

**Fishery Data Series No. 91-40**

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**Effort, Catch, and Harvest Statistics for the Chinook  
Salmon Sport Fishery in the Middle Mulchatna  
River, Alaska, During 1990**

by

**Dan O. Dunaway,  
Allen E. Bingham,  
and  
R. E. Minard**

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Alaska Department of Fish and Game

Division of Sport Fish



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Anchorage, Alaska

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## ABSTRACT

An estimated 8,344 hours of effort (standard error = 1,061) were expended by recreational anglers fishing the middle Mulchatna River (from the mouth of the Kuktuli River to the mouth of the Stuyahok River) during the period from 30 June through 25 July 1990. Anglers caught (landed) and harvested (kept) an estimated 6,069 (standard error = 1,414) and 1,409 (standard error = 267) (23% harvested) chinook salmon *Oncorhynchus tshawytscha*; 110 and 54 (49% harvested) sockeye salmon *Oncorhynchus nerka*; 312 and 37 (12% harvested) chum salmon *Oncorhynchus keta*; 727 and 77 (11% harvested) rainbow trout *Oncorhynchus mykiss*. Anglers also retained 4% of the estimated catch of 272 Arctic grayling *Thymallus arcticus*, and they retained 6% of the estimated catch of 117 northern pike *Esox lucius*. Nearly equal percentages of age-1.2, age-1.3, and age-1.4 chinook salmon comprised over 90% of the sport harvest. Over two-thirds of the sport harvest of chinook salmon were male fish.

KEY WORDS: chinook salmon, *Oncorhynchus tshawytscha*, sockeye salmon, *Oncorhynchus nerka*, chum salmon, *Oncorhynchus keta*, rainbow trout, *Oncorhynchus mykiss*, Arctic grayling, *Thymallus arcticus*, northern pike, *Esox lucius*, sport harvest, sport effort, creel survey, escapement, Mulchatna River, Stuyahok River, Kuktuli River, Bristol Bay.

## INTRODUCTION

The Mulchatna River flows to the southwest before joining the Nushagak River approximately 104 km (65 miles) northeast of Dillingham, Alaska (Figure 1). Most of the land along the mainstem Mulchatna is owned by the state of Alaska. Other land owners include the National Park Service, which controls the headwaters of the Mulchatna, and Alaska natives who own some land along the mainstem. The creel survey study area, referred to here as the middle Mulchatna River, included the section of the Mulchatna River from the mouth of the Koktuli River downstream to the mouth of the Stuyahok River, a distance of approximately 20 km (Figure 1). The 1990 study area, though relatively small, may be the most heavily used portion of the river.

The sport fishery on the Mulchatna River commences about the third week of June with the arrival of chinook salmon *Oncorhynchus tshawytscha*, the first of the five species of Pacific salmon that spawn in Mulchatna River. The sport fishery continues until early October when the coho salmon *O. kisutch* run has nearly ended and the river begins to freeze. In addition to salmon, anglers catch good numbers of rainbow trout *O. mykiss*, Arctic grayling *Thymallus arcticus*, and northern pike *Esox lucius*. Airplanes are the most common means of transportation into the area, though some anglers use boats from communities along the Nushagak River.

Harvest data for the Mulchatna River sport fishery are limited to results of the Alaska Department of Fish and Game (ADFG) Statewide Harvest Survey (Mills 1979-1990) and one on-site creel survey conducted in 1986 (Lipchak 1986). The statewide survey provides estimates of harvest and effort but does not furnish information on characteristics of the sport fishery. The 1986 on-site survey was of limited scope and occurred before the bag limits on chinook salmon were reduced in 1987, and before the 25 July chinook salmon season closure was enacted in 1990 to protect fish on the spawning beds.

From 1977 to 1982, sport effort on the entire<sup>1</sup> Mulchatna River quite consistently averaged 1,274 angler-days per year (Figure 2, Mills 1979-1983). Since 1983, effort has been more variable, and has ranged from 1,974 angler-days in 1989 to 4,711 angler-days in 1988 (no estimate is yet available for 1990) (Mills 1984-1990). The recent 7-year average of 2,922 angler-days per year indicates increased sport angling effort since the 1977-1982 period. In a similar fashion, sport harvests of chinook salmon on the entire Mulchatna River averaged 326 fish per year from 1977 to 1982, while the annual harvests since 1982 have averaged 1,145 fish.

Chinook of Mulchatna drainage origin are also harvested along with other Nushagak stocks in commercial and subsistence fisheries. Peak commercial harvests of Nushagak Bay drainage chinook salmon stocks were achieved from 1976 through 1986. The commercial harvest of chinook salmon has since dropped below the historical average and shows a declining trend since 1987 (Table 1; ADFG 1990a, 1990b). The subsistence harvest of chinook salmon in the Nushagak Bay drainage has increased, averaging 5,400 fish per year from 1963 through 1977, and averaging 10,400 fish per year since 1978 (Table 1;

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<sup>1</sup> The Statewide Survey only provides harvest data for the whole length of the Mulchatna River.

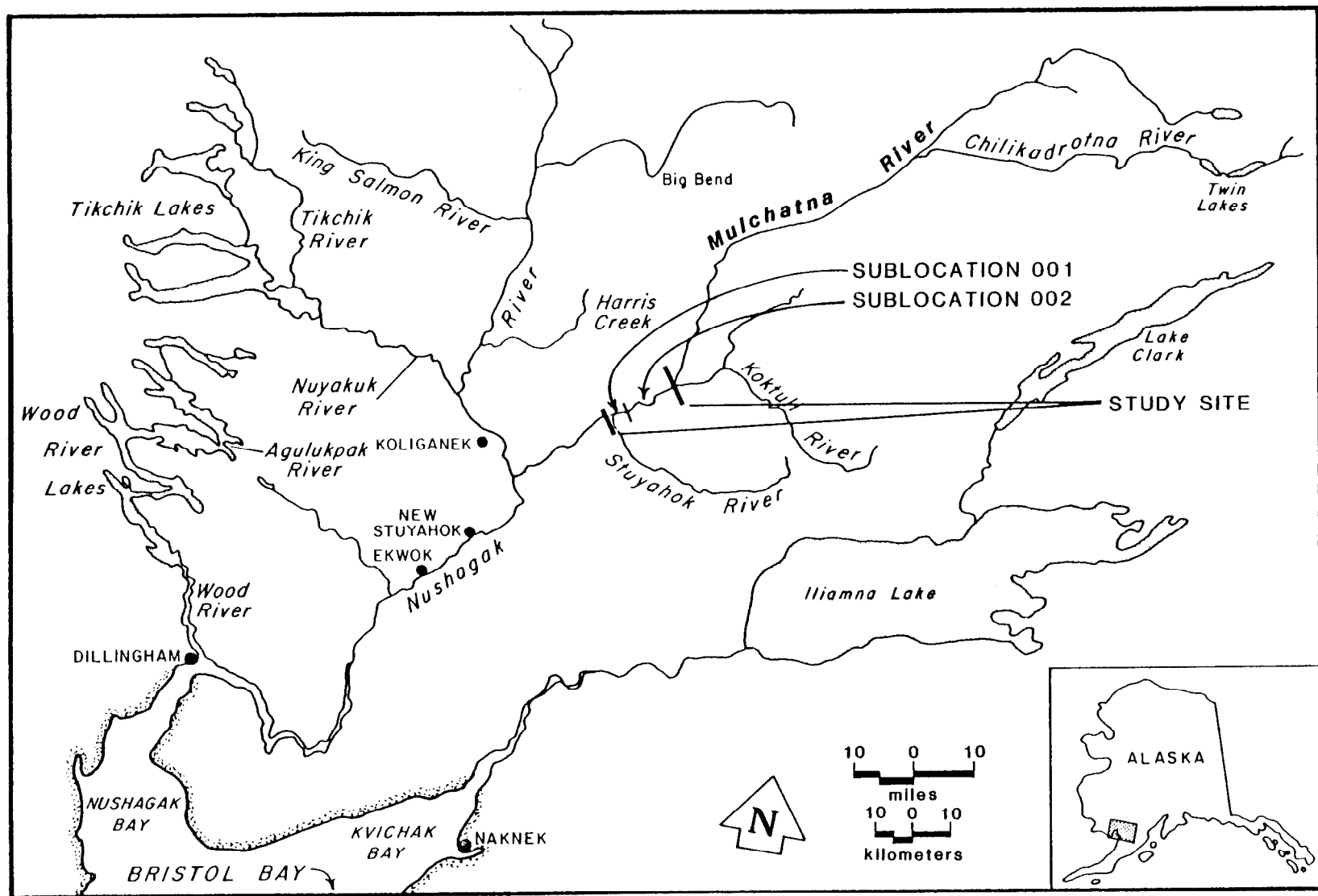


Figure 1. Nushagak Bay and Nushagak River drainages showing the middle Mulchatna River study site.

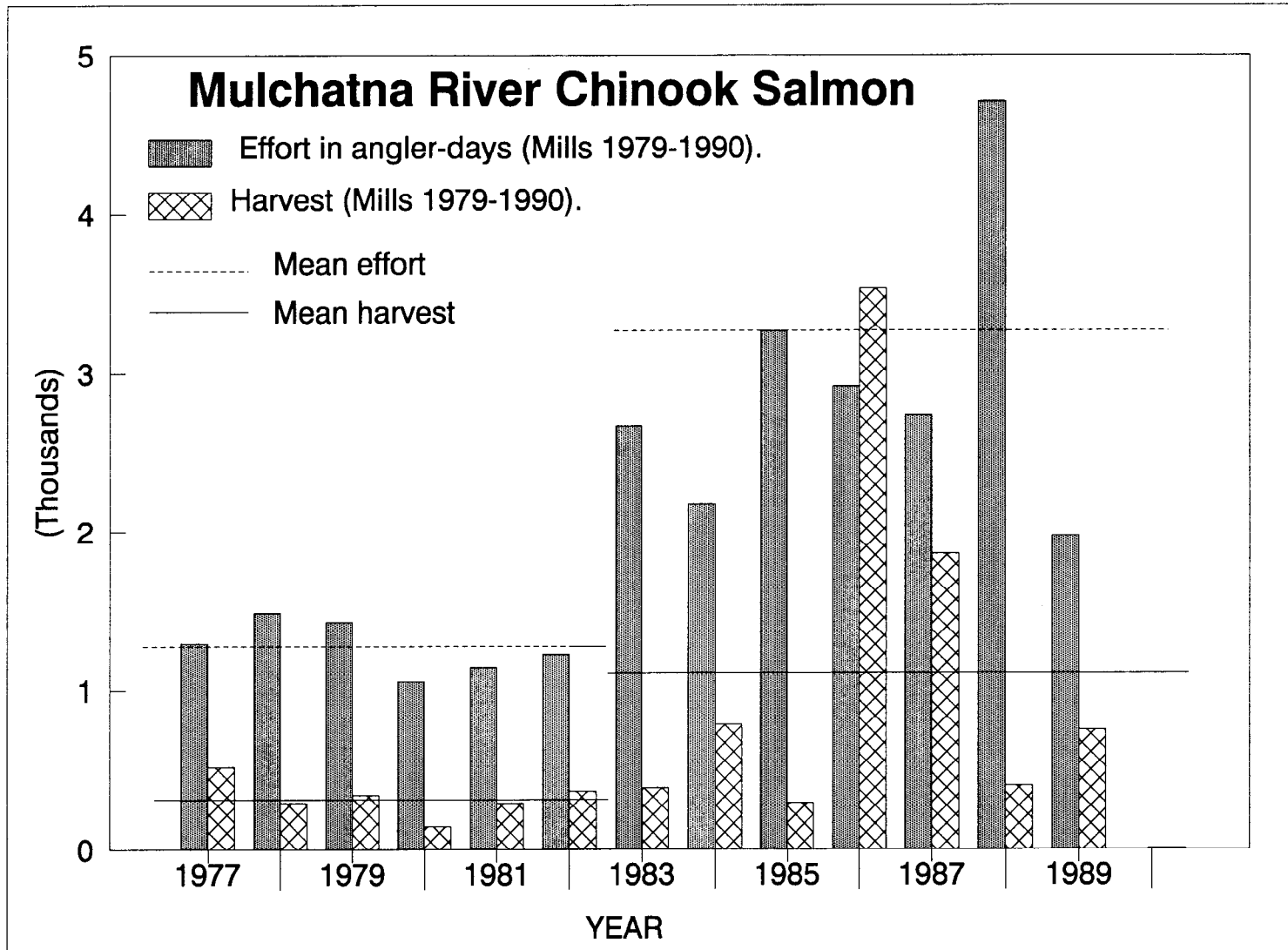


Figure 2. Estimates and means of effort (angler-days) and harvests of chinook salmon (1977-1989) by the sport fishery in the Mulchatna River.

Table 1. Commercial harvest, subsistence harvest, sport harvest, and escapement estimate for Nushagak Bay drainage chinook salmon 1966-1990.

Year	Harvest			Escapement Estimate <sup>d</sup>	Total Run <sup>e</sup>	Total Rate of Harvest <sup>f</sup>	Harvest Rate by Anglers <sup>g</sup>	Mulchatna R. Sport Harvest <sup>h</sup>	
	Comm. <sup>a</sup>	Sub. <sup>b</sup>	Sport <sup>c</sup>						Total
1966	58,184	3,700		61,884	40,000	101,884	61%		
1967	96,240	3,700		99,940	65,000	164,940	61%		
1968	78,201	6,600		84,801	70,000	154,801	55%		
1969	80,803	7,100		87,903	35,000	122,903	72%		
1970	87,547	6,900		94,447	50,000	144,447	65%		
1971	82,769	4,400		87,169	40,000	87,169	100%		
1972	46,045	4,000		50,045	25,000	75,045	67%		
1973	30,470	6,600		37,070	35,000	72,070	51%		
1974	32,053	7,900		39,953	70,000	109,953	36%		
1975	21,454	7,100		28,554	70,000	98,554	29%		
1976	60,684	6,900		67,584	100,000	167,584	40%		
1977	85,074	5,200	923	91,197	65,000	156,197	58%	0.59%	521
1978	118,548	6,600	442	125,590	130,000	255,590	49%	0.17%	291
1979	157,321	8,900	654	166,875	95,000	261,875	64%	0.25%	342
1980	64,958	11,800	757	77,515	141,000	218,515	35%	0.35%	146
1981	193,461	11,500	1,220	206,181	150,000	356,181	58%	0.34%	291
1982	195,287	12,100	1,845	209,232	147,000	356,232	59%	0.52%	367
1983	137,123	11,800	2,548	151,471	161,730	313,201	48%	0.81%	388
1984	61,378	9,800	2,394	73,572	80,940	154,512	48%	1.55%	786
1985	67,783	7,900	1,852	77,535	115,720	193,255	40%	0.96%	292
1986	65,783	12,600	5,664	84,047	43,434	127,481	66%	4.44%	3,534
1987	45,983	12,200	3,449	61,632	84,309	145,941	42%	2.36%	1,860
1988	16,501 <sup>i</sup>	10,100	3,436	30,037	56,905	86,942	35%	3.95%	403
1989	17,887 <sup>i</sup>	8,100	4,315	30,302	78,302	108,604	28%	3.97%	754
Historical Average:									
	79,231	8,063	2,269	88,522	83,015	168,078	53%	1.35%	767
1990 <sup>j</sup>	14,092	11,932	4,500 <sup>k</sup>	30,324	63,955	94,279	68%	4.6%	1,409 <sup>k</sup>

- a Commercial harvest. Some harvests were impacted by price disputes.
- b Subsistence harvest. Estimates are latest available.
- c Sport harvests estimates from Statewide Harvest Survey for rivers in the Nushagak Bay drainage except 1986, 1987 which include on-site survey harvest estimates for lower Nushagak River.
- d Escapement estimates: 1966 expanded from Nushagak River tower counts; 1967 is a combination of tower counts and aerial surveys; 1971 estimated from mean exploitation rates observed 1960-1970 and 1972-1976; 1972-1985 from aerial counts of index streams; 1986-1990 from sonar counts.
- e Total run = sum of all harvests + escapement. Considered to be a minimum number.
- f Total rate of harvest = (Total harvest/Total run)\* 100.
- g (Sport Harvest/Total Run)\* 100.
- h From statewide harvest survey.
- i Commercial harvests for 1988, 1989 are preliminary.
- j All figures for 1990 are preliminary except escapement.
- k 1990 statewide harvest estimate not available, preliminary estimate.

ADFG 1990a, 1990b). Increased subsistence harvests may reflect an increased number of local inhabitants as well as improved reporting methods. Escapement of Nushagak River chinook salmon onto the spawning grounds averaged 55,400 fish per year from 1966 through 1977, rose to an average 137,400 fish per year from 1978 through 1983, then dropped to an average 74,400 fish per year since the establishment in 1984 of a provisional escapement goal of 75,000 fish (ADFG 1990a).

Changes in the users, the stocks, and the sport regulations all indicated a need for more up-to-date information on the Mulchatna River sport fisheries. Growth in other nearby sport fisheries has shown that prudent management required information about the sport fisheries beyond that provided by the Statewide Harvest Survey (Dunaway 1990). Of particular importance is obtaining estimates of effort directed at target species; total catch; and age, sex, and size composition. Therefore, specific objectives of the study were:

1. To estimate angling effort (in angler-hours), catch (fish kept plus released), harvest (fish kept only), for the chinook salmon sport fishery on the middle Mulchatna River during the period 30 June to 25 July 1990.
2. To estimate the age, sex, and length composition of chinook salmon harvested by the sport fishery on the middle Mulchatna River during the period 30 June to 25 July 1990.
3. To estimate catch (fish kept plus released), and harvest (fish kept only) of other species of fish frequently encountered on the middle Mulchatna River during the period 30 June to 25 July 1990.

In 1990, anglers on the middle Mulchatna River were allowed a daily bag and possession limit of three chinook salmon per day, only two of which could be over 71 cm (28 inches) (ADFG 1990c). The daily bag and possession limits of salmon other than chinook salmon (including sockeye *O. nerka*, chum *O. keta*, pink *O. gorbuscha*, and coho *O. kisutch*) were five fish per day in combination. The bag and possession limit on rainbow trout during the survey period was two fish per day, one of which could exceed 51 cm (20 inches) in length. Anglers were limited to a bag and possession limit of five Arctic grayling and 10 northern pike per day (ADFG 1990c).

## METHODS

### Effort Catch and Harvest Surveys

The middle Mulchatna River creel survey project was divided into two parts corresponding to two distinctive portions of the area's sport fisheries (Figure 1).

#### Sublocation 001:

The fishery occurring within sublocation 001 takes place along the banks and beaches where the Stuyahok River empties into the Mulchatna River (Figure 1). Large sand bars in the area are used by overnight campers, while other

anglers may fly or boat in for day trips. Sublocation 001 also serves as the termination and pickup point for anglers making raft trips down the Mulchatna, Koktuli, and Stuyahok Rivers. The limited area of the fishery and the easy accessibility to the anglers allowed the survey crew to interview anglers as they left the fishery, and to sample the sport harvest.

Effort, catch, and harvest in sublocation 001 were estimated by the direct expansion method. Twelve of the 26 days in the study period were randomly selected without replacement for sampling at sublocation 001. The angling day, for the purpose of the survey, began at 0000 and ended at 2359 hours (24 hours). On each of the selected days, anglers were counted and interviewed as they left the fishery. The number of hours fished, the species and numbers of fish kept, the number and species of fish released, gear types used, and a variety of demographic information were recorded on standard ADFG mark-sense angler interview forms. Harvested fish were sampled for age, sex, and length at sublocation 001 whenever there was an opportunity, regardless of the interview sampling schedule.

Angler effort, catch, harvest, and their associated variances were estimated for the sublocation 001 portion of the creel survey using the following procedures.

For each sample day, individual effort (hours fished) was summed to produce a daily total effort. Similarly, a daily total of each species caught (fish kept plus fish released), and a daily total of fish harvested (fish kept) were calculated.

The estimates of angler effort for the survey were obtained by the following procedures:

$$\begin{aligned}
 \hat{E} &= \text{estimated angler effort for the entire survey, obtained as follows;} \\
 &= D \bar{E} \qquad \qquad \qquad (1)
 \end{aligned}$$

where:

$$\begin{aligned}
 D &= \text{the number of days available for sampling (26 in this instance);} \\
 \bar{E} &= \text{mean daily total angler effort over days sampled;} \\
 &= \frac{\sum_{i=1}^d E_i}{d} ; \qquad \qquad \qquad (2)
 \end{aligned}$$

$E_i$  equals the total angler effort observed over all anglers interviewed during the sampled day  $i$ ; and  $d$  equals the number of days sampled (equal to 12 in this instance).



The variance of the angler effort estimate was obtained by the standard single stage formula (see Cochran 1977):

$$\hat{V}[\hat{E}] = (1 - f_1) \frac{S_1^2}{d}; \quad (3)$$

where:

$f_1$  = the sampling fraction for days sampled (i.e.,  $f_1 = d / D$ ); and

$S_1^2$  = the among day variance;

$$= \frac{\sum_{i=1}^d (E_i - \bar{E})^2}{d - 1} \quad (4)$$

Estimates of catch and harvest and their variances were obtained similarly, by substituting the appropriate catch or harvest statistics into equations 1-4, above. Standard errors were obtained by taking the square root of the variance estimates.

The assumption necessary for unbiased point and variance estimates of angler effort, catch, and harvest obtained by the procedures outlined above is that interviewed anglers accurately reported their hours of fishing effort and the number of fish by species released.

#### Sublocation 002:

Sublocation 002 included anglers fishing in the approximately 24 km (15 miles) of the Mulchatna River from the mouth of the Kaktuli River to the mouth of the Stuyahok River (Figure 1). Anglers fishing in sublocation 002 were fewer in number and much more scattered requiring the use of a more complex survey design to obtain the desired estimates.

A stratified three-stage random sampling design was used on sublocation 002 of the middle Mulchatna River to estimate effort (in angler-hours) and catch and harvest. A roving creel survey (Neuhold and Lu 1957) was conducted to count and interview anglers as well as sample the sport harvest. Angler counts were considered instantaneous and represent angler effort for the stratum in which the count was conducted. Angler interviews were used to estimate the catch and harvest rates. Estimates of catch and harvest are the product of the estimated effort and the catch or harvest rates.

The study period in sublocation 002 began 30 June and continued through 25 July 1990. The angling day, for the purpose of the survey, began at 0600 and ended at 2059 (15 hours). Each angling day was split into two time-of-day strata, peak and non-peak. The nonpeak stratum was composed of two, 3-hour periods: period A 0600 to 0859 and period E 1800 to 2059. The peak stratum contained three, 3-hour periods: period B 0900 to 1159, period C

1200 to 1459, and period D 1500 to 1759. These periods were selected such that the combination count interview samples, which take approximately 3 hours to conduct, would "fit" into each time-of-day stratum in equal increments. Surveys of other Bristol Bay area sport fisheries have indicated that angler effort (hence catch and harvest) are limited during the early and late hours of the day (Dunaway 1990). The numerous access points to the fishery (particularly with airplanes), the mobility of the anglers (again, via boats and airplanes), and the general nature of a roving type survey make it difficult to gather adequate numbers of completed trip interviews. Therefore, estimates necessarily included data from anglers interviewed before the completion of their fishing trip.

From the 14 days remaining after selection of the 12 sampling days for sublocation 001, 7 days were selected without replacement for sampling the peak time-of-day stratum. Four days were selected at random from the remaining days in the week for sampling the non-peak stratum. This restricted sampling of days may have introduced bias(es) in the resulting estimates. The magnitude of the bias(es) is unknown.

For each day selected for sampling during the peak stratum, two of the three possible 3-hour sampling periods (i.e., 0900-1159 and 1500-1859) were sampled. Similarly, for the non-peak stratum, both the early and late 3-hour periods were sampled (censused).

Angler effort, catch, and harvest, their associated variances, and standard errors were estimated for the creel survey using the following procedures. A random estimator was used to estimate angler effort on a sample by sample basis. Catch and harvest estimates for each sample were obtained by a ratio estimator which was computed by combining the estimated effort (for the sample) with estimates of catch per unit effort (CPUE) and harvest per unit effort (HPUE) obtained from the angler interviews. The CPUE and HPUE estimates were obtained by the jackknife estimation approach (Efron 1982). The jackknife approach for estimating CPUE and HPUE was used since most other estimators are known to be biased (for use as ratio estimators, i.e., for expansion), and the jackknife estimate has been shown to be less biased and procedures exist for correcting some of this bias (as noted below) (see Cochran 1977, section 6.15, pages 174-177; and Smith 1980).

The CPUE and HPUE estimates presented here are only appropriate for expansion purposes (i.e., as used in a ratio estimation procedure).

The individual sample estimates of effort, catch, and harvest were then used in a stratified three-stage estimation approach to obtain total estimates, both within strata and across strata, as noted below.

The first step involved obtaining the jackknife estimated sample mean of CPUE (or HPUE) as follows:

\*  
 $CPUE_{hijk}^*$  = the jackknifed CPUE for angler  $k$  in sample  $j$  within day  $i$  and stratum  $h$ ;

$$= \frac{\sum_{\substack{o=1 \\ o \neq k}}^{m_{hij}} c_{hijo}}{\sum_{\substack{o=1 \\ o \neq k}}^{m_{hij}} e_{hijo}}; \quad (5)$$

where:

$m_{hij}$  = the number of anglers interviewed within sampled period during each sampled day;

$c_{hijo}$  = the catch in hours of each angler interviewed, and

$e_{hijo}$  = the angling effort in hours of each angler interviewed.

The jackknife mean CPUE for sample  $j$  within day  $i$  and stratum  $h$  was then obtained as:

$$\overline{CPUE}_{hij}^* = \frac{\sum_{k=1}^{m_{hij}} CPUE_{hijk}^*}{m_{hij}}. \quad (6)$$

Then the bias correction (adapted from Efron 1982, equation 2.8, page 6) was performed:

$$\overline{CPUE}_{hij}^{*†} = [m_{hij} (\overline{CPUE}_{hij} - \overline{CPUE}_{hij}^*)] + [\overline{CPUE}_{hij}^*]; \quad (7)^2$$

where:

$$\overline{CPUE}_{hij} = \frac{\sum_{o=1}^{m_{hij}} c_{hijo}}{\sum_{o=1}^{m_{hij}} e_{hijo}}. \quad (8)$$

The bias-corrected jackknife mean was then expanded by the estimated angler effort for the sample to obtain the estimated catch for each sample period within each sampled day:

---

<sup>2</sup> Note that if the bias correction, equation 7, resulted in a negative value, then the uncorrected version, equation 6, was used in all following equations.

$$\hat{C}_{hij} = \hat{E}_{hij} \text{ CPUE}_{hij}^* \quad (9)$$

where:

$$\begin{aligned} \hat{E}_{hij} &= \text{estimated angler effort (in hours) for each sample period;} \\ &= H_{hij} x_{hij}; \end{aligned} \quad (10)$$

where:

$$\begin{aligned} H_{hij} &= \text{number of hours in sampling period } j \text{ within day } i \text{ and} \\ &\text{stratum } h; \text{ and} \\ x_{hij} &= \text{the number of anglers counted fishing during each sample.} \end{aligned}$$

The harvest for the sample was estimated similarly by substituting the appropriate harvest statistics into equations 5 to 9, above.

Estimates of angler effort, catch, and harvest for each day sampled were obtained as follows:

$$\begin{aligned} \bar{Y}_{hi} &= \text{mean of the sample estimates for each sampled day; in which } Y \\ &\text{represents } E, C, \text{ or } H \text{ for effort, catch, and harvest,} \\ &\text{respectively;} \\ &= \frac{\sum_{j=1}^{\text{Phi}} \hat{Y}_{hij}}{\text{Phi}}; \end{aligned} \quad (11)$$

where:

$$\begin{aligned} \hat{Y}_{hij} &= \text{the estimated sample value for effort (E, as obtained from} \\ &\text{equation 7, above), catch or harvest (C or H, as obtained from} \\ &\text{equation 6, above); and} \\ \text{Phi} &= \text{number of periods sampled within each sampled day.} \end{aligned}$$

The estimated daily effort, catch, and harvest was obtained by expanding by the number of sampling periods in the day:

$$\hat{Y}_{hi} = \text{Phi} \bar{Y}_{hi}; \quad (12)$$

where:

$$\text{Phi} = \text{the number of possible sampling periods within each day.}$$

Similarly, we obtained daily mean estimates for each sampling stratum as follows:

$$\bar{Y}_h = \frac{\sum_{i=1}^{d_h} Y_{hi}}{d_h}; \quad (13)$$

where:

$d_h$  = the number of days sampled within each stratum.

The estimated stratum effort, catch, and harvest was obtained by expanding by the number of days in each stratum:

$$\hat{Y}_h = D_h \bar{Y}_h; \quad (14)$$

where:

$D_h$  = the number of days within each stratum.

The variance of the estimated catch for stratum  $h$  was obtained by the three-stage variance equation (following the approach outlined by Cochran 1977), omitting the finite population correction factor (FPC) for the third stage units:

$$\begin{aligned} \hat{V}[C_h] = & \left\{ (1 - f_{1h}) D_h^2 \frac{S_{1h}^2}{d_h} \right\} \\ & + \left\{ f_{1h} \frac{D_h^2}{d_h^2} \sum_{i=1}^{d_h} (1 - f_{2hi}) P_{hi}^2 \frac{S_{2hi}^2}{P_{hi}} \right\} \\ & + \left\{ f_{1h} \frac{D_h^2}{d_h^2} \sum_{i=1}^{d_h} f_{2hi} \frac{P_{hi}^2}{P_{hi}^2} \sum_{j=1}^{p_{hi}} V[C_{hij}] \right\}; \end{aligned} \quad (15)$$

where:

$f_{1h}$  = the sampling fraction for days (i.e.,  $d_h / D_h$ );

$f_{2hi}$  = the sampling fraction for periods within each day (i.e.,  $p_{hi} / P_{hi}$ );

$S_{1h}^2$  = the among day variance for the total angler catch estimate over all days sampled in each stratum;

$$= \frac{\sum_{i=1}^{d_h} (C_{hi} - \bar{C}_h)^2}{d_h - 1}; \quad (16)$$

$S_{2hi}^2$  = the among period variance for sampled day;

$$= \frac{\sum_{j=1}^{phi} (C_{hij} - \bar{C}_{hi})^2}{phi - 1}; \quad (17)$$

$V[C_{hij}]$  = the within period variance for the estimated sample catch for each sample period, obtained by treating the first term on the right hand side of equation 9 as a constant<sup>3</sup> and as such, we approximated the variance by using the equation for a product of a constant and an estimate (Kish 1965, equation 2.8.5, page 60);

$$\approx E_{hij}^2 s_{3hij}^2; \text{ and} \quad (18)$$

$s_{3hij}^{*2}$  = jackknife estimate of the variance for the jackknifed sample mean CPUE (adapted from Efron 1982, equation 3.2, page 13);

$$= \frac{(m_{hij} - 1)}{m_{hij}} \sum_{k=1}^{m_{hij}} (CPUE_{hijk}^* - \overline{CPUE_{hij}^*})^2. \quad (19)$$

Variance estimates for the estimated harvest were obtained by replacing the appropriate harvest statistics (h's and H's) for the catch statistics (c's and C's) in equations 15 through 19.

Stratum estimates of the variance of the angler effort were obtained in a similar manner to those for catch and harvest. The primary difference occurred in the absence of the third major term in equation 14, since we could not estimate the within period component of variance for angler effort, and accordingly our variance estimate was only approximate and assumed to be negatively biased:

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<sup>3</sup> Since only one angler count was conducted within each sampled period.

$$\hat{V}[\hat{E}_h] \approx \left\{ (1 - f_{1h}) D_h^2 \frac{S_{1h}^2}{d_h} \right\} + \left\{ f_{1h} \frac{D_h^2}{d_h^2} \sum_{i=1}^{d_h} (1 - f_{2hi}) P_{hi}^2 \frac{S_{2hi}^2}{P_{hi}} \right\}. \quad (20)$$

The values for the terms in equation 19 were obtained by replacing the catch statistics (C's) by the appropriate effort statistics (E's), in equations 16 and 17.

Total angler effort, catch, or harvest across all strata and the associated variances were calculated by summing statistics across strata.

Since our estimates of angler effort, catch, and harvest are estimates of totals, then standard errors (SE's) were obtained by taking the square root of the associated variances.

The assumptions necessary for unbiased point and variance estimates of angler effort, catch, and harvest obtained by the procedures outlined above are:

1. incomplete-trip angler CPUE and HPUE represent accurate estimates of completed-trip angler CPUE and HPUE;
2. interviewed anglers accurately reported their hours of fishing effort and the number of fish by species released;
3. interviewed anglers were representative of the total angler population;
4. no significant fishing effort occurred during the hours not included in the fishing day;
5. no significant fishing effort occurred in areas not covered by the survey;
6. catch rate and duration of fishing trip are independent (DiCostanzo 1956); and
7. angler effort, catch, and harvest did not vary substantially among days (this assumption necessary due to the constrained sampling of days outlined above).

Incomplete-trip angler CPUE, although probably biased, is assumed to provide a reasonable estimate of completed-trip angler CPUE. Therefore our catch estimates are assumed to be reasonably unbiased. Incomplete-trip angler HPUE is probably biased, and therefore our estimates of angler harvest are biased to an undetermined extent.

Combined Estimates:

To obtain estimates of total effort, catch, and harvest within the study area, the estimates for each sublocation were added together. Similarly, the estimates of variance associated with each sublocation's estimate of effort, catch, and harvest were summed to produce an overall variance.

Size, Sex, and Age Sampling

Sport harvested chinook salmon encountered during the angler interview portion of the creel survey were measured to the nearest millimeter for mid-eye to fork-of-tail length, weighed to the nearest 10 grams, and sexed based on external characteristics. In addition, three scales were removed from the preferred location on each fish<sup>4</sup>. Upon removal, the scales were mounted on adhesive-coated cards which were later thermohydraulically pressed against acetate cards. The resulting scale impressions were displayed on a microfiche projector for age determination<sup>5</sup>.

Estimates of mean length by age group of chinook salmon subsampled from harvest were calculated. The procedures outlined by Sokal and Rohlf (1981, Boxes 4.2 and 7.1, pages 56 and 139) were used to obtain the estimates of each mean and its standard error.

Estimates of age composition (proportion) by sex for the subsampled chinook salmon were calculated. Each proportion was calculated according to the following equations:

$$\begin{aligned} \hat{p}_u &= \text{estimated proportion of the sampled chinook salmon harvested} \\ &\text{that are age } u; \\ &= \frac{n_u}{n}; \end{aligned} \tag{21}$$

where:

$$\begin{aligned} n_u &= \text{number of the sampled chinook salmon harvested that are age } u; \\ &\text{and} \\ n &= \text{the number of chinook salmon harvested that were subsampled} \\ &\text{for scales.} \end{aligned}$$

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<sup>4</sup> The left side of the fish approximately two rows above the lateral line and on the diagonal row downward from the posterior insertion of the dorsal fin as used on sockeye salmon by Clutter and Whitesel (1956).

<sup>5</sup> For salmon, the numeral preceding the decimal is the number of freshwater annuli, whereas the numeral following the decimal is the number of marine annuli (European method). Total age from brood year is the sum of the two numerals plus one.



The variance of the estimate of  $p_u$  was obtained approximately by the standard equation for the variance of a binomial proportion omitting the finite population correction factor (Cochran 1977, equation 3.8, page 52):

$$\hat{V}[p_u] \approx \frac{\hat{p}_u (1 - \hat{p}_u)}{n - 1} . \quad (22)$$

The survey crew's camp was located in the midst of sublocation 001, giving the crew the opportunity to intensively sample the harvest there. The 513 samples gathered at sublocation 001 were nearly a census of the entire chinook salmon harvest during the survey period.

Although the harvest in sublocation 002 was sampled by a stratified multi-stage approach, we treated our samples of fish lengths and ages as if collected by a simple random sampling program. We assumed that length at age and age composition did not vary substantially from the peak stratum to the non-peak stratum, or from sampling stage to stage.

## RESULTS

### Creel Statistics

The middle Mulchatna River creel survey project, conducted from 30 June to 25 July 1990, covered two geographic areas (Figure 1), each with a unique fishery that required two different methods of data collection and analysis.

#### Sublocation 001:

For the fishery at the mouth of the Stuyahok River (sublocation 001), data from 511 completed trip interviews were used to estimate effort, catch, and harvest (Tables 2, 3, and 4; Appendix A). Seven anglers were not interviewed during the survey and adjustments to the estimates were considered unnecessary. Effort in sublocation 001 was estimated to be 5,558 angler-hours (SE = 662) (Tables 2 and 5; Appendix A). An estimated 2,806 chinook salmon (SE = 441) were caught (landed), of which 667 (SE = 105), or 24% were harvested (Table 6, Appendix A). Catches of other species at sublocation 001 were estimated to be: 65 sockeye salmon, 297 chum salmon, 310 rainbow trout, 128 Arctic grayling, and 93 northern pike. Estimated retention was highest for sockeye salmon (46%) followed by chinook salmon (24%). Retention rates for the other species ranged from 15% of the rainbow trout to 8% of the northern pike (Table 6).

#### Sublocation 002:

In sublocation 002 (the Mulchatna River from the mouth of the Kuktuli River to the mouth of the Stuyahok River), the 27 completed trip interviews collected were insufficient to produce useful estimates of effort, catch and harvest. Therefore the estimates for sublocation 002 also used, and are biased by, the data collected from 141 incomplete-trip interviews (Appendices B, C1 to C6). Effort in sublocation 002 was estimated to be

Table 2. Sublocation 001 summary of daily angler counts and hours fished in the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Date	Anglers Counted	Hours Fished
6/30/90	38	191
7/03/90	34	171
7/04/90	35	197
7/08/90	56	222
7/09/90	46	216
7/11/90	43	262
7/12/90	76	414
7/14/90	55	328
7/15/90	66	366
7/19/90	27	152
7/22/90	11	42
7/23/90	2	2
Total	489	2,565
Mean	41	214
Variance	455	14,465

Table 3. Sublocation 001 summary of daily catch and harvest of chinook, sockeye, and chum salmon in the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Date	Chinook Salmon		Sockeye Salmon		Chum Salmon	
	Catch <sup>a</sup>	Harvest	Catch <sup>a</sup>	Harvest	Catch <sup>a</sup>	Harvest
6/30/90	17	4	2	0	7	1
7/03/90	158	25	0	0	6	1
7/04/90	236	18	0	0	15	0
7/08/90	151	43	0	0	8	1
7/09/90	94	30	1	1	17	3
7/11/90	117	35	0	0	15	3
7/12/90	193	55	5	4	27	1
7/14/90	145	43	10	7	15	1
7/15/90	158	45	5	2	15	6
7/19/90	25	10	7	0	4	0
7/22/90	1	0	0	0	8	0
7/23/90	0	0	0	0	0	0
Total	1,295	308	30	14	137	17
Mean	108	26	2	1	11	1
Variance	6,399	367	12	5	53	3

<sup>a</sup> Catch = total fish kept + total fish released.

Table 4. Sublocation 001 summary of daily catch and harvest of rainbow trout, Arctic grayling, and northern pike in the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Date	Rainbow Trout		Arctic Grayling		Northern Pike	
	Catch <sup>a</sup>	Harvest	Catch <sup>a</sup>	Harvest	Catch <sup>a</sup>	Harvest
6/30/90	2	0	3	0	32	0
7/03/90	11	0	13	0	0	0
7/04/90	14	1	0	0	0	0
7/08/90	24	4	2	0	0	0
7/09/90	7	1	0	0	0	0
7/11/90	6	0	2	0	0	0
7/12/90	30	4	0	0	0	0
7/14/90	10	3	2	0	0	0
7/15/90	10	5	9	2	0	0
7/19/90	19	0	16	0	8	0
7/22/90	10	3	12	3	3	3
7/23/90	0	0	0	0	0	0
Total	143	21	59	5	43	3
Mean	12	2	5	0.5	4	0.2
Variance	76	4	35	1	86	1

<sup>a</sup> Catch = total fish kept + total fish released.

Table 5. Sublocation 001 estimate of effort (angler-hours) for the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Estimated Angler-hours	Standard Error	95% Confidence Interval <sup>a</sup>		Relative Precision <sup>b</sup>
		Lower	Upper	
5,558	662	4,260	6,857	23%

<sup>a</sup> 95% CI = (Point Estimate) ± (1.96\*SE)

<sup>b</sup> Relative precision = ((1.96\*SE)/POINT ESTIMATE)\*100 where  $\alpha = 0.05$ .

Table 6. Sublocation 001 estimates of catch and harvest of chinook salmon, sockeye salmon, chum salmon, rainbow trout, Arctic grayling, and northern pike in the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

		Catch <sup>a</sup>			Harvest					
Estimated Number	SE	95% Confidence Interval <sup>b</sup>		RP <sup>c</sup>	Estimated Number	SE	95% Confidence Interval <sup>b</sup>		Percent of Catch Harvested	
		Lower	Upper				Lower	Upper		
Chinook Salmon										
2,806	441	1,942	3,669	31%	667	105	460	874	31	24%
Sockeye Salmon										
65	19	28	101	57%	30	12	6	54	79%	46%
Chum Salmon										
297	40	218	375	26%	37	10	17	56	52%	12%
Rainbow Trout										
310	48	215	404	30%	46	11	24	66	45%	15%
Arctic Grayling										
128	32	64	191	50%	11	5	0	21	99%	9%
Northern Pike										
93	51	0	193	107%	7	5	0	15	144%	8%

<sup>a</sup> Catch = total fish kept + total fish released.

<sup>b</sup> 95% CI = (Point Estimate) $\pm$ (1.96\*SE); where d is 12 days.

<sup>c</sup> Relative precision = ((1.96\*SE)/POINT ESTIMATE)\*100 where  $\alpha = 0.05$ .

2,786 angler-hours (SE = 830) (Table 7; Appendix B, C1). Anglers were estimated to have caught 3,263 chinook salmon (SE = 1,344) and kept 741 (SE = 245) for essentially the same rate of retention observed in sublocation 001 (Table 6 and 8; Appendix C1). The catches of sockeye salmon (45), rainbow trout (417), Arctic grayling (144), and northern pike (23) in sublocation 002 were similar to the sublocation 001 estimates but distinctly fewer chum salmon (15) were caught in sublocation 002 (Tables 6 and 8). Sublocation 002 retention rates for all species other than chum salmon were basically similar to those observed in 001 (Tables 6 and 8).

#### Combined Estimates:

Total estimated effort for the entire survey area during the study period was 8,344 angler-hours (SE = 1,062) (Table 9). The combined estimate of chinook salmon caught in both locations was 6,069 fish (SE = 1,414), of which 1,409 (SE = 276) were kept (Table 10). For sockeye salmon, the overall catch was estimated to be 110 fish (SE = 37), with 54 (SE = 19) fish retained. A total catch of 312 (SE = 41) and harvest of 37 (SE = 10) chum salmon were estimated during the entire study. Overall, 727 (SE = 144) rainbow trout were estimated to have been caught, with an 11% retention rate. Anglers caught an estimated 272 Arctic grayling and 117 northern pike during the study; and retention rates for both species were 4% and 6% respectively (Table 10). The study was primarily designed to investigate the sport fishery for chinook salmon, and may not have included some of the more favorable periods for taking other species such as rainbow trout or northern pike; hence the estimates for species other than chinook salmon must be considered incomplete.

#### Size, Sex, and Age Compositions

##### Sublocation 001:

Over 76% of the 513 chinook salmon sampled from the sport harvest were males (Table 11). The harvest sample was composed of nearly equal percentages of age-1.2 (31.5%), age-1.3 (35.1%), and age-1.4 (26.6%) fish (Table 11). The mean length of chinook salmon taken in 001 was 742 mm (SE = 6.34, n = 512) and a mean weight of 7.68 kg (SE = 0.19, n = 416). The largest chinook salmon sampled was 1,040 mm (41 inches) long and weighed 20.3 kg (45 lbs).

##### Sublocation 002:

Ninety-nine fish were sampled from the sport harvest of chinook salmon in sublocation 002. Male fish comprised 84% of the sample (Table 12). Nearly 38% (SE = 5.19) of the samples were age-1.2 fish, 29.5% (SE = 4.89) were age-1.3 fish, and 23.9% (SE = 4.57) of the fish were age 1.4 (Table 12). The largest chinook salmon sampled was 1,005 mm (40 inches) long and weighed 19 kg (42 lbs).

## DISCUSSION

The 1990 Nushagak River escapement of 63,955 chinook salmon (fish past the ADFG Commercial Fisheries sonar facility at Portage Creek) was below the

Table 7. Sublocation 002 estimate of effort (angler-hours), by stratum for the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Stratum <sup>a</sup>	Days Sampled	Estimated Angler-Hours	SE	95% Confidence Interval		Relative Precision <sup>b</sup>
				Lower	Upper	
Nonpeak	4	546	502	0	- 1,530	180%
Peak	7	2,240	660	945	- 3,534	58%
Total	11	2,786	830	1,160	- 4,412	58%

<sup>a</sup> Nonpeak stratum; period A (0600-0859) and period E (1800-2059).  
Peak stratum; period B (0900-1159) and period C (1200-1449) and period D (1500-1759).

<sup>b</sup> Relative Precision =  $((1.96 * SE) / \text{POINT ESTIMATE}) * 100$  where  $\alpha = 0.05$ .



Table 8. Sublocation 002 estimates of catch and harvest by species and stratum for the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Stratum <sup>b</sup>	Catch <sup>a</sup>					Harvest					Percent of Catch Harvested		
	Estimated Number	SE	95% Confidence Interval		RP <sup>c</sup>	Estimated Number	SE	95% Confidence Interval		RP <sup>c</sup>			
			Lower	Upper				Lower	Upper				
<b>Chinook Salmon</b>													
N	933	859	0	-	2,617	181%	148	139	0	-	419	184%	16%
P	2,330	1,033	305	-	4,356	87%	594	202	197	-	991	67%	25%
Total	3,263	1,344	629	-	5,897	81%	741	245	261	-	1,222	65%	23%
<b>Sockeye Salmon</b>													
N	0	0	0	-	0		0	0	0	-	0		0%
P	45	31	0	-	106	139%	24	15	0	-	54	125%	53%
Total	45	31	0	-	106	139%	24	15	0	-	54	125%	53%
<b>Chum Salmon</b>													
N	0	0	0	-	0		0	0	0	-	0		
P	15	9	0	-	33	121%	0	0	0	-	0		0%
Total	15	9	0	-	33	121%	0	0	0	-	0		0%
<b>Rainbow Trout</b>													
N	28	28	0	-	83	196%	0	0	0	-	0		0%
P	389	133	129	-	649	67%	32	18	0	-	67	109%	8%
Total	417	136	151	-	683	64%	32	18	0	-	67	109%	8%
<b>Arctic Grayling</b>													
N	0	0	0	-	0		0	0	0	-	0		0%
P	144	74	0	-	289	100%	0	0	0	-	0		0%
Total	144	74	0	-	289	100%	0	0	0	-	0		0%
<b>Northern Pike</b>													
N	0	0	0	-	0		0	0	0	-	0		0%
P	23	23	0	-	69	0%	0	0	0	-	0		0%
Total	23	23	0	-	69	192.13%	0	0.00	0	-	0		0%

<sup>a</sup> Catch = total fish kept + total fish released.

<sup>b</sup> N = Nonpeak stratum; period A (0600-0859) and period E (1800-2059).  
P = Peak stratum; period B (0900-1159) and period C (1200-1449) and period D (1500-1759).

<sup>c</sup> Relative Precision =  $((1.96 * SE) / \text{POINT ESTIMATE}) * 100$  where  $\alpha = 0.05$ .

Table 9. Combined estimates of effort (angler-hours) for sublocation 001 and 002 of the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Sublocation	Survey Type	Days Sampled	Estimated Anger-Hours	SE	95% Confidence Interval		Relative Precision <sup>a</sup>
					Lower	Upper	
001	Direct	12	5,558	662	4,260	- 6,857	23%
002	Roving	11	2,786	830	1,160	- 4,412	58%
Combined Estimates							
		23	8,344	1,062	6,263	- 10,425	25%

<sup>a</sup> Relative precision =  $((1.96*SE)/POINT\ ESTIMATE)*100$  where  $\alpha = 0.05$ .

Table 10. Combined estimates of catch and harvest by species for sublocations 001 and 002 of the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Sub location <sup>b</sup>	Catch <sup>a</sup>					Harvest					
	Estimated Number	SE	95% Confidence Interval		RPC <sup>c</sup>	Estimated Number	SE	95% Confidence Interval		Percent of Catch Harvested	
			Lower	Upper				Lower	Upper		
<b>Chinook Salmon</b>											
001	2,806	441	1,942	3,669	31%	667	105	461	874	31%	24%
002	3,263	1,344	629	5,897	81%	741	245	261	1,222	65%	23%
Total	6,069	1,414	3,297	8,841	46%	1,409	267	885	1,932	37%	23%
<b>Sockeye Salmon</b>											
001	65	19	28	102	57%	30	12	6	54	79%	47%
002	45	31	0	106	139%	24	15	0	54	125%	54%
Total	110	37	38	181	66%	54	19	16	92	70%	49%
<b>Chum Salmon</b>											
001	297	40	218	375	26%	37	10	18	56	52%	12%
002	15	9	0	33	12%	0	0	0	0	0%	0%
Total	312	41	231	392	26%	37	10	18	56	52%	12%
<b>Rainbow Trout</b>											
001	310	48	216	404	30%	46	11	25	66	45%	15%
002	417	136	151	683	64%	32	18	0	67	109%	8%
Total	727	144	445	1,009	39%	77	21	37	118	52%	11%
<b>Arctic Grayling</b>											
001	128	32	64	191	50%	11	5	0	22	99%	8%
002	144	74	0	289	100%	0	0	0	0	0%	0%
Total	272	81	114	430	58%	11	5	0	22	99%	4%
<b>Northern Pike</b>											
001	93	51	0	193	107%	7	5	0	16	143%	7%
002	23	23	0	69	192%	0	0	0	0	0%	0%
Total	117	56	7	226	94%	7	5	3	16	144%	6%

<sup>a</sup> Catch = total fish kept + total fish released.

<sup>b</sup> Sublocation 001 = direct expansion survey; 002 = roving survey

<sup>c</sup> Relative precision =  $((1.96 * SE) / \text{POINT ESTIMATE}) * 100$  where  $\alpha = 0.05$ .

Table 11. Mean lengths (millimeters) and weights (kilograms) of chinook salmon, by sex and age group, from samples collected from the sport fishery at sublocation 001 of the middle Mulchatna River, 30 June to 25 July 1990.

	Age Group						TOTAL
	UNKNOWN	1.1	1.2	1.3	1.4	1.5	
<b>UNKNOWN SEX</b>							
n (Known Age)				1	2		3
Percent				0.2	0.4		0.6
SE				0.2	0.2		0.3
Mean Length					815		815
SE					50		50
Sample Size				0	2		2
Mean Weight					8.7		8.7
SE					1.8		1.8
Sample Size				0	2		2
<b>FEMALES</b>							
n (Known Age)			1	25	72	14	112
Percent			0.2	5.2	14.9	2.9	23.2
SE			0.2	1.0	1.6	0.8	1.9
Mean Length	841		625	816	873	900	860
SE	9.6			11.0	5.5	14.2	5.4
Sample Size	7		1	25	72	14	119
Mean Weight	9.9		3.8	8.6	10.7	12.6	10.4
SE	39.1			0.2	0.2	0.9	0.2
Sample Size	6		1	21	58	12	98
<b>MALES</b>							
n (Known Age)		11	151	143	54	8	367
Percent		2.3	31.3	29.7	11.2	1.7	76.1
SE		0.7	2.1	2.1	1.4	0.6	1.9
Mean Length	746	429	600	744	896	962	705
SE	22.7	25.0	6.5	7.0	11.0	15.2	7.2
Sample Size	24	11	151	143	54	8	391
Mean Weight	7.4	1.5	4.1	7.3	12.2	15.0	6.8
SE	0.7	0.3	0.2	0.2	0.5	0.8	0.2
Sample Size	18	8	119	118	46	7	316

-Continued-

Table 11. (Page 2 of 2).

	Age Group						TOTAL
	UNKNOWN	1.1	1.2	1.3	1.4	1.5	
<b>ALL SAMPLES</b>							
n (Known Age)		11	152	169	128	22	482
Percent		2.3	31.5	35.1	26.6	4.6	100.0
SE		0.7	2.1	2.2	2.0	0.9	
Mean Length	768	429	600	755	881	923	742
SE	19.0	24.9	6.4	6.4	5.7	12.2	6.3
Sample Size	31	11	152	168	128	22	512
Mean Weight	8.0	1.4	4.0	7.5	11.3	13.5	7.6
SE	0.5	0.3	0.1	0.2	0.2	0.6	0.1
Sample Size	24	8	120	139	106	19	416

Table 12. Mean lengths (millimeters) and weights (kilograms) of chinook salmon, by sex and age group, from samples collected from the sport fishery at sublocation 002 of the middle Mulchatna River, 30 June to 25 July 1990.

	Age Group						TOTAL
	UNKNOWN	1.1	1.2	1.3	1.4	1.5	
<b>FEMALES</b>							
n (Known Age)				2	12		14
Percent				2.3	13.6		15.9
SE				1.6	3.6		3.9
Mean Length				847	854		853
SE				47.5	16.1		14.6
Sample Size				2	12		14
Mean Weight				10.1	9.6		9.7
SE				2.1	0.5		0.5
Sample Size				2	7		9
<b>MALES</b>							
n (Known Age)		7	33	24	9	1	74
Percent		8.0	37.5	27.3	10.2	1.1	84.1
SE		2.9	5.1	4.7	3.2	1.1	3.9
Mean Length	630	386	598	728	900	1005	658
SE	22.3	27.5	12.7	14.1	18.6		15.9
Sample Size	11	7	33	24	9	1	85
Mean Weight	4.2	1.1	3.5	6.7	12.4	19.0	5.4
SE	0.4	0.1	0.2	0.3	1.0		0.4
Sample Size	11	7	29	21	8	1	77
<b>ALL SAMPLES</b>							
n (Known Age)		7	33	26	21	1	88
Percent		8.0	37.5	29.5	23.9	1.1	100.0
SE		2.9	5.1	4.8	4.5	1.1	
Mean Length	630	386	598	737	874	1005	686
SE	22.3	27.5	12.7	14.7	12.9		15.3
Sample Size	11	7	33	26	21	1	99
Mean Weight	4.2	1.1	3.5	7.0	11.1	19.0	5.8
SE	0.4	0.1	0.2	0.4	0.7		0.4
Sample Size	11	7	29	23	15	1	86

provisional escapement goal of 75,000 fish. Further, the escapement was 10,000 fish less than the recent 7-year average of 74,700 fish (ADFG 1990b). The commercial harvest<sup>6</sup> in 1990 was 14,092 chinook salmon, and the 1990 preliminary subsistence harvest is estimated to be 11,277 chinook salmon for the whole Nushagak Bay drainage (ADFG 1990b).

The 1990 middle Mulchatna River sport harvest estimate of 1,409 chinook salmon represents a portion of the sport take in the Nushagak Bay drainage. It is not clear whether the estimate indicates a significant change in the sport fishery. However, in light of the declining trend of recent escapements, and the apparent general growth of sport and subsistence fisheries in the area, frequent monitoring of the middle Mulchatna River sport fishery may be prudent.

A point to consider in future surveys of the area: the 1990 survey crew occasionally observed anglers fishing around the clock. The assumption that little effort occurs between the hours of 2100 of one day and 0600 of the next may not be as valid for the middle Mulchatna as it appears to be for other fisheries. All-night fishing was observed in sublocation 001 and the sampling crew was still able to collect total effort, catch, and harvest data from the angler(s).

#### ACKNOWLEDGEMENTS

Crew leader Jim Magee (ADFG Fisheries Technician II) deserves credit for managing the camp and collecting the data used in this report. We also wish to thank volunteers Beth Sullivan and Nick Wolf for their assistance with data collection. Keith Webster and Sandy Sonnichsen of the ADFG regional biometric staff were helpful with the data analysis. Finally, thanks to the anonymous outboard mechanic who sacrificed nearly a day of his fishing vacation to fix a reluctant ADFG outboard.

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<sup>6</sup> There was no directed commercial effort on chinook salmon in the Nushagak area in 1990. The harvest occurred incidentally to the commercial sockeye salmon fishery.

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APPENDIX A

Appendix A. Sublocation 001, direct expansion survey, completed trip angler interview data from the sport fishery on the middle Mulchatna River, 30 June to 25 July 1990.

Date	We Wd <sup>a</sup>	Data Form Number Line	Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																										
				G M A R L S G Boat H			Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike								
				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900630	1	00011129 01	5.42	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011129 02	5.42	U	M	A	N	N	S	1	raft	3	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011129 03	5.42	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011129 04	5.42	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011129 05	5.42	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011129 06	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	1	Y	
900630	1	00011129 07	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	5	Y	
900630	1	00011129 08	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	2	Y	
900630	1	00011129 09	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	4	Y	
900630	1	00011129 10	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	2	Y	
900630	1	00011131 01	6.50	U	M	A	N	N	S	1	raft	3	0	2	Y	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
900630	1	00011131 02	6.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
900630	1	00011131 03	6.50	U	M	A	N	N	S	1	raft	3	0	3	Y	0	0	0	0	0	0	0	0	0	0	2	0	0	0	
900630	1	00011131 04	4.50	U	M	A	N	N	S	1	raft	3	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011131 05	4.50	U	M	A	N	N	S	1	raft	3	0	0		0	0	0	0	0	0	0	0	0	0	0	0	7	Y	
900630	1	00011131 06	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	7	Y	
900630	1	00011131 07	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	4	Y	
900630	1	00011131 08	9.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011131 09	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011131 10	4.50	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011131 11	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 01	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 02	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 03	110.50	U	F	A	N	N	S	1	raft	3	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

-Continued-

Appendix A. (Page 2 of 20).

Date	We Wd <sup>a</sup>	Data Form Number Line	Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																									
				G M A R L S G Boat H			Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike							
				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>
900630	1	00011130 04	4.50	U	M	A	N	N	S	1	raft	3	2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 05	4.50	U	M	A	N	N	S	1	raft	3	1	1	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 06	4.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 07	4.50	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 08	6.00	U	M	A	N	N	S	1	raft	3	0	2	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 09	5.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 10	5.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011130 11	4.00	U	M	A	N	N	S	1	raft	3	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011128 01	4.00	U	M	A	N	N	S	1	raft	3	0	2	Y	0	0	0	1	0	0	0	0	0	1	0	0	0	0
900630	1	00011128 03	4.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	2	0	0	0	0	0	0	0	0
900630	1	00011128 04	1.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011128 05	1.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011128 06	1.50	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900630	1	00011128 07	6.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	1	0	1	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 01	3.50	U	M	A	N	N	S	1	raft	3	0	2	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0
900703	2	00019131 02	3.50	U	F	A	N	N	S	1	raft	3	2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 03	3.50	U	M	A	N	N	S	1	raft	3	3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 04	6.00	U	M	A	N	N	S	1	raft	3	1	5	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 06	6.00	U	M	A	N	N	S	1	raft	3	0	15	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0
900703	2	00019131 07	6.00	U	M	A	N	N	S	1	raft	3	1	27	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 09	4.50	U	M	A	N	N	S	1	raft	3	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 10	4.50	U	M	A	N	N	S	1	raft		0	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019131 11	3.00	U	M	A	N	N	S	5	raft	3	0	10	Y	0	0	0	2	0	0	0	0	0	0	0	0	0	0
900703	2	00019132 01	3.00	U	M	A	N	N	S	1	raft	3	0	1	Y	0	0	0	0	0	0	0	0	8	0	0	0	0	0
900703	2	00019132 03	3.00	U	M	A	N	N	S	1	raft	3	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 3 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>				Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike						
		Number	Line		G	M	A	R	L	S	G	Boat	H	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	
																														U
900703	2	00019132	04	4.50	U	M	A	N	N	S	1	raft	3	1	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	05	111.50	U	M	A	N	N	S	1	raft	3	1	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	06	2.75	U	M	A	N	N	S	1	raft	3	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	07	8.00	U	M	A	N	N	S	1	raft	3	1	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	08	111.50	U	M	A	N	N	S	1	raft	3	1	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	09	3.00	U	M	A	N	N	S	1	raft	3	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	10	3.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019132	11	3.00	U	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	01	6.00	U	M	A	N	N	S	1	raft	3	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	02	6.00	U	M	A	N	N	S	1	raft	3	0	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	03	6.00	U	M	A	N	N	S	1	raft	3	0	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	04	7.00	G	M	A	N	N	S	1			2	2	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	06	7.00	G	M	A	N	N	S	1			3	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	07	7.00	G	M	A	N	N	S	1			3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00019133	08	7.50	G	M	A	N	N	S	1			1	5	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0
900703	2	00019133	10	6.00	U	M	A	N	N	S	1			0	16	Y	0	0	0	0	0	3	0	3	0	0	0	0	0	0
900703	2	00011125	01	5.00	U	M	A	N	N	S	1			1	8	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00011125	02	5.00	U	M	A	N	N	S	1			0	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00011125	03	1.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00011125	04	1.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900703	2	00011125	05	6.00	U	M	A	N	N	S	1	raft		0	1	Y	0	0	0	0	0	5	0	1	0	0	0	0	0	0
900703	2	00011125	08	6.00	U	M	A	N	N	S	1	raft		0	2	Y	0	0	0	1	0	0	0	1	0	0	0	0	0	0
900703	2	00011125	10	1.00	U	M	A	N	N	S	1	raft		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	01	0.50	U	M	A	R	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	02	6.42	G	M	A	N	N	S	1			2	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 4 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>						Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike			
		Number	Line		G	M	A	R	L	S	G	Boat	H	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900704	2	00039539	03	6.00	G	F	A	N	N	S	1			0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	04	6.42	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	05	6.42	G	M	A	N	N	S	1			1	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0
900704	2	00039539	06	4.00	U	M	A	N	N	S	1	raft	3	0	6	Y	0	0	0	0	0	2	0	0	0	0	0	0	0
900704	2	00039539	07	4.00	U	M	A	N	N	S	1	raft	3	0	8	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	08	4.00	U	M	A	N	N		1	raft	3	0	11	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039539	09	4.00	U	M	A	N	N	S	1	raft	3	2	5	Y	0	0	0	0	0	2	0	0	0	0	0	0	0
900704	2	00039539	11	6.00	U	M	A	N	N	S	1	raft	3	1	14	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039538	01	6.00	U	M	A	N	N	S	1	raft	3	2	12	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039538	03	6.00	U	M	A	N	N	S	1	raft	3	1	16	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039538	04	6.00	U	F	A	N	N	S	1	raft	3	1	8	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900704	2	00039538	06	6.00	U	M	A	N	N	S	1	raft	3	0	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039538	07	6.00	U	M	A	N	N	S	1	raft	3	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039538	08	6.00	U	M	A	N	N	S	1	raft	3	0	6	Y	0	0	0	10	0	0	0	0	0	0	0	0	0
900704	2	00039538	10	5.00	G	M	A	N	N	S	1			0	6	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900704	2	00039537	01	6.00	G	M	A	N	N	S	1			0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	03	0.33	U	M	A	N	N	S	1			0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	04	5.00	G	F	A	N	N	S	1			1	11	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	05	6.00	G	M	A	N	N	S	1			0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	06	7.50	U	M	A	N	N	S	1	raft	3	2	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	07	8.00	U	M	A	N	N	S	1	raft	3	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	08	8.00	U	M	A	N	N	S	1			2	8	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	09	8.00	U	M	A	N	N	S	1	raft	3	0	11	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	10	8.00	U	M	A	N	N	S	1	raft	3	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900704	2	00039537	11	8.00	U	M	A	N	N	S	1	raft	3	0	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 5 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>										Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike										
		Number	Line		G	M	A	R	L	S	G	Boat	H	Salmon			Salmon			Salmon			Trout			Grayling			Pike											
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900704	2	00019135	01	7.00	U	M	A	N	N	S	1	raft	3	1	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	02	7.00	U	M	A	N	N	S	1	raft	3	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	03	7.00	U	M	A	N	N	S	1	raft	3	0	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	04	110.00	U	M	A	N	N	S	1			0	20	Y	0	0	0	4	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	08	7.00	U	M	A	N	N	S	1			0	12	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	09	1.50	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	10	2.00	U	M	A	N	N	S	1			0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900704	2	00019135	11	2.00	U	M	A	N	N	S	1			0	4	Y	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	01	6.50	G	M	A	N	N	S	1			0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	03	2.50	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	04	2.50	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	05	2.50	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	06	6.00	U	M	A	N	N	S	1	raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	1	00011022	07	6.00	G	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	1	00011022	08	6.50	G	M	A	N	N	S	1			2	5	Y	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	1	00011022	10	6.50	G	M	A	N	N	S	1			3	6	Y	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	01	5.00	U	M	A	N	N	S	1	raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	02	5.00	U	M	A	N	N	S	1	raft	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	03	5.00	U	M	A	N	N	S	1	raft	2	3	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	04	3.00	U	M	A	N	N	S	5	raft	2	0	1	Y	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	06	1.50	U	M	A	N	N	S	1	raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	07	1.50	U	M	A	N	N	S	1	raft	2	1	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	08	2.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	09	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011040	10	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Appendix A. (Page 6 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>				Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike												
		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>										
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>
900708	1	00011040	11	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	01	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	02	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	03	6.50	G	M	A	N	N	S	1			2	4	Y	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	05	6.50	G	M	A	N	N	S	1			0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	07	6.50	G	M	A	N	N	S	1			0	6	Y	0	0	0	0	0	3	0	1	0	0	0	1	0	0	0	0	0	0	0	
900708	1	00011039	09	6.50	G	M	A	N	N	S	1			0	1	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011039	11	2.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011038	01	6.00	G	M	A	N	N	S	1			0	6	Y	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	03	5.50	U	M	A	N	N	S	1			3	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	04	5.00	U	M	A	N	N	S	1			0	3	Y	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	06	2.00	U	M	A	N	N	S	1			0	6	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	08	4.00	U	M	A	N	N	S	1			1	5	Y	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	10	5.00	G	M	A	N	N	S	1			3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011038	11	5.00	G	M	A	N	N	S	1			3	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	01	5.00	G	F	A	N	N	S	1			3	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	03	5.00	G	M	A	N	N	S	1			1	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	04	5.00	G	M	A	N	N	S	1			3	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	05	5.00	G	M	A	N	N	S	1			3	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	06	5.00	G	M	Y	N	N	S	1			2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	07	5.00	G	M	A	N	N	S	1			3	6	Y	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	09	4.00	U	M	A	N	N	S	1	raft	2	0	7	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011037	11	4.00	U	M	A	N	N	S	1	raft	2	1	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011122	01	4.00	U	M	A	N	N	S	1	raft	2	2	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011122	03	4.00	U	M	A	N	N	S	1	raft	2	1	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 7 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																													
		Number	Line		G M A R L S G Boat H							Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike							
					U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>			
900708	1	00011122	04	4.00	U	M	A	N	N	S	1	raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900708	1	00011122	05	4.00	U	M	A	N	N	S	1			0	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	06	4.00	U	M	A	N	N	S	1	raft	2	2	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	07	4.00	U	M	A	N	N	S	1	raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	08	4.00	U	F	A	N	N	S	1	raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	09	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	10	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011122	11	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00019130	01	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00019130	02	1.50	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00019130	03	1.50	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00019130	04	1.50	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00019130	05	1.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	01	2.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	
900708	1	00011023	02	2.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	03	2.00	U	M	A	N	N	S	1	raft	2	2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	04	2.00	U	M	A	N	N	S	1	raft	2	2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	05	1.00	U	M	A	R	N	S	1	jet	3	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	06	6.50	G	M	A	N	N	S	1	jet	3	0	2	Y	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	08	6.50	G	M	A	N	N	S	1	jet	3	0	2	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	10	6.50	G	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900708	1	00011023	11	2.50	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	01	6.50	G	M	A	N	N	S	1			3	5	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	03	0.50	U	M	A	R	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	04	6.50	U	M	A	N	N	S	1	raft	2	1	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Appendix A. (Page 8 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>										Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike								
		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>									
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>
900709	2	00011021	05	5.00	U	M	A	N	N	S	1	raft	2	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	06	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	07	4.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	08	3.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	09	3.00	U	M	A	N	N	S	1		0	0	Y	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011021	11	111.00	U	M	A	N	N	S	1	raft	2	1	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011028	01	111.00	U	M	A	N	N	S	1	raft	2	1	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011028	02	111.00	U	M	A	N	N	S	1	raft	2	2	5	Y	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011028	04	1.50	U	M	A	N	N	S	1	raft	2	1	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011028	05	3.00	U	F	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011028	06	8.00	U	F	A	N	N	S	1	raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011028	07	8.00	U	M	A	N	N	S	1	raft	2	1	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011028	08	8.00	U	M	A	N	N	S	1	raft	2	0	5	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011028	10	8.00	U	M	A	N	N	S	1	raft	2	0	14	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011028	11	1.00	U	M	A	N	N	S	1		0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011027	01	5.00	G	M	A	N	N	S	1		0	0	Y	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011027	02	7.00	G	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	03	7.00	G	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	04	7.00	G	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	05	7.00	G	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	06	4.00	U	M	A	N	N	S	1	raft	2	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	07	4.00	U	M	A	N	N	S	1	raft	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	08	4.00	U	M	A	N	N	S	1	raft	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011027	09	4.50	U	F	A	N	N	S	1		0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900709	2	00011027	10	4.50	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 9 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>					Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike								
		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>							
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>
900709	2	00011027	11	2.00	U	M	A	N	N	S	1	raft2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	01	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	02	2.00	U	M	A	N	N	S	1	raft2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	03	2.00	U	M	A	N	N	S	1	raft2	0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	05	2.00	U	M	A	N	N	S	1	raft2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	06	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	07	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	08	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	09	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900709	2	00011026	10	2.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	01	3.00	U	M	A	N	N	S	1	raft2	0	3	Y	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	03	3.00	U	M	A	N	N	S	1	raft2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	04	3.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	05	3.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	06	3.00	U	M	A	N	N	S	1	raft2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	07	1.50	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	08	1.50	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	09	1.50	U	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	10	1.50	U	M	A	N	N	S	1		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011044	11	0.33	U	M	A	N	N	S	1		0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	01	0.33	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	02	0.33	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	03	110.00	U	M	A	N	N	S	1	raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	04	110.00	U	M	A	N	N	S	1	raft	2	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	05	110.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 10 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>							Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike									
		Number	Line		G	M	A	R	L	S	G	Boat	H	Salmon			Salmon			Salmon			Trout			Grayling			Pike							
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>
900711	2	00011043	06	110.00	U	M	A	N	N	S	1	raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	07	110.00	U	M	A	N	N	S	1	raft	2	1	11	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	08	110.00	U	M	A	N	N	S	1	raft	2	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	10	110.00	U	M	A	N	N	S	1	raft	2	0	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011043	11	110.00	U	M	A	N	N	S	1	raft	2	0	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	01	110.00	U	M	A	N	N	S	1	raft	2	0	12	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	02	7.00	U	M	A	N	N	S	1		2	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	04	2.00	U	M	A	N	N	S	1		0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	05	110.00	U	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	06	110.00	U	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	07	110.00	U	M	A	N	N	S	1		2	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	08	112.00	U	M	A	N	N	S	1		2	4	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	10	2.00	U	M	A	N	N	S	1		0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011049	11	2.75	U	M	A	N	N	S	1		0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	01	2.75	U	M	A	N	N	S	1		0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	02	5.00	U	M	A	N	N	S	1		1	3	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	04	4.50	U	F	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	08	6.00	G	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	09	6.00	G	F	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	10	6.00	G	M	A	N	N	S	1		2	2	Y	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011048	11	6.00	G	M	A	N	N	S	1		2	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011047	01	6.00	G	M	A	N	N	S	1		2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011047	02	6.00	G	M	A	N	N	S	1		2	3	Y	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011047	04	6.00	G	M	A	N	N	S	1		2	2	Y	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011047	06	111.00	U	M	A	N	N	S	1	raft	2	1	3	Y	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 11 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>										Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike												
		Number	Line		G	M	A	R	L	S	G	Boat	H	Salmon			Salmon			Salmon			Trout			Grayling			Pike													
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>		
900711	2	00011047	08	111.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900711	2	00011047	09	111.00	U	M	A	N	N	S	1	raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900711	2	00011047	10	7.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	01	4.00	G	M	A	N	N	S	1			0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	02	7.00	G	M	A	N	N	S	1			1	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	03	7.00	G	M	A	N	N	S	1			0	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	04	7.00	G	M	A	N	N	S	1			0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	05	7.00	G	M	A	N	N	S	1			1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	06	4.50	G	M	A	N	N	S	1			0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	08	7.00	G	M	A	N	N	S	1			1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	09	7.00	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011046	10	7.00	G	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011046	11	3.00	U	F	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	01	3.00	U	M	A	N	N	S	1			0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	03	7.00	G	M	A	N	N	S	1			0	4	Y	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	05	7.00	G	M	A	N	N	S	1			0	8	Y	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	06	7.00	G	M	A	N	N	S	1			0	3	Y	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	08	7.00	G	M	A	N	N	S	1			1	4	Y	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	10	6.00	G	M	A	N	N	S	1			3	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011045	11	6.00	G	M	A	N	N	S	1			3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011036	01	6.00	G	M	A	N	N	S	1			3	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011036	02	9.00	U	M	A	N	N	S	1	raft	2	2	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011036	03	9.00	U	M	A	N	N	S	1	raft	2	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011036	04	9.00	U	M	A	N	N	S	1	raft	2	3	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011036	05	9.00	U	M	A	N	N	S	1	raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Appendix A. (Page 12 of 20).

		Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>							Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike				
We		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>					
Date	Wd <sup>a</sup>				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900712	2	00011036	06	9.00	U	M	A	N	N	S	1 raft	2	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011036	07	9.00	U	M	A	N	N	S	1 raft	2	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011036	08	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011036	10	5.00	U	M	A	N	N	S	1 raft	2	0	3	Y	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	01	2.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	02	2.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	03	2.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	04	2.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	05	2.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	06	2.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	07	2.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	08	2.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	09	2.00	U	M	A	N	N	S	1 raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	10	2.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011057	11	2.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	01	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	02	5.00	U	M	A	N	N	S	1 raft	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	03	5.00	U	M	A	N	N	S	1 raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	04	5.00	U	M	A	N	N	S	1 raft	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	05	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	06	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	07	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	08	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	09	5.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900712	2	00011056	10	5.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Appendix A. (Page 13 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>										Chinook Salmon		Sockeye Salmon		Chum Salmon		Rainbow Trout		Arctic Grayling		Northern Pike				
		Number	Line		G	M	A	R	L	S	G	Boat	H	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900712	2	00011056	11	4.00	U	M	A	N	N	S	1	raft	2	2	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	01	5.00	U	M	A	N	N	S	1	raft	2	0	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0
900712	2	00011055	03	5.00	U	M	A	N	N	S	1	raft	2	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	04	4.00	U	M	A	N	N	S	1	raft	2	0	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	05	7.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	06	7.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	07	7.00	U	M	A	N	N	S	1		1	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	08	2.50	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	09	2.00	U	M	A	N	N	S	1		0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	10	1.00	U	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011055	11	110.00	U	M	A	N	N	S	1		0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	01	110.00	U	M	A	N	N	S	1		0	3	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	02	110.00	U	M	A	N	N	S	1		2	2	Y	0	0	0	0	2	2	0	0	0	0	0	0	0	0
900712	2	00011054	03	110.00	U	M	A	N	N	S	1		0	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	04	110.00	U	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	05	110.00	U	M	A	N	N	S	1		0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	06	1.00	U	M	A	N	N	S	1		0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	07	2.00	U	M	A	N	N	S	1		1	6	Y	3	3	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	09	0.17	U	M	A	N	N	S	1		0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011054	10	6.00	G	M	Y	R	N	S	1		3	3	Y	0	0	0	0	1	1	0	0	0	0	0	0	0	0
900712	2	00011054	11	6.00	G	M	A	N	N	S	1		3	3	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900712	2	00011053	01	7.00	G	M	A	R	N	S	1		3	3	Y	1	1	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011053	02	6.00	G	M	A	N	N	S	1		3	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011053	03	7.00	G	F	A	R	N	S	1		2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011053	04	7.00	G	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 14 of 20).

Date	We Wd <sup>a</sup>	Data Form Number Line	Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																								
				G M A R L S G Boat H			Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike						
				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>
900712	2	00011053 05	7.00	G	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900712	2	00011053 06	0.50	G	M	A	R	N	S	1		0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900712	2	00011053 07	7.00	G	M	A	N	N	S	1	raft	3	0	0	Y	0	0	0	6	0	15	0	0	0	0	0	0	0
900712	2	00011053 09	7.00	G	M	A	N	N	S	1	raft	3	0	2	Y	0	0	0	3	0	8	0	0	0	0	0	0	0
900714	1	00011119 01	2.00	U	M	A	N	N	S	1	raft		0	2	Y	0	0	0	0	0	2	0	2	0	0	0	0	0
900714	1	00011119 03	2.00	U	M	A	N	N	S	1	raft		0	2	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900714	1	00011119 05	2.00	U	M	A	N	N	S	1	raft		0	1	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900714	1	00011119 08	6.50	G	M	A	N	N	S	1		2	2	Y	0	0	0	1	1	2	0	0	0	0	0	0	0	0
900714	1	00011119 10	6.50	G	M	A	N	N	S	1		2	2	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0
900714	1	00011119 11	6.50	G	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 01	6.50	G	M	A	N	N	S	1		3	8	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 02	6.50	G	M	A	N	N	S	1		3	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 03	6.50	G	M	A	N	N	S	1		2	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 05	6.50	G	M	A	N	N	S	1		3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 06	1.00	G	M	A	R	N	S	1		2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 07	0.50	G	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 08	7.00	U	M	A	N	N	S	1	raft	2	1	5	Y	1	1	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 10	7.00	U	M	A	N	N	S	1	raft	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011064 11	7.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 01	7.00	U	M	A	N	N	S	1	raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 02	7.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 03	7.00	U	M	A	N	N	S	1	raft	2	1	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 04	8.00	U	M	A	N	N	S	1	raft	2	1	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 05	8.00	U	M	A	N	N	S	1	raft	2	0	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 06	8.00	U	M	A	N	N	S	1	raft	2	0	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 15 of 20).

Date	We Wd <sup>a</sup>	Data Form Number Line	Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																							
				G M A R L S G Boat H										Chinook Salmon		Sockeye Salmon		Chum Salmon		Rainbow Trout		Arctic Grayling		Northern Pike			
				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900714	1	00011063 07	8.00	U	M	A	N	N	S	1	raft	2	0	5	Y	0	0	0	0	0	0	1	1	0	0	0	0
900714	1	00011063 08	8.00	U	M	A	N	N	S	1	raft	2	2	5	Y	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 09	8.00	U	M	A	N	N	S	1	raft	2	3	6	Y	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011063 10	8.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0
900714	1	00011063 11	8.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0
900714	1	00011062 01	8.50	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011062 02	8.50	U	M	A	N	N	S	1	raft	2	0	5	Y	0	0	0	0	0	1	0	0	0	0	0	0
900714	1	00011062 04	8.50	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011062 05	8.50	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011062 06	5.00	U	M	A	N	N	S	1		0	4	Y	0	2	0	2	0	0	0	0	0	0	0	0	0
900714	1	00011062 08	6.00	U	M	A	N	N	S	1		3	3	Y	0	1	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011062 09	4.00	U	M	A	N	N	S	1		2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011062 10	7.00	U	M	A	N	N	S	1		0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0
900714	1	00011061 07	4.50	U	M	A	N	N	S	1	raft	0	2	Y	0	0	0	1	1	1	1	0	0	0	0	0	0
900714	1	00011061 09	4.50	U	M	A	N	N	S	1	raft	0	0	Y	0	0	1	1	0	0	0	0	0	0	0	0	0
900714	1	00011061 10	4.00	U	M	A	N	N	S	1	raft	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 01	5.00	U	M	A	N	N	S	1	raft	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 02	8.00	U	M	A	N	N	S	1	raft	0	1	Y	0	0	0	2	0	0	0	0	0	0	0	0	0
900714	1	00011060 04	2.00	U	M	A	N	N	S	1	raft	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 05	5.00	U	F	A	N	N	S	1	raft	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 06	8.50	U	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 07	8.50	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 08	7.50	U	M	A	N	N	S	1		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011060 10	5.00	U	M	A	N	N	S	1		0	3	Y	0	0	0	2	0	0	0	0	0	0	0	0	0
900714	1	00011059 01	6.00	U	M	A	N	N	S	1		0	2	Y	2	2	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 16 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																											
		Number	Line		G M A R L S G Boat H							Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike					
					U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	
900714	1	00011059	02	2.00	U	M	A	N	N	S	1			0	1	Y	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	03	2.00	U	M	A	N	N	S	1			0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	04	4.00	U	M	A	N	N	S	1			4	4	Y	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	05	2.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	06	1.00	U	M	A	N	N	S	1			0	0	Y	3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	10	110.00	U	M	A	N	N	S	1			2	5	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00011059	11	2.00	U	M	A	N	N	S	1			1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900714	1	00019122	01	112.00	U	M	A	N	N	S	1			1	16	Y	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
900714	1	00019122	03	110.00	U	M	A	N	N	S	1			0	2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	01	1.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	02	3.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	03	7.00	U	M	A	N	N	S	1	raft		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	04	4.00	U	M	A	N	N	S	1	raft		1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	05	4.00	U	M	A	N	N	S	1	raft		0	0	Y	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	06	8.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	07	6.00	G	M	A	N	N	S	1			3	4	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	09	6.00	G	M	A	N	N	S	1			2	2	Y	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00019120	11	6.00	G	M	A	N	N	S	1			2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	01	6.00	G	M	A	N	N	S	1			1	1	Y	0	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	03	6.00	G	M	A	N	N	S	1			1	1	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	04	6.00	G	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	05	6.00	G	M	A	N	N	S	1			0	0	Y	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	06	6.00	G	F	A	N	N	S	1			1	1	Y	0	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	08	3.00	U	M	A	R	N	S	1	raft		1	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011118	09	3.00	U	M	A	R	N	S	1	raft		0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (page 17 of 20).

Date	We Wd <sup>a</sup>	Data Form Number Line	Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																								
				G M A R L S G Boat H			Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike						
				U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>
900715	1	00011118 10	3.00	U	M	A	R	N	S	1	raft	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 01	6.00	G	M	A	N	N	S	1		1	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 02	6.00	G	M	A	N	N	S	1		0	6	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 03	6.00	G	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 04	6.00	G	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 05	6.00	G	M	A	N	N	S	1		1	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 06	6.00	G	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 07	6.00	G	M	A	N	N	S	1		0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 08	6.00	G	M	A	N	N	S	1	jet	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 09	6.00	G	M	A	N	N	S	1	jet	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011117 10	6.00	G	M	A	N	N	S	1	jet	2	0	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011116 01	7.00	U	M	A	N	N	S	1	raft	2	2	10	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011116 02	5.00	U	M	A	N	N	S	1	raft	2	2	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011116 03	7.00	U	M	A	N	N	S	1	raft	2	2	7	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011116 04	7.00	U	M	A	N	N	S	1	raft	2	2	5	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900715	1	00011116 06	7.00	U	M	A	N	N	S	1	raft	2	2	4	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900715	1	00011116 08	7.00	U	M	A	N	N	S	1	raft	2	2	12	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900715	1	00011116 10	7.00	U	M	A	N	N	S	1	raft	2	2	13	Y	0	0	0	0	0	1	0	0	0	0	0	0	0
900715	1	00011115 01	7.00	U	M	A	N	N	S	1	raft	2	2	9	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011115 02	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011115 03	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011115 04	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011115 05	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011115 06	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	1	0	0	0	0	0	0
900715	1	00011115 08	8.00	U	M	A	N	N	S	1	raft	2	3	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0

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Appendix A. (Page 18 of 20).

Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>										Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike					
		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>			H <sup>c</sup> C <sup>d</sup> T <sup>e</sup>									
														U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>
900715	1	00011115	09	8.00	U	M	A	N	N	S	1	raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011115	10	8.00	U	M	A	N	N	S	1	raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011115	11	8.00	U	M	A	N	N	S	1	raft	2	1	3	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011114	10	1.50	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011114	11	6.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
900715	1	00011113	01	6.00	U	M	A	N	N	S	1	raft		0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011113	03	4.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
900715	1	00011113	04	6.00	U	F	A	N	N	S	1			0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
900715	1	00011113	05	0.33	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
900715	1	00011113	06	3.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011113	07	4.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011113	08	4.00	U	M	A	N	N	S	1	raft		0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011113	09	5.00	U	M	A	N	N	S	1	raft		0	1	Y	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
900715	1	00011113	11	4.00	U	M	A	N	N	S	1			0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	01	4.00	U	M	A	N	N	S	1			0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	02	4.00	U	M	A	N	N	S	1			0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	03	1.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	04	0.50	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	05	8.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	06	3.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011112	07	8.00	U	M	A	N	N	S	1			3	10	Y	1	1	0	0	0	1	0	1	2	2	0	0	0	0	0	0	0	0	0
900715	1	00011112	10	7.00	U	M	A	N	N	S	1			0	0	Y	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011110	01	110.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900715	1	00011110	02	6.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
900715	1	00011110	03	1.00	U	M	A	N	N	S	1	jet	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Date	We Wd <sup>a</sup>	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>						Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike					
		Number	Line		G	M	A	R	L	S	G	Boat	H	H <sup>c</sup>			H <sup>c</sup>			H <sup>c</sup>			H <sup>c</sup>			H <sup>c</sup>					
														U	F	Y	N	N	M	T	Type	P	C <sup>d</sup>	T <sup>e</sup>	C <sup>d</sup>	T <sup>e</sup>	C <sup>d</sup>	T <sup>e</sup>	C <sup>d</sup>	T <sup>e</sup>	C <sup>d</sup>
900719	2	00019117	01	3.00	U	M	A	N	N	S	1			0	1	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019117	03	1.00	U	M	A	N	N	S	1			0	2	Y	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019117	05	2.00	U	M	A	N	N	S	1			0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019117	06	3.00	U	M	A	N	N	S	1			0	0	Y	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0
900719	2	00019117	08	3.00	U									0	0	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
900719	2	00019117	09	1.00	U	M	A	N	N	S	1			0	1	Y	0	2	0	0	0	4	0	5	0	0	0	0	0	0	0
900719	2	00019118	01	5.00	U	M	A	R	N	S	5 raft			0	0		0	0	0	0	0	0	10	Y	0	0	0	0	0	0	0
900719	2	00019118	02	5.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
900719	2	00019118	03	5.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019118	04	5.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
900719	2	00019118	05	5.00	U	M	A	N	N	S	1 raft	2	2	4	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019118	06	5.00	U	M	A	N	N	S	1 raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019118	07	5.00	U	M	A	N	N	S	1 raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019118	08	5.50	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
900719	2	00019118	09	5.50	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	3	Y	0	1	0	0	0	0	0	0	0	0	0
900719	2	00019118	11	5.50	U	M	A	N	N	S	1 raft	2	0	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	01	8.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	02	8.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	03	8.00	U	M	A	N	N	S	1 raft	2	1	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	04	8.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	05	8.00	U	M	A	N	N	S	1 raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	06	8.00	U	M	A	N	N	S	1 raft	2	1	2	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	07	8.00	U	M	A	N	N	S	1 raft	2	1	2	Y	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	09	8.00	U	M	A	N	N	S	1 raft	2	0	1	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	10	8.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
900719	2	00019119	11	8.00	U	M	A	N	N	S	1 raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Date	Data Form		Hours Fished	Angler and Equipment Characteristics <sup>b</sup>																										
	We	Number Line		G M A R L S G Boat				Chinook Salmon			Sockeye Salmon			Chum Salmon			Rainbow Trout			Arctic Grayling			Northern Pike							
	Wd <sup>a</sup>			U	F	Y	N	N	M	T	Type	P	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>	H <sup>c</sup>	C <sup>d</sup>	T <sup>e</sup>
900719	2	00011078 01	8.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
900722	1	00011032 01	3.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	2	2	Y
900722	1	00011032 02	3.00	U	M	A	N	N	S	1	raft	2	0	0	Y	0	0	0	0	0	0	0	0	0	0	1	1	Y		
900722	1	00011032 03	4.00	U	M	A	N	N	S	1	raft	0	0	Y	0	0	0	5	0	1	1	2	0	0	0	0	0	0		
900722	1	00011032 06	5.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
900722	1	00011032 07	4.00	U	M	A	N	N	S	1	raft	0	1	Y	0	0	0	1	1	2	0	3	0	0	0	0	0	0		
900722	1	00011032 10	2.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	0	0	2	0	0	0	0	0	0	0	0		
900722	1	00011058 01	2.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	1	0	0	0	1	0	0	0	0	0	0		
900722	1	00011058 03	6.50	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
900722	1	00011058 05	5.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	0	1	1	0	0	0	0	0	0	0	0		
900722	1	00011058 08	5.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	0	1	2	2	6	0	0	0	0	0	0		
900722	1	00011033 01	3.00	U	M	A	N	N	S	5	raft	0	0	Y	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
900723	2	00011079 01	2.00	U	M	A	N	N	S	1	raft	0	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
900723	2	00011079 02	0.50	U	M	A	N	N	S	1	raft	2	0	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

<sup>a</sup> We = weekend or holiday, Wd = weekday.

<sup>b</sup> Angler and equipment characteristics:

G/U G guided angler; U unguided angler.

M/F M male; F female.

A/Y A adult; Y youth.

R/N R Alaska resident, N nonresident.

L/N L local resident, N nonlocal.

S/M S single gear type used, M multiple gear types used.

GT gear type: 1 spin; 5 fly.

HP horsepower class: 2 (1 to 20 hp); 3 (21 to 40 hp).

<sup>c</sup> H number of fish harvested (kept).

<sup>d</sup> C number of fish caught (fish released + fish kept).

<sup>e</sup> T was the angler targeting on the species? Y (yes).



APPENDIX B



Appendix B. Angler counts from the sport fishery at sublocation 002 on the middle Mulchatna River, 30 June to 25 July 1990.

Date	Non-peak Period <sup>a</sup>	Peak Periods <sup>b</sup>			Non-peak Period <sup>c</sup>
	A	B	C	D	E
30 June					
01 July	0				0
02 July		0	0		
03 July					
04 July					
05 July		3		NC <sup>d</sup>	
06 July					
07 July	24				4
08 July					
09 July					
10 July		17	29		
11 July					
12 July					
13 July	0				0
14 July					
15 July					
16 July					
17 July					
18 July		19	10		
19 July					
20 July		20	2		
21 July		0	9		
22 July					
23 July					
24 July	0				0
25 July					

<sup>a</sup> Nonpeak stratum period A 0600-0859.

<sup>b</sup> Peak stratum Period B 0900-1159; C 1200-1459; D 1500-1759.

<sup>c</sup> Nonpeak stratum period E 1800-2059.

<sup>d</sup> No count made at this selected time.

APPENDIX C

Appendix C1. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for chinook salmon in the sport fishery in the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Estimate				Estimates by Period							
			Hours	Anglers	Effort	Anglers	CPUE		Catch		HPUE		Harvest	
			in	Counted	in	Inter-	Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.00000	0.00000	0.000	0.000	0.00000	0.000000	0.0000	0.000
0	900701	E	3	0	0				0.000	0.000			0.0000	0.000
0	900707	A	3	24	72	19	1.97275	0.05403	142.038	280.077	0.29484	0.022802	21.2287	118.208
0	900707	E	3	4	12	5	0.12206	0.01538	1.465	2.214	0.12206	0.015376	1.4647	2.214
0	900713	A	3	0	0	16	2.04865	0.16064	0.000	0.000	0.19457	0.017841	0.0000	0.000
0	900713	E	3	0	0	2	0.00000	0.00000	0.000	0.000	0.00000	0.000000	0.0000	0.000
0	900724	A	3	0	0				0.000	0.000			0.0000	0.000
0	900724	E	3	0	0	8	0.80314	0.24167	0.000	0.000	0.12093	0.006344	0.0000	0.000
1	900702	B	3	0	0				0.000	0.000			0.0000	0.000
1	900702	C	3	0	0				0.000	0.000			0.0000	0.000
1	900705	B	3	14	42	10	1.27448	0.07690	53.528	135.655	0.35142	0.010444	14.7596	18.424
1	900710	C	3	17	51	19	1.36770	0.01894	69.753	49.275	0.31063	0.000631	15.8421	1.640
1	900710	D	3	29	87	18	1.72962	0.04480	150.477	339.127	0.25767	0.002020	22.4177	15.288
1	900718	B	3	19	57	16	0.52613	0.01027	29.989	33.378	0.27212	0.006002	15.5109	19.502
1	900718	C	3	10	30	13	0.35453	0.02083	10.636	18.751	0.20133	0.006907	6.0399	6.217
1	900720	B	3	20	60	19	0.75611	0.01459	45.366	52.526	0.27446	0.005120	16.4674	18.431
1	900720	C	3	2	6	12	0.45866	0.00416	2.752	0.150	0.13406	0.003626	0.8044	0.131
1	900721	B	3	0	0				0.000	0.000			0.0000	0.000
1	900721	C	3	9	27	8	0.08081	0.00992	2.182	7.235	0.00000	0.000000	0.0000	0.000
1	900726	C	3	0	0				0.000	0.000			0.0000	0.000
1	900726	D	3	0	0				0.000	0.000			0.0000	0.000

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).

Appendix C2. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for sockeye salmon in the sport fishery in the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Estimate				Estimates by Period							
			Hours	Anglers	Effort	Anglers	CPUE		Catch		HPUE		Harvest	
			in	Counted	in	Inter-	Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
0	900701	E	3	0	0				0.00000	0.00000			0.00000	0.00000
0	900707	A	3	24	72	19	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
0	900707	E	3	4	12	5	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
0	900713	A	3	0	0	16	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
0	900713	E	3	0	0	2	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
0	900724	A	3	0	0				0.00000	0.00000			0.00000	0.00000
0	900724	E	3	0	0	8	0.11643	0.013913	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900702	B	3	0	0				0.00000	0.00000			0.00000	0.00000
1	900702	C	3	0	0				0.00000	0.00000			0.00000	0.00000
1	900705	B	3	14	42	10	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900710	C	3	17	51	19	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900710	D	3	29	87	18	0.02428	0.000350	2.11231	2.64899	0.024279	.0003500	2.11231	2.64899
1	900718	B	3	19	57	16	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900718	C	3	10	30	13	0.19606	0.007299	5.88166	6.56952	0.072202	.0017056	2.16606	1.53503
1	900720	B	3	20	60	19	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900720	C	3	2	6	12	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900721	B	3	0	0				0.00000	0.00000			0.00000	0.00000
1	900721	C	3	9	27	8	0.00000	0.000000	0.00000	0.00000	0.000000	.0000000	0.00000	0.00000
1	900726	C	3	0	0				0.00000	0.00000			0.00000	0.00000
1	900726	D	3	0	0				0.00000	0.00000			0.00000	0.00000

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).

Appendix C3. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for chum salmon in the sport fishery in the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Hours in Period	Estimate			Estimates by Period							
				Anglers Counted	Effort in Period	Anglers Inter- viewed	CPUE		Catch		HPUE		Harvest	
							Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.00000	0.000000	0.00000	0.00000	0	0	0	0
0	900701	E	3	0	0				0.00000	0.00000			0	0
0	900707	A	3	24	72	19	0.00000	0.000000	0.00000	0.00000	0	0	0	0
0	900707	E	3	4	12	5	0.00000	0.000000	0.00000	0.00000	0	0	0	0
0	900713	A	3	0	0	16	0.18308	0.038895	0.00000	0.00000	0	0	0	0
0	900713	E	3	0	0	2	0.00000	0.000000	0.00000	0.00000	0	0	0	0
0	900724	A	3	0	0				0.00000	0.00000			0	0
0	900724	E	3	0	0	8	0.07762	0.006183	0.00000	0.00000	0	0	0	0
1	900702	B	3	0	0				0.00000	0.00000			0	0
1	900702	C	3	0	0				0.00000	0.00000			0	0
1	900705	B	3	14	42	10	0.00000	0.000000	0.00000	0.00000	0	0	0	0
1	900710	C	3	17	51	19	0.01112	0.000124	0.56723	0.32277	0	0	0	0
1	900710	D	3	29	87	18	0.01316	0.000168	1.14524	1.27103	0	0	0	0
1	900718	B	3	19	57	16	0.00000	0.000000	0.00000	0.00000	0	0	0	0
1	900718	C	3	10	30	13	0.02583	0.000617	0.77477	0.55507	0	0	0	0
1	900720	B	3	20	60	19	0.00000	0.000000	0.00000	0.00000	0	0	0	0
1	900720	C	3	2	6	12	0.02791	0.000728	0.16745	0.02620	0	0	0	0
1	900721	B	3	0	0				0.00000	0.00000			0	0
1	900721	C	3	9	27	8	0.00000	0.000000	0.00000	0.00000	0	0	0	0
1	900726	C	3	0	0				0.00000	0.00000			0	0
1	900726	D	3	0	0				0.00000	0.00000			0	0

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).

Appendix C4. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for rainbow trout in the sport fishery in the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Estimate				Estimates by Period							
			Hours	Anglers	Effort	Anglers	CPUE		Catch		HPUE		Harvest	
			in	Counted	in	viewed	Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.00000	0.00000	0.0000	0.0000	0.00000	.0000000	0.00000	0.00000
0	900701	E	3	0	0				0.0000	0.0000			0.00000	0.00000
0	900707	A	3	24	72	19	0.05959	0.00357	4.2905	18.5297	0.00000	.0000000	0.00000	0.00000
0	900707	E	3	4	12	5	0.00000	0.00000	0.0000	0.0000	0.00000	.0000000	0.00000	0.00000
0	900713	A	3	0	0	16	0.00000	0.00000	0.0000	0.0000	0.00000	.0000000	0.00000	0.00000
0	900713	E	3	0	0	2	0.00000	0.00000	0.0000	0.0000	0.00000	.0000000	0.00000	0.00000
0	900724	A	3	0	0				0.0000	0.0000			0.00000	0.00000
0	900724	E	3	0	0	8	0.35552	0.04214	0.0000	0.0000	0.00000	.0000000	0.00000	0.00000
1	900702	B	3	0	0				0.0000	0.0000			0.00000	0.00000
1	900702	C	3	0	0				0.0000	0.0000			0.00000	0.00000
1	900705	B	3	14	42	10	0.15912	0.00713	6.6831	12.5801	0.00000	.0000000	0.00000	0.00000
1	900710	C	3	17	51	19	0.14408	0.00297	7.3483	7.7130	0.01055	.0001246	0.53815	0.32418
1	900710	D	3	29	87	18	0.07880	0.00106	6.8553	8.0445	0.00000	.0000000	0.00000	0.00000
1	900718	B	3	19	57	16	0.38108	0.01390	21.7216	45.1680	0.03617	.0006255	2.06155	2.03235
1	900718	C	3	10	30	13	0.19957	0.01331	5.9872	11.9792	0.00000	.0000000	0.00000	0.00000
1	900720	B	3	20	60	19	0.12614	0.00289	7.5687	10.4134	0.04150	.0008662	2.49008	3.11833
1	900720	C	3	2	6	12	0.72787	0.22311	4.3672	8.0320	0.10415	.0056272	0.62487	0.20258
1	900721	B	3	0	0				0.0000	0.0000			0.00000	0.00000
1	900721	C	3	9	27	8	0.09775	0.00952	2.6392	6.9409	0.00000	.0000000	0.00000	0.00000
1	900726	C	3	0	0				0.0000	0.0000			0.00000	0.00000
1	900726	D	3	0	0				0.0000	0.0000			0.00000	0.00000

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).

Appendix C5. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for Arctic grayling from the sport fishery on the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Hours in Period	Estimate		Anglers Inter- viewed	Estimates by Period							
				Anglers Counted	Effort in Period		CPUE		Catch		HPUE		Harvest	
							Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.00000	0.00000	0.0000	0.0000	0	0	0	0
0	900701	E	3	0	0				0.0000	0.0000			0	0
0	900707	A	3	24	72	19	0.00000	0.00000	0.0000	0.0000	0	0	0	0
0	900707	E	3	4	12	5	0.00000	0.00000	0.0000	0.0000	0	0	0	0
0	900713	A	3	0	0	16	0.00000	0.00000	0.0000	0.0000	0	0	0	0
0	900713	E	3	0	0	2	0.00000	0.00000	0.0000	0.0000	0	0	0	0
0	900724	A	3	0	0				0.0000	0.0000			0	0
0	900724	E	3	0	0	8	0.00000	0.00000	0.0000	0.0000	0	0	0	0
1	900702	B	3	0	0				0.0000	0.0000			0	0
1	900702	C	3	0	0				0.0000	0.0000			0	0
1	900705	B	3	14	42	10	0.06135	0.00407	2.5768	7.1788	0	0	0	0
1	900710	C	3	17	51	19	0.05564	0.00070	2.8379	1.8116	0	0	0	0
1	900710	D	3	29	87	18	0.02576	0.00067	2.2412	5.1069	0	0	0	0
1	900718	B	3	19	57	16	0.03698	0.00132	2.1077	4.3033	0	0	0	0
1	900718	C	3	10	30	13	0.41078	0.10121	12.3233	91.0888	0	0	0	0
1	900720	B	3	20	60	19	0.02075	0.00045	1.2449	1.6038	0	0	0	0
1	900720	C	3	2	6	12	0.00000	0.00000	0.0000	0.0000	0	0	0	0
1	900721	B	3	0	0				0.0000	0.0000			0	0
1	900721	C	3	9	27	8	0.00000	0.00000	0.0000	0.0000	0	0	0	0
1	900726	C	3	0	0				0.0000	0.0000			0	0
1	900726	D	3	0	0				0.0000	0.0000			0	0

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).

Appendix C6. Sublocation 002, roving survey; summary of daily angler effort (angler-hours), catch rates (CPUE, fish per angler-hour), and harvest rates (HPUE, fish kept per angler-hour) for northern pike from the sport fishery on the middle Mulchatna River, 1990.

Stratum <sup>a</sup>	Date	Period <sup>b</sup>	Hours in Period	Estimate			Estimates by Period							
				Anglers Counted	Effort in Period	Anglers Inter- viewed	CPUE		Catch		HPUE		Harvest	
							Mean	Variance	Estimate	Variance	Mean	Variance	Estimate	Variance
0	900701	A	3	0	0	2	0.000000	.0000000	0.00000	0.0000	0	0	0	0
0	900701	E	3	0	0				0.00000	0.0000			0	0
0	900707	A	3	24	72	19	0.000000	.0000000	0.00000	0.0000	0	0	0	0
0	900707	E	3	4	12	5	0.000000	.0000000	0.00000	0.0000	0	0	0	0
0	900713	A	3	0	0	16	0.000000	.0000000	0.00000	0.0000	0	0	0	0
0	900713	E	3	0	0	2	0.000000	.0000000	0.00000	0.0000	0	0	0	0
0	900724	A	3	0	0				0.00000	0.0000			0	0
0	900724	E	3	0	0	8	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900702	B	3	0	0				0.00000	0.0000			0	0
1	900702	C	3	0	0				0.00000	0.0000			0	0
1	900705	B	3	14	42	10	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900710	C	3	17	51	19	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900710	D	3	29	87	18	0.048394	.0014091	4.21030	10.6651	0	0	0	0
1	900718	B	3	19	57	16	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900718	C	3	10	30	13	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900720	B	3	20	60	19	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900720	C	3	2	6	12	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900721	B	3	0	0				0.00000	0.0000			0	0
1	900721	C	3	9	27	8	0.000000	.0000000	0.00000	0.0000	0	0	0	0
1	900726	C	3	0	0				0.00000	0.0000			0	0
1	900726	D	3	0	0				0.00000	0.0000			0	0

<sup>a</sup> Stratum 0 = Nonpeak; periods A and E. Stratum 1 = Peak; periods B, C, D.

<sup>b</sup> Daily periods: A (0600-0859); B (0900-1159); C (1200-1459); D (1500-1759); E (1800-2059).





APPENDIX D

Appendix D. Data files used to produce this report.

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Data Files

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T007AIA0.DTA Mulchatna R. sublocation 001 (direct expansion survey) angler interviews 30 June to 25 July 1990.  
T007BIA0.DTA Mulchatna R. sublocation 002 (roving survey) angler interviews 30 June to 25 July 1990.  
T007BCA0.DTA Mulchatna R. sublocation 002 (roving survey) angler count data 30 June to 25 July 1990.  
T007ABA0.DTA Mulchatna R. chinook salmon biological data (age, weight, length),

Analysis Programs

DOINT90. BAT Batch file which sorts interview data to create a file with one record per angler with kept and released fish and target species sorted by species. Output may be imported into spreadsheet or word processing packages for use.  
INTMRG90.EXE File supports the operation of DOINT90.BAT.  
INTMRG90.PRM File supports operation of DOINT90.BAT.  
MUL90NEW.SAS Mulchatna R. sublocation 002 (roving survey) effort, catch, harvest estimate program 1990.  
BBXPEXE A series of programs that uses biological data files to produce tables of mean lengths and weights by sex and age group for a species. The program also produces a data set which may be used in Lotus 1-2-3 (tm) to create graphs.

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The data files are all archived with the Alaska Department of Fish and Game, Sport Fish Division, Research and Technical Services Unit, 333 Raspberry Road, Anchorage, Alaska 99518-1599. Contact Gail Heineman or Donna Buchholz (907-267-2369) for copies of the files and descriptions of the file formats.

