FISHERY DATA SERIES NO. 112

CATCH, HARVEST, AND SIZE STATISTICS FOR THE RAINBOW TROUT FISHERY IN THE TAZIMINA RIVER, ALASKA, DURING 1987 AND 1988.[1]

By

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TABLE OF CONTENTS

	Page
LIST OF TABLES	ii
LIST OF FIGURES	iv
LIST OF APPENDIX TABLES	vi
ABSTRACT	1
INTRODUCTION	2
METHODS	5
Creel Survey	5
Data Collection	5
Data Analysis	7
Boat Use Survey	10
Biological Sampling	10
Sockeye Salmon Spawning Ground Survey	11
RESULTS	12
Fishery Characteristics	12
Boat Use	12
Sport Effort	17
Catch and Harvest	17
Biological Sampling and Tagging	23
Sockeye Salmon Spawning Ground Survey	40
DISCUSSION	40
LITERATURE CITED	46
APPENDIX	48

LIST OF TABLES

Table		Page
1.	Angler characteristics and gear preference profiles for the sport fishery in the Tazimina River, 1987 and 1988	13
2.	Estimated effort (angler-hours) by location and temporal component for the sport fishery in the Tazimina River, 1987	18
3.	Estimated effort (angler-hours) by location and temporal component for the sport fishery in the Tazimina River, 1988	19
4.	Catch and harvest rates (fish per hour) by species, location, and temporal component for the sport fishery in the Tazimina River, 1987	21
5.	Estimated catch and harvest of rainbow trout, sockeye salmon, Arctic char, and Arctic grayling, for the sport fishery in the Tazimina River, 1987	22
6.	Catch and harvest rates (fish per hour) by species and temporal component for the sport fishery in the Tazimina River, 1988	24
7.	Estimated catch and harvest of rainbow trout, sockeye salmon, Arctic char, and Arctic grayling, for the sport fishery in the Tazimina River, 1988	25
8.	Summary of mark and recapture of rainbow trout tagged in the Tazimina River in 1987 and 1988	27
9.	Date and location of captures for recaptured rainbow trout tagged in the Tazimina River in 1987 and 1988	29
10.	Mean length (mm) and weight (gm) of rainbow trout by age group in the Tazimina River, 1987	30
11.	Mean length (mm) and weight (gm) of rainbow trout by age group in the Tazimina River, 1988	31
12.	Mean length (mm) and weight (gm) of Arctic grayling by age group in the Tazimina River, 1987	36
13.	Mean length (mm) and weight (gm) of Arctic grayling by age group in the Tazimina River, 1988	37

LIST OF TABLES (Continued)

Table | Page

14. Mean length (mm) and weight (gm) of sockeye salmon by sex and age group, sampled from the sport harvest in the Tazimina River, 1988..... 44

LIST OF FIGURES

Figure		Page
1.	Bristol Bay, southwest Alaska, sport fish management area	3
2.	Tazimina River study site extends from the falls approximately 14.4 km downstream to Six Mile Lake	4
3.	Percentage and frequency of use by boat type on the Tazimina River, 25 August through 4 October 1987	14
4.	Proportion of total number of boats on the Tazimina River, 8 June through 5 October 1988	15
5.	Boat use frequency, by week, on the Tazimina River, 8 June through 5 October 1988	16
6.	Length frequency distributions for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988	32
7.	Age frequency distributions for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988	33
8.	Length and weight relationship for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988	34
9.	Mean length by age group (95% confidence interval) for rainbow trout sampled from the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988	35
10.	Length frequency distributions for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River	38
11.	Age frequency distributions for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River	39
12.	Length and weight relationship for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River	41

LIST OF FIGURES (Continued)

Figure		Page
13.	Mean length by age group (95% confidence interval) for all Arctic grayling sampled from the Tazimina River, 28 June-30 September 1987, and 19 May-5 October 1988...	42
14.	Length frequency distributions for Arctic char sampled from the sport fishery in the Tazimina River, 4 September-2 October 1987, and 16 August-4 October 1988.....	43
15.	Frequency of water depths and water velocities over sockeye salmon redds in the Tazimina River, 1987.....	45

LIST OF APPENDIX TABLES

Appendix Table		Page
1.	Daily boat traffic on the Tazimina River, 1987	49
2.	Daily boat traffic on the Tazimina River, 1988	50
3.	Summary of daily angler effort and catch rates (CPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews of anglers exiting the Tazimina River via the river mouth access, 1987	53
4.	Summary of daily angler effort and harvest rates (HPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1987	54
5.	Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Hudson Lake access, 1987	55
6.	Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Alexcy Lake access, 1987	56
7.	Summary of daily angler effort and catch rates (CPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988	57
8.	Summary of daily angler effort and harvest rates (HPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988	59
9.	Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Hudson Lake access, 1988	61

LIST OF APPENDIX TABLES (Continued)

Appendix Table		Page
10.	Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Alexcy Lake access, 1988	62
11.	Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988	63
12.	Water depths and velocities and substrate compositions for sockeye salmon redds sampled in the Tazimina River, 1987	69

ABSTRACT

A 2-year cooperative study between the United States National Park Service and the Alaska Department of Fish and Game, Sport Fish Division, was conducted on the Tazimina River from 1 August to 3 October 1987 and from 8 June to 5 October 1988. The study was designed to collect sport angler effort, catch, harvest, and boat use information through direct expansion creel surveys, and to investigate sockeye salmon *Oncorhynchus nerka* spawning habitats through spawning ground surveys.

It was estimated that anglers fished 3,720 hours during 1987 resulting in an estimated catch of 969 rainbow trout *Oncorhynchus mykiss*, 3,155 sockeye salmon, 577 Arctic char *Salvelinus alpinus*, and 1,477 Arctic grayling *Thymallus arcticus*. During 1988, angling effort was estimated to be 7,073 hours and resulted in a catch of 1,818 rainbow trout, 3,679 sockeye salmon, 335 Arctic char, and 5,115 Arctic grayling. Harvests of all species were less than 30 percent of the total catch in both years.

Rafts accounted for 33 percent of the boat traffic during the 1987 study and jet boats accounted for 46 percent. In 1988, rafts accounted for 22 percent of the boat use and jet boats accounted for 60 percent.

Rainbow trout and Arctic grayling were sampled for age and length using hook and line, seine, and minnow trap gear. Age 5 and 6 rainbow trout were the dominate age group sampled by hook and line gear, age 4 by the beach seine gear, and age 1 by the minnow trap gear. In addition, 256 of the 716 rainbow trout were tagged with individually numbered Floy anchor tags. Recaptures of tagged rainbow trout were reported from Six Mile Lake (2), the Newhalen River (3), and the Tazimina River (28). Age 3, 4, and 5 Arctic grayling dominated the sample obtained with all three gear types.

One hundred ninety-two redds of sockeye salmon sampled during 1987 had a mean water depth of 0.66 meters (SE = 0.02) and mean water velocity of 0.62 meters per second (SE = 0.02). Gravel (0.5 - 1.0 inch diameter) was the substrate found most frequently.

KEY WORDS: Tazimina River, Bristol Bay, rainbow trout, *Oncorhynchus mykiss*, creel statistics, sport effort, sport harvest, length statistics, angler characteristics, age composition, spawning habitat.

INTRODUCTION

The Tazimina River is located within Lake Clark National Park and Preserve in the Bristol Bay region of Alaska (Figure 1). The river drains the Upper and Lower Tazimina lakes into Six Mile Lake over a distance of 27 km (Figures 1 and 2). The river descends over a series of falls. This confines a growing recreational sport fishery in this river to the lower 14 km of the river. In this reach of the river, rainbow trout *Oncorhynchus mykiss*, sockeye salmon *O. nerka*, Arctic char *Salvelinus alpinus*, and Arctic grayling *Thymallus arcticus* are found in substantial numbers. Anglers access the river by boat from Six Mile Lake via the river mouth or by float plane and then hike from Alexcy Lake or Hudson Lake. The float from the Alexcy Lake access downstream to Six Mile Lake is quite popular and is considered an easy 1-day trip.

The Tazimina River is located within the Bristol Bay Wild Trout Zone and therefore special regulations apply (ADF&G 1988a). Only unbaited, single-hook artificial lures may be used in this zone from 8 June through 31 October, and anglers may only retain one rainbow trout per day and in their possession. Fishing is prohibited from 10 April through 7 June.

Due to increasing angler effort, resource managers for the Tazimina River are faced with a number of increasing environmental, safety, and social concerns. The river is currently under consideration for hydroelectric development, and at nearby Keyes Point, plans are under way for a new 200-300 room hotel, catering to high quality recreation. Concern is also mounting among anglers and local residents over the use of jet-powered outboard and inboard motors on the river. Safety, quality of recreational experience, and potential biological impacts on the sockeye salmon reproductive process are issues among many of the people that utilize the Tazimina River.

Data regarding the fisheries of the Tazimina River are limited. Russell (1980) reported the results of a 2-year resource inventory within the boundaries of Lake Clark National Park and Preserve. In 1981, the Alaska Power Authority contracted Dames & Moore to conduct an environmental assessment and evaluate potential impacts of hydroelectric development on the wildlife and fisheries resources of the Tazimina River (Dames & Moore 1982). Additionally, the Fisheries Research Institute (FRI) of the University of Washington conducted studies of the Tazimina River fisheries in 1962 (Dames & Moore 1982).

To gain a better understanding of the fisheries of the Tazimina River, a cooperative fisheries research effort involving the National Park Service (NPS) and Alaska Department of Fish and Game (ADF&G) staff started in August of 1987 and continued in 1988. The goals of this research were to make a detailed assessment of the Tazimina River sport fishery, with emphasis on rainbow trout, and thereby initiate a data base to gauge impacts of future fishery development. This data base will also allow resource managers to assess current management strategies and policies related to the fishery. The specific objectives of the studies were to:

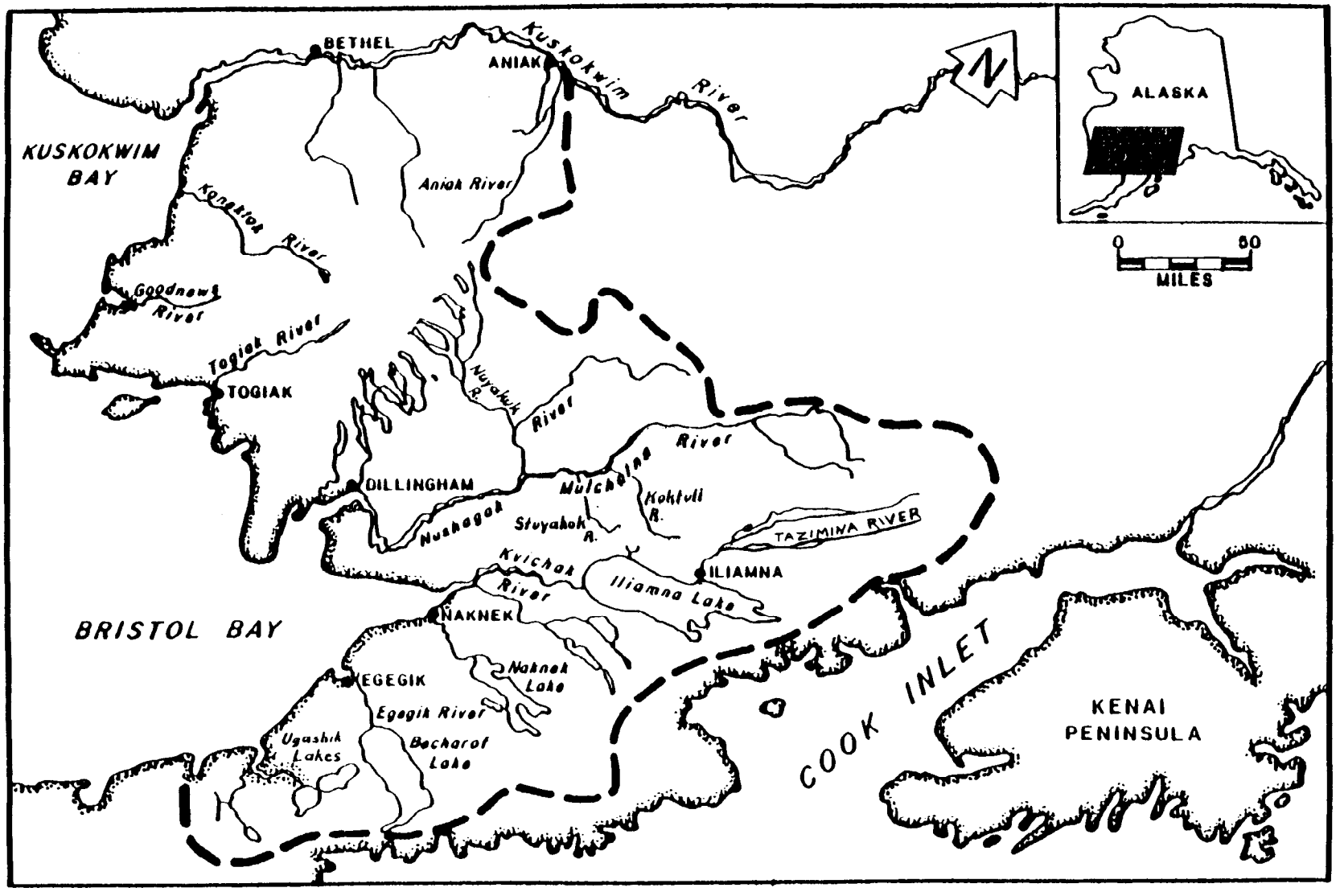

Figure 1. Bristol Bay, southwest Alaska, sport fish management area.

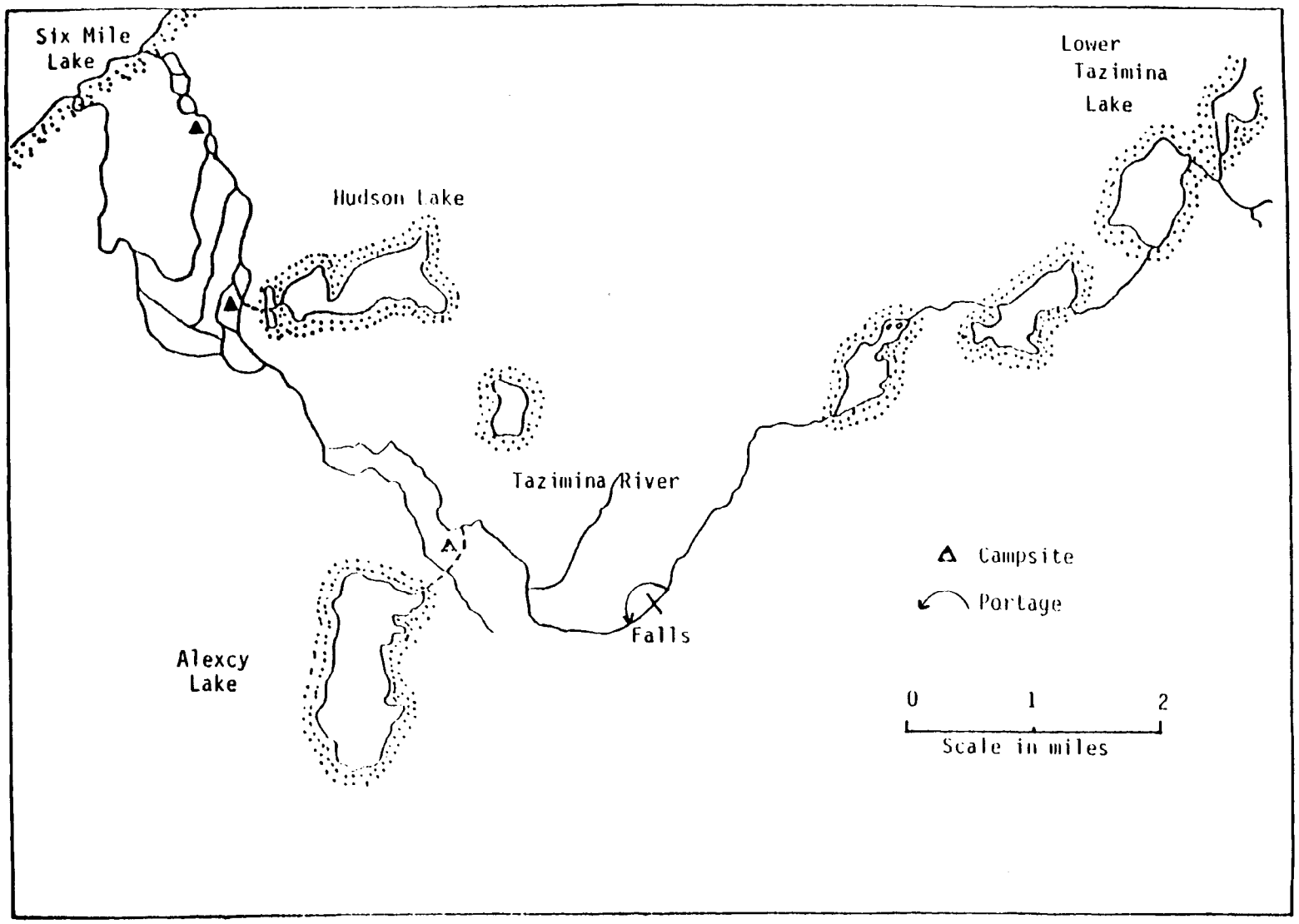

Figure 2. Tazimina River study site extends from the falls approximately 14.4 km downstream to Six Mile Lake.

1. estimate sport angling effort, catch, and harvest for each species,

2. establish residency and gear preference profiles for sport anglers fishing the Tazimina River,

3. determine the number and frequency of use of rafts and jet- and propeller-driven boats utilizing the study site,

4. define seasonal migration patterns and distribution of rainbow trout in the Tazimina River,

5. characterize the sex, mean length, and age compositions of the sport catch and harvest of rainbow trout, and

6. characterize the habitat preferences of spawning sockeye salmon relative to water velocities and substrate.

METHODS

Creel Survey

A direct expansion creel survey was conducted in the Tazimina River from 1 August to 3 October 1987 and from 8 June to 5 October 1988. The study area included the lower 14.4 km of the Tazimina River (Figure 2). Anglers enter and exit the Tazimina River by one of three routes. The river mouth, draining into Six Mile Lake, is the primary access used by people entering or exiting the fishery by boat. Additionally, the river is accessed via portages from either of two nearby lakes, Hudson and Alexcy. Each of these access points were surveyed during 1987 and 1988.

Data Collection:

The fishing day was divided into three time strata. A sampling schedule for conducting angler interviews was composed for each year of the study of randomly selected time strata at each of the three primary access points to the fishery. During a selected time stratum, a creel clerk was stationed at the scheduled access point and attempted to interview every angler that exited the fishery through that access point. For each angler contacted, the creel survey technician recorded the number of hours the angler fished since he/she last exited the fishery; the number of fish, by species, that were in the angler's possession; and the number of fish, by species, which the angler released. Other data recorded consisted of angler demographics information, including state of residency; local (resident of the Lake Clark and Six Mile Lake area, including the villages of Iliamna and Newhalen) or non-local; whether the angler was guided or not guided; and gear type used. All interviews were of individual anglers. Occasionally anglers who had completed fishing exited the fishery without being interviewed. In those instances, the number of anglers not interviewed were tallied on a missed angler interview form.

During 1987, the creel survey was conducted from 1 August through 3 October. The survey period was stratified into two components to reflect seasonal changes in angling effort and catch rates: Component 1 (1 August through 31 August) and Component 2 (1 September through 3 October). In each component, the fishing day was 15 hours in length, from 0600 hours to 2100 hours. The fishing day in each component was further stratified into three periods: Period A (0600-1059), Period B (1100-1559), and Period C (1600-2100).

The sampling intensity for the creel survey during 1987 was 20 sample units per week. Days to be sampled were selected randomly without replacement given the constraint that only 5 days could be sampled each week. For the days to be sampled, two of three time strata were selected randomly without replacement. Since most anglers exited by way of the river mouth, 50% of the sampling effort (ten 3-hour sample units per 7 day week) was scheduled at the river mouth. The remaining sampling effort was divided equally between the Hudson and Alexcy lakes access points. Sampling at the Alexcy Lake access was curtailed during Component 2 due to very low usage and sampling effort previously scheduled at the Alexcy Lake access was re-allocated to the river mouth access to improve the precision of estimates there.

During 1988, the creel survey was conducted from 1 August through 3 October. The survey period was stratified into five components to reflect seasonal changes in angling effort and catch rates: Component 1 (8 June-30 June), Component 2 (1 July-1 August), Component 3 (2 August-25 August), Component 4 (26 August-5 September), and Component 5 (6 September-5 October). In each component, the fishing day was 9 hours in length, from 1200 hours to 2100 hours. The fishing day in each component was further stratified into three periods: Period A (1200-1459), Period B (1500-1759), and Period C (1800-2100).

The sampling intensity for the creel survey during 1988 remained at 20 sample units per week. Days to be sampled were selected randomly without replacement given the constraint that only 5 days could be sampled each week. For the days to be sampled, two of three time strata were selected randomly without replacement. Due to minimal effort observed at the Hudson Lake access during 1987, no sampling effort was allocated to the Hudson Lake access in 1988. Most of the angling effort was expected to exit by way of the river mouth access. During temporal components two and three, however, anglers targeting sockeye salmon were expected to use the Alexcy Lake access more frequently. Therefore, during components two and three, 60% of the sampling effort (twelve 3-hour sampling units per week) was scheduled for the river mouth access and 40% (eight 3-hour sampling units per week) was scheduled for the Alexcy Lake access. During components one and four, 75% of the sampling effort (fifteen 3-hour sampling units per week) was scheduled for the river mouth access and 25% (five 3-hour sampling units per week) for the Alexcy Lake access.

Shortly after the start of the 1988 season, the sampling schedule was modified due to low effort levels observed at the Alexcy Lake access. ADF&G technicians found it possible to observe all effort occurring at both the Alexcy Lake and Hudson Lake accesses. Observations were made at each site as

needed and every angler exiting the fishery at these locations was interviewed. The surveys at the Hudson and Alexcy lakes locations are, therefore, considered a true census with no expansion. The survey at the river mouth remained on a random sampling schedule at the original sampling intensity, and was considered a direct expansion survey.

Data Analysis:

The estimation of angler effort by a direct expansion creel survey can be considered as a problem in estimating a rate. Effort was estimated in units of angler-hours. The rate estimated was the mean number of angler-hours leaving an access point during each hour the fishery was in progress in a selected stratum. The product of this rate and the total number of possible fishing hours in a selected stratum represents the estimate of angler effort during that stratum at that access site. This can be expressed as:

$$\hat{E} = \sum_{j=1}^{p} H_j(\bar{e}_j/\bar{h}_j) \qquad [1]$$

where:

- $\hat{E}$ = the estimated effort (in units of angler-hours) during a particular component of the fishery at a selected access site,
- H_j = the number of possible hours of fishing time during period j of a particular component of the fishery at a selected access site,
- e_j = the mean number of angler-hours leaving an access site during a sample unit in period j of a particular component of the fishery at a selected access site, and
- $\bar{h}_j$ = the mean number of hours censused on days sampled during period j of a particular component of the fishery at a selected access site.

The variance of this effort estimate was estimated as:

$$V(\hat{E}) = \sum_{j=1}^{p} H_j^2 V(\bar{e}_j/\bar{h}_j). \qquad [2]$$

The variance of the rate, $\bar{e}_j/\bar{h}_j$, was approximated by the variance for the quotient of two random variables (Jessen 1978):

$$V(\bar{e}_j/\bar{h}_j) \approx (\bar{e}_j/\bar{h}_j)^2(1/d_j)(s_e^2/\bar{e}_j^2 + s_h^2/\bar{h}_j^2 - 2rs_e s_h/\bar{e}_j\bar{h}_j)(1-h_j/H_j) \qquad [3]$$

where:

- d_j = the number of days censused at a selected access site during period j of a particular component of the fishery,

s_e^2 = the sample variance for the mean number of angler-hours leaving a census site on a sample day during period j of a particular component of the fishery, and

s_h^2 = the sample variance for the mean number of hours censused on a sample day during period j of a particular component of the fishery.

In most of the access sites surveyed, the time spent surveying on period j of a sample day (h_j) was relatively constant on each sampling occasion. In some instances, i.e. on days when no interviews were conducted, h_j varied considerably during the fishery. In these instances, the h_j terms were considered random variables. This variation is represented by the variance of the sample unit length in Equation 3 (s_h^2). The coefficient of variation was used to determine if the h_{ij} were treated as random variables. If the coefficient of variation exceeded 20%, the h_j were treated as random variables, otherwise the h_j were treated as constant.

For h_j constant, s_h^2 equals zero and the variance of the estimate of angler effort simplifies to:

$$V(\hat{E}) = \sum_{j=1}^{p} d_j \, (H_j/h_j)^2 \, s_e^2 (1 - h_j/H_j) \qquad [4]$$

where:

h_j = the number of hours censused on days sampled during period j of a particular component of the fishery.

When it was not possible to interview all anglers leaving the access site, the effort by the anglers who were not interviewed was estimated. In contrast to the previous situation, where the effort leaving the fishery during period j on day i was considered to be measured without error, error is now associated with this variable (e_{ij}). Effort leaving the fishery during a given sample unit was estimated for period j on day i by:

$$\hat{e}_{ij} = M_{ij} \bar{f}_{ij} \qquad [5]$$

where:

M_{ij} = the number of anglers leaving the fishery during period j of day i of a particular component of the fishery, and

$\bar{f}_{ij}$ = the mean number of hours fished by anglers during period j of day i of a particular component of the fishery.

The variance of this estimate was estimated as:

$$\hat{s}_{eij}^2 = M_{ij}^2 (s_{fij}^2/m_{ij}) \, (1 - m_{ij}/M_{ij}) \qquad [6]$$

where:

m_{ij} = the number of anglers leaving the fishery who are interviewed during period j of day i of a particular component of the fishery, and

s_{fij}^2 = the sample variance for the mean effort by anglers departing a fishery during period j of day i of a particular component of the fishery.

Effort for period j was then estimated as:

$$\hat{E}_j = H_j \ (\hat{e}_j/h_j). \qquad [7]$$

The variance of $\hat{E}_j$ was estimated using equations 2 and 3 with the exception that the variance of the mean number of angler-hours of effort by completed-trip anglers censused during each sampling event now has two components, the within-day variance due to missed anglers and the between-day variance.

Letting $\hat{s}_e^2$ estimate the variance of $\hat{e}_j$:

$$\hat{s}_e^2 = s_{Be}^2 + h_j/[d_j(H_j - h_j] \ (\sum_{i=1}^{D} \hat{s}_{eij}^2) \qquad [8]$$

with the between-day variance (s_{Be}^2) estimated as:

$$s_{Be}^2 = [\sum_{i=1}^{D} (e_{ij} - \bar{e}_j)^2]/(d_j - 1), \qquad [9]$$

the variance of $\hat{E}_j$ was estimated by substituting $\hat{s}_e^2$ for s_e^2 in equation 3 (Sukhatme et al. 1984). By replacing s_e^2 with $\hat{s}_e^2$, the variance of the angler effort estimate simplifies to equation 4 when the h_j is constant.

During the 1988 creel survey, every angler exiting the fishery at the Alexcy and Hudson lakes access points were interviewed, and no expansions were necessary. Effort was simply summed for each temporal component. Since every angler exiting the Alexcy and Hudson lakes accesses was interviewed, no error term exists for the estimates, thus no variances were associated with effort at the Alexcy and Hudson lakes access points.

The catch and harvest of a species, and their variances, were estimated with the same procedures used to estimate effort by simply substituting the corresponding quantities for catch or harvest in place of effort.

Total effort, catch, and harvest leaving an access point were calculated by summing the separate component estimates. Since the component estimates are considered independent estimates, the variance of the total was calculated as the sum of the estimated component variances.

Assumptions necessary for the direct expansion creel survey design are:

1. no significant fishing effort occurs during the hours not included in the fishing day,
2. all anglers participating in a particular fishery exit the fishery through a surveyed access site,
3. all anglers who are not interviewed are counted and all non-interviewed anglers are completed-trip anglers.

Based on observations by creel personnel during hours the fishery was not surveyed, it appears that very little fishing effort occurred during hours not surveyed and the first assumption is valid. Also, observations by creel survey personnel indicate that very few anglers exit the fishery from locations other than those surveyed, suggesting that the second assumption is also valid. Since complete censuses of anglers was attempted, I also feel that the third assumption is valid.

Boat Use Survey

The proximity of camp to the mouth of the Tazimina River made it possible to record all boat traffic on the river during scheduled creel periods during 1987 and 1988. For every boat exiting the river at the mouth, ADF&G personnel recorded the following information: 1) the type of boat used (whether raft, propeller driven outboard, jet-driven outboard, or jet-driven inboard), 2) if motorized, the horsepower used, and 3) the number of occupants in the boat. Data were analyzed using simple proportions to obtain the total number of boats by type and horsepower.

Biological Sampling

Rainbow trout were captured using hook and line, beach seines, and minnow traps. All captured rainbow trout were measured for fork length to the nearest millimeter, weighed to the nearest 10 grams, and sexed when possible. Fish greater than 250 mm in length were tagged at the base of the dorsal fin on the left side with a numbered Floy anchor tag. Scales were collected from 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 described in Clutter and Whitesel (1956). Scales were mounted on adhesive-coated cards and impressions were thermohydraulically made in cellulose acetate. Age determinations were made by examination of scales using a microfiche reader.

Age compositions of the sampled rainbow trout were calculated. Letting p_h equal the estimated proportion of age group h in the sample, the variance of p_h was estimated as (Scheaffer et al. 1979):

$$V(\hat{p}_h) = \hat{p}_h(1-\hat{p}_h)/(n_T-1), \qquad [10]$$

where n_T is the total number of legible scales collected from rainbow trout during the fishery.

A linear regression was run on the natural logarithms of the length and weight of each fish sampled from the sport catch. A constant (B_0) and slope (B_1) were calculated using the equation:

$$LN_w = e^{B0} + B_1(LN_l) \qquad [11]$$

where:

LN_w = the natural logarithm for every fish with a weight *w*,

LN_l = the natural logarithm for every fish with a length *l*.

With these constraints satisfied, a weight value (W_l) was calculated for each length using the equation:

$$W_l = l^{B1}e^{B0}. \qquad [12]$$

Resultant data were plotted on a length versus weight curve.

Mean length and its associated variance was estimated for each age group using standard normal procedures. Ninety-five percent confidence intervals were obtained as:

$$95\%\ CI = 1.96\ (V_{la})^{0.5} \pm l_a \qquad [13]$$

where:

l_a = mean length for age class *a*, and

V_{la} = variance of the mean length for age class *a*.

Arctic grayling and Arctic char were captured by hook and line and beach seine and sampled in the same manner as above, with the exception that no Arctic grayling or Arctic char were tagged with Floy tags and no scales were taken from Arctic char. Data for Arctic grayling were analyzed as mentioned above, and mean lengths and weights were calculated for Arctic char.

Sport harvested sockeye salmon observed during the creel surveys were sampled during 1988 as described above for rainbow trout with the exception that length was measured from mid-eye to fork-of-tail. Ages were designated using the European method where the numeral preceding the decimal refers to the number of freshwater annuli and the numeral following the decimal refers to the number of marine annuli. Age compositions were calculated from all legible scales using the methods described above and mean length-at-age was calculated for each age class.

Sockeye Salmon Spawning Ground Survey

Redds of spawning sockeye salmon were surveyed during the peak spawning period in August 1987 in the lower 14.4 km section of the Tazimina River. Spawning sites to be surveyed were randomly selected starting from the falls and working downriver. For each redd surveyed, ADF&G personnel measured and

recorded water depth (meters) and water velocity (meters/second). The dominant substrate size of the redd was assessed using the following six classifications; (1) silt, (2) sand, (3) gravel from 0.25 to 0.50 in diameter, (4) gravel from 0.50 to 1.00 in diameter, (5) cobble from 1 to 4 in diameter, and (6) rock over 4 inches in diameter.

RESULTS

Fishery Characteristics

A total of 243 and 1,066 angler interviews were obtained during the sampling periods for 1987 and 1988, respectively. Ninety four percent (1,234) of all interviews were obtained from anglers exiting the fishery at the river mouth, while 2% (27) and 4% (48) were obtained at the Alexcy and Hudson lakes sites, respectively.

The majority of the anglers interviewed were non-residents; only 10% and 13% were Alaska residents in 1987 and 1988, respectively (Table 1). Of the Alaskan residents in 1987, 38% were local (residents within the Lake Clark and Six Mile Lake watersheds, or residents of the village of Iliamna or Newhalen). Guided anglers comprised 79% of the anglers that responded in 1987, and 90% in 1988. In 1988, 7% of all anglers used two gear types (fly and spinning gear) and 93% used only one gear type. The majority of anglers using one gear type used fly fishing gear (63% and 62%, respectively) during the 1987 and 1988 seasons (Table 1).

Boat Use

Seventy two boats were observed on the Tazimina River from 25 August through 4 October 1987 (Appendix Table 1). Figure 3 displays the percentage and frequency of use of boats by week and throughout this time period for each type and horsepower. In 1987, jet-driven outboards and non-powered rafts each comprised 33.3% of the boat use during the survey period. Small jet-driven outboards (20 to 40 horsepower) were observed more frequently (20.8% of total use) than larger (41 to 60 horsepower) jet-driven outboards (12.5% of total boat use). Propeller-driven outboards comprised 20.8% of the total boat use during the survey period, and jet-driven inboards accounted for 12.5% of the total boat use on the Tazimina River.

In 1988, 516 boats were observed from 8 June through 5 October (Appendix Table 2). Seasonal and weekly frequency throughout the 1988 survey period are shown in Figures 4 and 5, respectively, by type and horsepower. Jet-driven outboards comprised roughly one-third (35.5%) of the seasonal use with small units (20 to 40 horsepower) comprising 25.8% and large units (41 to 60 horsepower) comprising 9.7% of total use. Jet-driven inboards comprised 24.2% of the use during 1988, followed by non-powered rafts (21.7%), and propeller-driven outboards (18.6%).

The use of boats, by type, over the season fluctuated weekly. However, use throughout the season increased from the start, reached a maximum level during July, and then declined for each boat type. As such, during any time of

Table 1. Angler characteristics and gear preference profiles for the sport fishery in the Tazimina River, 1987 and 1988[1].

	1987			1988		
	Number of Responses	Percent Frequency	Relative Percent[2]	Number of Responses	Percent Frequency	Relative Percent[2]
Residency						
Unknown				66	6.1%	
Alaska resident	26	10.3%		132	12.3%	13.1%
Local	10	38.5%				
Non-local	16	61.5%				
Non-resident	227	89.7%		877	81.6%	86.9%
Guided vs. unguided anglers						
Unknown	1	0.4%		4	0.4%	
Guided	199	78.7%	79.0%	961	89.4%	89.7%
Unguided	53	20.9%	21.0%	110	10.2%	10.3%
Angling primarily from boat or shore						
Unknown				7	0.6%	
Boat	9	3.6%		29	2.7%	2.7%
Shore	244	96.4%		1,039	96.7%	97.3%
Gear preference						
Unknown	253	100.0%		6	0.6%	
Anglers using both fly and spinning gear				68	6.7%	6.7%
Anglers using one gear type only				942	92.7%	93.3%
Unknown				23	2.1%	
Anglers using spinning gear	94	37.2%		399	37.1%	37.9%
Anglers flyfishing	159	62.8%		653	60.8%	62.1%

[1] The 1987 survey started 1 August, ended 3 October, and resulted in 243 interviews; the 1988 season started 8 June, ended 5 October, and resulted in 1,066 interviews.

[2] Relative percent of the number of positive responses.

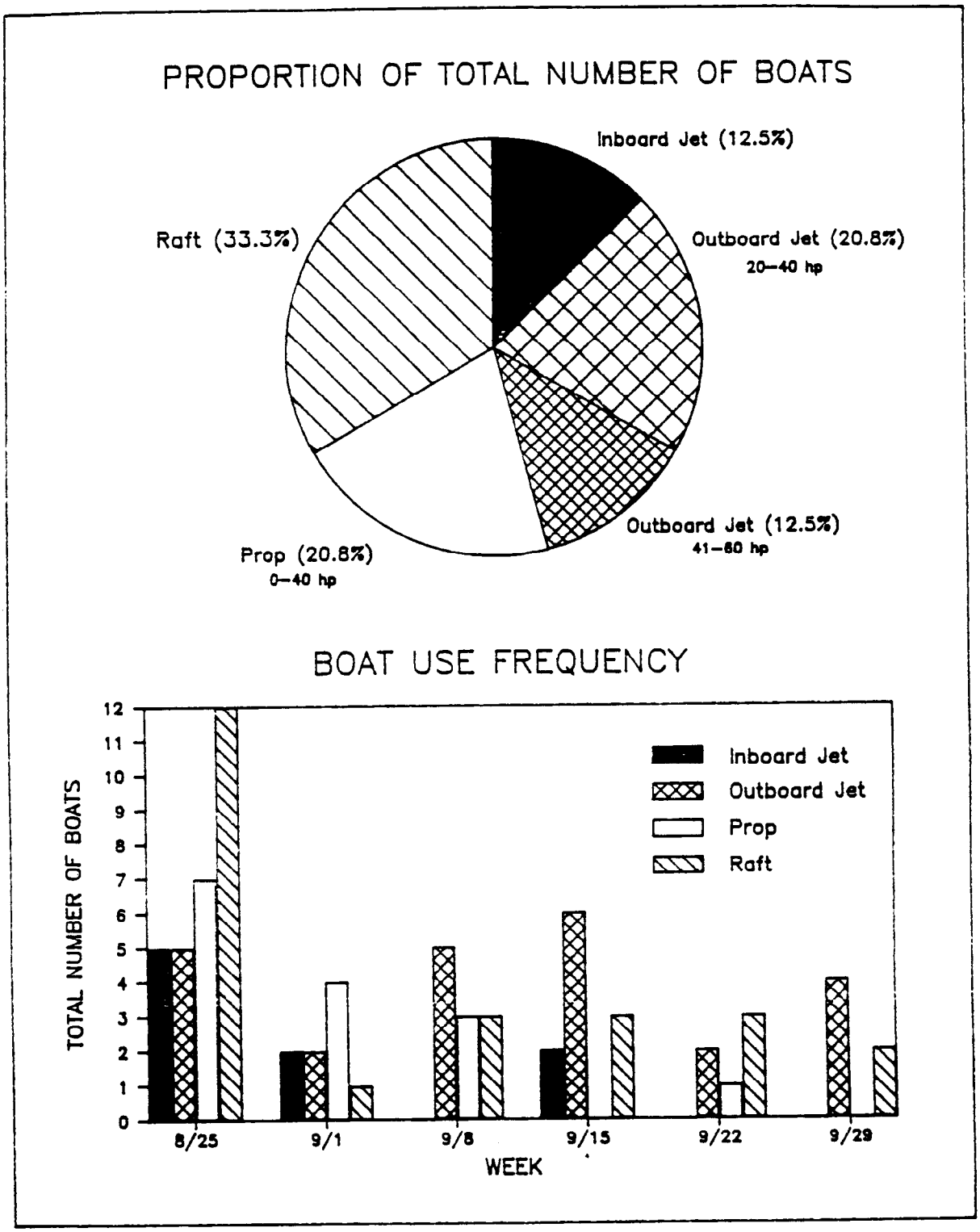

Figure 3. Percentage and frequency of use by boat type on the Tazimina River, 25 August through 4 October 1987.

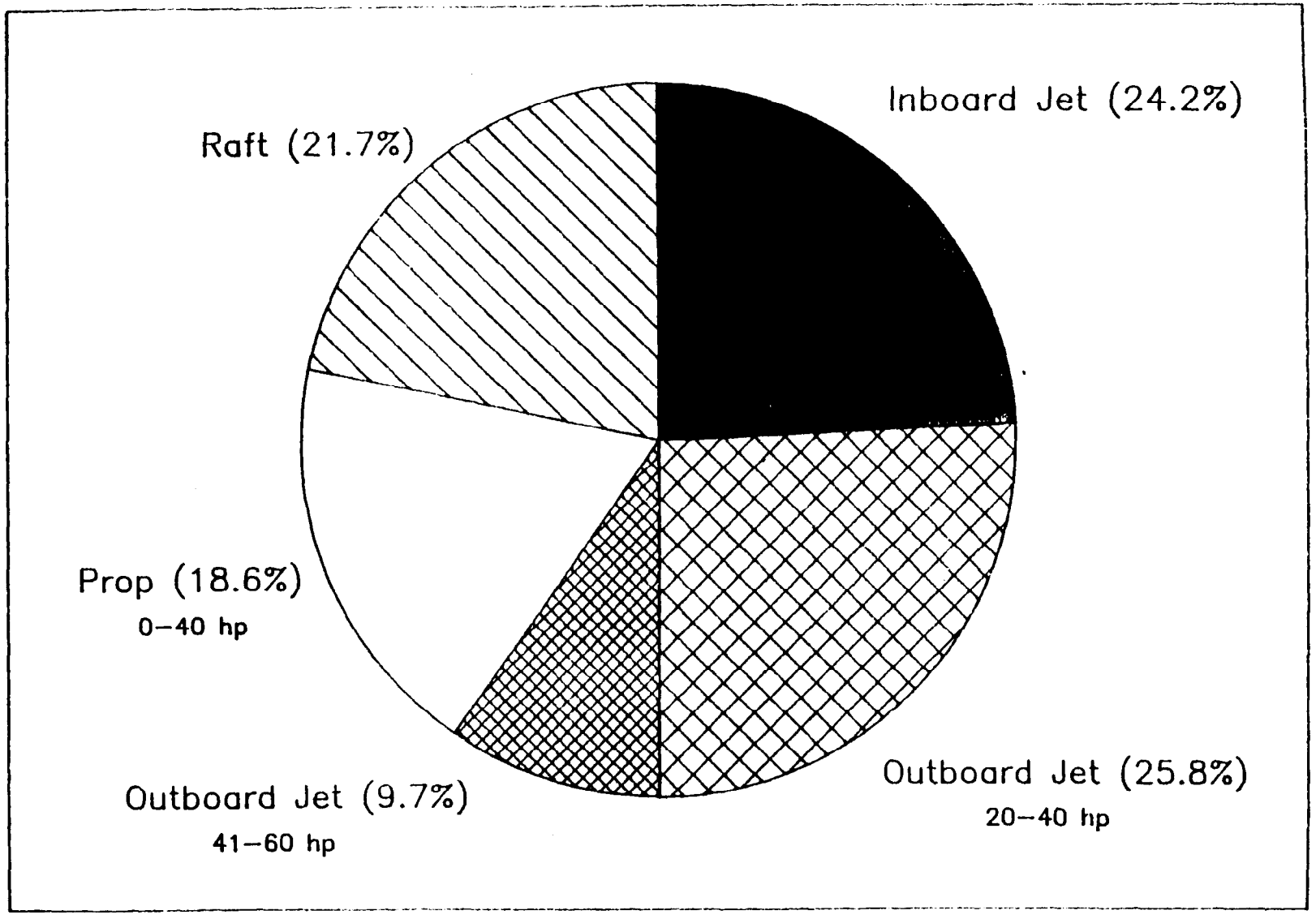

Figure 4. Proportion of total number of boats on the Tazimina River, 8 June through 5 October 1988.

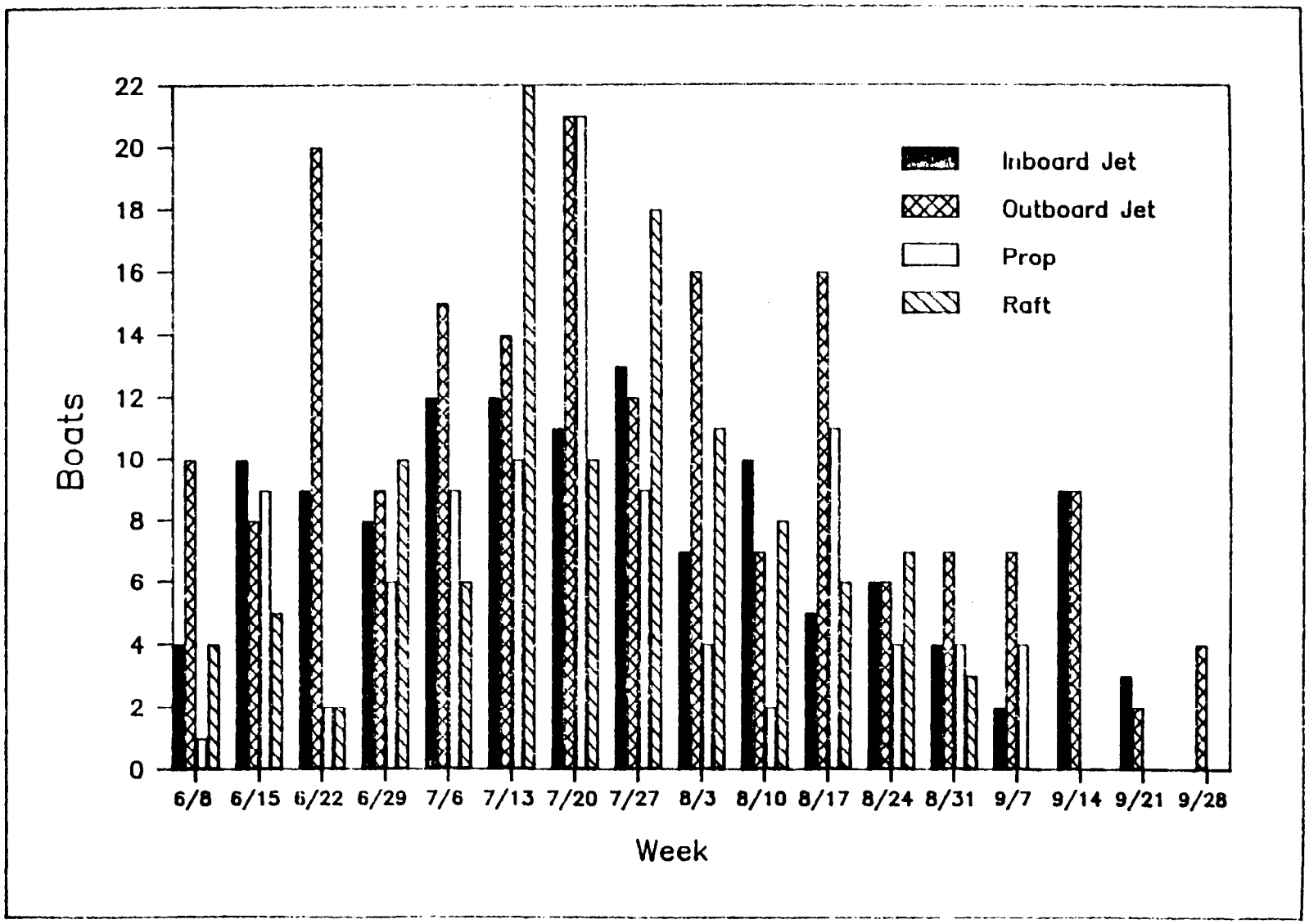

Figure 5. Boat use frequency, by week, on the Tazimina River, 8 June through 5 October 1988.

the season, there is no one type that can be singled out as being absent or as being an exclusive user. However, after the first week in September 1988, jet-driven inboards and outboards were the only types observed on the river (Figure 5).

Sport Effort

During 1987, anglers fished an estimated 3,720 hours with 76% of this effort (over 2,800 angler-hours) being expended during component 1 (Table 2). Eighty-one percent (3,002 angler-hours) of the effort exited the fishery at the river mouth, 14% (529 angler-hours) at Alexcy Lake, and 5% (189 angler-hours) at Hudson Lake. The mean length of an angler day during 1987 was 4.9 hours (SE=0.13), and ranged from 4.2 to 6.3 hours depending on location and temporal component (Table 2). The mean length of the angler-day was greater during component 2 at all locations.

During 1988, anglers fished an estimated 7,073 hours with 51% of this effort (3,590 angler-hours) being expended during the second temporal component (Table 3). Ninety-seven percent of the estimated effort (6,833 angler-hours) exited the fishery at the river mouth, 2% (125 angler-hours) at Hudson Lake, and 1.6% (115 angler-hours) at Alexcy Lake. The mean length of the angler day for the 1988 season was 5.7 hours (SE=0.08) (Table 3). The mean length of the angler-day ranged from 2.3 to 6.1 hours, depending on location and temporal component, and was greatest during temporal components 2 and 3 for all locations combined.

For the period in 1988 that corresponds to the survey during 1987 (2 August through 5 October, temporal components 3, 4, and 5), 2,424 angler-hours were expended (Table 3). This estimate is similar to estimates made for the effort expended during the 1987 survey in that the 95% confidence intervals overlap. However, it is obvious that anglers expend much effort prior to August in that prior to 2 August during 1988, anglers had expended 66% (4,649 angler-hours) of their seasonal angling effort.

Catch and Harvest

During 1987, daily catch rates for rainbow trout fluctuated throughout the survey period, ranging from 0 to 1.3 fish per hour (Appendix Tables 3, 5, and 6). The seasonal mean catch rate for rainbow trout was 0.26 fish per hour with mean catch rates being greatest in component two (Table 4). A total of 969 rainbow trout were caught, of which only 64 (6.6%) were retained (Table 5). Harvests of rainbow trout were very small with the majority occurring during component 1.

Daily catch rates for sockeye salmon ranged from 0 to 3.8 fish per hour during 1987 (Appendix Tables 3, 5, and 6). Mean catch rates were greatest during temporal component 1 (Table 4). During this component, anglers exiting both the river mouth and the Alexcy Lake access had a mean catch rate greater than one fish per hour. An estimated 3,155 sockeye salmon were caught during the 1987 survey period of which 366 (11.6%) were harvested (Table 5). Over 98% of the sockeye catch and 100% of the harvest occurred during component 1.

Table 2. Estimated effort (angler-hours) by location and temporal component for the sport fishery in the Tazimina River, 1987.

Location	Temporal Component[1]	Number of Interviews	Number of Days Possible	Number of Days Sampled	x Length of Angler-day (hrs)	SE[2]	ESTIMATED EFFORT Ang-Hrs	SE[2]	95% C. I.[3]	Relative Precision[4]
River Mouth	1	157	31	22	4.6	0.176	2,177	397.0	1,399 - 2,955	35.7%
	2	62	33	27	5.9	0.190	825	136.9	557 - 1,093	32.5%
	Season	219	64	49	5.0	0.141	3,002	419.9	2,179 - 3,825	27.4%
Hudson Lake	1	4	31	8	4.0	0.000	103	95.0	0 - 290	180.3%
	2	2	33	8	6.3	0.249	86	79.4	0 - 242	181.2%
	Season	6	64	16	4.8	0.479	189	123.8	0 - 432	128.2%
Alexcy Lake	1	18	31	10	4.2	0.286	529	190.2	156 - 901	70.5%
	2	0	33	0			0		0 - 0	
	Season	18	64	10			529	190.2	156 - 901	70.5%
Combined Locations	1	179	31	26	4.5	0.158	2,809	450.3	1,926 - 3,692	31.4%
	2	64	33	28	5.9	0.184	911	158.3	601 - 1,221	34.1%
	Season	243	64	54	4.9	0.130	3,720	477.3	2,784 - 4,656	25.2%

1 Component 1 = 8/1-8/31, Component 2 = 9/1-10/3.

2 Standard Error.

3 Confidence interval.

4 Relative precision of 95% confidence interval.

Table 3. Estimated effort (angler-hours) by location and temporal component for the sport fishery in the Tazimina River, 1988.

Location	Temporal Component[1]	Number Of Interviews[2]	Number Of Days Possible	Number Of Days Sampled	x Length of Angler-Day (hrs)	SE[3]	ESTIMATED EFFORT Ang-Hrs	SE[3]	95% C. I.[4]	Relative Precision[5]
River Mouth	1	160	23	22	5.6	0.235	949	48.5	854 - 1,044	10.0%
	2	485	32	30	6.0	0.122	3,514	120.5	3,278 - 3,750	6.7%
	3	211	24	24	6.0	0.179	1,461	68.8	1,327 - 1,596	9.2%
	4	62	11	11	4.0	0.344	255	20.3	215 - 294	15.6%
	5	97	30	30	5.6	0.265	654	60.2	536 - 771	18.1%
	Season	1015	120	117	5.8	0.084	6,833	160.1	6,519 - 7,146	4.6%
Hudson Lake	1	18	23	23	6.1	0.226	110	0.0	110 - 110	0.0%
	2	3	32	32	4.8	2.088	15	0.0	15 - 15	0.0%
	3	0	24	24			0		0 - 0	
	4	0	11	11			0		0 - 0	
	5	0	30	30			0		0 - 0	
	Season	21	120	120	6.0	0.332	125	0.0	125 - 125	0.0%
Alexcy Lake	1	0	23	23			0		0 - 0	
	2	15	32	32	4.0	0.331	61	0.0	61 - 61	0.0%
	3	7	24	24	5.1	0.553	36	0.0	36 - 36	0.0%
	4	0	11	11			0		0 - 0	
	5	8	30	30	2.3	0.161	18	0.0	18 - 18	0.0%
	Season	30	120	120	3.8	0.278	115	0.0	115 - 115	0.0%

-Continued-

Table 3. Estimated effort (angler-hours) by location and temporal component for the sport fishery in the Tazimina River, 1988 (continued).

Location	Temporal Component[1]	Number Of Interviews[2]	Number Of Days Possible	Number Of Days Sampled	x Length of Angler-Day (hrs)	SE[3]	ESTIMATED EFFORT Ang-Hrs	SE[3]	95% C. I.[4]	Relative Precision[5]
Combined Locations	1	178	23	23	5.6	0.207	1,059	48.5	964 - 1,154	9.0%
	2	503	32	32	5.9	0.122	3,590	120.5	3,353 - 3,825	6.6%
	3	218	24	24	6.0	0.173	1,497	68.8	1,363 - 1,632	9.0%
	4	62	11	11	4.0	0.344	255	20.3	215 - 294	15.6%
	5	105	30	30	5.3	0.279	672	60.2	554 - 789	17.6%
	Season	1066	120	120	5.7	0.084	7,073	160.1	6,758 - 7,386	4.4%

1 Component 1 = 6/8-6/30, Component 2 = 7/1-8/1, Component 3 = 8/2-8/25, Component 4 = 8/26-9/5, Component 5 = 9/6-10/5.

2 Number of interviews are not comparable between locations due to different methods of sampling. The river mouth access was sampled on a random schedule and the Hudson and Alexcy locations were surveyed on a continuous basis. Missed anglers (N = 56) are not included.

3 Standard Error.

4 Confidence Interval.

5 Relative precision of 95% confidence interval.

Table 4. Catch and harvest rates (fish per hour) by species, location, and temporal component for the sport fishery in the Tazimina River, 1987.

Species	Location	Temporal Component[1]	Catch Rate Fish/Hr	Catch Rate SE[2]	Harvest Rate Fish/Hr	Harvest Rate SE[2]
Rainbow Trout	River Mouth	1	0.2024	0.0433	0.0057	0.0020
		2	0.4354	0.1002	0.0000	0.0000
	Hudson Lake	1	0.1250	0.0225	0.0000	0.0000
		2	0.1600	0.0416	0.0000	0.0000
	Alexcy Lake	1	0.1538	0.0056	0.0769	0.0339
		Season	0.2605	0.0548	0.0172	0.0100
Sockeye Salmon	River Mouth	1	1.0953	0.1535	0.1189	0.0347
		2	0.0646	0.0412	0.0000	0.0000
	Hudson Lake	1	0.0625	0.0112	0.0625	0.0112
		2	0.0000	0.0000	0.0000	0.0000
	Alexcy Lake	1	1.0385	0.5269	0.1282	0.0973
		Season	0.8482	0.2300	0.0984	0.0332
Arctic Char	River Mouth	1	0.0906	0.0273	0.0085	0.0040
		2	0.2556	0.0484	0.0393	0.0138
	Hudson Lake	1	0.0000	0.0000	0.0000	0.0000
		2	1.8400	0.0384	0.0000	0.0000
	Alexcy Lake	1	0.0256	0.0168	0.0000	0.0000
		Season	0.1551	0.0510	0.0132	0.0050
Arctic Grayling	River Mouth	1	0.4104	0.0700	0.0283	0.0094
		2	0.5337	0.1004	0.0225	0.0111
	Hudson Lake	1	0.1875	0.0337	0.0000	0.0000
		2	0.6400	0.1664	0.0000	0.0000
	Alexcy Lake	1	0.0385	0.0229	0.0256	0.0205
		Season	0.3971	0.0866	0.0261	0.0100

[1] Component 1 = 8/1-8/31, Component 2 = 9/1-10/3.

[2] Standard Error.

Table 5. Estimated catch and harvest of rainbow trout, sockeye salmon, Arctic char, and Arctic grayling, for the sport fishery in the Tazimina River, 1987.

		Catch				Harvest				
Species	Temporal Component[1]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Percent Harvested
Rainbow Trout	1	558	116	332 - 784	40.6%	64	35	0 - 133	107.3%	11.5%
	2	411	111	193 - 629	53.1%	0		0 - 0		0.0%
	Season	969	160	655 - 1,283	32.4%	64	35	0 - 133	107.3%	6.6%
Sockeye Salmon	1	3,104	753	1,627 - 4,581	47.6%	366	114	143 - 589	60.9%	11.8%
	2	51	24	5 - 97	90.5%	0		0 - 0		0.0%
	Season	3,155	754	1,678 - 4,632	46.8%	366	114	143 - 589	60.9%	11.6%
Arctic char	1	210	84	44 - 376	78.8%	18	12	0 - 42	136.0%	8.6%
	2	367	154	65 - 669	82.2%	31	12	7 - 55	78.5%	8.4%
	Season	577	176	233 - 921	59.6%	49	18	14 - 84	70.4%	8.5%
Arctic Grayling	1	932	222	497 - 1,367	46.7%	79	34	12 - 146	84.8%	8.5%
	2	545	136	278 - 812	49.0%	18	9	0 - 36	98.0%	3.3%
	Season	1,477	261	966 - 1,988	34.6%	97	35	28 - 166	71.4%	6.6%

[1] Component 1 = 8/1-8/31, Component 2 = 9/1-10/3.

[2] Standard Error.

[3] Confidence Interval.

[4] Relative precision of 95% confidence interval.

The mean catch rate for Arctic char during the 1987 survey period was 0.16 fish per hour (Table 4). Angling during component 2 resulted in much greater mean catch rates for Arctic char than angling during component 1. Five hundred seventy-seven Arctic char were caught during the study period, of which 49 (8.5%) were harvested (Table 5). Catches of Arctic char were greatest during component 1.

The mean catch rate for Arctic grayling during the 1987 survey period was 0.40 fish per hour (Table 4). Daily catch rates for Arctic grayling fluctuated throughout the survey period, ranging from 0 to 1.1 fish per hour (Appendix Tables 3, 5, and 6). The Arctic grayling catch totaled 1,477 fish of which 97 (6.6%) were harvested (Table 5). Catch and harvest of Arctic grayling peaked during component 1.

During 1988, the catch rate of rainbow trout over the entire season averaged 0.26 fish per hour (Table 6). Angling during component 3 resulted in the greatest mean catch rate for rainbow trout (0.49 fish per angler-hour). Catches of rainbow trout increased consistently throughout the first three components, then decreased dramatically during component four (Table 7). Of the 1,818 rainbow trout that were estimated to have been caught during 1988, only nine (0.5%) were retained. Harvests of rainbow trout were relatively consistent throughout the season.

Mean catch rates for sockeye salmon during 1988 were greatest during component two (0.79 fish per hour), followed by component three (0.51 fish per hour) (Table 6). In contrast, the greatest mean harvest rate (0.25 fish per hour) occurred during component two. A total of 3,679 sockeye salmon were caught during the 1988 creel survey, of which 1,021 (28%) were harvested (Table 7). Over 76% of the sockeye catch and 90% of the harvest occurred during the second component.

Mean catch rates for Arctic char during 1988 were low throughout the season, averaging only 0.05 fish per hour (Table 6). Mean catch rates were highest during component five (0.28 fish per hour). Three hundred thirty-five Arctic char were caught during the season, of which only 19 (6%) were harvested (Table 7). Catches of Arctic char were sporadic throughout the season and were greatest during components three and five.

Daily catch rates for Arctic grayling were relatively high at the beginning of the 1988 season and appeared to have declined as the season progressed (Appendix Tables 7, 9, and 10). The highest mean catch rate was over 1.8 fish per hour during component one (Table 6). The seasonal catch of Arctic grayling outnumbered all catches of all other species, totaling 5,115 fish, of which 89 (2%) were harvested (Table 7). A total of 4,159 Arctic grayling were caught during component one and component two, or 81% of the total grayling catch.

Biological Sampling and Tagging

Two hundred fifty-six rainbow trout were marked with numbered Floy tags during 1987 and 1988 (Table 8, Appendix Table 11). Recaptures of these tagged

Table 6. Catch and harvest rates (fish per hour) by species and temporal component for the sport fishery in the Tazimina River, 1988.

Species	Temporal Component[1]	Catch		Harvest	
		Fish/Hr	SE[2]	Fish/Hr	SE[2]
Rainbow Trout	1	0.3106	0.0347	0.0032	0.0020
	2	0.1385	0.0151	0.0011	0.0008
	3	0.4894	0.0791	0.0008	0.0011
	4	0.0203	0.0113	0.0000	0.0000
	5	0.3664	0.0586	0.0033	0.0014
	Season	0.2585	0.0240	0.0015	0.0006
Sockeye Salmon	1	0.0000	0.0000	0.0000	0.0000
	2	0.7872	0.0454	0.2548	0.0156
	3	0.5135	0.0527	0.0618	0.0109
	4	0.2969	0.0790	0.0000	0.0000
	5	0.0452	0.0301	----	----
	Season	0.5080	0.0265	0.1367	0.0082
Arctic Char	1	0.0043	0.0050	0.0022	0.0017
	2	0.0014	0.0008	0.0000	0.0000
	3	0.0883	0.0308	0.0032	0.0022
	4	0.0366	0.0119	0.0081	0.0050
	5	0.2811	0.0575	0.0167	0.0070
	Season	0.0503	0.0122	0.0031	0.0013
Arctic Grayling	1	1.8506	0.1246	0.0194	0.0278
	2	0.6231	0.0639	0.0116	0.0027
	3	0.5039	0.0494	0.0193	0.0035
	4	0.0447	0.0193	0.0000	0.0000
	5	0.2443	0.0554	0.0017	0.0011
	Season	0.7297	0.0483	0.0130	0.0023

[1] Component 1 = 6/8-6/30, Component 2 = 7/1-8/1, Component 3 = 8/2-8/25, Component 4 = 8/26-9/5, Component 5 = 9/6-10/5.

[2] Standard Error.

Table 7. Estimated catch and harvest of rainbow trout, sockeye salmon, Arctic char, and Arctic grayling, for the sport fishery in the Tazimina River, 1988.

		Catch				Harvest				
Species	Temporal Component[1]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Percent Harvested
Rainbow Trout	1	332	24	286 - 378	14.0%	3	0	2 - 4	26.1%	0.9%
	2	475	25	426 - 524	10.3%	3	1	2 - 4	32.7%	0.6%
	3	764	56	655 - 873	14.2%	1	0	0 - 2	78.4%	0.1%
	4	5	0	5 - 5	0.0%	0		0 - 0	0.0%	0.0%
	5	242	16	210 - 274	13.0%	2	0	2 - 2	0.0%	0.8%
	Season	1,818	67	1,686 - 1,950	7.2%	9	1	8 - 10	16.4%	0.5%
Sockeye Salmon	1	0		0 - 0		0		0 - 0		
	2	2,810	148	2,521 - 3,099	10.3%	924	53	821 - 1,027	11.2%	32.9%
	3	765	80	608 - 922	20.6%	94	14	67 - 121	28.6%	12.3%
	4	74	2	71 - 77	4.5%	0		0 - 0	0.0%	
	5	30	1	28 - 32	7.8%	3	1	1 - 5	78.4%	10.0%
	Season	3,679	168	3,350 - 4,008	8.9%	1,021	54	914 - 1,128	10.5%	27.8%
Arctic char	1	4	1	3 - 5	24.5%	2	0	2 - 2	19.6%	50.0%
	2	4	1	2 - 6	53.9%	0		0 - 0	0.0%	
	3	129	16	97 - 161	24.9%	5	1	2 - 8	51.0%	3.9%
	4	9	1	7 - 11	21.8%	2	0	2 - 2	0.0%	22.2%
	5	189	15	159 - 219	15.7%	10	0	9 - 11	7.8%	5.3%
	Season	335	22	291 - 379	13.1%	19	1	16 - 22	14.2%	5.7%

-Continued-

Table 7. Estimated catch and harvest of rainbow trout, sockeye salmon, Arctic char, and Arctic grayling, for the sport fishery in the Tazimina River, 1988 (continued).

		Catch				Harvest				
Species	Temporal Component[1]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Number	SE[2]	95% C. I.[3]	Rel. Pre.[4]	Percent Harvested
Arctic Grayling	1	1,869	74	1,725 - 2,013	7.7%	19	1	16 - 22	14.4%	1.0%
	2	2,290	201	1,897 - 2,683	17.2%	40	5	31 - 49	23.0%	1.7%
	3	790	60	673 - 907	14.8%	29	5	20 - 38	32.4%	3.7%
	4	11	0	11 - 11	0.0%	0		0 - 0		0.0%
	5	155	7	141 - 169	9.0%	1	0	1 - 1	0.0%	0.6%
	Season	5,115	222	4,680 - 5,550	8.5%	89	7	76 - 102	15.1%	1.7%

[1] Component 1 = 6/8-6/30, Component 2 = 7/1-8/1, Component 3 = 8/2-8/25, Component 4 = 8/26-9/5, Component 5 = 9/6-10/5.

[2] Standard Error.

[3] Confidence Interval.

[4] Relative precision of 95% confidence interval.

Table 8. Summary of mark and recapture of rainbow trout tagged in the Tazimina River in 1987 and 1988.

Year Tagged	Number of Tags Deployed	Recapture Events 1987	1988	Total	Total Fish Caught
1987	84	2		2	86
1988	172	12[1]	20[2]	32	204
Total	256	14	20	34	290

[1] One fish were recaptured twice.

[2] One fish was recaptured twice, and one fish was found dead.

fish were obtained from two sources: anglers on the Tazimina River (including ADF&G personnel), Newhalen River, and on Six Mile Lake, and subsistence fishermen who fish in the Newhalen River and Six Mile Lake.

Of 84 fish tagged during 1987, two were recaptured during the fall of 1987 (Table 8). One of the recaptures came from the Newhalen River and one from Six Mile Lake (Table 9, Appendix Table 11). During 1988, an additional 11 fish tagged during 1987 were recaptured. One fish was recaptured twice, for a total of 12 recapture events during 1988 of fish tagged in 1987. All 12 of the fish that were recaptured during 1988 were observed during the course of the creel survey on the Tazimina River.

During the 1988 season, an additional 172 rainbow trout were tagged and released. To date, 19 of these fish have been recaptured, including one tagged fish found dead. One fish was recaptured twice for a total of 20 recapture events from the fish tagged during 1988. Seventeen recapture events from fish tagged during 1988 occurred during the creel survey of the Tazimina River. Two recapture events occurred in the Newhalen River during the fall, and one of the recapture events occurred in Six Mile Lake during October.

The mean length and weight, by age group and gear type, for rainbow trout captured using hook and line gear (110 fish) during 1987 and hook and line (218 fish), beach seine (18 fish), and minnow trap (370 fish) gear during 1988 are presented in Tables 10 and 11. Age five and six fish predominate fish caught with hook and line gear in the sport fishery during 1987 and 1988. The mean length of rainbow trout caught in the sport fishery decreased from 1987 to 1988; from 459 mm (SE = 12.6) to 392 mm (SE = 8.6). This shift can be seen in the length and age frequency distributions (Figures 6 and 7, respectively). A regression of length and weight data from fish sampled by hook and line resulted in the curve found in Figure 8. Mean lengths for each age class with 95% confidence intervals are plotted in Figure 9 for all rainbow trout sampled.

Due to the relatively low harvest of rainbow trout from the Tazimina River season, only eight rainbow trout were sampled from the sport harvest during 1987 and 1988. The sample obtained had a mean length of 591 mm (SE = 24.4), and a mean weight of 2,304 gm (SE = 316.6). Ages were obtained from only 3 fish, of which two were age 6 and one was age 7.

Samples of 140 and 461 Arctic grayling were captured during 1987 and 1988, respectively, using hook and line, and sampled for age, length, and weight statistics. Additional samples in 1988 included 76 Arctic grayling, including spawners, captured by hook and line in a spring sampling effort, and 18 Arctic grayling captured by beach seine. Mean length and mean weight by age group and gear type can be found in Tables 12 and 13. Age 4 is the predominant age class captured using hook and line gear during both 1987 and 1988 and age 5 is the predominant age class in the spring sample. The mean length of all Arctic grayling caught using hook and line gear decreased from 364 mm in 1987 to 336 mm in 1988. Length and age frequency distributions for the spring sample and sport fisheries were plotted in Figures 10 and 11, respectively. A regression analysis was run on weight vs. length data obtained

Table 9. Date and location of captures for recaptured rainbow trout tagged in the Tazimina River in 1987 and 1988.

	Original Capture		Recapture		
Tag Number	Date	Mile Number[1]	Date	Location	Mile Number
16149	09/07/87	3.3	12/07/87	Newhalen River	23.0
16219	09/28/87	2.0	11/10/87	Six Mile Lake	
16156	09/08/87	3.0	06/28/88	Tazimina River	3.2
16157	09/07/87	3.0	08/03/88	Tazimina River	3.5
16162	09/16/87	3.0	09/12/88	Tazimina River	3.3
16174	10/03/87	2.5	07/19/88	Tazimina River	1.8
16200	09/17/87	3.2	07/02/88	Tazimina River	1.2
16218	09/28/87	2.5	06/21/88	Tazimina River	1.0
			09/19/88	Tazimina River	5.2
16225	10/03/87	2.0	06/09/88	Tazimina River	1.0
16530	09/13/87	2.5	09/12/88	Tazimina River	3.3
16532	09/13/87	3.0	08/26/88	Tazimina River	6.0
16545			06/23/88	Tazimina River	2.8
16800	10/03/87	3.1	09/15/88	Tazimina River	3.5
02436	09/16/88	3.3	11/11/88	Newhalen River	19.0
89144	06/29/88	5.8	08/21/88	Tazimina River	5.3
			09/21/88	Tazimina River	3.3
89149	07/04/88	7.9	07/17/88	Tazimina River	8.2
89160	07/22/88	3.6	08/03/88	Tazimina River	3.5
89165	07/12/88	5.2	08/01/88	Tazimina River	3.5
89169	08/05/88	1.0	09/28/88	Tazimina River	3.6
89174	06/19/88	8.1	07/02/88	Tazimina River	8.2
89188	08/13/88	5.6	08/21/88	Tazimina River	5.3
89200	07/30/88	3.4	10/ /88	Six Mile Lake	Outlet
89201	07/27/88	3.6	08/03/88	Tazimina River	3.5
89205	07/19/88	4.6	09/14/88	Tazimina River	5.1
89206	07/18/88	8.7	08/18/88	Tazimina River	8.7
89209	07/15/88	3.7	07/22/88	Tazimina River	3.7
89210	07/15/88	3.7	08/03/88	Tazimina River	3.5
89277[2]	09/11/88	5.1	09/27/88	Tazimina River	1.0
89291	08/15/88	5.2	09/16/88	Tazimina River	3.3
89302	08/17/88	3.7	09/19/88	Tazimina River	3.0
89561			09/16/88		
89573	09/17/88	3.3	/88	Newhalen River	

[1] All fish tagged were originally tagged in the Tazimina River.

[2] Fish found dead 9/27/88.

Table 10. Mean length (mm) and weight (gm) of rainbow trout by age group in the Tazimina River, 1987[1].

	Age Group								
	Unknown	2	3	4	5	6	7	8	Total
Percent by Age		1.4	8.2	17.8	19.2	23.3	16.4	13.7	100.0
Mean Length	504	180	278	327	376	448	566	600	459
Std Err	21.46		31.37	10.88	19.70	16.12	21.73	15.84	12.59
Sample Size	37	1	6	13	14	17	12	10	110
Mean Weight	2202		335	502	780	1401	2136	2332	1661
Std Err	165.13		115.00	41.25	113.25	123.05	207.00	190.03	102.55
Sample Size	24	0	2	10	8	14	11	10	79

[1] Sampling Period: 7/28-10/4.

Table 11. Mean length (mm) and weight (gm) of rainbow trout by age group in the Tazimina River, 1988.

	Age Group											
	Unknown	0	1	2	3	4	5	6	7	8	9	Total
Hook & Line[1]												
Percent by Age				9.1	12.0	19.0	25.4	17.6	12.0	4.2	0.7	100.0
Mean Length	400			186	265	321	403	479	524	586	624	392
Std Err	14.70			14.94	12.25	11.11	12.11	14.24	14.49	22.24		8.61
Sample Size	76			13	17	27	36	25	17	6	1	218
Mean Weight	1129			197	216	411	849	1424	1936	2890	2450	1097
Std Err	114.38			46.67	17.91	44.03	75.43	131.44	209.23	403.55		65.78
Sample Size	65			3	8	23	34	25	16	5	1	180
Beach Seine[2]												
Percent by Age					25.0	50.0	25.0					100.0
Mean Length	339				275	307	378					329
Std Err	14.58				20.50	6.47	54.00					11.41
Sample Size	10				2	4	2					18
Mean Weight	556				380	400	813					539
Std Err	81.38					27.00	387.50					65.31
Sample Size	10				1	4	2					17
Minnow Trap[3]												
Percent by Age		27.0	53.9	14.2	4.9							100.0
Mean Length	90	52	91	144	170							92
Std Err	32.34	1.09	0.90	2.80	4.76							1.88
Sample Size	3	99	198	52	18							370

[1] Sampling Period: 6/9-10/3.

[2] Sampling Period: 9/15, 9/16.

[3] Sampling Period: 7/6-9/15.

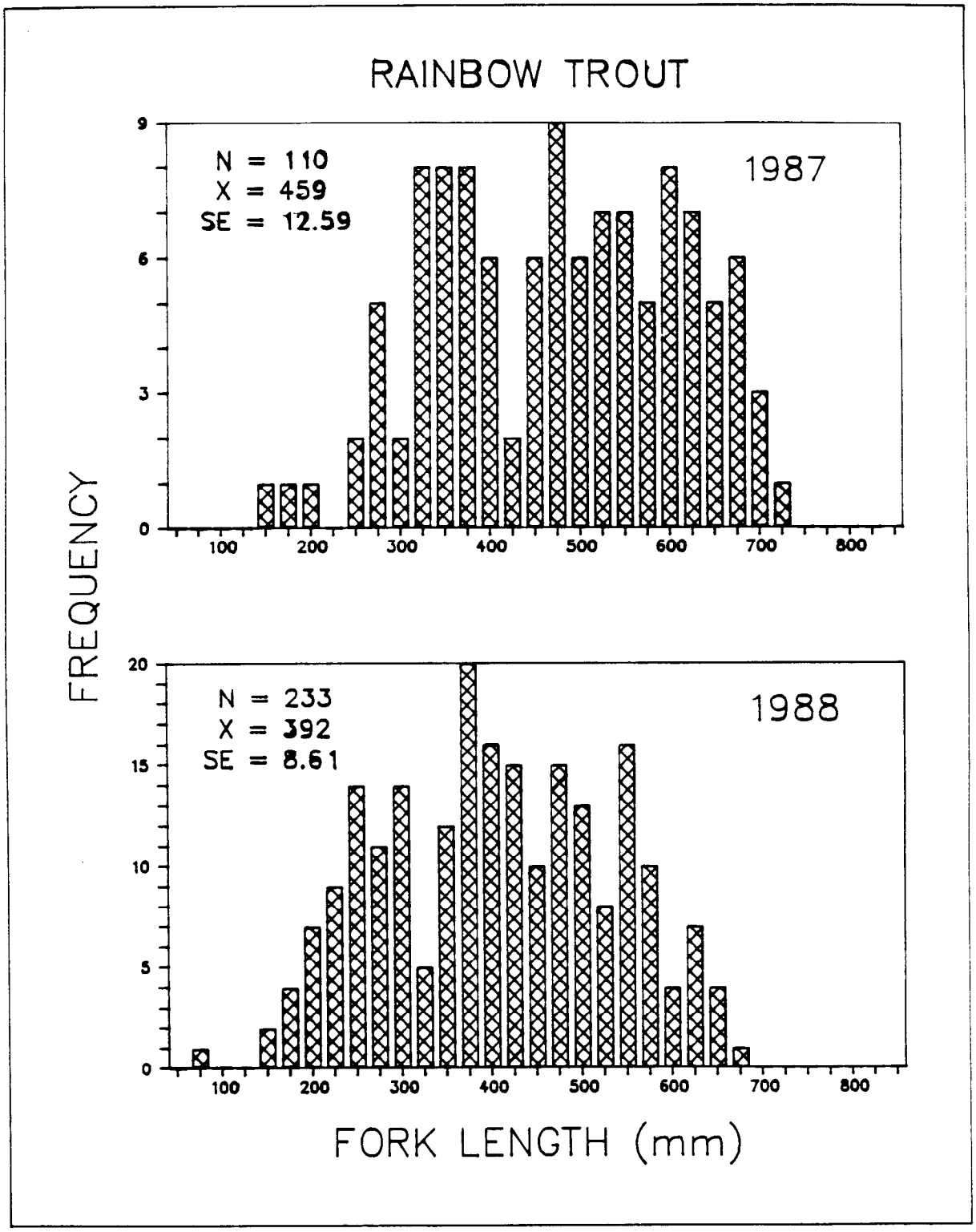

Figure 6. Length frequency distributions for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988.

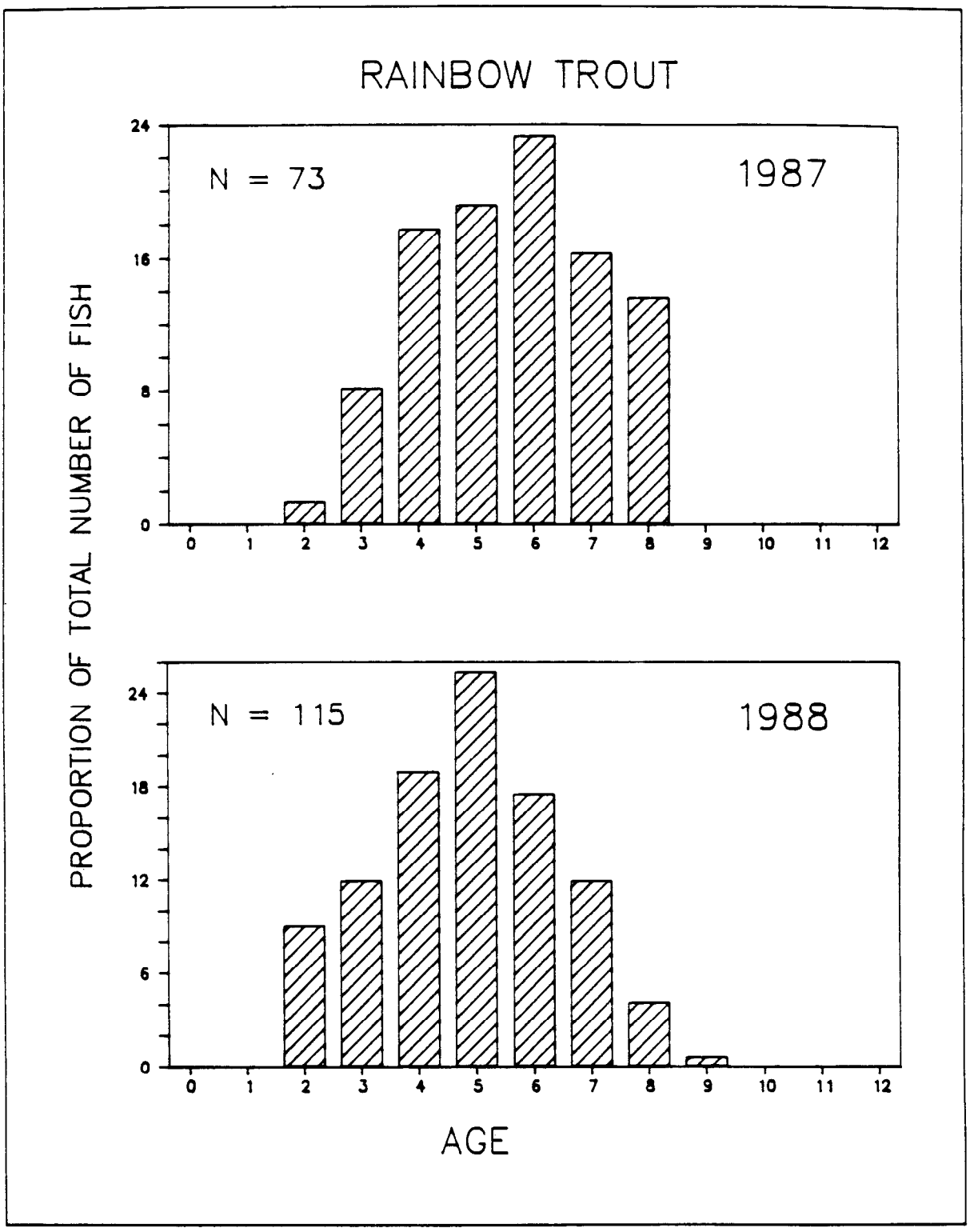

Figure 7. Age frequency distributions for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988.

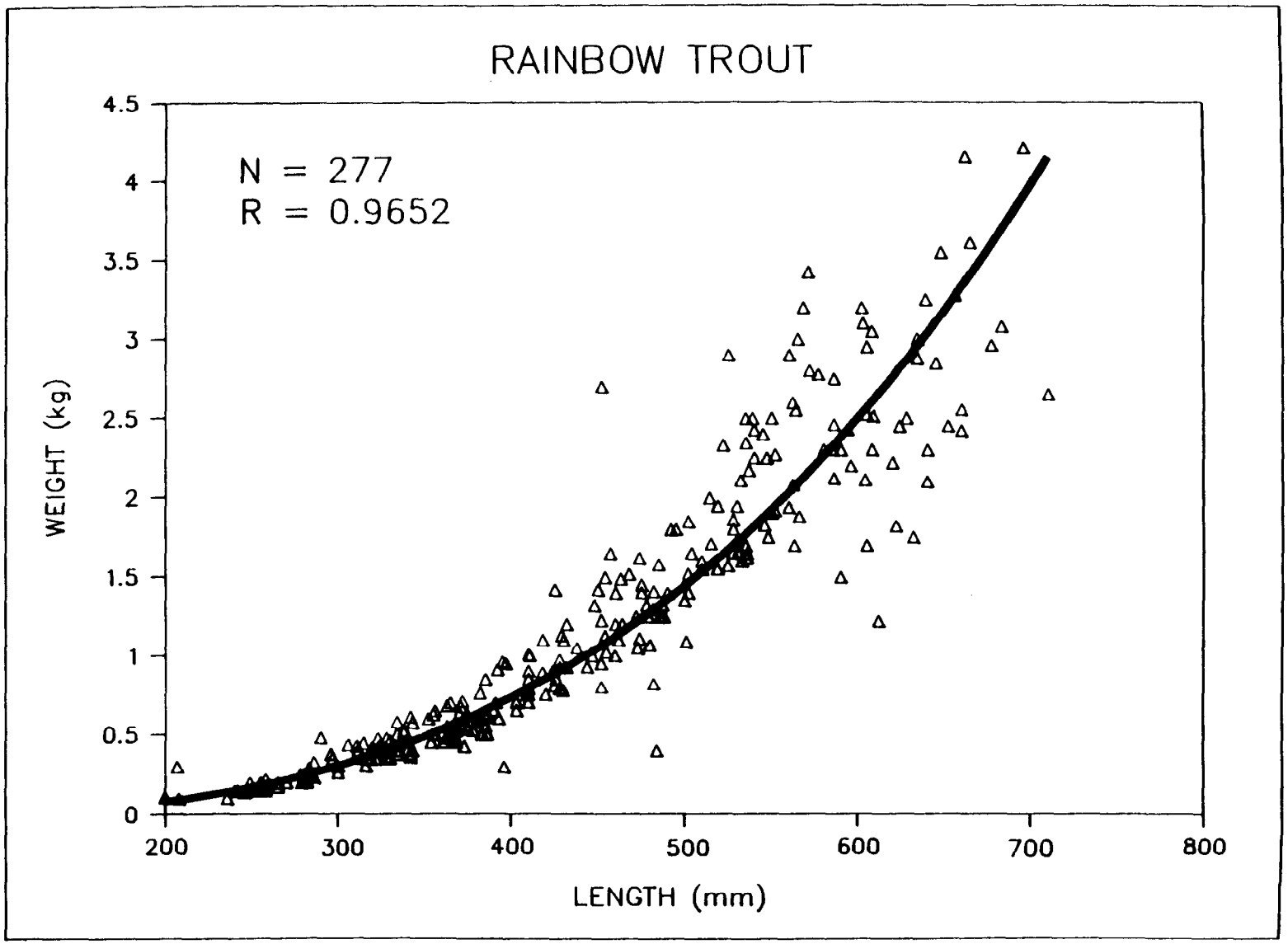

Figure 8. Length and weight relationship for rainbow trout sampled from the sport fishery in the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988.

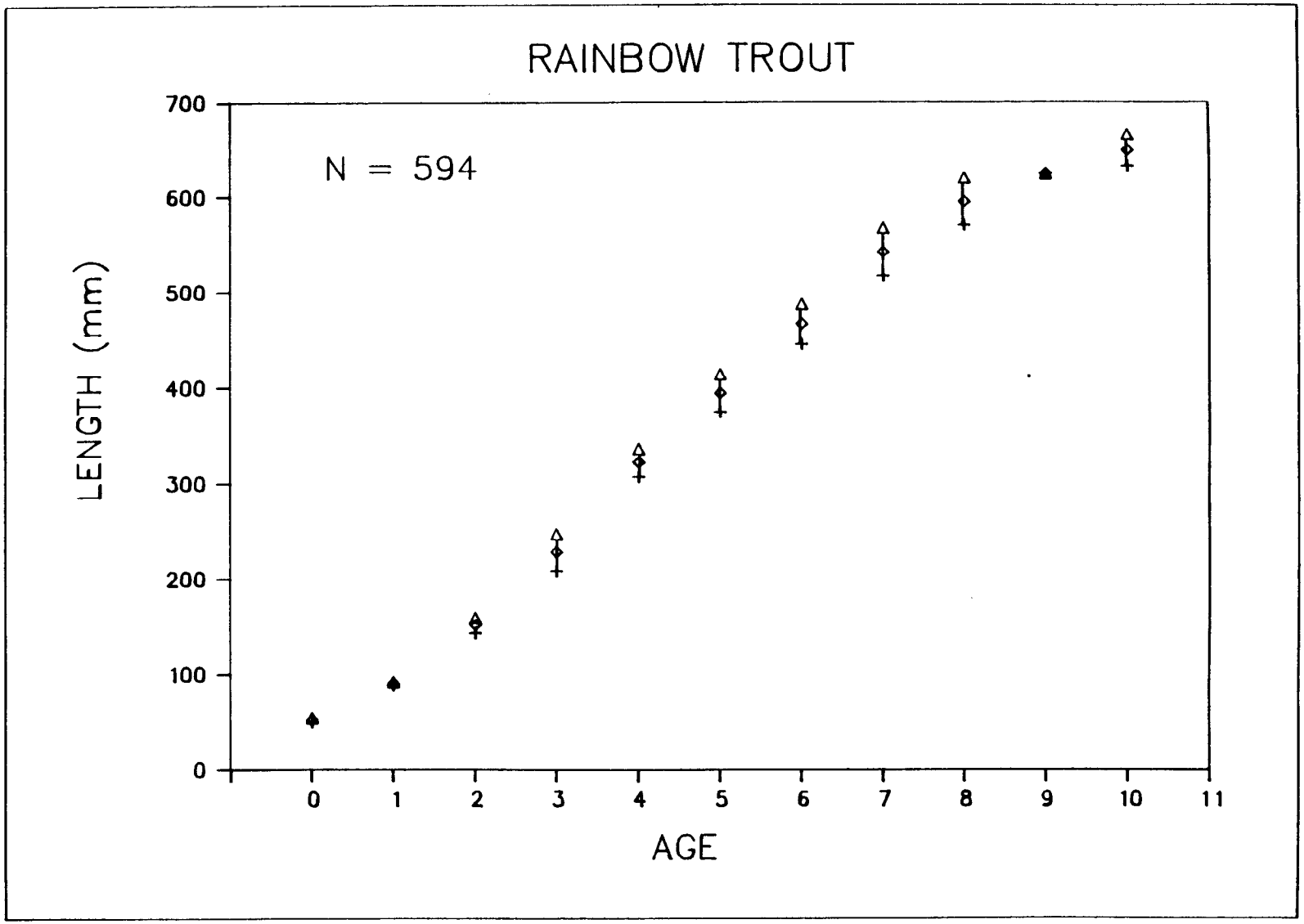

Figure 9. Mean length by age group (95% confidence interval) for rainbow trout sampled from the Tazimina River, 28 July-4 October 1987, and 9 June-3 October 1988.

Table 12. Mean length (mm) and weight (gm) of Arctic grayling by age group in the Tazimina River, 1987[1].

	Age Group									
	Unknown	2	3	4	5	6	7	8	9	Total
Percent by Age		1.5	21.8	24.8	13.5	18.1	13.5	6.0	0.8	100.0
Mean Length	386	207	280	339	385	412	430	436	445	364
Std Err	30.12	7.50	7.65	5.80	6.95	5.36	7.01	7.98		5.73
Sample Size	7	2	29	33	18	24	18	8	1	140
Mean Weight	680	100	269	411	609	732	737	752	760	535
Std Err	450.00		29.58	29.75	44.83	46.37	75.51	126.32		31.13
Sample Size	2	1	15	15	10	11	10	4	1	69

[1] Sampling Period: 7/28 - 9/30.

Table 13. Mean length (mm) and weight (gm) of Arctic grayling by age group in the Tazimina River, 1988.

	Age Group											
	Unknown	1	2	3	4	5	6	7	8	9	11	Total
Hook and Line, Spring Sample[1]												
Percent by Age					20.8	26.4	16.7	19.4	11.1	4.2	1.4	100.0
Mean Length	387				316	351	389	397	415	449	437	372
Std Err	27.27				10.69	5.82	5.16	5.97	7.01	16.71		5.38
Sample Size	4				15	19	12	14	8	3	1	76
Beach Seine[2]												
Percent by Age				17.6	29.4	23.5	5.9	11.8	11.8			100.0
Mean Length	290			306	332	351	397	419	417			352
Std Err				21.34	3.72	6.69		9.00	7.50			10.78
Sample Size	1			3	5	4	1	2	2			18
Mean Weight	300			375	445	575	700	777	887			565
Std Err				125.00	16.58	44.49		27.50	37.50			46.82
Sample Size	1			2	5	4	1	2	2			17
Hook and Line, Sport Catch[3]												
Percent by Age		0.2	5.4	20.7	33.8	25.4	10.9	2.0	1.6			100.0
Mean Length	379	160	222	283	327	375	398	416	445			336
Std Err	16.61		5.36	3.71	3.10	3.28	4.44	4.25	6.91			2.84
Sample Size	12	1	24	93	152	114	49	9	7			461
Mean Weight	611		201	264	431	627	729	740	1060			491
Std Err	109.94		47.30	12.31	12.99	13.50	29.55	22.73	94.07			13.35
Sample Size	8	0	9	59	94	65	36	4	4			279

[1] Sampling Period: 5/19, 5/20.

[2] Sampling Period: 9/13-9/16.

[3] Sampling Period: 6/7-10/5.

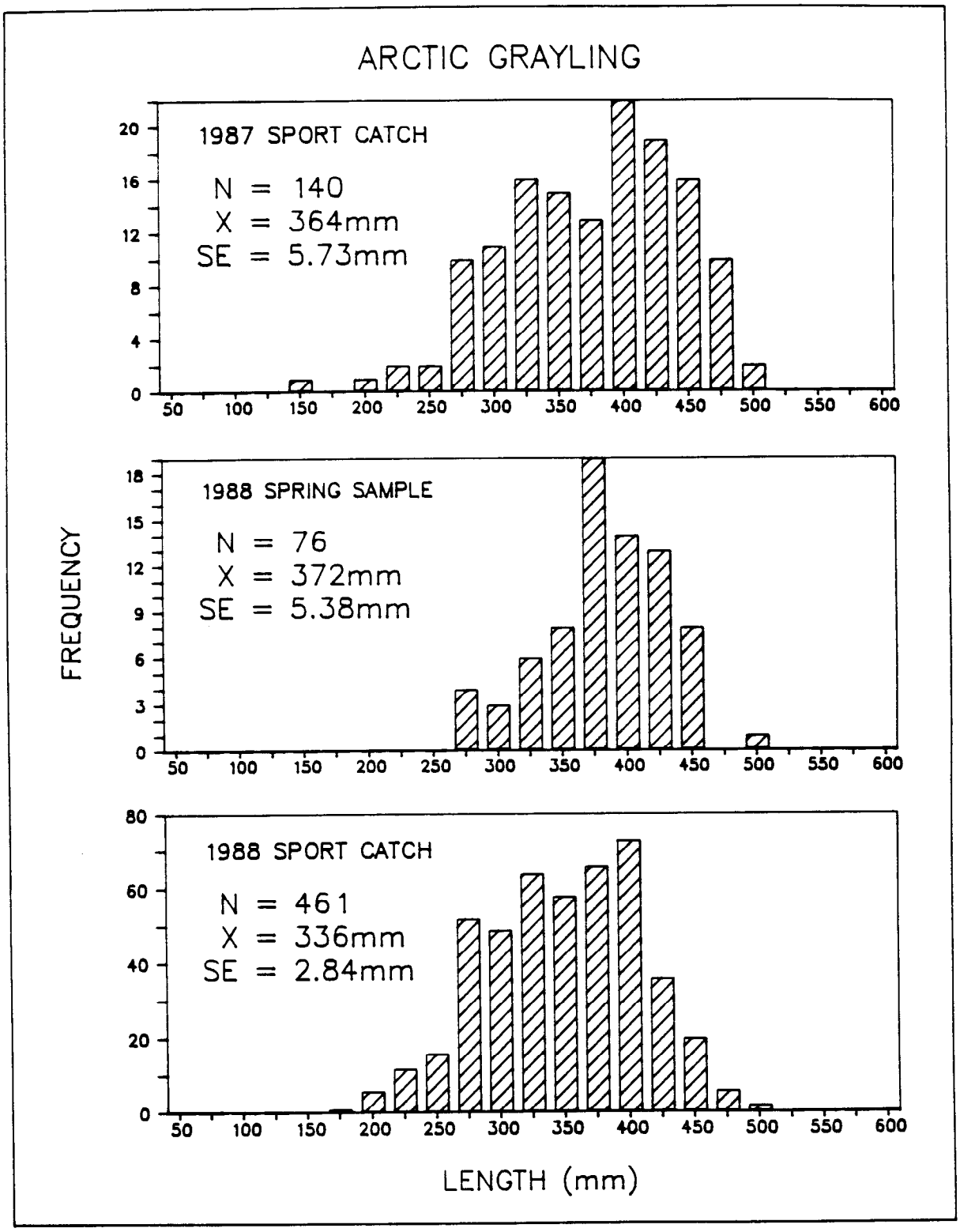

Figure 10. Length frequency distributions for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River.

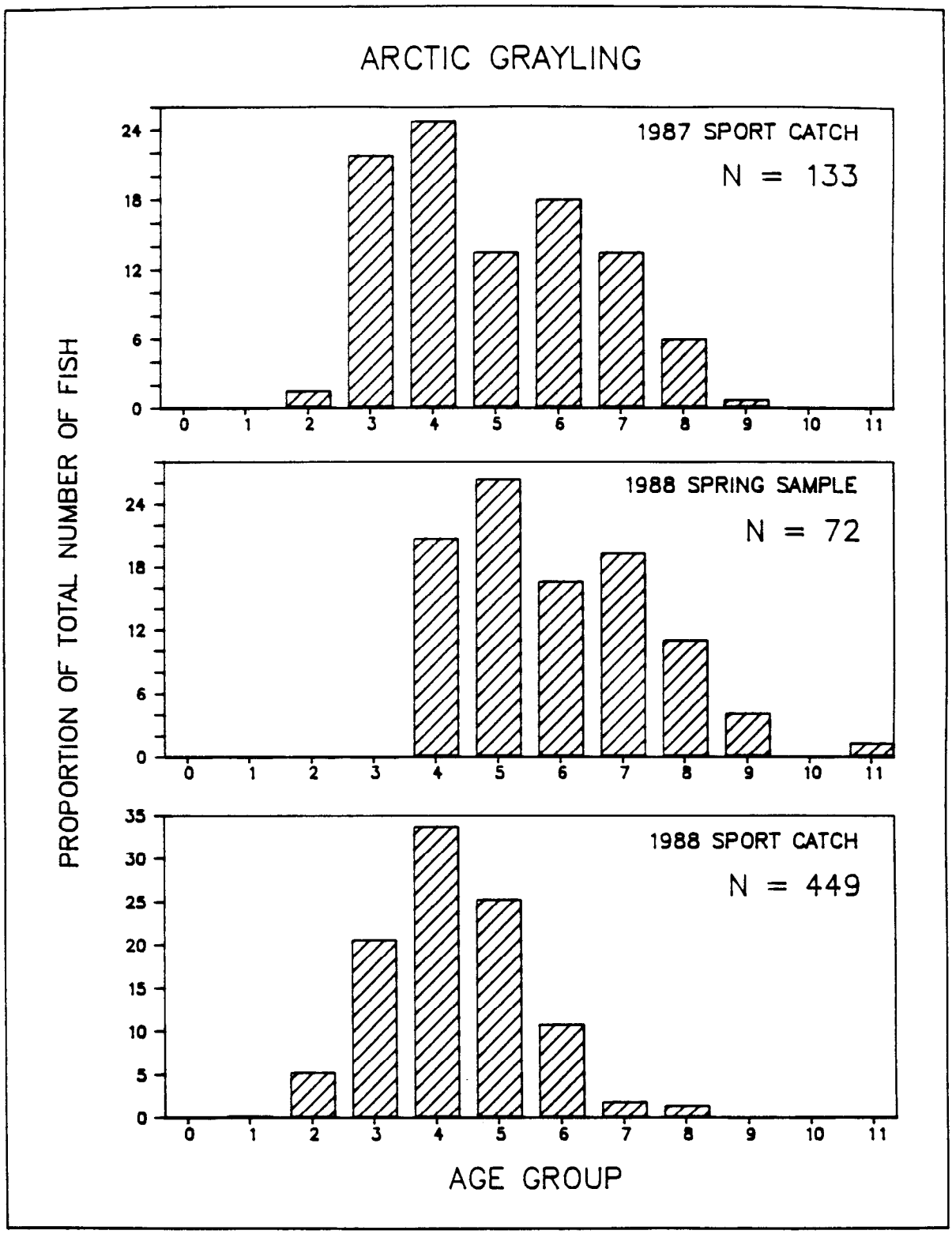

Figure 11. Age frequency distributions for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River.

using hook and line gear and the results plotted in Figure 12. Mean length by age group, with 95% confidence intervals, is presented in Figure 13.

Samples of 30 and 112 Arctic char were obtained during 1987 and 1988, respectively, using hook and line gear. The mean length and weight of Arctic char in 1987 were 478 mm (SE=11.1) and 1,372 gm (SE=94.2), respectively. The mean length and weight in 1988 were 499 mm (SE=6.5) and 1,641 (SE=62.5), respectively. Length frequency distributions for the 1987 and 1988 samples can be found in Figure 14.

During 1988, 159 sockeye salmon were sampled from the sport harvest. Results of percent by age class, mean length and weight for each age class, and mean length and weight can be found in Table 14. Age 1.3 fish were predominant in the sport harvest.

Sockeye Salmon Spawning Ground Survey

One hundred ninety two redds of spawning sockeye salmon were measured for water depth, water velocity, and substrate in 1987 (Appendix Table 12). Sockeye spawning in the Tazimina River occurred at a mean water depth of 0.66 meters (SE=0.02), and a mean water velocity of 0.62 meters per second (SE=0.02) with most of the spawning activity occurring at a depth of 0.4 to 0.8 meters, and at a water velocity of 0.2 to 1.0 meters per second (Figure 15). Silt and rock (greater than 4 inches diameter) were the two least frequently used substrates (Appendix Table 12). Large gravel (0.5 to 1.0 inches diameter) was present in 82% of the redds surveyed, followed by sand, present in 61% of redds surveyed. Small gravel (less than 0.50 inches diameter) and cobble (1 to 4 inches diameter) were each present in 57% of the redds surveyed.

DISCUSSION

Recoveries of tagged rainbow trout suggest Tazimina River stocks migrate into Six Mile Lake and the upper portions of the Newhalen River. This suggests that an isolated stock in the proximity of Six Mile Lake exists separate from those of Lake Iliamna. To verify this, it is recommended that a follow-up radio telemetry project be conducted in the fall and winter months to more completely understand annual migration patterns.

Throughout the study, several issues arose among anglers, local residents, guides, and lodge owners regarding boat traffic on the Tazimina River. These issues are as follows:

1. There is a perceived safety hazard to users of different boat types, including non-powered rafts, imposed by large jet outboards and jet inboards.
2. There is an adverse impact on sockeye salmon reproduction associated with large jet outboards and jet inboards.
3. There is a general decrease in the aesthetic value of the remote angling experience imposed by large jet outboard and inboards on raft users.

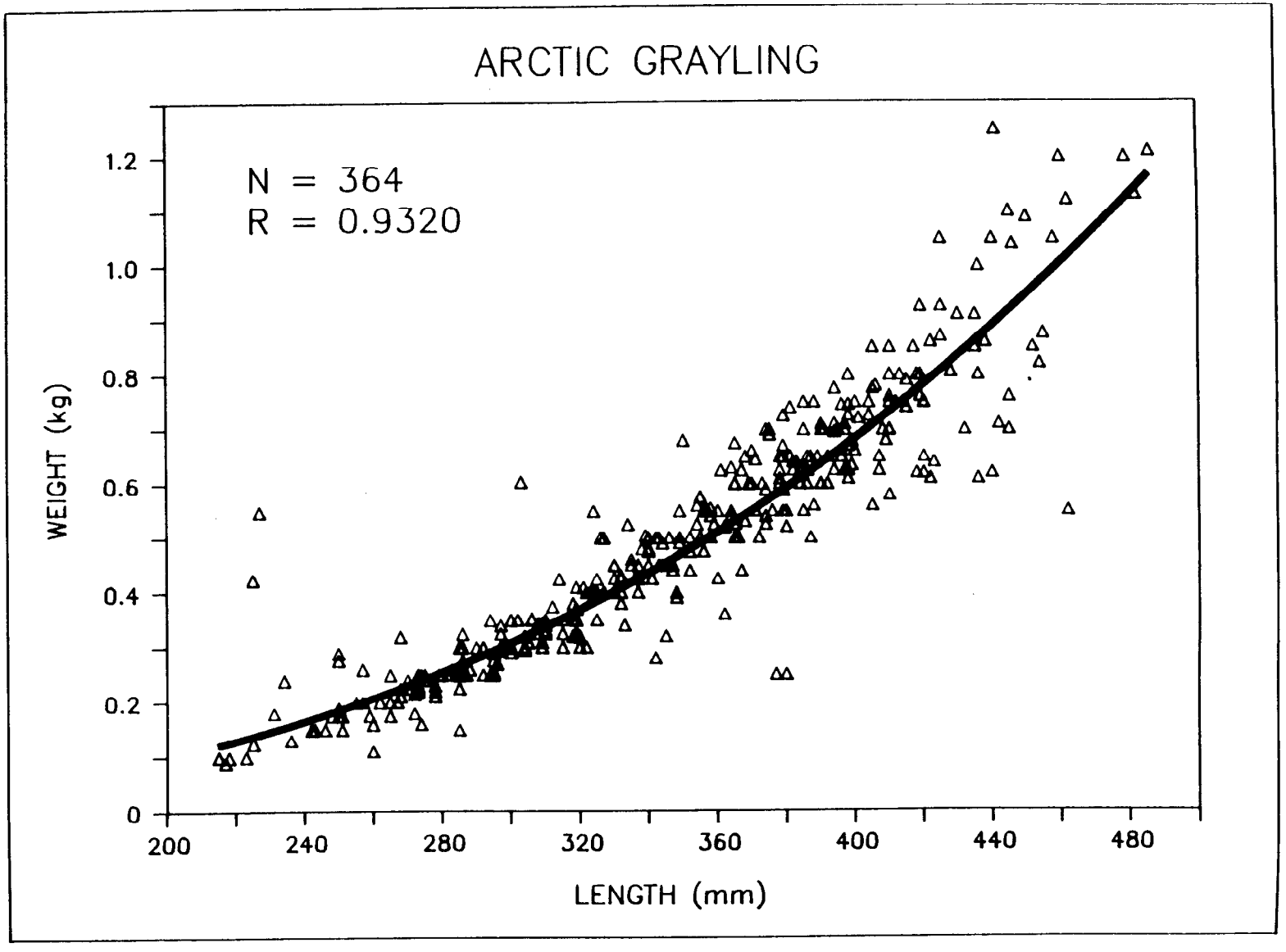

Figure 12. Length and weight relationship for Arctic grayling sampled from the 1987 sport catch (28 June-30 September), 1988 spring sample (19 and 20 May), and 1988 sport catch (7 June-5 October) in the Tazimina River.

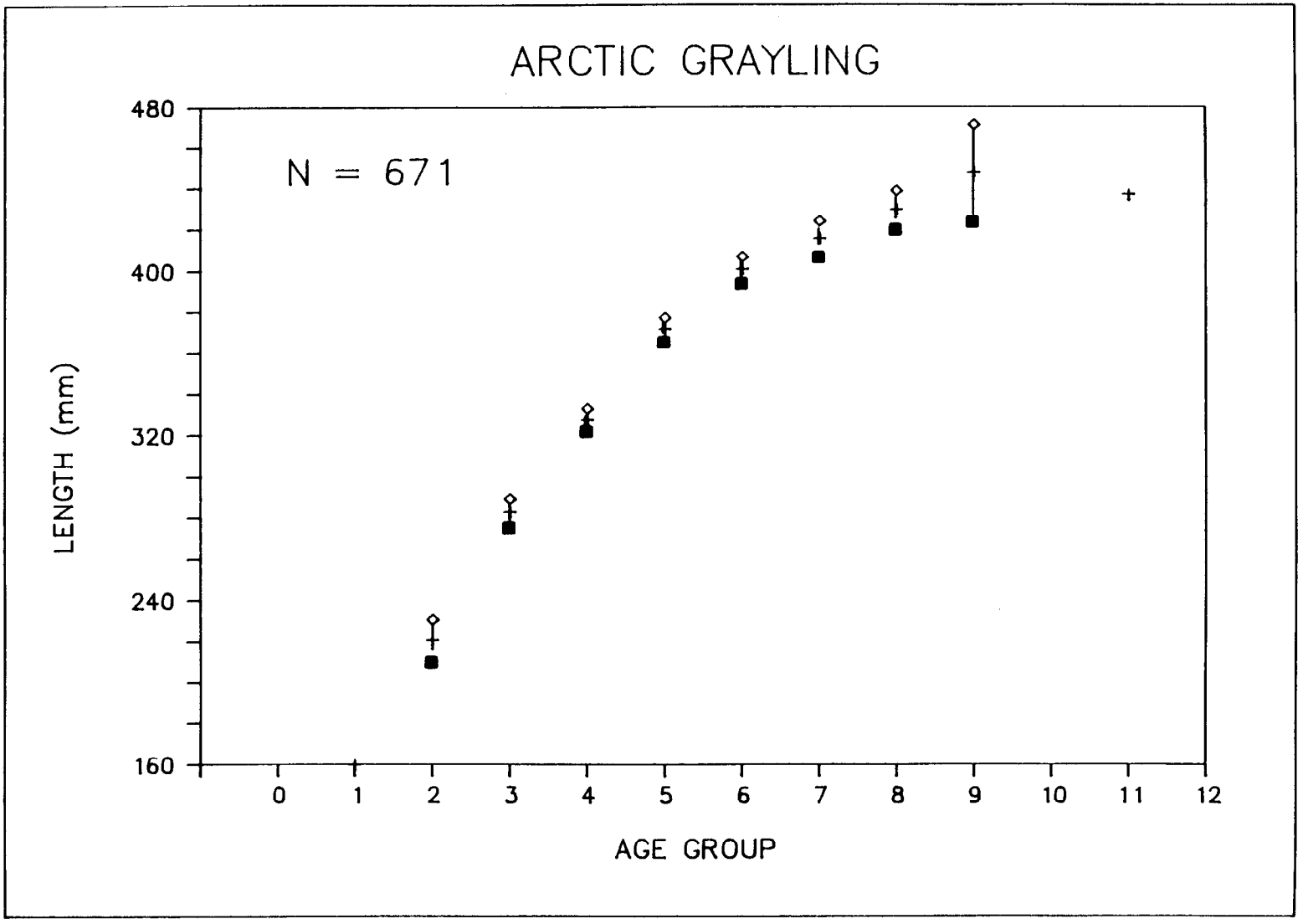

Figure 13. Mean length by age group (95% confidence interval) for all Arctic grayling sampled from the Tazimina River, 28 June-30 September 1987, and 19 May-5 October 1988.

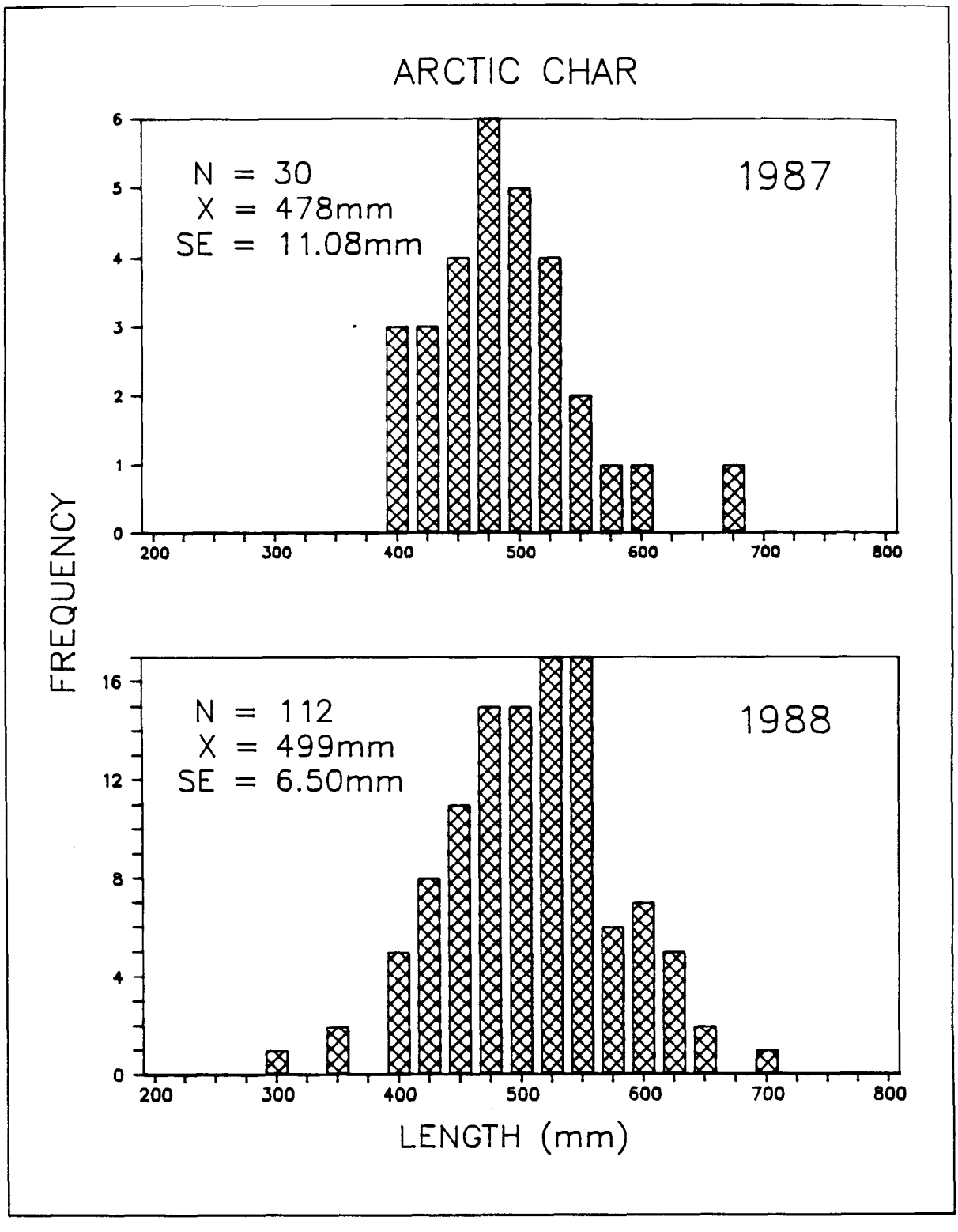

Figure 14. Length frequency distributions for Arctic char sampled from the sport fishery in the Tazimina River, 4 September-2 October 1987, and 16 August-4 October 1988.

Table 14. Mean length (mm) and weight (gm) of sockeye salmon by sex and age group, sampled from the sport harvest in the Tazimina River, 1988.

	Age Group						
	Unknown	1.2	1.3	1.4	2.1	2.2	Total
FEMALES							
Percent by Age	3.1	10.7	13.2		0.6	5.7	33.3
Mean Length	560	558	572		490	509	554
Std Err	19.50	10.15	11.89			25.41	7.88
Sample Size	5	17	21		1	9	53
Mean Weight	2517	3066	2965		1800	2381	2817
Std Err	216.76	159.36	86.97			143.89	81.11
Sample Size	5	14	17		1	8	45
MALES							
Percent by Age	3.8	17.0	28.9	0.6		16.4	66.7
Mean Length	589	575	595	596		536	575
Std Err	23.10	12.62	4.59			4.92	4.69
Sample Size	6	27	46	1		26	106
Mean Weight	3214	3118	3429	3700		2463	3098
Std Err	358.53	138.52	80.27			77.99	68.94
Sample Size	5	24	39	1		23	92
BOTH SEXES							
Percent by Age	6.9	27.7	42.1	0.6	0.6	22.0	100.0
Mean Length	576	568	587	596	490	529	568
Std Err	15.36	8.69	5.00			7.52	4.14
Sample Size	11	44	67	1	1	35	159
Mean Weight	2865	3099	3288	3700	1800	2442	3005
Std Err	229.13	104.10	67.81			67.82	54.43
Sample Size	10	38	56	1	1	31	137

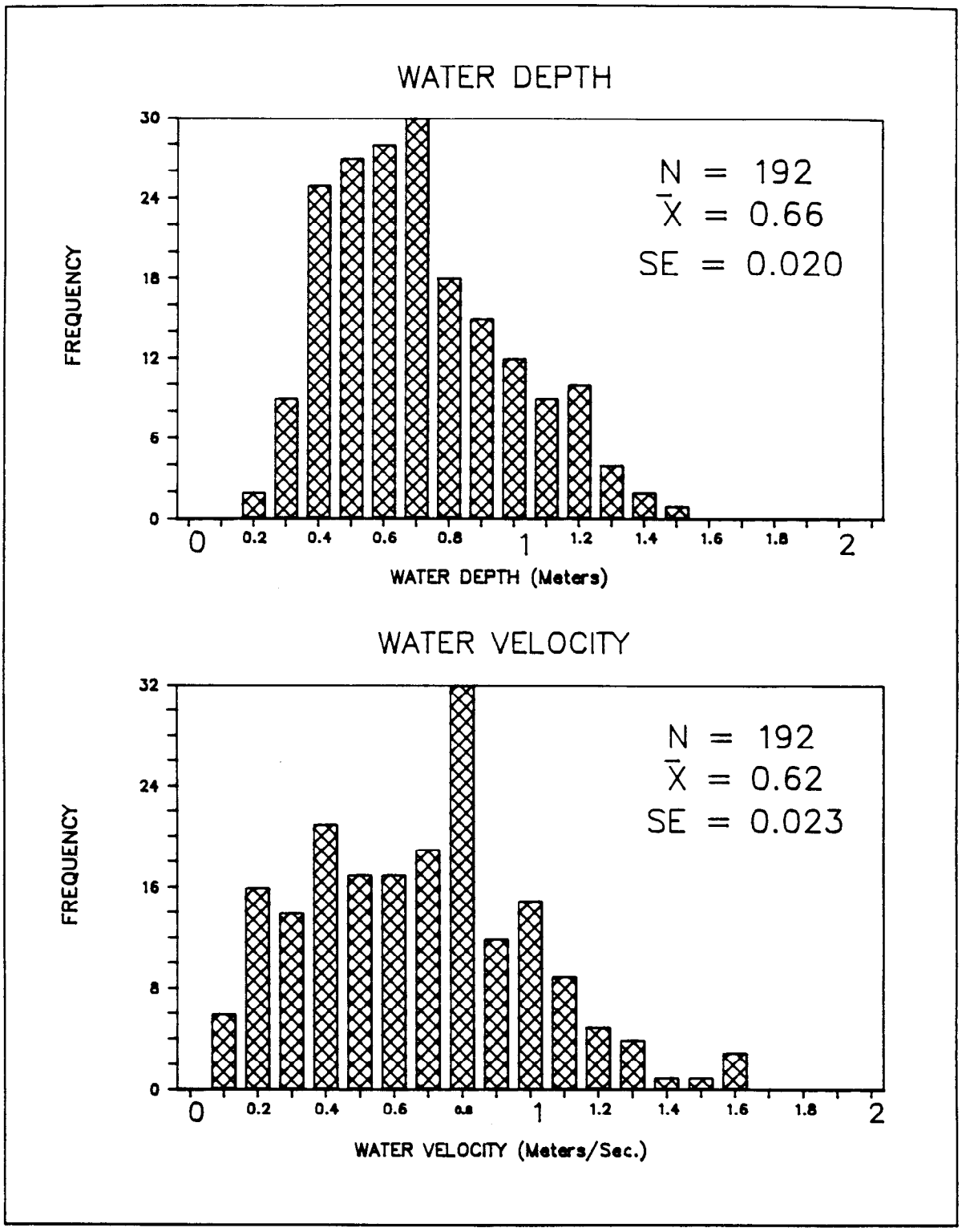

Figure 15. Frequency of water depths and water velocities over sockeye salmon redds in the Tazimina River, 1987.

The safety concern increases each year, as rivers throughout Bristol Bay become more crowded. The Tazimina River, given its narrow width in the lower sections, daily boat traffic, and the inherent characteristics of jet boats, has a high potential for an accident not only between powered boats, but also between powered and non-powered boats. Regarding the second issue, Sutherland and Ogle (1975) found that inboard jet boats traveling through salmon spawning areas can kill salmon eggs buried in the river bed. Results of their study revealed fatality rates as high as 40% on the 9th day of egg development and at the worst possible combination of water depth and boat speed. Existing data on the Tazimina River is not comparable to that of Sutherland and Ogle (1975), however it is possible that some level of egg fatality associated with jet boat use exists on the Tazimina River. Much more extensive field and laboratory investigations are recommended to determine the actual extent of egg fatality associated with jet boat traffic on the Tazimina River, if any exists, and whether it significantly impacts sockeye salmon production.

It appears that the Tazimina River currently contains healthy stocks of Arctic grayling, rainbow trout, Arctic char, and sockeye salmon. Biological sampling resulted in well balanced length and age compositions for all species sampled. Catch rates and catches indicate that the Tazimina River is a productive Arctic grayling and sockeye salmon sport fishery. Rainbow trout catch rates were seasonally sporadic, and productive at times. Given current levels of effort, catch, and harvest, existing regulations governing the sport fishery appear to be satisfactory. The Tazimina River fulfills all criteria listed in the Draft Bristol Bay Rainbow Trout Management Plan (ADF&G 1988b) for consideration as a special management area, and will be recommended as a candidate for a fly fishing only and/or a catch and release area.

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APPENDIX

Appendix Table 1. Daily boat traffic on the Tazimina River, 1987.

Date	Inboard Jet	Outboard Jet 20-40hp	Outboard Jet 41-60hp	Outboard Jet Total	Prop (0-40hp)	Raft	Total
08/25	1	0	0	0	2	5	8
08/26	1	0	1	1	0	1	3
08/27	1	0	1	1	2	0	4
08/28	1	0	2	2	1	0	4
08/29	0	0	0	0	0	0	0
08/30	0	0	1	1	1	2	4
08/31	1	0	0	0	1	4	6
09/01	0	0	0	0	0	0	0
09/02	0	0	2	2	1	0	3
09/03	2	0	0	0	0	0	2
09/04	0	0	0	0	1	1	2
09/05	0	0	0	0	0	0	0
09/06	0	0	0	0	1	0	1
09/07	0	0	0	0	1	0	1
09/08	0	1	0	1	0	1	2
09/09	0	0	1	1	2	0	3
09/10	0	0	0	0	1	0	1
09/11	0	0	0	0	0	0	0
09/12	0	1	0	1	0	1	2
09/13	0	1	0	1	0	0	1
09/14	0	1	0	1	0	1	2
09/15	0	0	0	0	0	1	1
09/16	2	1	0	1	0	0	3
09/17	0	0	0	0	0	0	0
09/18	0	1	0	1	0	0	1
09/19	0	2	0	2	0	0	2
09/20	0	1	0	1	0	1	2
09/21	0	1	0	1	0	1	2
09/22	0	0	0	0	0	0	0
09/23	0	1	0	1	0	2	3
09/24	0	0	0	0	1	0	1
09/25	0	0	0	0	0	1	1
09/26	0	1	0	1	0	0	1
09/27	0	0	0	0	0	0	0
09/28	0	0	0	0	0	0	0
09/29	0	2	0	2	0	0	2
09/30	0	0	0	0	0	0	0
10/01	0	0	0	0	0	1	1
10/02	0	1	0	1	0	0	1
10/03	0	0	0	0	0	1	1
10/04	0	0	1	1	0	0	1
Total	9	15	9	24	15	24	72
Mean	0.22	0.37	0.22	0.59	0.37	0.59	1.76
Std Err	0.08	0.09	0.08	0.10	0.10	0.17	0.27

Appendix Table 2. Daily boat traffic on the Tazimina River, 1988[1].

Date	Inboard Jet	Outboard Jet 20-40hp	Outboard Jet 41-60hp	Outboard Jet Total	Prop (0-40hp)	Raft	Total
06/08	0	3	0	3	0	2	5
06/09	1	1	1	2	0	0	3
06/10	0	0	0	0	0	0	0
06/11	0	2	0	2	0	0	2
06/12	0	0	0	0	0	1	1
06/13	1	2	0	2	1	0	4
06/14	2	1	0	1	0	1	4
06/15	0	1	0	1	3	0	4
06/16	2	2	0	2	0	3	7
06/17	1	1	0	1	0	1	3
06/18	0	2	0	2	2	0	4
06/19	2	1	0	1	3	0	6
06/20	1	0	0	0	1	0	2
06/21	4	1	0	1	0	1	6
06/22	2	1	0	1	1	0	4
06/23	1	1	1	2	0	0	3
06/24	1	2	2	4	1	0	6
06/25	0	2	2	4	0	0	4
06/26	3	5	0	5	0	2	10
06/27	1	1	2	3	0	0	4
06/28	1	1	0	1	0	0	2
06/29	1	2	0	2	0	1	4
06/30	1	0	1	1	0	2	4
07/01	1	1	2	3	1	1	6
07/02	2	2	0	2	1	0	5
07/03	0	1	0	1	0	2	3
07/04	2	0	0	0	1	2	5
07/05	1	0	0	0	3	2	6
07/06	2	1	1	2	1	4	9
07/07	1	2	0	2	2	0	5
07/08	2	0	0	0	1	0	3
07/09	2	2	2	4	0	0	6
07/10	2	1	0	1	2	0	5
07/11	1	2	1	3	2	0	6
07/12	2	3	0	3	1	2	8
07/13	2	0	1	1	0	3	6
07/14	0	0	1	1	1	2	4
07/15	1	1	1	2	6	3	12
07/16	4	3	0	3	1	3	11
07/17	3	3	0	3	2	2	10
07/18	0	2	0	2	0	7	9
07/19	2	2	0	2	0	2	6
07/20	1	2	0	2	1	2	6
07/21	2	2	2	4	0	0	6
07/22	4	1	2	3	3	0	10
07/23	1	1	2	3	4	2	10
07/24	1	2	2	4	4	1	10
07/25	1	1	0	1	3	2	7
07/26	1	2	2	4	6	3	14
07/27	2	1	0	1	3	2	8
07/28	1	2	0	2	2	3	8
07/29							
07/30	3	1	3	4	2	2	11
07/31	2	1	0	1	1	4	8
08/01	2	1	0	1	0	4	7
08/02	3	2	1	3	1	3	10

-Continued-

Appendix Table 2. Daily boat traffic on the Tazimina River, 1988[1] (continued).

Date	Inboard Jet	Outboard Jet 20-40hp	Outboard Jet 41-60hp	Outboard Jet Total	Prop (0-40hp)	Raft	Total
08/03	1	0	0	0	0	0	1
08/04	2	1	3	4	0	2	8
08/05	1	2	2	4	0	2	7
08/06	2	1	2	3	0	1	6
08/07	1	1	1	2	4	3	10
08/08	0	0	0	0	0	2	2
08/09	0	2	1	3	0	1	4
08/10	5	1	0	1	0	0	6
08/11	1	1	2	3	0	0	4
08/12	1	1	0	1	1	1	4
08/13	1	1	0	1	0	0	2
08/14	1	0	0	0	0	2	3
08/15	1	0	0	0	1	3	5
08/16	0	1	0	1	0	2	3
08/17	1	3	3	6	0	0	7
08/18	0	2	0	2	4	2	8
08/19	1	1	0	1	1	0	3
08/20	2	2	2	4	1	0	7
08/21	0	0	1	1	3	2	6
08/22	1	0	0	0	0	2	3
08/23	0	2	0	2	2	0	4
08/24	1	1	0	1	2	0	4
08/25	2	2	0	2	1	2	7
08/26	0	0	0	0	1	4	5
08/27	1	0	1	1	0	0	2
08/28	0	0	0	0	0	0	0
08/29	2	1	0	1	0	0	3
08/30	0	1	0	1	0	1	2
08/31	0	0	0	0	1	0	1
09/01	1	1	0	1	0	2	4
09/02	1	2	0	2	1	0	4
09/03	0	0	0	0	2	0	2
09/04	0	0	0	0	0	1	1
09/05	2	1	0	1	0	0	3
09/06	0	3	0	3	0	0	3
09/07	0	0	0	0	1	0	1
09/08	0	2	0	2	1	0	3
09/09	0	0	0	0	1	0	1
09/10	0	1	0	1	0	0	1
09/11	0	1	0	1	0	0	1
09/12	2	1	0	1	0	0	3
09/13	0	2	0	2	1	0	3
09/14	0	2	0	2	0	0	2
09/15	0	2	0	2	0	0	2
09/16	3	2	0	2	0	0	5
09/17	1	0	0	0	0	0	1
09/18	1	0	0	0	0	0	1
09/19	2	2	0	2	0	0	4
09/20	2	1	0	1	0	0	3
09/21	1	0	0	0	0	0	1
09/22	0	1	0	1	0	0	1
09/23	1	1	0	1	0	0	2
09/24	0	0	0	0	0	0	0
09/25	0	0	0	0	0	0	0
09/26	1	0	0	0	0	0	1
09/27	0	0	0	0	0	0	0

-Continued-

Appendix Table 2. Daily boat traffic on the Tazimina River, 1988[1] (continued).

Date	Inboard Jet	Outboard Jet 20-40hp	Outboard Jet 41-60hp	Outboard Jet Total	Prop (0-40hp)	Raft	Total
09/28	0	1	0	1	0	0	1
09/29	0	1	0	1	0	0	1
09/30	0	1	0	1	0	0	1
10/01	0	1	0	1	0	0	1
10/02	0	0	0	0	0	0	0
10/03	0	0	0	0	0	0	0
10/04	0	0	0	0	0	0	0
10/05	0	0	0	0	0	0	0
Total	125	133	50	183	96	112	516
Mean	1.05	1.12	0.42	1.54	0.81	0.94	4.34
Std Er	0.10	0.09	0.07	0.12	0.12	0.12	0.28

[1] Results may be considered accurate with the exception of one survey day (29 July) missed.

Appendix Table 3. Summary of daily angler effort and catch rates (CPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews of anglers exiting the Tazimina River via the river mouth access, 1987.

Date	Wd/We[1]	Sample Size	Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
			Mean	SE[2]	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE
801	We	16	3.000	0.270	0.130	0.085	0.042	9.130	2.773	3.042	0.000	0.000	0.000	1.560	0.899	0.521
802	We	9	3.900	0.860	0.670	0.373	0.173	9.330	3.064	2.424	0.000	0.000	0.000	0.110	0.111	0.029
803	Wd	11	4.600	0.670	0.000	0.000	0.000	8.090	1.492	1.745	0.000	0.000	0.000	0.450	0.455	0.098
805	Wd	9	3.700	0.670	0.000	0.000	0.000	0.440	0.176	0.121	0.000	0.000	0.000	2.670	1.518	0.727
808	We	6	4.000	0.000	0.000	0.000	0.000	5.500	1.408	1.375	0.000	0.000	0.000	0.500	0.342	0.125
811	Wd	4	2.300	0.140	1.750	1.750	0.778	3.750	0.854	1.667	0.000	0.000	0.000	0.000	0.000	0.000
812	Wd	21	5.800	0.570	0.480	0.164	0.083	8.380	1.785	1.455	0.000	0.000	0.000	3.860	1.072	0.669
815	We	10	5.000	0.660	0.800	0.291	0.160	5.400	1.249	1.080	0.000	0.000	0.000	1.000	0.298	0.200
816	We	10	6.800	0.080	2.700	0.943	0.397	3.900	1.178	0.574	0.300	0.213	0.044	2.700	0.907	0.397
817	Wd	8	4.100	0.750	1.750	0.620	0.431	1.000	0.327	0.246	0.500	0.267	0.123	4.000	1.927	0.985
818	Wd	11	4.400	0.900	2.000	1.335	0.458	1.360	0.592	0.313	0.640	0.472	0.146	3.730	2.261	0.854
825	Wd	24	4.900	0.380	1.080	0.306	0.223	1.710	0.415	0.352	1.380	0.345	0.283	1.080	0.318	0.223
826	Wd	5	6.600	0.600	1.400	0.678	0.212	3.000	1.140	0.455	1.800	0.800	0.273	1.600	0.510	0.242
831	Wd	11	3.500	0.380	1.270	0.407	0.368	5.000	1.949	1.447	0.730	0.469	0.211	0.640	0.388	0.184
902	Wd	4	6.800	0.250	0.250	0.250	0.037	0.000	0.000	0.000	0.000	0.000	0.000	1.500	0.500	0.222
903	Wd	3	8.000	0.000	0.670	0.333	0.083	3.330	0.333	0.417	2.000	1.155	0.250	0.670	0.667	0.083
904	Wd	3	4.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.222
908	Wd	4	5.900	1.460	0.000	0.000	0.000	2.750	0.479	0.468	0.500	0.289	0.085	0.000	0.000	0.000
913	We	2	9.000	0.000	4.500	3.500	0.500	0.500	0.500	0.056	2.500	0.500	0.278	0.500	0.500	0.056
915	Wd	2	5.000	2.000	2.500	2.500	0.500	1.000	1.000	0.200	10.000	2.000	2.000	1.000	0.000	0.200
916	Wd	5	6.600	0.190	4.000	1.265	0.606	0.200	0.200	0.030	3.000	1.449	0.455	2.600	0.980	0.394
919	We	7	4.700	0.180	6.140	1.580	1.303	0.000	0.000	0.000	3.000	0.535	0.636	1.710	0.360	0.364
921	Wd	5	6.600	0.240	7.000	3.795	1.061	0.000	0.000	0.000	1.600	0.678	0.242	4.200	1.241	0.636
923	Wd	10	4.600	0.580	3.100	1.149	0.674	0.000	0.000	0.000	0.900	0.379	0.196	4.400	1.586	0.957
926	We	3	7.000	0.000	0.330	0.333	0.048	0.000	0.000	0.000	0.330	0.333	0.048	7.670	0.333	1.095
929	Wd	4	6.500	0.000	1.000	0.408	0.154	0.000	0.000	0.000	0.750	0.479	0.115	4.250	0.479	0.654
1001	Wd	8	6.000	0.000	1.130	0.295	0.188	0.000	0.000	0.000	2.130	0.295	0.354	4.880	0.295	0.813
1003	We	2	5.000	0.000	2.000	2.000	0.400	0.000	0.000	0.000	2.000	2.000	0.400	4.500	4.500	0.900

1 Wd = Weekday; We = Weekend/Holiday.

2 Standard Error.

Appendix Table 4. Summary of daily angler effort and harvest rates (HPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1987.

Date	Wd/We[1]	Sample Size	Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
			Mean	SE[2]	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE
801	We	16	3.000	0.270	0.000	0.000	0.000	0.310	0.313	0.104	0.000	0.000	0.000	0.000	0.000	0.000
802	We	9	3.900	0.860	0.000	0.000	0.000	2.000	0.764	0.519	0.000	0.000	0.000	0.000	0.000	0.000
803	Wd	11	4.600	0.670	0.000	0.000	0.000	2.360	0.509	0.510	0.000	0.000	0.000	0.000	0.000	0.000
805	Wd	9	3.700	0.670	0.000	0.000	0.000	0.330	0.167	0.091	0.000	0.000	0.000	0.560	0.242	0.152
808	We	6	4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
811	Wd	4	2.300	0.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
812	Wd	21	5.800	0.570	0.050	0.048	0.008	0.710	0.250	0.124	0.000	0.000	0.000	0.520	0.178	0.091
815	We	10	5.000	0.660	0.100	0.100	0.020	0.200	0.200	0.040	0.000	0.000	0.000	0.000	0.000	0.000
816	We	10	6.800	0.080	0.000	0.000	0.000	0.500	0.342	0.074	0.000	0.000	0.000	0.000	0.000	0.000
817	Wd	8	4.100	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
818	Wd	11	4.400	0.900	0.000	0.000	0.000	0.360	0.364	0.083	0.000	0.000	0.000	0.180	0.182	0.042
825	Wd	24	4.900	0.380	0.080	0.058	0.017	0.210	0.147	0.043	0.210	0.104	0.043	0.080	0.058	0.017
826	Wd	5	6.600	0.600	0.000	0.000	0.000	0.200	0.200	0.030	0.200	0.200	0.030	0.000	0.000	0.000
831	Wd	11	3.500	0.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
902	Wd	4	6.800	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
903	Wd	3	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.330	0.333	0.042	0.000	0.000	0.000
904	Wd	3	4.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
908	Wd	4	5.900	1.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
913	We	2	9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
915	Wd	2	5.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.100
916	Wd	5	6.600	0.190	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.632	0.152	0.000	0.000	0.000
919	We	7	4.700	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
921	Wd	5	6.600	0.240	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
923	Wd	10	4.600	0.580	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.022	0.400	0.221	0.087
926	We	3	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
929	Wd	4	6.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.038	1.000	0.000	0.154
1001	Wd	8	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.250	0.125	0.000	0.000	0.000
1003	We	2	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[1] Wd = Weekday; We = Weekend.

[2] Standard Error.

Appendix Table 5. Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Hudson Lake access, 1987.

			Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
Date	Wd/We[1]	Sample Size	Mean	SE[2]	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE
Catch Rates																
801	We	4	4.000	0.000	0.500	0.500	0.125	0.250	0.250	0.063	0.000	0.000	0.000	0.750	0.750	0.188
806	Wd	4	2.000	0.000	0.000	0.000	0.000	0.500	0.289	0.250	0.000	0.000	0.000	1.000	0.000	0.500
817	Wd	2	3.000	0.000	0.500	0.500	0.167	1.000	1.000	0.333	0.000	0.000	0.000	0.000	0.000	0.000
916	Wd	2	6.300	0.250	1.000	1.000	0.160	0.000	0.000	0.000	11.500	0.500	1.840	4.000	4.000	0.640
Harvest Rates																
801	We	4	4.000	0.000	0.000	0.000	0.000	0.250	0.250	0.063	0.000	0.000	0.000	0.000	0.000	0.000
806	Wd	4	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
817	Wd	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
916	Wd	2	6.300	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1 Wd = Weekday; We = Weekend.

2 Standard Error.

Appendix Table 6. Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Alexcy Lake access, 1987.

Date	Wd/We[1]	Sample Size	Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
			Mean	SE[2]	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE
Catch Rates																
803	Wd	4	4.500	0.000	1.500	0.500	0.333	1.500	0.645	0.333	0.000	0.000	0.000	0.500	0.500	0.111
812	Wd	4	4.000	0.000	1.000	0.408	0.250	15.000	2.198	3.750	0.000	0.000	0.000	0.000	0.000	0.000
815	We	2	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
828	Wd	3	2.500	0.000	0.000	0.000	0.000	1.330	0.667	0.533	0.000	0.000	0.000	0.000	0.000	0.000
829	We	3	4.000	0.000	0.330	0.333	0.083	2.000	0.577	0.500	0.330	0.333	0.083	0.330	0.333	0.083
830	We	3	6.500	0.000	0.330	0.333	0.051	1.670	0.333	0.256	0.330	0.333	0.051	0.000	0.000	0.000
926	We	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.333	0.000	0.000	0.000
Harvest Rates																
803	Wd	4	4.500	0.000	1.000	0.000	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.111
812	Wd	4	4.000	0.000	0.000	0.000	0.000	2.500	1.443	0.625	0.000	0.000	0.000	0.000	0.000	0.000
815	We	2	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
828	Wd	3	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
829	We	3	4.000	0.000	0.330	0.333	0.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
830	We	3	6.500	0.000	0.330	0.333	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
926	We	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[1] Wd = Weekday; We = Weekend.

[2] Standard Error.

Appendix Table 7. Summary of daily angler effort and catch rates (CPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988.

			Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
Date	Wd/We[1]	Sample Size	Mean	SE[2]	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE
608	Wd	6	5.300	0.560	0.830	0.543	0.159	0.000	0.000	0.000	0.000	0.000	0.000	2.000	0.516	0.381
609	Wd	4	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.083
611	We	2	6.000	0.000	2.000	1.000	0.333	0.000	0.000	0.000	0.500	0.500	0.083	1.000	0.000	0.167
613	Wd	5	7.600	1.470	2.000	0.447	0.263	0.000	0.000	0.000	0.000	0.000	0.000	13.000	1.225	1.711
614	Wd	7	5.500	1.350	1.430	0.685	0.260	0.000	0.000	0.000	0.140	0.143	0.026	14.710	3.350	2.675
615	Wd	2	8.000	0.000	0.500	0.500	0.063	0.000	0.000	0.000	0.000	0.000	0.000	26.000	1.000	3.250
616	Wd	7	6.700	0.710	3.140	1.243	0.468	0.000	0.000	0.000	0.140	0.143	0.021	10.140	2.075	1.511
617	Wd	14	3.600	0.620	0.640	0.498	0.180	0.000	0.000	0.000	0.000	0.000	0.000	1.790	0.720	0.499
618	We	7	5.000	1.240	2.710	1.229	0.548	0.000	0.000	0.000	0.000	0.000	0.000	11.710	6.159	2.366
619	We	8	6.900	0.660	1.380	0.754	0.200	0.000	0.000	0.000	0.000	0.000	0.000	19.000	6.756	2.764
620	Wd	2	7.800	0.000	1.500	0.500	0.194	0.000	0.000	0.000	0.000	0.000	0.000	25.500	4.500	3.290
621	Wd	10	4.500	0.710	1.000	0.333	0.222	0.000	0.000	0.000	0.000	0.000	0.000	10.500	2.697	2.333
622	Wd	5	3.700	0.450	2.400	1.030	0.643	0.000	0.000	0.000	0.000	0.000	0.000	5.800	3.200	1.554
623	Wd	7	7.300	0.950	3.000	1.155	0.414	0.000	0.000	0.000	0.000	0.000	0.000	11.430	2.045	1.576
624	Wd	11	2.500	0.130	1.450	0.474	0.593	0.000	0.000	0.000	0.000	0.000	0.000	5.550	1.942	2.259
625	We	7	4.900	1.130	0.570	0.297	0.116	0.000	0.000	0.000	0.000	0.000	0.000	5.140	1.370	1.043
626	We	23	5.000	0.370	1.610	0.430	0.319	0.000	0.000	0.000	0.000	0.000	0.000	8.300	2.091	1.647
627	Wd	6	5.900	1.540	1.330	0.843	0.227	0.000	0.000	0.000	0.000	0.000	0.000	10.170	4.246	1.730
628	Wd	4	8.000	2.000	0.750	0.250	0.094	0.000	0.000	0.000	0.000	0.000	0.000	9.500	1.258	1.188
629	Wd	8	4.600	1.270	6.000	1.813	1.309	0.000	0.000	0.000	0.000	0.000	0.000	13.500	4.383	2.946
630	Wd	15	4.700	0.720	1.470	0.631	0.311	0.000	0.000	0.000	0.000	0.000	0.000	13.600	2.404	2.886
701	Wd	9	2.200	0.310	1.110	0.309	0.511	0.000	0.000	0.000	0.000	0.000	0.000	3.780	0.954	1.736
702	We	12	4.500	0.880	2.500	0.723	0.556	0.000	0.000	0.000	0.000	0.000	0.000	8.080	1.917	1.796
703	We	10	5.400	0.860	0.300	0.300	0.056	0.000	0.000	0.000	0.000	0.000	0.000	3.900	1.286	0.727
704	We	15	5.100	0.730	0.870	0.413	0.171	0.000	0.000	0.000	0.000	0.000	0.000	12.000	4.658	2.368
705	Wd	15	6.000	0.500	0.530	0.236	0.089	0.000	0.000	0.000	0.000	0.000	0.000	4.000	0.647	0.670
706	Wd	29	5.500	0.520	0.970	0.327	0.176	0.030	0.034	0.006	0.000	0.000	0.000	3.660	1.281	0.665
707	Wd	16	4.900	0.530	0.380	0.221	0.077	1.690	0.624	0.346	0.000	0.000	0.000	11.190	5.094	2.295
708	Wd	10	4.300	1.220	0.100	0.100	0.023	1.300	0.448	0.302	0.000	0.000	0.000	5.600	2.837	1.302
709	We	9	5.400	0.710	0.220	0.147	0.041	0.220	0.147	0.041	0.000	0.000	0.000	4.670	1.922	0.862
710	We	13	4.300	0.070	1.380	0.738	0.321	3.310	1.206	0.768	0.080	0.077	0.018	3.000	1.925	0.696
711	Wd	12	3.400	0.970	1.000	0.522	0.296	0.920	0.229	0.271	0.000	0.000	0.000	4.830	4.119	1.429
712	Wd	22	6.100	0.700	0.360	0.155	0.060	7.270	1.673	1.195	0.000	0.000	0.000	1.000	0.372	0.164
713	Wd	15	7.600	0.480	0.330	0.270	0.044	5.070	1.909	0.667	0.000	0.000	0.000	0.870	0.515	0.114
714	Wd	2	3.000	0.000	0.000	0.000	0.000	3.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
715	Wd	21	4.900	0.590	0.240	0.118	0.049	6.480	1.630	1.333	0.000	0.000	0.000	2.570	1.168	0.529
716	We	33	4.600	0.430	0.480	0.222	0.105	2.580	0.806	0.557	0.030	0.030	0.007	0.610	0.246	0.131
717	We	17	7.400	0.680	0.710	0.306	0.096	6.650	1.067	0.902	0.000	0.000	0.000	1.290	0.567	0.176
719	Wd	16	6.900	0.260	1.130	0.375	0.164	9.310	2.167	1.355	0.000	0.000	0.000	1.000	0.652	0.145
720	Wd	14	7.400	0.660	2.290	1.765	0.311	11.140	1.941	1.515	0.000	0.000	0.000	1.640	0.829	0.223
721	Wd	12	6.500	0.450	1.080	0.336	0.167	5.000	2.637	0.769	0.000	0.000	0.000	11.170	3.426	1.718
722	Wd	19	6.300	0.710	0.950	0.346	0.150	2.580	0.743	0.407	0.110	0.105	0.017	5.470	1.669	0.864
723	We	24	7.600	0.320	1.080	0.454	0.143	7.130	1.421	0.942	0.000	0.000	0.000	4.830	1.690	0.639
724	We	18	6.400	0.390	1.560	0.506	0.241	4.170	1.197	0.647	0.000	0.000	0.000	5.110	1.239	0.793
725	Wd	13	6.800	0.500	0.920	0.473	0.136	10.000	2.667	1.469	0.000	0.000	0.000	1.000	0.376	0.147
726	Wd	22	5.800	0.520	0.410	0.215	0.070	5.360	1.037	0.924	0.000	0.000	0.000	2.450	1.171	0.423
727	Wd	16	5.800	0.580	0.000	0.000	0.000	11.810	1.840	2.032	0.000	0.000	0.000	0.060	0.063	0.011
728	Wd	19	4.900	0.580	0.470	0.269	0.097	5.840	1.178	1.194	0.000	0.000	0.000	0.210	0.145	0.043

-Continued-

Appendix Table 7. Summary of daily angler effort and catch rates (CPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988 (continued).

Date	Wd/We[1]	Sample Size	Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
			Mean	SE[2]	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE	Mean	SE[2]	CPUE
730	We	20	5.900	0.270	0.600	0.197	0.102	6.050	1.448	1.025	0.000	0.000	0.000	5.150	1.749	0.873
731	We	17	6.100	0.680	0.240	0.161	0.039	5.240	0.825	0.860	0.000	0.000	0.000	1.240	0.525	0.203
801	Wd	16	5.500	0.630	0.310	0.218	0.056	6.250	1.160	1.130	0.000	0.000	0.000	1.690	0.705	0.305
802	Wd	18	6.700	0.640	0.500	0.294	0.075	8.830	1.964	1.325	0.000	0.000	0.000	2.720	1.462	0.408
803	Wd	4	6.500	1.500	8.000	2.708	1.231	9.250	2.097	1.423	0.000	0.000	0.000	2.500	2.500	0.385
804	Wd	19	5.300	0.700	3.320	1.362	0.625	5.420	1.763	1.022	0.000	0.000	0.000	2.890	1.666	0.546
805	Wd	18	7.100	0.320	2.670	0.662	0.375	0.560	0.185	0.078	0.000	0.000	0.000	4.280	1.117	0.602
806	We	2	5.500	1.500	12.500	7.500	2.273	0.000	0.000	0.000	0.000	0.000	0.000	2.500	2.500	0.455
807	We	12	5.700	0.590	1.330	0.512	0.235	5.170	1.705	0.912	0.000	0.000	0.000	3.500	1.294	0.618
809	Wd	8	4.100	0.860	3.750	2.455	0.909	4.380	1.990	1.061	0.130	0.125	0.030	6.380	1.832	1.545
810	Wd	13	2.900	0.320	2.920	1.253	1.013	5.920	1.146	2.053	0.000	0.000	0.000	1.920	0.804	0.667
811	Wd	2	7.500	0.000	1.500	1.500	0.200	0.500	0.500	0.067	0.000	0.000	0.000	4.500	1.500	0.600
812	Wd	6	4.300	0.620	2.830	1.905	0.667	5.000	3.098	1.176	0.000	0.000	0.000	0.670	0.422	0.157
813	We	7	2.500	0.000	0.430	0.297	0.171	4.570	1.798	1.829	0.000	0.000	0.000	1.140	0.634	0.457
814	We	8	5.500	0.500	3.380	0.944	0.617	2.250	0.818	0.411	0.250	0.164	0.046	1.880	0.915	0.343
815	Wd	7	7.400	0.200	11.140	2.972	1.500	0.000	0.000	0.000	4.430	2.653	0.596	0.290	0.286	0.038
816	Wd	11	5.700	0.950	5.730	1.893	1.004	0.270	0.141	0.048	0.270	0.141	0.048	1.450	0.638	0.255
818	Wd	8	4.600	0.780	1.750	0.726	0.384	1.380	0.905	0.301	0.500	0.267	0.110	1.130	0.743	0.247
819	Wd	5	4.900	1.170	2.000	0.548	0.408	0.000	0.000	0.000	0.400	0.245	0.082	1.600	1.600	0.327
820	We	19	6.300	0.390	2.050	0.677	0.325	0.320	0.217	0.050	0.530	0.258	0.083	5.110	1.889	0.808
821	We	11	6.500	0.900	3.180	0.961	0.489	0.640	0.432	0.098	0.730	0.237	0.112	2.730	0.787	0.419
822	Wd	7	7.100	0.930	5.710	1.426	0.808	0.430	0.429	0.061	3.710	2.168	0.525	7.000	1.864	0.990
823	Wd	6	8.000	0.810	1.000	0.365	0.125	0.000	0.000	0.000	2.670	1.145	0.333	0.500	0.224	0.063
824	Wd	9	5.700	0.670	0.440	0.444	0.078	0.110	0.111	0.020	0.330	0.236	0.059	0.780	0.401	0.137
825	Wd	11	6.200	0.800	0.910	0.315	0.146	2.550	0.562	0.408	0.360	0.203	0.058	5.180	1.292	0.831
826	Wd	7	6.900	0.810	0.430	0.297	0.063	3.860	1.122	0.563	0.290	0.184	0.042	0.710	0.421	0.104
827	We	8	6.000	1.130	0.000	0.000	0.000	0.000	0.000	0.000	0.130	0.125	0.021	0.750	0.313	0.125
829	Wd	7	4.200	1.520	0.000	0.000	0.000	0.710	0.421	0.169	0.000	0.000	0.000	0.000	0.000	0.000
830	Wd	3	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
901	Wd	11	3.500	0.720	0.000	0.000	0.000	0.270	0.195	0.077	0.180	0.182	0.051	0.000	0.000	0.000
902	Wd	13	2.800	0.310	0.150	0.104	0.054	1.080	0.560	0.378	0.230	0.231	0.081	0.000	0.000	0.000
904	We	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
905	We	11	3.100	0.170	0.000	0.000	0.000	2.180	0.913	0.698	0.090	0.091	0.029	0.000	0.000	0.000
910	We	4	5.800	1.250	1.250	0.250	0.217	0.000	0.000	0.000	1.750	0.250	0.304	1.500	0.500	0.261
911	We	3	6.300	1.670	0.330	0.333	0.053	2.670	1.453	0.421	0.000	0.000	0.000	2.330	2.333	0.368
912	Wd	8	3.300	0.370	1.380	0.532	0.423	2.380	1.463	0.731	0.880	0.479	0.269	0.000	0.000	0.000
913	Wd	9	6.600	0.560	2.670	1.236	0.407	0.000	0.000	0.000	0.560	0.294	0.085	3.670	1.000	0.559
914	Wd	7	7.400	1.160	3.000	0.756	0.408	0.000	0.000	0.000	2.860	1.421	0.388	4.290	1.861	0.583
915	Wd	6	5.300	1.090	3.000	0.775	0.563	0.000	0.000	0.000	1.000	0.447	0.188	1.170	0.543	0.219
916	Wd	15	7.800	0.760	4.070	0.693	0.521	0.000	0.000	0.000	3.530	1.230	0.453	0.670	0.475	0.085
918	We	3	6.700	1.330	7.330	2.667	1.100	0.000	0.000	0.000	6.670	3.333	1.000	1.330	1.333	0.200
919	Wd	10	6.500	0.720	1.700	0.423	0.260	0.000	0.000	0.000	3.000	1.033	0.458	2.000	0.830	0.305
920	Wd	13	5.700	0.770	1.850	0.421	0.321	0.000	0.000	0.000	1.150	0.517	0.201	0.380	0.213	0.067
923	Wd	6	3.300	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.170	0.167	0.050	0.000	0.000	0.000
926	Wd	3	4.500	0.000	1.000	1.000	0.222	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.577	0.222
928	Wd	3	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	0.143
930	Wd	4	2.400	0.070	3.000	0.707	1.263	0.000	0.000	0.000	1.000	0.408	0.421	4.500	2.363	1.895
1001	We	8	3.500	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[1] Wd = Weekday; We = Weekend.

[2] Standard Error.

Appendix Table 8. Summary of daily angler effort and harvest rates (HPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988.

			Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
Date	Wd/We[1]	Sample Size	Mean	SE[2]	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE
608	Wd	6	5.300	0.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
609	Wd	4	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
611	We	2	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
613	Wd	5	7.600	1.470	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.600	0.600	0.079
614	Wd	7	5.500	1.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.430	0.429	0.078
615	Wd	2	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
616	Wd	7	6.700	0.710	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.143	0.021	0.000	0.000	0.000
617	Wd	14	3.600	0.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.210	0.114	0.060
618	We	7	5.000	1.240	0.290	0.184	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
619	We	8	6.900	0.660	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.036
620	Wd	2	7.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.129
621	Wd	10	4.500	0.710	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
622	Wd	5	3.700	0.450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
623	Wd	7	7.300	0.950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624	Wd	11	2.500	0.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
625	We	7	4.900	1.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626	We	23	5.000	0.370	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.043	0.009
627	Wd	6	5.900	1.540	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
628	Wd	4	8.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.063
629	Wd	8	4.600	1.270	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
630	Wd	15	4.700	0.720	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
701	Wd	9	2.200	0.310	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
702	We	12	4.500	0.880	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.056
703	We	10	5.400	0.860	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
704	We	15	5.100	0.730	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
705	Wd	15	6.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.270	0.206	0.045
706	Wd	29	5.500	0.520	0.000	0.000	0.000	0.030	0.034	0.006	0.000	0.000	0.000	0.030	0.034	0.006
707	Wd	16	4.900	0.530	0.000	0.000	0.000	0.630	0.272	0.128	0.000	0.000	0.000	0.000	0.000	0.000
708	Wd	10	4.300	1.220	0.000	0.000	0.000	1.100	0.407	0.256	0.000	0.000	0.000	0.400	0.163	0.093
709	We	9	5.400	0.710	0.000	0.000	0.000	0.220	0.147	0.041	0.000	0.000	0.000	0.000	0.000	0.000
710	We	13	4.300	0.070	0.000	0.000	0.000	0.690	0.472	0.161	0.000	0.000	0.000	0.460	0.243	0.107
711	Wd	12	3.400	0.970	0.000	0.000	0.000	0.500	0.195	0.148	0.000	0.000	0.000	0.000	0.000	0.000
712	Wd	22	6.100	0.700	0.000	0.000	0.000	1.860	0.331	0.306	0.000	0.000	0.000	0.000	0.000	0.000
713	Wd	15	7.600	0.480	0.000	0.000	0.000	1.730	0.573	0.228	0.000	0.000	0.000	0.000	0.000	0.000
714	Wd	2	3.000	0.000	0.000	0.000	0.000	3.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
715	Wd	21	4.900	0.590	0.000	0.000	0.000	1.710	0.474	0.353	0.000	0.000	0.000	0.050	0.048	0.010
716	We	33	4.600	0.430	0.030	0.030	0.007	0.790	0.294	0.170	0.000	0.000	0.000	0.060	0.042	0.013
717	We	17	7.400	0.680	0.000	0.000	0.000	2.530	0.595	0.343	0.000	0.000	0.000	0.000	0.000	0.000
719	Wd	16	6.900	0.260	0.000	0.000	0.000	2.690	0.610	0.391	0.000	0.000	0.000	0.000	0.000	0.000
720	Wd	14	7.400	0.660	0.000	0.000	0.000	3.070	0.579	0.417	0.000	0.000	0.000	0.000	0.000	0.000
721	Wd	12	6.500	0.450	0.000	0.000	0.000	1.250	0.653	0.192	0.000	0.000	0.000	0.080	0.083	0.013
722	Wd	19	6.300	0.710	0.000	0.000	0.000	1.000	0.452	0.158	0.000	0.000	0.000	0.160	0.086	0.025
723	We	24	7.600	0.320	0.000	0.000	0.000	2.420	0.489	0.320	0.000	0.000	0.000	0.000	0.000	0.000
724	We	18	6.400	0.390	0.000	0.000	0.000	0.440	0.202	0.069	0.000	0.000	0.000	0.170	0.090	0.026
725	Wd	13	6.800	0.500	0.000	0.000	0.000	3.460	1.035	0.508	0.000	0.000	0.000	0.000	0.000	0.000
726	Wd	22	5.800	0.520	0.000	0.000	0.000	2.090	0.455	0.360	0.000	0.000	0.000	0.000	0.000	0.000
727	Wd	16	5.800	0.580	0.000	0.000	0.000	4.060	0.370	0.699	0.000	0.000	0.000	0.060	0.063	0.011
728	Wd	19	4.900	0.580	0.000	0.000	0.000	1.740	0.389	0.355	0.000	0.000	0.000	0.000	0.000	0.000

-Continued-

Appendix Table 8. Summary of daily angler effort and harvest rates (HPUE) for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the river mouth access, 1988 (continued).

			Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
Date	Wd/We[1]	Sample Size	Mean	SE[2]	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE	Mean	SE[2]	HPUE
730	We	20	5.900	0.270	0.000	0.000	0.000	1.650	0.418	0.280	0.000	0.000	0.000	0.100	0.069	0.017
731	We	17	6.100	0.680	0.000	0.000	0.000	2.590	0.563	0.425	0.000	0.000	0.000	0.000	0.000	0.000
801	Wd	16	5.500	0.630	0.000	0.000	0.000	2.310	0.489	0.418	0.000	0.000	0.000	0.000	0.000	0.000
802	Wd	18	6.700	0.640	0.000	0.000	0.000	1.060	0.357	0.158	0.000	0.000	0.000	0.280	0.195	0.042
803	Wd	4	6.500	1.500	0.000	0.000	0.000	5.000	0.000	0.769	0.000	0.000	0.000	0.000	0.000	0.000
804	Wd	19	5.300	0.700	0.000	0.000	0.000	0.890	0.425	0.169	0.000	0.000	0.000	0.320	0.154	0.060
805	Wd	18	7.100	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
806	We	2	5.500	1.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
807	We	12	5.700	0.590	0.000	0.000	0.000	0.580	0.288	0.103	0.000	0.000	0.000	0.000	0.000	0.000
809	Wd	8	4.100	0.860	0.000	0.000	0.000	0.630	0.420	0.152	0.000	0.000	0.000	0.000	0.000	0.000
810	Wd	13	2.900	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
811	Wd	2	7.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
812	Wd	6	4.300	0.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
813	We	7	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
814	We	8	5.500	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
815	Wd	7	7.400	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.430	0.202	0.058	0.000	0.000	0.000
816	Wd	11	5.700	0.950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
818	Wd	8	4.600	0.780	0.000	0.000	0.000	0.380	0.263	0.082	0.000	0.000	0.000	0.000	0.000	0.000
819	Wd	5	4.900	1.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
820	We	19	6.300	0.390	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.370	0.232	0.058
821	We	11	6.500	0.900	0.000	0.000	0.000	0.270	0.273	0.042	0.000	0.000	0.000	0.000	0.000	0.000
822	Wd	7	7.100	0.930	0.140	0.143	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
823	Wd	6	8.000	0.810	0.000	0.000	0.000	0.000	0.000	0.000	0.170	0.167	0.021	0.000	0.000	0.000
824	Wd	9	5.700	0.670	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
825	Wd	11	6.200	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.550	0.247	0.088
826	Wd	7	6.900	0.810	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.143	0.021	0.000	0.000	0.000
827	We	8	6.000	1.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
829	Wd	7	4.200	1.520	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
830	Wd	3	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
901	Wd	11	3.500	0.720	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
902	Wd	13	2.800	0.310	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.077	0.027	0.000	0.000	0.000
904	We	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
905	We	11	3.100	0.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
910	We	4	5.800	1.250	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.250	0.130	0.000	0.000	0.000
911	We	3	6.300	1.670	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
912	Wd	8	3.300	0.370	0.000	0.000	0.000	0.000	0.000	0.000	0.130	0.125	0.038	0.000	0.000	0.000
913	Wd	9	6.600	0.560	0.110	0.111	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
914	Wd	7	7.400	1.160	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.143	0.019	0.000	0.000	0.000
915	Wd	6	5.300	1.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
916	Wd	15	7.800	0.760	0.000	0.000	0.000	0.000	0.000	0.000	0.270	0.153	0.034	0.000	0.000	0.000
918	We	3	6.700	1.330	0.000	0.000	0.000	0.000	0.000	0.000	0.330	0.333	0.050	0.000	0.000	0.000
919	Wd	10	6.500	0.720	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.015
920	Wd	13	5.700	0.770	0.080	0.077	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
923	Wd	6	3.300	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
926	Wd	3	4.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
928	Wd	3	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
930	Wd	4	2.400	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1001	We	8	3.500	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1 Wd = Weekday; We = Weekend.

2 Standard Error.

Appendix Table 9. Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Hudson Lake access, 1988.

			Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
Date	Wd/We[1]	Sample Size	Mean	SE[2]	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE
Catch Rates																
621	Wd	3	5.000	0.000	0.330	0.333	0.067	0.000	0.000	0.000	0.000	0.000	0.000	13.000	3.786	2.600
622	Wd	3	6.000	0.000	1.330	0.667	0.222	0.000	0.000	0.000	0.330	0.333	0.056	12.670	3.712	2.111
623	Wd	3	6.800	1.170	1.670	1.667	0.244	0.000	0.000	0.000	0.000	0.000	0.000	9.670	1.856	1.415
624	Wd	3	7.000	0.000	1.000	0.577	0.143	0.000	0.000	0.000	0.000	0.000	0.000	9.000	1.732	1.286
625	We	3	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.330	6.692	2.389
626	We	3	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.670	1.202	0.611
Harvest Rates																
621	Wd	3	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
622	Wd	3	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.330	0.333	0.056	0.000	0.000	0.000
623	Wd	3	6.800	1.170	0.330	0.333	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
624	Wd	3	7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.670	0.667	0.095
625	We	3	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
626	We	3	6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[1] Wd = Weekday; We = Weekend.

[2] Standard Error.

Appendix Table 10. Summary of daily angler effort and catch (CPUE) and harvest (HPUE) rates for rainbow trout, sockeye salmon, Arctic char, and Arctic grayling from interviews taken from anglers exiting the Tazimina River via the Alexcy Lake access, 1988.

Date	Wd/We[1]	Sample Size	Effort		Rainbow Trout			Sockeye Salmon			Arctic Char			Arctic Grayling		
			Mean	SE[2]	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE	Mean	SE[2]	CPUE/HPUE
Catch Rates																
701	Wd	4	5.000	0.000	1.750	0.479	0.350	0.000	0.000	0.000	0.000	0.000	0.000	4.500	2.021	0.900
702	We	4	5.000	0.000	1.000	0.707	0.200	0.000	0.000	0.000	0.000	0.000	0.000	4.000	0.707	0.800
703	We	3	2.000	0.000	1.670	1.202	0.833	0.000	0.000	0.000	0.000	0.000	0.000	1.330	0.333	0.667
721	Wd	4	3.700	0.000	0.000	0.000	0.000	12.250	0.479	3.338	0.000	0.000	0.000	0.000	0.000	0.000
803	Wd	5	6.000	0.000	0.000	0.000	0.000	3.000	0.775	0.500	0.000	0.000	0.000	0.000	0.000	0.000
825	Wd	2	3.000	0.000	0.000	0.000	0.000	1.000	1.000	0.333	0.000	0.000	0.000	0.000	0.000	0.000
920	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
921	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
922	Wd	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
923	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Harvest Rates																
701	Wd	4	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
702	We	4	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
703	We	3	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
721	Wd	4	3.700	0.000	0.000	0.000	0.000	4.750	0.479	1.294	0.000	0.000	0.000	0.000	0.000	0.000
803	Wd	5	6.000	0.000	0.000	0.000	0.000	0.600	0.400	0.100	0.000	0.000	0.000	0.000	0.000	0.000
825	Wd	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
920	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
921	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
922	Wd	2	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
923	Wd	2	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

[1] Wd = Weekday; We = Weekend.

[2] Standard Error.

Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988.

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	Tag Color[5] W	BK	R	Y	B	C	Tag Number
19	133	2.5	870824	35	2	RBT	9		525	2900	SC		R			Floy			R		B		16129
19	133	2.5	870824	35	2	RBT	9		482	820	SC	5				Floy			R		B		16130
19	133	2.5	870824	35	2	RBT	9		452	800	SC	5				Floy			R		B		16131
19	133	3.0	870824	35	2	RBT	9		536	1650	SC	7				Floy			R		B		16132
19	133	3.0	870824	35	2	RBT	9		620	2220	SC	7				Floy			R		B		16134
19	133	5.5	870824	35	2	RBT	9		425	1420	SC		R			Floy			R		B		16139
19	133	5.5	870824	35	2	RBT	9		484	1300	SC	7				Floy			R		B		16141
19	133	5.5	870824	35	2	RBT	9		478	1320	SC	6				Floy			R		B		16142
19	133	3.0	870824	35	2	RBT	9		447	1000	SC		R			Floy			R		B		16143
19	133	3.0	870824	35	2	RBT	9		605	1700	SC	8				Floy			R		B		16144
19	133	3.0	870907	37	2	RBT	9		640	2100	SC	8				Floy			R		B		16145
19	133	3.0	870907	37	2	RBT	9		472		SC					Floy			R		B		16146
19	133	5.2	870907	37	2	RBT	9		474	1620	SC	6				Floy			R		B		16149
19	007	23.0	871207			RBT	99				SC				Y *	Floy		BK	R				16149
19	133	5.5	870907	37	2	RBT	9		475		SC		R			Floy			R		B		16153
19	133	3.0	870907	37	2	RBT	9		325	420	SC	5				Floy			R		B		16154
19	133	3.0	870907	37	2	RBT	9		480	1070	SC	6				Floy			R		B		16155
19	133	3.0	870907	37	2	RBT	9		356	650	SC	5				Floy			R		B		16156
19	133	3.2	880628	27	2	RBT	9		409	750	SC	5			Y	Floy		BK	R				16156
19	133	3.0	870907	37	2	RBT	9		380	580	SC	5				Floy			R		B		16157
19	133	3.5	880803	32	2	RBT	9		383	500	SC				Y	Floy		BK	R				16157
19	133	5.8	870913	38	1	RBT	9		450	1420	SC		R			Floy			R		B		16158
19	133	3.2	870916	38	2	RBT	9		585	2300	SC	8				Floy			R		B		16161
19	133	3.0	870916	38	2	RBT	9		410	900	SC	6				Floy			R		B		16162
19	133	3.3	880912	38	2	RBT	9		463	1490	SC				Y	Floy		BK	R				16162
19	133	3.2	870916	38	2	RBT	9		320	420	SC	4				Floy			R		B		16163
19	133	3.2	870917	38	2	RBT	9		528	1800	SC		R			Floy			R		B		16164
19	133	6.0	870922	39	2	RBT	9		590	2300	SC		R			Floy			R		B		16166
19	133	3.1	870922	39	2	RBT	9		475	1400	SC	6				Floy			R		B		16167
19	133	3.1	870922	39	2	RBT	9		315		SC		R			Floy			R		B		16168
19	133	2.3	870922	39	2	RBT	9		610		SC					Floy			R		B		16170
19	133	3.2	870922	39	2	RBT	9		580	2300	SC	8				Floy			R		B		16171
19	133	6.0	870928	40	2	RBT	9		547	2250	SC	6				Floy			R		B		16172
19	133	2.5	871003	41	1	RBT	9		660	2550	SC		R			Floy			R		B		16173
19	133	2.5	871003	41	1	RBT	9		550	2500	SC		R			Floy			R		B		16174
19	133	1.8	880719	30	2	RBT	9		559		SC				Y	Floy		BK	R				16174
19	133	3.2	870917	38	2	RBT	9		342	360	SC	4				Floy			R		B		16200
19	133	1.2	880702	28	1	RBT	9		390		SC				Y	Floy		BK	R				16200
19	133	6.0	870917	38	2	RBT	9		468	1520	SC	7				Floy			R		B		16201
19	133	6.0	870917	38	2	RBT	9		696	4210	SC		R			Floy			R		B		16202
19	133	3.2	870917	38	2	RBT	9		382	760	SC	4				Floy			R		B		16203
19	133	3.2	870917	38	2	RBT	9		566	1880	SC		R			Floy			R		B		16204
19	133	2.3	870922	39	2	RBT	9		586	2460	SC	8				Floy			R		B		16205
19	133	5.2	870922	39	2	RBT	9		683	3080	SC	8				Floy			R		B		16207
19	133	2.1	870922	39	2	RBT	9		634	2880	SC		R			Floy			R		B		16208
19	133	2.1	870922	39	2	RBT	9		445		SC	5				Floy			R		B		16209
19	133	2.1	870922	39	2	RBT	9		362		SC	6				Floy			R		B		16211
19	133	2.0	870928	40	2	RBT	9		335		SC	3				Floy			R		B		16212
19	133	2.1	870928	40	2	RBT	9		504	1650	SC	6				Floy			R		B		16213
19	133	0.5	870928	40	2	RBT	9		320	400	SC	4				Floy			R		B		16214
19	133	6.0	870928	40	2	RBT	9		608	3050	SC	7				Floy			R		B		16215
19	133	2.5	870928	40	2	RBT	9		342	610	SC	4				Floy			R		B		16216

-Continued-

Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988 (continued).

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	----Tag Color[5]--- W	BK	R	Y	B	C	Tag Number
19	133	2.5	870928	40	2	RBT	9		652	2450	SC	7				Floy			R		B		16217
19	133	2.5	870928	40	2	RBT	9		314	350	SC	4				Floy			R		B		16218
19	133	1.0	880621	26	2	RBT	9		335	375	SC	5			Y	Floy		BK	R				16218
19	133	5.2	880919	39	2	RBT	9				SC				Y	Floy		BK	R				16218
19	133	2.0	870928	40	2	RBT	9		475	1450	SC	5				Floy			R		B		16219
19	152		871110			RBT	99				SC				Y *	Floy		BK	R				16219
19	133	2.5	870928	40	2	RBT	9		392	910	SC	6				Floy			R		B		16220
19	133	2.5	871003	41	1	RBT	9		385	610	SC	6				Floy			R		B		16221
19	133	2.5	871003	41	1	RBT	9		528	1860	SC	7				Floy			R		B		16222
19	133	2.5	871003	41	1	RBT	9		365	510	SC	4				Floy			R		B		16223
19	133	1.0	871003	41	1	RBT	9		605	2520	SC	7				Floy			R		B		16224
19	133	2.0	871003	41	1	RBT	9		340	450	SC	3				Floy			R		B		16225
19	133	1.0	880609	24	2	RBT	9		370	630	SC	4			Y	Floy		BK	R				16225
19	133	2.0	871003	41	1	RBT	9		515	1710	SC	8				Floy			R		B		16228
19	133	0.0	871003	41	1	RBT	9		677	2960	SC		R			Floy			R		B		16229
19	133	6.0	871004	41	1	RBT	9		552	2270	SC		R			Floy			R		B		16230
19	133	6.0	871004	41	1	RBT	9		532	2110	SC	6				Floy			R		B		16231
19	133	3.2	871004	41	1	RBT	9		448	1320	SC	6				Floy			R		B		16234
19	133	2.5	871004	41	1	RBT	9		552	1920	SC		R			Floy			R		B		16236
19	133	2.5	870907	37	2	RBT	9		258	220	SC	3				Floy			R		B		16526
19	133	2.5	870907	37	2	RBT	9		372	710	SC		R			Floy			R		B		16527
19	133	5.8	870913	38	1	RBT	9		648	3550	SC		R			Floy			R		B		16528
19	133	5.8	870913	38	1	RBT	9		522	2330	SC		R			Floy			R		B		16529
19	133	2.5	870913	38	1	RBT	9		594	2430	SC	7				Floy			R		B		16530
19	133	3.3	880912	38	2	RBT	9		605	2950	SC				Y	Floy		BK	R				16530
19	133	2.5	870913	38	1	RBT	9		634	3000	SC		R			Floy			R		B		16531
19	133	3.0	870913	38	1	RBT	9		502	1400	SC	6				Floy			R		B		16532
19	133	6.0	880826	35	2	RBT	9				SC				Y	Floy		BK	R				16532
19	133	2.5	870913	38	1	RBT	9		395	960	SC	5				Floy			R		B		16533
19	133	2.5	870913	38	1	RBT	9		290	480	SC	4				Floy			R		B		16534
19	133	6.0	870913	38	1	RBT	9		338	510	SC	4				Floy			R		B		16535
19	133	3.2	870913	38	1	RBT	9		586	2120	SC	8				Floy			R		B		16536
19	133	6.0	870916	38	2	RBT	9		562	2080	SC		R			Floy			R		B		16538
19	133	2.5	870916	38	2	RBT	9		324		SC	3				Floy			R		B		16539
19	133	3.2	870916	38	2	RBT	9		502	1520	SC		R			Floy			R		B		16540
19	133	3.2	870916	38	2	RBT	9		536	1620	SC		R			Floy			R		B		16541
19	133	6.2	870916	38	2	RBT	9		656	3280	SC	7				Floy			R		B		16542
19	133	6.2	870916	38	2	RBT	9		560	1940	SC	8				Floy			R		B		16543
19	133	6.2	870916	38	2	RBT	9		665	3610	SC	8				Floy			R		B		16544
19	133	2.8	880623	26	2	RBT	9		458		SC				Y	Floy		BK	R				16545
19	133		870917	38	2	RBT	9		368	560	SC	5				Floy			R		B		16546
19	133		870917	38	2	RBT	9		612	1220	SC	7				Floy			R		B		16547
19	133	3.2	870917	38	2	RBT	9		472	1250	SC	6				Floy			R		B		16548
19	133	3.2	870917	38	2	RBT	9		492	1800	SC	6				Floy			R		B		16549
19	133	3.1	871003	41	1	RBT	9		375	620	SC	4				Floy			R		B		16800
19	133	3.5	880915	38	2	RBT	9				SC				Y	Floy		BK	R				16800
19	133	3.5	880915	38	2	RBT	9	F	519	1950	SC		R			Floy			R	Y			2249
19	133	3.3	880915	38	2	RBT	3		323	475	SC	4				Floy			R	Y			2425
19	133	3.3	880915	38	2	RBT	3		306	435	SC		R			Floy			R	Y			2426
19	133	3.3	880915	38	2	RBT	3		286	325	SC		R			Floy			R	Y			2427
19	133	3.3	880915	38	2	RBT	3	F	432	1200	SC	5				Floy			R	Y			2428

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Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988 (continued).

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	----Tag Color[5]--- W	BK	R	Y	B	C	Tag Number
19	133	3.3	880915	38	2	RBT	3		312	400	SC	4				Floy			R	Y			2429
19	133	3.3	880915	38	2	RBT	3		315	445	SC		R			Floy			R	Y			2430
19	133	3.3	880915	38	2	RBT	3		334	580	SC		R			Floy			R	Y			2431
19	133	3.3	880916	38	2	RBT	3		297	350	SC	4				Floy			R	Y			2432
19	133	3.3	880916	38	2	RBT	3		342	375	SC		R			Floy			R	Y			2433
19	133	3.3	880916	38	2	RBT	3	M	343	575	SC		R			Floy			R	Y			2435
19	133	3.3	880916	38	2	RBT	3		311	425	SC		R			Floy			R	Y			2436
19	007	19.0	881111			RBT	99				SC				Y *	Floy			R	Y			2436
19	133	3.3	880916	38	2	RBT	3		296	375	SC	4				Floy			R	Y			2437
19	133	3.3	880916	38	2	RBT	3		371	675	SC		R			Floy			R	Y			2438
19	133	3.3	880916	38	2	RBT	3		324	425	SC	5				Floy			R	Y			2439
19	133	3.3	880916	38	2	RBT	3		334	500	SC		R			Floy			R	Y			2440
19	133	3.3	880916	38	2	RBT	3	F	452	1225	SC		R			Floy			R	Y			2441
19	133	3.3	880916	38	2	RBT	9		336		SC	4				Floy			R	Y			2442
19	133	5.0	880917	39	1	RBT	9	M	603	3100	SC		R			Floy			R	Y			2443
19	133	5.0	880917	39	1	RBT	9	M	572	2800	SC	8				Floy			R	Y			2444
19	133	5.1	880920	39	2	RBT	9	M	608	2300	SC		R			Floy			R	Y			2445
19	133	3.3	880915	38	2	RBT	3		296	380	SC	3				Floy			R	Y			2448
19	133	0.2	880611	25	1	RBT	9		300		SC	4				Floy			R	Y			89036
19	133	6.0	880611	25	1	RBT	9		479	1250	SC		I			Floy			R	Y			89039
19	133	3.4	880612	25	1	RBT	9		530	1700	SC		I			Floy			R	Y			89041
19	133	3.4	880615	25	2	RBT	9	F	452	950	SC	5				Floy			R	Y			89042
19	133	3.4	880616	25	2	RBT	9		390	650	SC	6				Floy			R	Y			89043
19	133	1.0	880617	25	2	RBT	9		464	1200	SC	6				Floy			R	Y			89044
19	133	3.2	880618	26	1	RBT	9		550	1900	SC	7				Floy			R	Y			89045
19	133	5.0	880618	26	1	RBT	9		519	1550	SC	7				Floy			R	Y			89046
19	133	0.5	880620	26	2	RBT	9		255	200	SC	3				Floy			R	Y			89047
19	133	8.1	880622	26	2	RBT	9		488	1250	SC	6				Floy			R	Y			89049
19	133		880622	26	2	RBT	9		368	470	SC	4				Floy			R	Y			89050
19	133	5.0	880707	28	2	RBT	9		383	600	SC	4				Floy			R	Y			89052
19	133	1.7	880706	28	2	RBT	9		356	495	SC	5				Floy			R	Y			89053
19	133	3.3	880705	28	2	RBT	9		280	225	SC	4				Floy			R	Y			89054
19	133		880705	28	2	RBT	9		487	1325	SC	5				Floy			R	Y			89055
19	133	5.2	880703	28	1	RBT	9		531	1650	SC	5				Floy			R	Y			89056
19	133	0.0	880701	27	2	RBT	9		444	925	SC	6				Floy			R	Y			89057
19	133	5.1	880929	40	2	RBT	9		390	650	SC	5				Floy			R	Y			89058
19	133	3.6	880913	38	2	RBT	9		397	950	SC	6				Floy			R	Y			89059
19	133	5.5	880627	27	2	RBT	9		530	1950	SC	5				Floy			R	Y			89061
19	133	5.5	880627	27	2	RBT	9		410	785	SC		I			Floy			R	Y			89062
19	133	5.5	880627	27	2	RBT	9		366	550	SC	5				Floy			R	Y			89063
19	133	5.3	880626	27	1	RBT	9		454	1500	SC	5				Floy			R	Y			89064
19	133	3.3	880912	38	2	RBT	9	F	565	3000	SC		R			Floy			R	Y			89065
19	133	1.2	880625	27	1	RBT	9		371	550	SC	5				Floy			R	Y			89066
19	133	1.0	880625	27	1	RBT	9	F	438	1050	SC	5				Floy			R	Y			89068
19	133	3.9	880624	26	2	RBT	9		500	1350	SC		I			Floy			R	Y			89069
19	133	3.9	880624	26	2	RBT	9		639	3250	SC	8				Floy			R	Y			89070
19	133	3.4	880628	27	2	RBT	9	M	645	2850	SC	7				Floy			R	Y			89141
19	133	3.4	880628	27	2	RBT	9		510	1550	SC	6				Floy			R	Y			89143
19	133	5.8	880629	27	2	RBT	9		428	925	SC	5				Floy			R	Y			89144
19	133	5.3	880821	35	1	RBT	9				SC				Y	Floy			R	Y			89144
19	133	3.3	880921	39	2	RBT	9				SC				Y	Floy			R	Y			89144

-Continued-

Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988 (continued).

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	----Tag Color[5]--- W	BK	R	Y	B	C	Tag Number
19	133	5.8	880629	27	2	RBT	9	F	490	1400	SC	5				Floy			R	Y			89145
19	133	1.7	880630	27	2	RBT	9		454	1125	SC	6				Floy			R	Y			89146
19	133	0.0	880701	27	2	RBT	9		265	200	SC	4				Floy			R	Y			89148
19	133	7.9	880704	28	2	RBT	9		528	1650	SC	5				Floy			R	Y			89149
19	133	8.2	880717	30	1	RBT	9				SC				Y	Floy			R	Y			89149
19	133	5.6	880708	28	2	RBT	9		432	925	SC	6				Floy			R	Y			89151
19	133	8.7	880708	28	2	RBT	9	F	482	1300	SC	6				Floy			R	Y			89152
19	133	3.3	880912	38	2	RBT	9	F	452	2700	SC	7				Floy			R	Y			89153
19	133	3.3	880710	29	1	RBT	9		319	350	SC	4				Floy			R	Y			89154
19	133	5.1	880914	38	2	RBT	9	M	495	1800	SC		R			Floy			R	Y			89156
19	133	3.5	880915	38	2	RBT	9	M	562		SC	7	R			Floy			R	Y			89157
19	133	1.7	880717	30	1	RBT	9		280		SC	4				Floy			R	Y			89158
19	133	8.9	880718	30	2	RBT	9		640	2300	SC		I			Floy			R	Y			89159
19	133	3.6	880722	30	2	RBT	9		286	230	SC	3				Floy			R	Y			89160
19	133	3.5	880803	32	2	RBT	9				SC				Y	Floy			R	Y			89160
19	133	3.5	880801	32	2	RBT	9		420	750	SC	4				Floy			R	Y			89164
19	133	5.2	880712	29	2	RBT	9		396	295	SC	3				Floy			R	Y			89165
19	133	3.5	880801	32	2	RBT	9		270	200	SC		R		Y	Floy			R	Y			89165
19	133	1.0	880802	32	2	RBT	9		340	400	SC	5				Floy			R	Y			89166
19	133	3.5	880803	32	2	RBT	9		283	250	SC	3				Floy			R	Y			89167
19	133	0.7	880804	32	2	RBT	9		343	400	SC	5				Floy			R	Y			89168
19	133	1.0	880805	32	2	RBT	9		368	525	SC		R			Floy			R	Y			89169
19	133	3.6	880928	40	2	RBT	9		373	425	SC		R		Y	Floy			R	Y			89169
19	133	3.4	880806	33	1	RBT	9		354	450	SC	4				Floy			R	Y			89170
19	133	4.1	880807	33	1	RBT	9		393	600	SC	5				Floy			R	Y			89171
19	133	3.9	880807	33	1	RBT	9		361	450	SC	5				Floy			R	Y			89172
19	133	8.1	880619	26	1	RBT	9	F	515		SC	8				Floy			R	Y			89174
19	133	8.2	880702	28	1	RBT	9		500		SC				Y	Floy			R	Y			89174
19	133	5.2	880707	28	2	RBT	9		460	1200	SC	5				Floy			R	Y			89178
19	133	7.9	880709	29	1	RBT	9		360	500	SC	4				Floy			R	Y			89179
19	133	7.8	880712	29	2	RBT	9		486	1250	SC		I			Floy			R	Y			89180
19	133	3.7	880713	29	2	RBT	9		391	700	SC	6				Floy			R	Y			89181
19	133	5.9	880814	34	1	RBT	9		364	490	SC		R			Floy			R	Y			89184
19	133	7.7	880813	34	1	RBT	9		375	530	SC		R			Floy			R	Y			89185
19	133	8.2	880813	34	1	RBT	9		428	790	SC		R			Floy			R	Y			89186
19	133	8.2	880813	34	1	RBT	9		367	525	SC	4				Floy			R	Y			89187
19	133	5.6	880813	34	1	RBT	9		484	400	SC	7	R			Floy			R	Y			89188
19	133	5.3	880821	35	1	RBT	9				SC				Y	Floy			R	Y			89188
19	133	1.7	880804	32	2	RBT	9	F	322	350	SC	4				Floy			R	Y			89190
19	133	3.5	880804	32	2	RBT	9		510	1600	SC	6				Floy			R	Y			89191
19	133	3.5	880804	32	2	RBT	9		255	150	SC	2				Floy			R	Y			89192
19	133	3.5	880802	32	2	RBT	9		460	1000	SC	6				Floy			R	Y			89194
19	133	3.7	880801	32	2	RBT	9		320		SC	3				Floy			R	Y			89195
19	133	1.7	880731	32	1	RBT	9		428	975	SC	5				Floy			R	Y			89196
19	133	1.7	880731	32	1	RBT	9		300	300	SC		R			Floy			R	Y			89197
19	133	3.4	880730	32	1	RBT	9		363	550	SC		R			Floy			R	Y			89198
19	133	3.4	880730	32	1	RBT	9		426	850	SC	5				Floy			R	Y			89199
19	133	3.4	880730	32	1	RBT	9		455	1025	SC	5				Floy			R	Y			89200
19	152	outlet	881000			RBT	99				SC				Y *	Floy			R	Y			89200
19	133	3.6	880727	31	2	RBT	9		335	400	SC	4				Floy			R	Y			89201
19	133	3.5	880803	32	2	RBT	9				SC				Y	Floy			R	Y			89201

-Continued-

Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988 (continued).

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	----Tag Color[5]--- W	BK	R	Y	B	C	Tag Number
19	133	3.6	880722	30	2	RBT	9		386	500	SC		R			Floy			R	Y			89202
19	133	3.5	880915	38	2	RBT	9	F	577	2775	SC	6				Floy			R	Y			89204
19	133	4.6	880719	30	2	RBT	9		596	2200	SC	6				Floy			R	Y			89205
19	133	5.1	880914	38	2	RBT	9		602	3200	SC				Y	Floy			R	Y			89205
19	133	8.7	880718	30	2	RBT	9		533	1600	SC	7				Floy			R	Y			89206
19	133	8.7	880818	34	2	RBT	9			1700	SC				Y	Floy			R	Y			89206
19	133	5.6	880717	30	1	RBT	9		410	850	SC	4				Floy			R	Y			89207
19	133	5.6	880717	30	1	RBT	9	M	628	2500	SC	6				Floy			R	Y			89208
19	133	3.7	880715	29	2	RBT	9		321	400	SC		I			Floy			R	Y			89209
19	133	3.7	880722	30	2	RBT	9				SC				Y	Floy			R	Y			89209
19	133	3.7	880715	29	2	RBT	9		278	250	SC	5				Floy			R	Y			89210
19	133	3.5	880803	32	2	RBT	9				SC				Y	Floy			R	Y			89210
19	133	3.3	880912	38	2	RBT	9	M	535	2500	SC		R			Floy			R	Y			89247
19	133	1.4	880809	33	2	RBT	9		410	750	SC		R			Floy			R	Y			89249
19	133	3.4	880814	34	1	RBT	9		418		SC	5				Floy			R	Y			89253
19	133	5.1	880928	40	2	RBT	9		363	475	SC	5	I			Floy			R	Y			89254
19	133	3.3	880909	37	2	RBT	9	F	562	2600	SC	7				Floy			R	Y			89255
19	133	3.7	880907	37	2	RBT	9	M	514	2000	SC	7				Floy			R	Y			89257
19	133	3.3	880907	37	2	RBT	9		328	475	SC	4				Floy			R	Y			89258
19	133	5.1	880909	37	2	RBT	9	M	568	3200	SC		R			Floy			R	Y			89259
19	133	3.6	880909	37	2	RBT	9	F	560	2900	SC	7	R			Floy			R	Y			89261
19	133	5.1	880914	38	2	RBT	9		545	2400	SC		R			Floy			R	Y			89262
19	133	5.1	880910	38	1	RBT	9	M	540	2250	SC		R			Floy			R	Y			89264
19	133	3.3	880910	38	1	RBT	9	M	662	4150	SC	8				Floy			R	Y			89265
19	133	3.3	880910	38	1	RBT	9	M	418	890	SC	5				Floy			R	Y			89266
19	133	3.3	880912	38	2	RBT	9	F	457	1650	SC	6				Floy			R	Y			89268
19	133	3.3	880911	38	1	RBT	9	F	430	1100	SC	6				Floy			R	Y			89269
19	133	3.3	880911	38	1	RBT	9		338	525	SC		R			Floy			R	Y			89271
19	133	3.3	880911	38	1	RBT	9		280	250	SC	3	R			Floy			R	Y			89272
19	133	5.2	880911	38	1	RBT	9	F	363	680	SC		R			Floy			R	Y			89273
19	133	5.2	880911	38	1	RBT	9	M	571	3425	SC	7				Floy			R	Y			89275
19	133	5.1	880911	38	1	RBT	9	M	535	2345	SC	7				Floy			R	Y			89276
19	133	5.1	880911	38	1	RBT	9	F	539	2500	SC	6				Floy			R	Y			89277
19	133	1.0	880927			RBT	16			1900	SC				Y	Floy			R	Y			89277
19	133	3.0	880822	35	2	RBT	9		207	300	SC					Floy			R	Y			89280
19	133	3.9	880811	33	2	RBT	9		280	225	SC		R			Floy			R	Y			89281
19	133	1.2	880811	33	2	RBT	9		260		SC		R			Floy			R	Y			89282
19	133	1.2	880811	33	2	RBT	9		279	200	SC	4				Floy			R	Y			89283
19	133	7.0	880812	33	2	RBT	9		382	600	SC	5				Floy			R	Y			89284
19	133	3.3	880814	34	1	RBT	9		330	350	SC	4				Floy			R	Y			89286
19	133	5.7	880815	34	2	RBT	9		604	2110	SC	7				Floy			R	Y			89290
19	133	5.2	880815	34	2	RBT	9		501	1090	SC		R			Floy			R	Y			89291
19	133	3.3	880916	38	2	RBT	9				SC				Y	Floy			R	Y			89291
19	133	5.2	880815	34	2	RBT	9		590	1500	SC		R			Floy			R	Y			89292
19	133	5.1	880914	38	2	RBT	9	F	460	1400	SC		R			Floy			R	Y			89293
19	133	5.2	880816	34	2	RBT	9		282	200	SC		R			Floy			R	Y			89294
19	133	5.2	880816	34	2	RBT	9		430	775	SC	4				Floy			R	Y			89295
19	133	5.7	880818	34	2	RBT	9	F	473	1050	SC	5				Floy			R	Y			89296
19	133	5.2	880816	34	2	RBT	9		535	1700	SC	6				Floy			R	Y			89297
19	133	5.2	880817	34	2	RBT	9	F	403	700	SC		R			Floy			R	Y			89298
19	133	5.2	880817	34	2	RBT	9	M	563	1700	SC	8				Floy			R	Y			89299

-Continued-

Appendix Table 11. Summary of biological data for rainbow trout tagged in the sport fishery in the Tazimina River, 1987 and 1988 (continued).

Survey Area	Site[1]	River Mile	Date	Wk Pd	We Wd	Species	Gear Code[2]	Sex	Fork Length (mm)	Weight (gm)	Age Str.	Age	Age Err[3]	Fate	Recap[4]	Tag Type	----Tag Color[5]--- W	BK	R	Y	B	C	Tag Number
19	133	4.7	880817	34	2	RBT	9		424	900	SC	6				Floy			R	Y			89300
19	133	4.7	880817	34	2	RBT	9	F	403	650	SC		R			Floy			R	Y			89301
19	133	3.7	880817	34	2	RBT	9		300	260	SC		R			Floy			R	Y			89302
19	133	3.0	880919	39	2	RBT	9				SC				Y	Floy			R	Y			89302
19	133	3.5	880817	34	2	RBT	9		425	805	SC	7				Floy			R	Y			89303
19	133	8.8	880818	34	2	RBT	9		368	450	SC	6				Floy			R	Y			89306
19	133	8.8	880818	34	2	RBT	9		328	360	SC	5				Floy			R	Y			89307
19	133	5.1	880910	38	1	RBT	9	F	410	1010	SC		R			Floy			R	Y			89309
19	133	8.8	880818	34	2	RBT	9		482	1410	SC	7				Floy			R	Y			89310
19	133	5.7	880818	34	2	RBT	9	F	385	550	SC		R			Floy			R	Y			89311
19	133	5.7	880818	34	2	RBT	9	F	462	1100	SC		R			Floy			R	Y			89312
19	133	5.7	880818	34	2	RBT	9	F	546	1825						Floy			R	Y			89313
19	133	5.7	880818	34	2	RBT	9		386	625	SC		R			Floy			R	Y			89314
19			880916	38	2	RBT	9				SC				Y	Floy			R	Y			89561
19	133	3.3	880819	34	2	RBT	9		488	1250	SC	7				Floy			R	Y			89563
19	133	5.7	880818	34	2	RBT	9		624	2450	SC	9				Floy			R	Y			89564
19	133	3.0	880822	35	2	RBT	9	M	548	1750	SC		R			Floy			R	Y			89566
19	133	3.3	880824	35	2	RBT	9		326	395	SC		R			Floy			R	Y			89567
19	133	1.2	880824	35	2	RBT	9		283	290	SC	2				Floy			R	Y			89568
19	133	3.6	880913	38	2	RBT	9	F	485	1580	SC	6				Floy			R	Y			89570
19	133	3.3	880913	38	2	RBT	9	F	352	600	SC	5				Floy			R	Y			89571
19	133	3.5	880915	38	2	RBT	9	M	586	2750	SC		R			Floy			R	Y			89572
19	133	3.3	880913	38	2	RBT	9	F	537	2175	SC		R			Floy			R	Y			89573
19	007		88			RBT									Y	Floy			R	Y			89573
19	133	5.4	880917	39	1	RBT	9	M	540	2425	SC		R			Floy			R	Y			89574
19	133	5.6	880917	39	1	RBT	9		355	625	SC		R			Floy			R	Y			89575
19	133	5.5	880917	39	1	RBT	9		418	1100	SC		R			Floy			R	Y			89576
19	133	5.0	880917	39	1	RBT	9	F	429	1130	SC	7				Floy			R	Y			89577
19	133	5.0	880917	39	1	RBT	9	M	502	1850	SC	6	R			Floy			R	Y			89578
19	133	5.4	880920	39	2	RBT	9	F	564	2550	SC	8				Floy			R	Y			89579
19	133	5.1	880926	40	2	RBT	9	F	385	850	SC		I			Floy			R	Y			89580
19	133	3.6	880929	40	2	RBT	9		365	700	SC	5				Floy			R	Y			89581
19	133	6.0	881001	41	1	RBT	9		330	460	SC	4				Floy			R	Y			89584
19	133	5.1	880915	38	2	RBT	9	M	411	1000	SC	5				Floy			R	Y			89595

1
- 007 Newhalen River.
- 133 Tazimina River mile number.
- 152 Six Mile Lake.

2
- 3 Beach Seine
- 9 Hook and Line
- 16 Found Dead
- 99 Unknown

3
- R Regenerated scale.
- I Illegible scale.

4
- * Tags reported to ADF&G or NPS.

5
- R,Y Orange
- BK,R Brown
- R,B Brown

Appendix Table 12. Water depths and velocities and substrate compositions for sockeye salmon redds sampled in the Tazimina River, 1987.

Observation Number	Water Depth ft.	Water Depth m.	Water Velocity (ft./sec.)	Substrate[1] 1	2	3	4	5	6	Location (Mile #)
1	2.9	0.884	0.4		X					9.0 Main channel
2	4.1	1.250	0.5		X					
3	4.4	1.341	2.4			X	X	X		
4	2.2	0.671	3.7				X	X		
5	3.1	0.945	2.4		X		X	X		8.5
6	2.3	0.701	1.6			X	X			
7	2.6	0.792	1.9		X		X			8.0
8	3.1	0.945	2.2		X		X			
9	2.6	0.792	1.9			X	X			
10	1.8	0.549	1.6		X	X				
11	2.6	0.792	1.8		X	X	X			
12	1.4	0.427	1.6			X				
13	2.6	0.792	2.2		X					
14	2.0	0.610	1.9		X					
15	3.3	1.006	3.4			X	X			
16	2.8	0.853	2.9			X	X			
17	2.9	0.884	3.0				X	X		7.5
18	3.0	0.914	3.1				X	X	X	7.0
19	1.8	0.549	0.8		X	X				6.5
20	1.7	0.518	1.4		X		X			
21	2.4	0.732	2.5		X		X			
22	2.1	0.640	1.9		X		X			
23	1.8	0.549	1.9		X		X			
24	1.9	0.579	2.1		X		X			6.0
25	2.1	0.640	1.6		X			X		
26	2.2	0.671	2.1		X			X		
27	2.1	0.640	2.0		X		X	X		
28	1.6	0.488	1.7		X		X	X		
29	1.8	0.549	2.3			X	X	X		
30	1.6	0.488	2.4				X	X	X	
31	1.5	0.457	2.6		X		X			5.8 Alexcy braid, upper,
32	1.4	0.427	2.4		X		X			main channel
33	1.5	0.457	2.3		X	X	X			
34	1.9	0.579	2.3		X	X	X			
35	2.5	0.762	2.5		X	X	X	X		
36	2.9	0.884	2.6			X	X	X		
37	2.4	0.732	3.5				X	X		
38	1.1	0.335	1.0			X	X			5.5 Beaver pond loop, upper
39	1.5	0.457	0.5			X	X			
40	2.2	0.671	0.5		X		X			
41	2.0	0.610	1.5		X	X	X			
42	2.2	0.671	0.8		X	X				
43	1.6	0.488	2.4			X	X			
44	2.8	0.853	3.2		X	X				
45	1.4	0.427	0.8			X	X			Beaver pond loop, middle
46	2.0	0.610	2.2			X	X			
47	2.4	0.732	1.6		X		X			
48	1.2	0.366	1.9		X	X	X	X		
49	1.4	0.427	2.7		X	X	X	X		
50	1.7	0.518	3.0		X	X	X	X		
51	1.0	0.305	2.1			X	X	X		
52	1.2	0.366	3.0				X	X		5.3 Alexcy braid, main channel
53	2.2	0.671	3.2			X	X	X		
54	3.4	1.036	3.3				X	X	X	
55	1.5	0.457	2.4				X	X	X	
56	1.4	0.427	3.5				X	X		5.2 Alexcy braid, lower
57	1.6	0.488	3.1			X	X	X		
58	2.3	0.701	2.6			X	X	X		
59	2.1	0.640	2.9			X	X	X		
60	1.2	0.366	2.8		X		X	X		
61	2.6	0.792	2.9		X	X	X			5.1 Beaver pond loop, lower
62	1.2	0.366	2.1		X	X	X			
63	2.2	0.671	2.6		X	X				
64	2.2	0.671	2.5		X	X	X			
65	1.4	0.427	1.1		X	X				

-Continued-

Appendix Table 12. Water depths and velocities and substrate compositions for sockeye salmon redds sampled in the Tazimina River, 1987 (continued).

Observation Number	Water Depth ft.	Water Depth m.	Water Velocity (ft./sec.)	Substrate[1] 1	2	3	4	5	6	Location (Mile #)
66	1.7	0.518	0.5		X	X				
67	1.8	0.549	1.5		X	X	X			
68	2.1	0.640	3.1		X	X	X	X		5.0 Main channel
69	2.4	0.732	3.7		X	X	X			
70	1.1	0.335	2.0			X	X			5.0 Alexcy braid, lower
71	1.1	0.335	1.2		X	X	X			
72	0.8	0.244	0.8		X	X	X			
73	1.6	0.488	1.1		X		X	X		
74	1.3	0.396	0.9		X		X	X		
75	1.0	0.305	0.2		X	X		X		
76	1.7	0.518	0.4		X	X	X	X		
77	2.8	0.853	4.1			X	X		X	
78	2.0	0.610	3.2		X		X	X		
79	2.8	0.853	4.5				X	X	X	
80	3.0	0.914	4.2				X	X		
81	2.9	0.884	3.0			X	X	X		
82	3.0	0.914	5.2		X	X	X	X		
83	1.8	0.549	1.5		X		X	X		
84	2.8	0.853	3.0		X	X	X	X		
85	3.9	1.189	5.1			X	X	X	X	
86	2.9	0.884	5.0				X	X	X	
87	1.6	0.488	3.4			X	X	X		3.4 Hudson braid, main channel
88	1.3	0.396	0.6		X	X	X			
89	2.4	0.732	4.6				X	X		
90	1.7	0.518	1.8		X	X	X	X		
91	3.1	0.945	2.4			X	X	X		
92	3.4	1.036	3.5			X		X		
93	2.0	0.610	4.1			X	X			3.4 Hudson braid, side channel
94	1.2	0.366	2.5			X	X	X		
95	1.5	0.457	1.5			X		X		3.0 Hudson braid, side channel
96	1.7	0.518	2.1				X	X		
97	1.4	0.427	2.5				X	X		
98	1.7	0.518	0.8			X	X	X		
99	1.8	0.549	1.2				X	X		
100	1.6	0.488	1.4			X	X	X		
101	1.5	0.457	0.2			X		X		
102	2.0	0.610	1.0		X		X	X		
103	0.9	0.274	2.8			X		X		
104	1.2	0.366	2.4			X		X		
105	0.8	0.244	1.0		X		X	X		3.0 Hudson braid
106	0.9	0.274	0.6		X		X	X		
107	0.9	0.274	0.8		X		X	X		
108	1.3	0.396	0.8	X	X			X		
109	1.8	0.549	1.1		X	X	X	X		
110	2.5	0.762	1.1		X	X	X			
111	1.6	0.488	1.3		X			X		2.8 Main channel below bluff
112	2.2	0.671	2.1				X	X		
113	1.8	0.549	1.9			X		X		
114	1.1	0.335	0.9		X		X			
115	1.1	0.335	1.1		X	X	X			
116	1.3	0.396	2.7			X	X			2.7 Main channel
117	0.8	0.244	1.0		X		X			
118	1.8	0.549	1.9		X		X	X		
119	1.1	0.335	2.3			X	X	X		
120	1.1	0.335	0.4		X		X			2.6
121	1.3	0.396	0.3		X			X		
122	0.9	0.274	0.6		X	X				
123	3.5	1.067	1.3				X	X		
124	3.7	1.128	2.2		X		X	X		
125	3.0	0.914	2.2		X	X	X	X		
126	2.1	0.640	1.9		X	X	X			
127	1.9	0.579	2.1		X		X	X		
128	1.5	0.457	0.2	X	X		X			
129	1.6	0.488	0.2	X			X	X		
130	1.3	0.396	2.0		X		X	X		2.5 Main channel
131	4.2	1.280	3.0			X	X	X		
132	2.5	0.762	2.6		X	X	X	X		
133	2.7	0.823	3.8			X	X	X		
134	4.0	1.219	2.5		X	X	X			2.4 Main channel
135	3.2	0.975	2.2				X	X		

-Continued-

Appendix Table 12. Water depths and velocities and substrate compositions for sockeye salmon redds sampled in the Tazimina River, 1987 (continued).

Observation Number	Water Depth ft.	Water Depth m.	Water Velocity (ft./sec.)	Substrate[1] 1	2	3	4	5	6	Location (Mile #)
136	2.0	0.610	3.8		X		X	X		
137	3.3	1.006	2.0		X		X	X		
138	3.7	1.128	2.9		X		X	X		
139	1.9	0.579	2.6			X	X	X		
140	2.7	0.823	4.0			X	X	X		2.0 Main channel
141	2.0	0.610	2.4		X	X	X			
142	2.4	0.732	3.8		X	X	X			
143	2.6	0.792	3.1			X	X	X		
144	2.1	0.640	2.3		X		X			
145	2.0	0.610	2.5		X		X	X		
146	1.1	0.335	0.7			X	X	X		2.0 Deep Creek
147	1.0	0.305	1.1			X	X	X		
148	1.7	0.518	1.6		X	X	X	X		
149	1.9	0.579	0.9			X	X	X		
150	0.9	0.274	1.3			X	X	X		
151	1.6	0.488	1.5		X		X	X		
152	2.0	0.610	2.6		X	X	X			1.5 Main channel
153	2.2	0.671	2.9		X	X	X			
154	4.2	1.280	3.0		X			X	X	
155	3.0	0.914	3.5			X	X	X		
156	2.0	0.610	2.2		X	X	X			
157	2.6	0.792	2.5		X		X	X		
158	2.0	0.610	2.5	X				X	X	
159	2.8	0.853	2.7		X		X	X		
160	3.8	1.158	3.2		X	X		X		
161	2.1	0.640	2.4		X		X			
162	0.5	0.152	0.5		X		X	X		1.0 loop
163	0.6	0.183	0.2		X	X				
164	0.8	0.244	0.6		X		X			
165	1.4	0.427	1.1	X	X	X	X			
166	1.9	0.579	1.0	X		X				
167	1.8	0.549	1.2	X	X	X	X			
168	3.0	0.914	0.5	X	X		X	X		1.0 Main channel
169	4.4	1.341	0.9		X		X	X		
170	2.2	0.671	2.8			X	X	X		
171	3.3	1.006	2.4			X	X	X		
172	3.8	1.158	1.5	X	X		X			
173	2.8	0.853	2.2			X	X	X		0.5
174	3.7	1.128	0.9		X			X		
175	1.8	0.549	1.9			X	X	X		
176	3.6	1.097	2.7			X	X	X		
177	1.6	0.488	1.8		X	X	X			0.5 South channel
178	1.5	0.457	1.5			X	X			
179	1.3	0.396	1.0		X	X	X			
180	3.9	1.189	0.6		X	X				
181	3.7	1.128	1.1		X	X				
182	1.8	0.549	0.5	X	X		X			
183	1.3	0.396	1.0		X					0.4 North channel
184	3.2	0.975	1.4		X	X	X	X		
185	3.4	1.036	0.9		X		X	X		
186	1.7	0.518	1.7		X	X	X			
187	2.8	0.853	3.5			X	X	X		0.2 Main channel
188	3.0	0.914	3.3		X	X	X			
189	3.5	1.067	0.5		X	X	X			
190	4.8	1.463	1.8		X		X			0.1
191	3.8	1.158	1.5	X	X		X			
192	3.7	1.128	1.8	X	X		X	X		

[1] Substrate 1: Silt, Substrate 2: Sand, Substrate 3: Gravel (0.25-0.50 inch dia.), Substrate 4: Gravel (0.50-1.00 inch dia.), Substrate 5: Cobble (1.0-4.0 inch dia.), Substrate 6: Rock (4.0+ inch dia.).