

**HARZA-EBASCO**

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**A Survey of Boaters Exiting at the  
Susitna Landing; Talkeetna Boat Launch and Airstrip;  
and, Willow Creek During 1984.**

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#### ABSTRACT

Interviewers contacted approximately 1900 boat operators exiting during May to September, 1984 at the Susitna Landing; 81 boats exiting during July to September, 1984 at the Talkeetna boat launch or airstrip; and 426 boats exiting during July to September, 1984 at Willow Creek.

Based on the above sample, an estimated 2700 boats and 8600 boaters exited at Susitna Landing, 400 boats and 1000 boat rs exited at the Talkeetna sites, and 600 boats and 1800 boaters exited at Willow Creek during the above periods.

Approximately 75% of the people exiting at the above three sites had sport fished. Other activities such as camping, transportation, private supply, and sightseeing were also popular; and still others, such as hunting, were seasonally important. At Willow and Talkeetna, approximately 60-70% of the boaters took one day trips, while at the Susitna Landing one to three day trips were nearly equal in frequency.

Approximately 90% of all boats exiting at Susitna Landing or the Talkeetna sites were inboard and outboard jets. At Willow Creek, nearly 70% of all boats exiting were airboats. Over all sites sampled, about 90% of the boats exiting had drafts of 8 inches or less.

Overall, no single navigational problem (rocks, bars, debris, velocity) was encountered by more than 16% of the boats exiting at any one of the points sampled. In no single month did more than 28% of the boats exiting at any one point sampled encounter any single navigational problem.

## INTRODUCTION

The Susitna River serves as a transportation corridor that provides access to major sport fisheries, remote hunting areas, and numerous recreational opportunities from camping to just plain sightseeing. For some people, such as guides and lodge operators, river use is an important part of their livelihood, while for others the river links their home to the towns and cities along the Alaska road system. Obviously, if diminished flows hampered navigation of the Susitna River there would be a detrimental economic effect on some individuals. Perhaps not so obvious, but still important, would be the impact of decreased recreational use of the river and its tributaries on the entire Alaskan economy. The goal of this study was to obtain information regarding boating navigation and use of the Susitna River and tributary mouths during the major portion of the ice free period. The ultimate purpose of this information is to help assess the impact of different flows on river use.

Boaters were interviewed during 1984 as they exited at the Susitna Landing from May through September, Talkeetna airstrip and boat launch from July through September, and Willow Creek from July through September. Data were gathered on boat characteristics (length, motor size, draft, and class) and boater characteristics (age, sex, residence). Activities for the party, as well as their starting locations and destinations were determined. Also, boaters were asked if they encountered any of several types of navigational problems.



## METHODS

### Sampling Schedules

Boaters were interviewed as they exited at Willow Creek, Susitna Landing, and Talkeetna airstrip and boat launch (Figure 1). The actual schedule deviated from that described below when a conflict existed between collection of creel census and navigation study data. These conflicts did occur at the Talkeetna and Willow Creek sites (see "Problem Areas" section below). The definition of a sampling day changed over time to reflect the change in hours of daylight (i.e., boating hours), activity levels during king salmon season, and other characteristics of the exit site that might affect activity. The sampling day was then divided into four-hour periods. Selection of which period to sample was random and without replacement (i.e., no period was selected twice before all periods had been sampled once). In those situations when not every weekday could be sampled, selection of which weekday to be sampled was also random and without replacement. A holiday was treated as a weekend day.

#### Susitna Landing:

Approximately 72 man hours were scheduled each week for interviewing boaters as they exited at the Susitna Landing. From 19 May to 20 July the sampling day was 0400-2400 hours. Sixteen hours were sampled each weekend day and two four-hour periods were sampled each weekend day.

For 21 July to 31 August a sampling day was 0600-2200 hours. The interview time was allocated as described above.

For September the sampling day was 0800-2000 hours. Sampling was scheduled for 12 hours each weekend day, with the remaining time allocated to the weekdays.

#### Talkeetna:

Approximately 72 man hours were scheduled each week for interviewing boaters as they exited at the boat launch or the airstrip. One day off was randomly selected without replacement each week for the 22 June to 6 July period. Due to the Talkeetna River creel census, some time each week was allocated to contact bank anglers at a third sample site.

From 2 June to 15 June, and 7 July to 31 August the sampling day was 0600-2200 hours. On each weekend day two hours of a four-hour period were sampled at the airstrip (the other two hours in this four-hour period were allocated to a creel census of bank anglers), and three four-hour periods were sampled at the boat launch. Seven periods were sampled on weekdays at the boat launch, and for three of the five weekdays two hours in a four-hour period were sampled at the airstrip. The remaining time (10 hours) was allocated to the creel census to contact bank anglers.

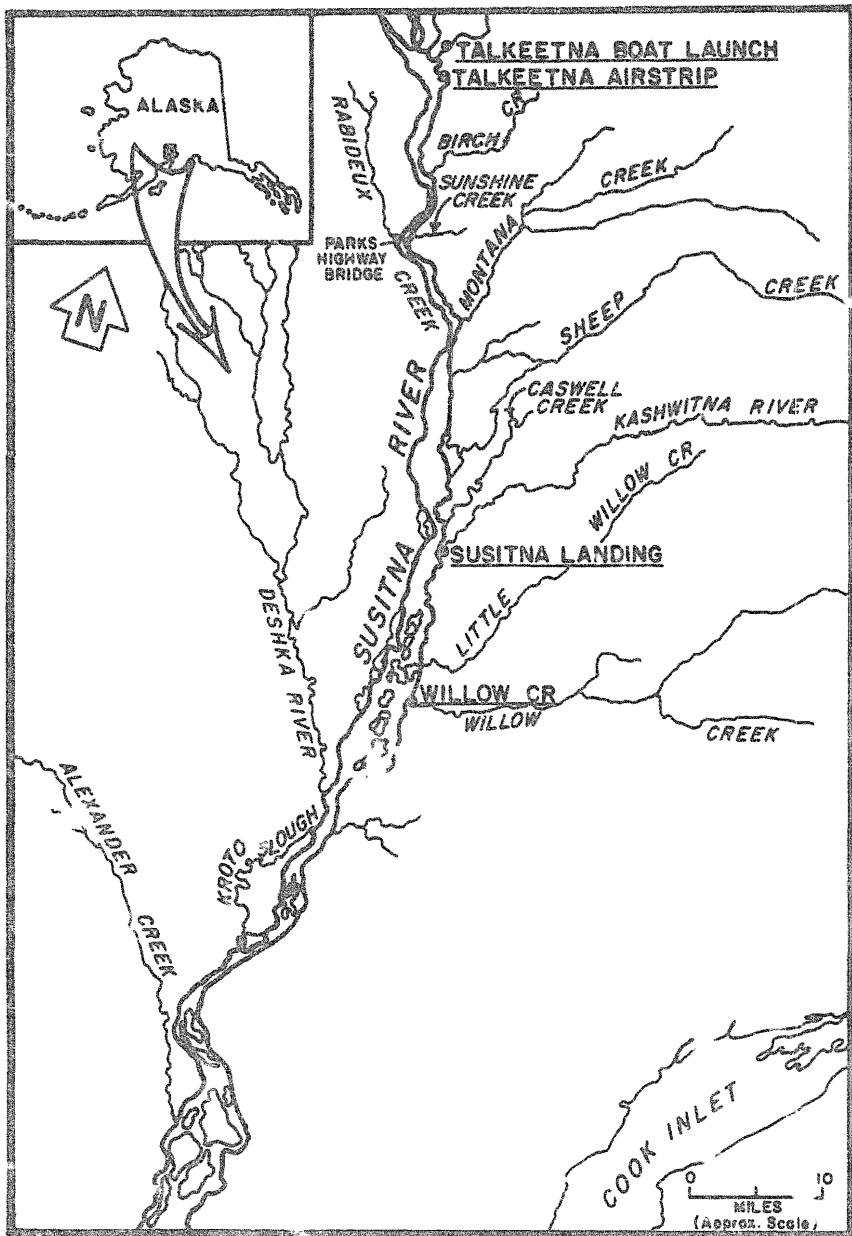


Figure 1. Lower Susitna River showing the relative location of the interview sites of Talkeetna boat launch and airstrip, Susitna Landing, and Willow Creek.

From 16 June to 6 July a sampling day was 0000-2400 hours. Each weekday was sampled 20 hours, with the remaining time allocated to weekday sampling.

For September, the schedule was similar to the 2 June through 15 June period, except the sampling day was 0800-2000 hours.

#### Willow Creek:

Approximately 72 man hours were scheduled each week for interviewing boaters as they exited at Willow Creek. From 2 June to 8 June and 2 July to 31 August the sampling day was 0600-2200 hours. Each weekend day was sampled 16 hours, with the remaining time allocated to weekdays.

From 9 June to 1 July sampling was scheduled for 24 hours each weekend day, with the remaining time assigned to weekdays. A sampling day on weekdays was 0600-2200 hours.

For September, the sampling day was 0800-2000 hours. Each weekend day was sampled 12 hours, with the remaining time allocated to weekdays.

#### Expansions

Sample values were expanded to estimate population values. Expansion factors were based on the known amount of time sampled versus the total possible number of boating hours. Corrections were made in the expansion factor for interview time missed. Estimates are not included in this report for those periods judged to have insufficient data. The expanded estimates are for boaters exiting at the three sampling sites and not for total use of the Susitna River. Stratification was by weekend and weekdays, with holidays being treated as a weekend day. For example, assume a sampling day was 0400-2400 hours. During this 20 hour period we interviewed all 100 boaters exiting during 3 of 4 periods (each period is 4 hours). We sampled 75% of the possible boating hours. The expansion factor for this day would be  $20/15 = 1.33$ . Our estimated number of boats exiting during the 0400-2400 hour period would be 133.

#### Interview Forms/Interviews

Three interview forms were used during this study. The original form was used by Harza-Ebasco personnel at the Susitna Landing from 19 May through 1 June, 1984. A revised form was used by ADF&G personnel from 2 June through 8 June, before the final form (Appendix A) was completed and used for the remainder of the study. Due to the evolution of the data form, certain variables were collected in a different manner over time. For example, boat length was recorded using codes on the original form, whereas on the final form an actual boat length was recorded. Also, put in or starting location, first and second destinations, and whether people remained overnight at their first or second destinations were not recorded on the original form. These differences explain why certain analyses presented below do not have information for all months. For example, boat class by put in location for May would be missing, since no put in locations for May were recorded.

Understanding the manner in which data were collected will make the following report easier to comprehend. Essentially the data were categorized as "Boat Information" or "People Information" (see Appendix A data form). As one might surmise, data recorded under the latter category were collected for each person in a boat (e.g., sex, age), whereas data recorded under the former category (e.g., boat class, draft) were collected on a boat or party basis. This is especially important to understand for the various activities. If any one person in the boat was engaged in an activity, then a "Y" for yes was recorded for that activity, yet there could only be one main activity (i.e., the main reason for the trip) for the entire boat. Therefore, in the presentation of results for activities, the information will be presented as boats rather than people engaged in each activity.

### Seasons

Two seasons were defined for use in analysis of the data. They were 'king salmon season', and 'other salmon season' or what may also be referred to in this report as 'other fish season'. The king salmon season was defined as 19 May to 6 July, and the other salmon season was defined as 7 July through 30 September. Since the hunting season was the month of September, no separate season for hunting was included.

### Problem Areas

Several problems were encountered during data collection and analysis. Since the study evolved during the first month, certain data were collected later in the study that had not been collected earlier. An example of this is put in location mentioned above.

Also, since some people did not respond to all questions in the survey, there exists 'missing' data. This is not a problem, if clarified. For example, assume half of 100 boaters interviewed did not indicate their destination, yet the other half all had the same destination, x. It would be misleading to state that 100% of the boats had x as their destination. In reality, 50% of the boats went to destination x, and 50% did not list a destination. In this report the sum of the number of boats for one variable may not equal the sum of the number of boats for another variable, because not all data were available for all boats.

Another problem resulted from differences in how data were collected. An example is motor size. Some boats had such large engines that their operators provided a cubic inch displacement rather than a horsepower rating. While there may be some overlap between actual horsepower and displacement, values of 240 and greater are most likely cubic inch displacements.

One objective of this study was to relate navigational problems to discharge, but numerous problems made this task difficult. It would be necessary to pinpoint the location of each navigational problem, its date of occurrence, and measure discharge at the point of the problem to analyze the relation between discharge and navigational problems. Since

the above was impossible to accomplish with the available budget, only general statements about discharge and its relation with navigational problems are included. Discharge data included were provided by Mr. Wayne Dyok and Mr. Dallas Owens of Harza-Ebasco.

Another problem arose at the Talkeetna and Willow Creek sites due to the conflict between sampling for the Navigation study and the ADF&G creel census. At Willow Creek there was a weekend only king salmon fishery (June 9,10,16,17,23,24,31 and July 1). During those weekends, the ADF&G personnel were unable to complete the Navigation study data collection and also perform their primary duties associated with the creel census. Therefore, insufficient data were available for boaters exiting at Willow Creek during a peak use period. At Talkeetna a similar situation occurred for weekends during the king salmon season there. In addition, there were too few boats sampled on weekdays during the king salmon season at Talkeetna to produce reliable estimates. Any estimates that could be calculated from the available data, would grossly underestimate actual use during the above periods. Therefore, no estimates will be presented in this report for the month of June or the previously defined 'king salmon season' for the Talkeetna and Willow Creek exit locations.

#### Analysis

All data coding, key punching, editing, programming and analyses were performed by Boeing Computer Services in Seattle under supervision of Deborah Amos. All analyses were completed using the Statistical Package for the Social Sciences (SPSS).

Certain SPSS procedures were provided by Mr. Dallas Owen, of Harza-Ebasco, and were augmented by Ms. Amos after telephone consultation with the author.

Summary tables and figures presented in this report were produced by ADF&G personnel using an IBM-XT and Lotus 1-2-3.

## RESULTS

### Boat Characteristics

#### Susitna Landing:

Approximately 1900 boat operators were interviewed at the Susitna Landing from May to September. Based on the above interviews, the following estimates for the population of boaters exiting at Susitna Landing were calculated.

During the May to September period, an estimated 2700 boats and 8600 boaters exited at the Susitna Landing. The two most frequent boat classes were inboard jets (1008 boats) and outboard jets (1332 boats) (Table 1, Figure 2). Most boats (813) were 18-19 feet in length, and 1243 boats had shallow drafts<sup>a/</sup> (Tables 2, 3, Figures 3, 4). The two major horsepower/displacement<sup>b/</sup> groups were the 80 hp and smaller motors (921 boats) and the 81-160 hp motors (668 boats) (Table 4, Figure 5). Overall, 1057 boats had medium, while 918 had heavy loads (Table 5, Figure 6).

#### Monthly.

Boat classes over the May to September period were dominated by inboard jets (33-47%) and outboard jets (44-53%) (Table 1). Each boat length group peaked in June, with the exception of the 18-19 foot group which peaked at 294 boats in May (Table 2). Boat drafts were fairly stable over time, with shallow draft boats ranging from 46-56%, and medium draft boats ranging from 35-47% (Table 3). The frequency of 80 hp and smaller motors peaked in May (362 boats), while the other motor sizes peaked in June (Table 4). The greatest frequency for each boat load category was also in June (Table 5).

#### By Season.

During the king salmon season an estimated 761 outboard jets, 532 inboard jets, and 107 outboard props exited at the Susitna Landing (Table 1). Some 47% of the boats were 18-19 feet in length, 676 had shallow drafts, and 573 had 80 hp and smaller motors (Tables 2, 3, 4).

During the other salmon season, an estimated 572 outboard jets, 476 inboard jets, and 105 outboard props exited at Susitna Landing (Table 1). Although all boat lengths, except the 16 foot and under group, had nearly equal frequencies, over 50% of the boats had shallow drafts (Tables 2, 3). Some 343 boats with 80 hp and smaller motors and 381 boats with 81-160 hp motors exited during this season (Table 4).

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<sup>a/</sup> Shallow drafts = less than or equal to 4.0 inches, medium drafts = 4.1-8.0 inches, and deep drafts = greater than 8.0 inches.

<sup>b/</sup> See discussion in Methods section. Values over 240 are most likely cubic inch displacements not horsepower.

Table 1. Boat class by exit location, 1984.<sup>a</sup>

| Exit Location   | Month/<br>Season | Air Boat |    | Canoe |   | Inboard Jet |    | Outboard Jet |    | Outboard Prop |    | Other |   | Total |
|-----------------|------------------|----------|----|-------|---|-------------|----|--------------|----|---------------|----|-------|---|-------|
|                 |                  | Boats    | %  | Boats | % | Boats       | %  | Boats        | %  | Boats         | %  | Boats | % |       |
| Susitna Landing | May              | 4        | 1  | 4     | 1 | 153         | 38 | 216          | 53 | 27            | 7  | 0     | 0 | 404   |
|                 | Jun              | 8        | 1  | 6     | 1 | 333         | 36 | 500          | 53 | 78            | 8  | 9     | 1 | 934   |
|                 | Jul              | 7        | 2  | 2     | 1 | 205         | 47 | 191          | 44 | 27            | 6  | 0     | 0 | 432   |
|                 | Aug              | 7        | 2  | 0     | 0 | 150         | 42 | 172          | 49 | 25            | 7  | 0     | 0 | 354   |
|                 | Sep              | 22       | 4  | 2     | 1 | 167         | 33 | 253          | 51 | 56            | 11 | 1     | 0 | 501   |
|                 | Overall          | 48       | 2  | 14    | 1 | 1,008       | 38 | 1,332        | 51 | 213           | 8  | 10    | 0 | 2,625 |
|                 | Kings            | 15       | 1  | 10    | 1 | 532         | 37 | 761          | 53 | 107           | 7  | 9     | 1 | 1,434 |
| Talkeetna       | Other fish       | 32       | 3  | 4     | 0 | 476         | 39 | 572          | 47 | 105           | 9  | 1     | 2 | 1,190 |
|                 | Jul              | 0        | 0  | 0     | 0 | 135         | 72 | 52           | 27 | 1             | 1  | 0     | 0 | 188   |
|                 | Aug              | 0        | 0  | 0     | 0 | 104         | 72 | 39           | 27 | 1             | 1  | 0     | 0 | 144   |
|                 | Sep              | 0        | 0  | 0     | 0 | 45          | 70 | 19           | 30 | 0             | 0  | 0     | 0 | 64    |
|                 | Overall          | 0        | 0  | 0     | 0 | 284         | 72 | 110          | 28 | 2             | 1  | 0     | 0 | 396   |
|                 | Other fish       | 0        | 0  | 0     | 0 | 284         | 71 | 110          | 28 | 3             | 1  | 0     | 0 | 397   |
|                 |                  |          |    |       |   |             |    |              |    |               |    |       |   |       |
| Willow Creek    | Jul              | 131      | 60 | 1     | 1 | 22          | 10 | 64           | 29 | 0             | 0  | 0     | 0 | 218   |
|                 | Aug              | 131      | 58 | 0     | 0 | 26          | 12 | 66           | 29 | 3             | 1  | 0     | 0 | 226   |
|                 | Sep              | 100      | 81 | 0     | 0 | 0           | 0  | 21           | 17 | 2             | 2  | 0     | 0 | 123   |
|                 | Overall          | 362      | 64 | 1     | 0 | 48          | 8  | 151          | 27 | 5             | 1  | 0     | 0 | 567   |
|                 | Other fish       | 350      | 62 | 0     | 0 | 48          | 9  | 149          | 26 | 5             | 1  | 0     | 2 | 552   |

<sup>a</sup>The numbers presented are estimates.

## Boat Class

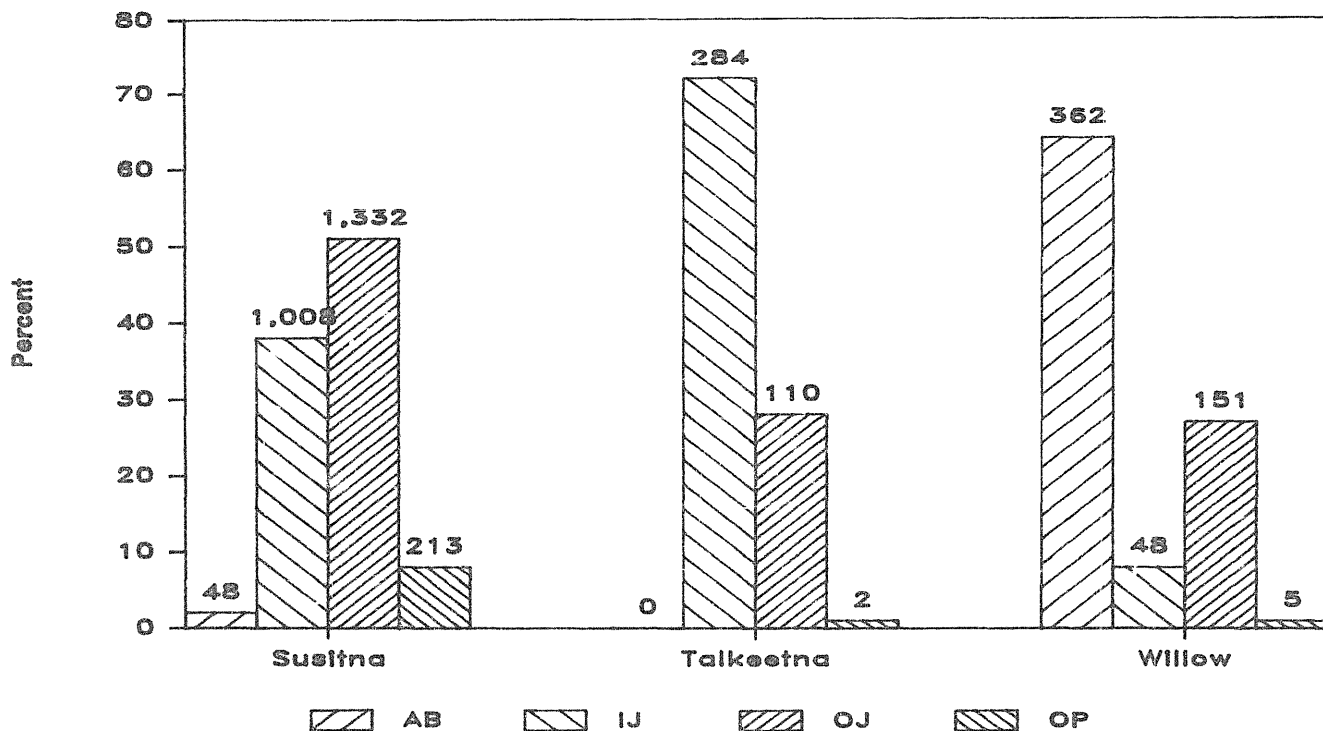


Figure 2. Boat class by exit location, 1994. The estimated number of boats are noted above each bar. AB=airboat, IJ=inboard jet, OJ=outboard jet, OP=outboard prop.



Table 2. Boat length (feet) by exit location, 1984.<sup>a</sup>

| Exit Location      | Month/<br>Season | Under 16 |    | 16-17 |    | 18-19 |    | 20-21 |    | Over 21 |    | Total |
|--------------------|------------------|----------|----|-------|----|-------|----|-------|----|---------|----|-------|
|                    |                  | Boats    | %  | Boats | %  | Boats | %  | Boats | %  | Boats   | %  |       |
| Susitna<br>Landing | May              | 12       | 4  | 12    | 3  | 294   | 86 | 17    | 5  | 6       | 2  | 341   |
|                    | Jun              | 53       | 8  | 157   | 24 | 191   | 29 | 158   | 24 | 103     | 15 | 662   |
|                    | Jul              | 22       | 5  | 82    | 19 | 116   | 26 | 131   | 30 | 87      | 20 | 438   |
|                    | Aug              | 16       | 5  | 78    | 22 | 86    | 24 | 102   | 29 | 70      | 20 | 352   |
|                    | Sep              | 44       | 9  | 138   | 28 | 126   | 25 | 117   | 23 | 75      | 15 | 500   |
|                    | Overall          | 147      | 6  | 467   | 20 | 813   | 35 | 525   | 23 | 341     | 15 | 2,293 |
|                    | Kings            | 72       | 7  | 182   | 16 | 515   | 47 | 200   | 18 | 128     | 12 | 1,097 |
| Talkeetna          | Other fish       | 74       | 6  | 285   | 24 | 298   | 25 | 324   | 27 | 213     | 18 | 1,194 |
|                    | Jul              | 0        | 0  | 56    | 30 | 18    | 9  | 53    | 28 | 62      | 33 | 189   |
|                    | Aug              | 1        | 1  | 30    | 20 | 4     | 3  | 81    | 56 | 30      | 20 | 146   |
|                    | Sep              | 1        | 2  | 2     | 3  | 16    | 25 | 8     | 13 | 36      | 57 | 63    |
|                    | Overall          | 2        | 1  | 88    | 22 | 38    | 10 | 142   | 36 | 128     | 32 | 398   |
|                    | Other fish       | 2        | 1  | 88    | 22 | 38    | 9  | 142   | 36 | 127     | 32 | 397   |
|                    |                  |          |    |       |    |       |    |       |    |         |    |       |
| Willow<br>Creek    | Jul              | 47       | 21 | 56    | 25 | 40    | 18 | 64    | 28 | 17      | 8  | 224   |
|                    | Aug              | 53       | 23 | 63    | 28 | 53    | 23 | 41    | 18 | 17      | 8  | 227   |
|                    | Sep              | 27       | 22 | 33    | 30 | 36    | 29 | 22    | 18 | 1       | 1  | 124   |
|                    | Overall          | 127      | 22 | 157   | 27 | 129   | 22 | 127   | 22 | 35      | 6  | 575   |
|                    | Other fish       | 125      | 22 | 147   | 26 | 127   | 23 | 126   | 23 | 35      | 6  | 560   |

<sup>a</sup>The numbers presented are estimates.

Table 3. Boat draft by exit location, 1984.<sup>a,b</sup>

| Exit<br>Location   | Month/<br>Season | Shallow |    | Medium |    | Deep  |    | Total |
|--------------------|------------------|---------|----|--------|----|-------|----|-------|
|                    |                  | Boats   | %  | Boats  | %  | Boats | %  |       |
| Susitna<br>Landing | May              | 203     | 54 | 146    | 39 | 29    | 7  | 378   |
|                    | Jun              | 426     | 48 | 372    | 42 | 90    | 10 | 888   |
|                    | Jul              | 224     | 53 | 147    | 35 | 53    | 12 | 424   |
|                    | Aug              | 189     | 56 | 117    | 35 | 30    | 9  | 336   |
|                    | Sep              | 201     | 46 | 207    | 47 | 33    | 7  | 441   |
|                    | Overall          | 1,243   | 50 | 989    | 40 | 235   | 10 | 2,467 |
|                    | Kings            | 676     | 50 | 549    | 41 | 128   | 9  | 1,353 |
|                    | Other fish       | 566     | 51 | 439    | 40 | 105   | 9  | 1,110 |
| Talkeetna          | Jul              | 98      | 52 | 89     | 47 | 1     | 1  | 188   |
|                    | Aug              | 88      | 60 | 56     | 39 | 1     | 1  | 145   |
|                    | Sep              | 55      | 87 | 8      | 13 | 0     | 0  | 63    |
|                    | Overall          | 241     | 61 | 153    | 39 | 2     | 1  | 396   |
|                    | Other fish       | 241     | 61 | 154    | 38 | 3     | 1  | 398   |
| Willow<br>Creek    | Jul              | 159     | 72 | 62     | 28 | 0     | 0  | 221   |
|                    | Aug              | 181     | 82 | 38     | 17 | 3     | 1  | 222   |
|                    | Sep              | 107     | 86 | 15     | 12 | 2     | 2  | 124   |
|                    | Overall          | 447     | 79 | 115    | 20 | 5     | 1  | 567   |
|                    | Other fish       | 418     | 80 | 102    | 19 | 5     | 1  | 525   |

<sup>a</sup> Shallow: under 4.1" Medium: 4.1-8.0" Deep: over 8.0"

<sup>b</sup> The numbers presented are estimates.

## Boat Length (feet)

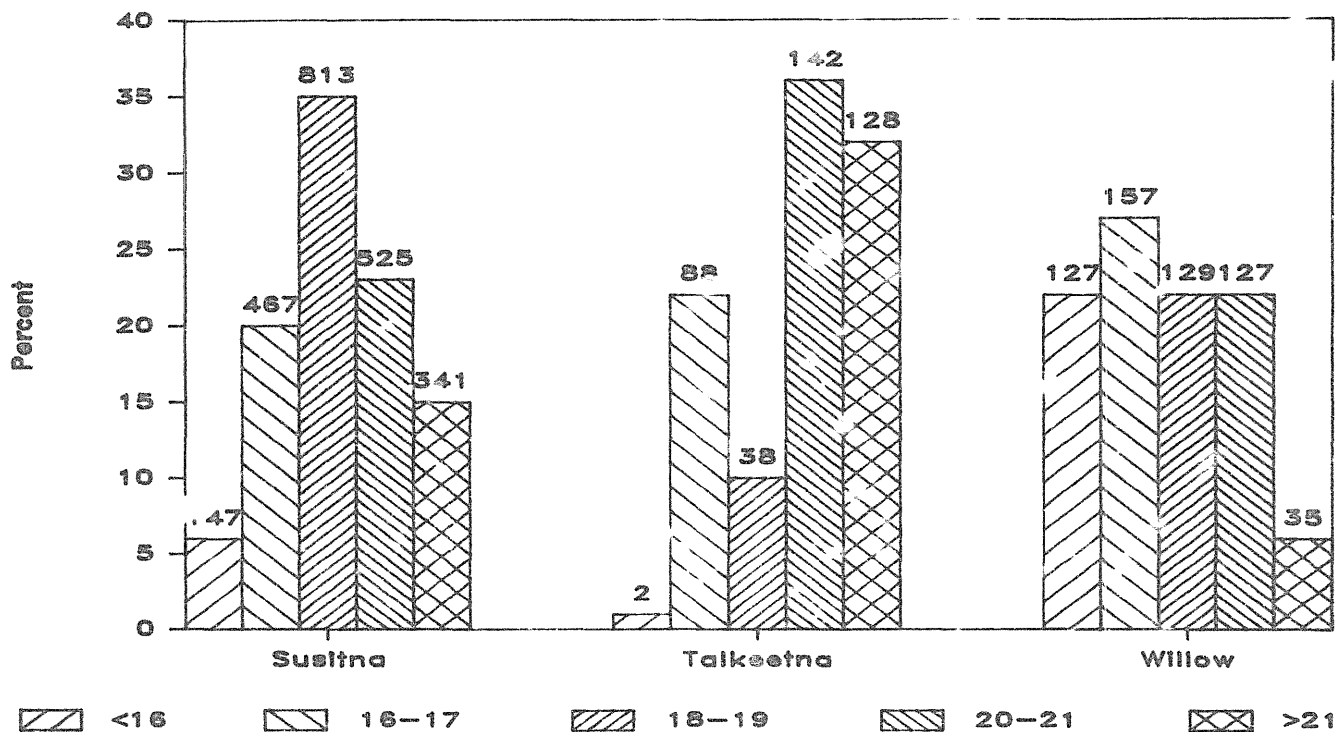


Figure 3. Boat length by exit location 1984. The estimated number of boats are noted above each bar.

## Boat Draft

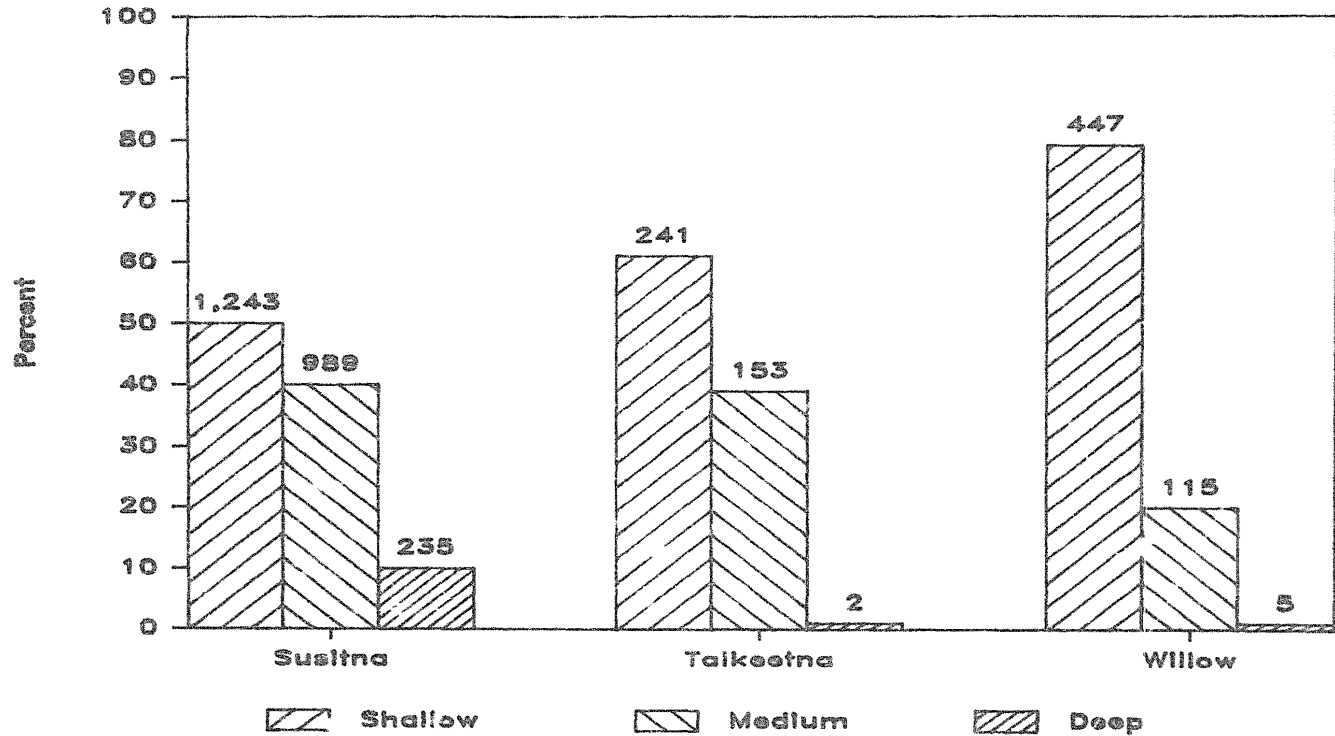


Figure 4. Boat draft by exit location 1984. The estimated number of boats are noted above each bar. Shallow: under 4.1', Medium: 4.1-8.0', Deep: over 8.0'.

Table 4. Boat horsepower/displacement (cubic inches) by exit location, 1984.<sup>a,b</sup>

| Exit Location      | Month/<br>Season | Under 81 |    | 81-160 |    | 161-240 |    | Over 240 |    | Total |
|--------------------|------------------|----------|----|--------|----|---------|----|----------|----|-------|
|                    |                  | Boats    | %  | Boats  | %  | Boats   | %  | boats    | %  |       |
| Susitna<br>Landing | May              | 362      | 91 | 23     | 6  | 10      | 2  | 4        | 1  | 399   |
|                    | Jun              | 201      | 31 | 220    | 33 | 75      | 12 | 157      | 24 | 653   |
|                    | Jul              | 96       | 22 | 147    | 34 | 74      | 17 | 119      | 27 | 436   |
|                    | Aug              | 84       | 24 | 117    | 33 | 55      | 16 | 93       | 27 | 349   |
|                    | Sep              | 178      | 36 | 161    | 32 | 59      | 12 | 100      | 20 | 498   |
|                    | Overall          | 921      | 39 | 668    | 29 | 273     | 12 | 473      | 20 | 2,335 |
|                    | Kings            | 573      | 50 | 285    | 25 | 104     | 9  | 185      | 16 | 1,147 |
| Talkeetna          | Other fish       | 343      | 29 | 381    | 33 | 168     | 14 | 288      | 24 | 1,180 |
|                    | Jul              | 51       | 28 | 9      | 5  | 54      | 29 | 70       | 38 | 184   |
|                    | Aug              | 37       | 30 | 34     | 27 | 13      | 11 | 40       | 32 | 124   |
|                    | Sep              | 12       | 19 | 8      | 13 | 9       | 15 | 33       | 53 | 62    |
|                    | Overall          | 100      | 27 | 51     | 14 | 76      | 21 | 143      | 39 | 370   |
|                    | Other fish       | 101      | 27 | 51     | 14 | 77      | 21 | 143      | 38 | 372   |
|                    | Willow Creek     | 40       | 18 | 38     | 17 | 21      | 10 | 123      | 55 | 222   |
| Willow<br>Creek    | Aug              | 49       | 22 | 45     | 21 | 40      | 18 | 85       | 39 | 219   |
|                    | Sep              | 13       | 11 | 14     | 11 | 25      | 20 | 71       | 58 | 123   |
|                    | Overall          | 102      | 18 | 97     | 17 | 86      | 15 | 279      | 49 | 564   |
|                    | Other fish       | 100      | 18 | 97     | 18 | 85      | 15 | 268      | 49 | 550   |

<sup>a</sup>Some boaters did not specify horsepower, but gave displacement. Any value in the over 240 group is most likely a displacement.

<sup>b</sup>The numbers presented are estimates.

# Horsepower/Displacement (Cu In)

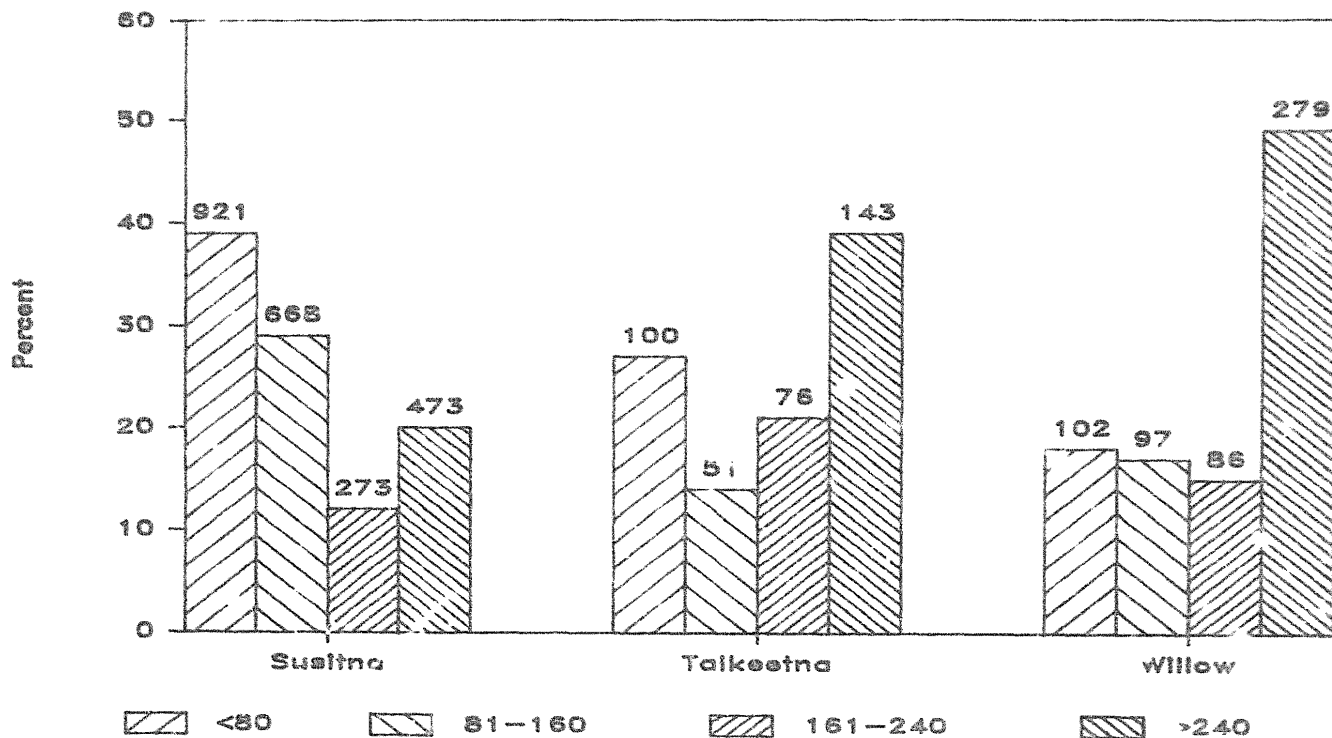


Figure 5. Boat horsepower/displacement by exit location, 1984. The estimated number of boats is noted above each bar. The over 240 group is most likely cubic inches. see text for details.

Table 5. Boat load by exit location, 1984.<sup>a</sup>

| Exit Location      | Month/<br>Season | Light |    | Medium |    | Heavy |    | Total |
|--------------------|------------------|-------|----|--------|----|-------|----|-------|
|                    |                  | Boats | %  | Boats  | %  | Boats | %  |       |
| Susitna<br>Landing | May              | 81    | 20 | 149    | 37 | 177   | 43 | 407   |
|                    | Jun              | 279   | 28 | 360    | 38 | 318   | 34 | 937   |
|                    | Jul              | 142   | 32 | 167    | 38 | 130   | 30 | 439   |
|                    | Aug              | 116   | 33 | 178    | 39 | 100   | 28 | 354   |
|                    | Sep              | 71    | 14 | 143    | 48 | 193   | 38 | 507   |
|                    | Overall          | 669   | 25 | 1,057  | 40 | 918   | 35 | 2,644 |
|                    | Kings            | 372   | 26 | 535    | 37 | 533   | 37 | 1,440 |
|                    | Other fish       | 297   | 25 | 522    | 43 | 384   | 32 | 1,203 |
| Talkeetna          | Jul              | 27    | 15 | 89     | 47 | 72    | 38 | 188   |
|                    | Aug              | 13    | 16 | 108    | 14 | 14    | 10 | 145   |
|                    | Sep              | 21    | 37 | 32     | 50 | 8     | 13 | 63    |
|                    | Overall          |       | 18 | 229    | 58 | 94    | 24 | 396   |
|                    | Other fish       | 74    | 19 | 228    | 57 | 94    | 24 | 396   |
| Willow<br>Creek    | Jul              | 111   | 51 | 73     | 33 | 35    | 16 | 219   |
|                    | Aug              | 94    | 43 | 81     | 37 | 45    | 20 | 220   |
|                    | Sep              | 46    | 37 | 50     | 45 | 22    | 18 | 124   |
|                    | Overall          | 251   | 45 | 210    | 37 | 102   | 18 | 563   |
|                    | Other fish       | 241   | 44 | 208    | 38 | 99    | 18 | 548   |

<sup>a</sup>The numbers presented are estimates.

## Boat Load

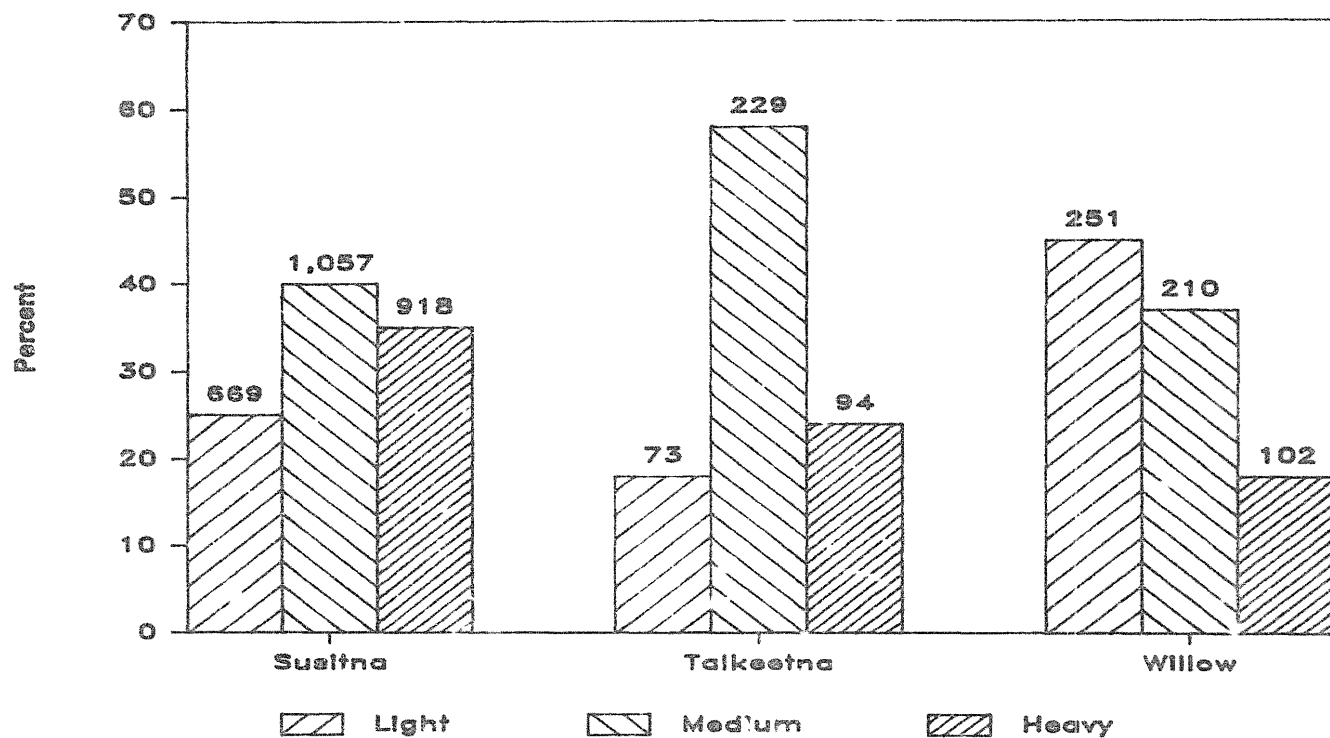


Figure 6. Boat load by exit location, 1984. The estimated number of boats is noted above each bar.



#### By Put-in or Starting Location.

For May there were insufficient data for put in locations. For June through September at least 95% of the boats that exited at Susitna Landing also put in there.

#### Talkeetna River:

There were 81 boat operators interviewed at the Talkeetna sites during the July through September period. Based on the above interviews, the following estimates for the population of boaters exiting at Talkeetna were calculated.

An estimated 400 boats and 1000 boaters exited at the Talkeetna sites during the July to September period. Of these, 284 were inboard jets and 110 were outboard jets (Table 1, Figure 2). While large boats were common with 142 at 20-21 feet and 128 over 21 feet in length, 241 had shallow drafts (Tables 2, 3, Figures 3, 4). The over 240 cubic inch motors (143 boats) were most frequent (Table 4, Figure 5). The majority of boaters (58%) considered their loads medium (Table 5, Figure 6).

#### Monthly.

Inboard jets (70-72%) and outboard jets (27-30%) were the dominant boat classes exiting at the Talkeetna sites over the July to September period (Table 1). Boat length shifted from the near equal frequency for the 16-17, 20-21, and over 21 foot groups in July, to the larger length groups in August and September (Table 2). The number of boats with shallow drafts decreased from 98 in July to 55 in September, while the frequency of medium draft boats declined from 89 to 8 over the same period (Table 3). There was a trend toward the over 240 cubic inch motors, with a peak in September at 53% (Table 4). Boats with heavy loads declined from 72 in July to 8 boats in September (Table 5).

#### By Season.

Insufficient data were available for king salmon season at Talkeetna.

During other salmon season 71% of the estimated 397 boats exiting were inboard jets and 28% were outboard jets (Table 1). While 68% of the boats were 20 feet and longer, 61% had shallow drafts (Tables 2, 3). The over 240 cubic inch motors (38%) were most frequent, as were medium boat loads (57%) during the other salmon season (Tables 4, 5).

#### By Put-in or Starting Location.

In July, 100% of the boats exiting at the two Talkeetna exit sites also started there. There was a 19% to 81% split between the Talkeetna boat launch and airstrip as the put in location, respectively. Of the boats that put in at the airstrip, 78% were inboard jets, 22% were outboard jets; and 55% had shallow drafts, while 45% had medium drafts.

The split between inboard and outboard jets was 44% and 52%, respectively. Some 57% of these boats had medium drafts, while the remaining boats had shallow drafts.

In August 77% of the boats put in at the airstrip, 19% at the boat launch, and 4% at Willow Creek. Some 76% of the boats that put in at the airstrip were inboard jets and 24% were outboard jets. Approximately 55% of boats at the airstrip had shallow drafts. Of those boats that put in at the Talkeetna boat launch, 66% were inboard jets, 25% were outboard jets, and 75% had shallow drafts.

During September 62% of the boats exiting at the Talkeetna sites had put in at the boat launch versus 38% at the airstrip. All of the boats that put in at the airstrip were inboard jets with shallow drafts, compared with 47% inboard jets at the boat launch. The remaining boats at the boat launch were outboard jets. Approximately 80% of the boats that put in at the boat launch had shallow drafts.

#### Willow Creek:

Some 426 boat operators were interviewed at Willow Creek during the July through September period. Based on the above interviews, the following estimates for the population of boaters exiting at Willow Creek were calculated.

An estimated 600 boats and 1800 boaters exited at Willow Creek during the July to September period. Airboats accounted for 58% of all boats, with outboard jets being the second most frequent class at 29% (Table 1, Figure 2). The 16-17 foot boats were most common at 31% (Table 2, Figure 3). At Willow Creek 72% of the boats had shallow drafts and an estimated 46% of the boats had over 240 cubic inch motors (Tables 3, 4, Figures 4, 5). At Willow Creek 42% of the boat loads were light and 36% were medium (Table 5, Figure 6).

#### Monthly.

The number of outboard jets was stable during July and August (64-66), but decreased to 21 in September. There were an estimated 100 or more airboats exiting at Willow Creek during every month sampled (Table 1). While most boat length groups were stable, the 18-19 group increased and the over 21 foot group decreased in percent over time (Table 2). The main trends in boat drafts were the increase in shallow draft boats from 72% in July to 86% in September, and the decline in medium draft boats from 28% in July to 12% in September (Table 3). The percent of boats with over 240 cubic inch motors ranged from 39-58% over the July to September period (Table 4). The percent of boats in each load class was fairly stable over time (Table 5).

#### By Season.

Insufficient data were available for king salmon season at Willow Creek.

During other salmon season 62% were airboats, and 38% were outboard jets (Table 1). All length groups were of near equal frequency (22-26%) except the over 21 foot group (Table 2). While shallow draft boats were most frequent (418 boats), 49% of the boats had over 240 cubic inch motors (Tables 3, 4). Approximately 82% of all boats had light or medium loads (Table 5).

#### By Put-in or Starting Location.

All 100% of the boats exiting at Willow Creek during July also put in there, and 72% had shallow drafts. In August 89% of the boats exiting at Willow Creek also put in there, while 10% put in at the Susitna Landing. Of those that put in at Willow Creek 64% were airboats, 29% were outboard jets, and 84% had shallow drafts. In September 99% of the boats exiting at Willow Creek also put in there, 81% were airboats, and 87% had shallow drafts.

#### Destinations

##### Susitna Landing:

An estimated 99% of all boaters exiting at the Susitna Landing had destinations downstream of the discharge gauging station at Sunshine (Table 6). The most frequent destinations were the Deshka River (1473 boats), and the Yentna River (633 boats) (Table 7). The only other first destinations listed by at least 2% of the boaters were Alexander Slough, Sheep Creek, and Willow Creek. Overall, an estimated 1700 boats stayed overnight at their first destination. While many more locations were listed as second destinations than first destinations, no single location was mentioned with any great frequency. The Deshka River (53 boats) and Yentna River (47 boats) were the main second destinations, followed by Willow Creek (28 boats). Only 69 boats stayed overnight at their second destinations.

##### Monthly.

There was a decline in the Deshka River as a first destination from 79% in May to 18% in September, accompanied by an increase in the Yentna River from 15% to 41% over the same period (Table 7). The Deshka River as a first destination increased from 316 boats in May to a peak of 685 boats in June, while the Yentna peaked in September with 211 boats (Table 7). The number of boats that stayed overnight at their first destination varied from 198 to 584. Second destinations were infrequent.

##### By Season.

During the king salmon season the Deshka River was the first destination for 73% of the boats exiting at Susitna Landing, while 17% indicated the Yentna River. In addition, only the first destinations of Willow Creek (68 boats), Susitna Landing (10 boats), and Alexander Slough (34 boats)

Table 6. Number of boats and their destination relative to the discharge gauging station at Sunshine, Alaska, 1984.<sup>a,b,c</sup>

| Month/<br>Season | Activity<br>Response<br>Category | Susitna Landing |              |      |     | Talkeetna      |              |      |     | Willow Creek   |              |      |     |
|------------------|----------------------------------|-----------------|--------------|------|-----|----------------|--------------|------|-----|----------------|--------------|------|-----|
|                  |                                  | Down<br>stream  | Up<br>stream | Both | Sum | Down<br>stream | Up<br>stream | Both | Sum | Down<br>stream | Up<br>stream | Both | Sum |
| May              | Main                             | 326             | 0            | 2    | 328 | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | Yes                              | 21              | 0            | 0    | 21  | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | No                               | 59              | 0            | 2    | 61  | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | Blank                            | 2               | 0            | 0    | 2   | --             | --           | --   | --  | --             | --           | --   | --  |
|                  |                                  | ---             | ---          | ---  | --- |                |              |      |     |                |              |      |     |
|                  |                                  | 408             | 0            | 4    | 412 |                |              |      |     |                |              |      |     |
| Jun              | Main                             | 781             | 0            | 1    | 782 | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | Yes                              | 83              | 0            | 0    | 83  | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | No                               | 73              | 0            | 1    | 74  | --             | --           | --   | --  | --             | --           | --   | --  |
|                  | Blank                            | 1               | 0            | 0    | 1   | --             | --           | --   | --  | --             | --           | --   | --  |
|                  |                                  | ---             | ---          | ---  | --- |                |              |      |     |                |              |      |     |
|                  |                                  | 938             | 0            | 2    | 940 |                |              |      |     |                |              |      |     |
| Jul              | Main                             | 251             | 0            | 1    | 252 | 0              | 33           | 0    | 33  | 174            | 0            | 0    | 174 |
|                  | Yes                              | 81              | 0            | 0    | 81  | 0              | 31           | 0    | 31  | 27             | 0            | 0    | 27  |
|                  | No                               | 99              | 0            | 3    | 102 | 0              | 118          | 0    | 118 | 23             | 0            | 0    | 23  |
|                  | Blank                            | 6               | 0            | 0    | 6   | 0              | 0            | 0    | 0   | 3              | 0            | 0    | 3   |
|                  |                                  | ---             | ---          | ---  | --- | ---            | ---          | ---  | --- | ---            | ---          | ---  | --- |
|                  |                                  | 437             | 0            | 4    | 441 | 0              | 182          | 0    | 182 | 227            | 0            | 0    | 227 |
| Aug              | Main                             | 215             | 0            | 0    | 215 | 0              | 85           | 19   | 104 | 160            | 0            | 0    | 160 |
|                  | Yes                              | 67              | 0            | 0    | 67  | 0              | 1            | 0    | 1   | 20             | 0            | 0    | 20  |
|                  | No                               | 73              | 0            | 0    | 73  | 0              | 30           | 10   | 40  | 46             | 0            | 0    | 46  |
|                  | Blank                            | 0               | 0            | 0    | 0   | 0              | 0            | 0    | 0   | 1              | 0            | 0    | 1   |
|                  |                                  | ---             | ---          | ---  | --- | ---            | ---          | ---  | --- | ---            | ---          | ---  | --- |
|                  |                                  | 355             | 0            | 0    | 355 | 0              | 116          | 29   | 145 | 227            | 0            | 0    | 227 |

Table 6 (Completed)

| Month/<br>Season | Activity<br>Response<br>Category | Susitna Landing |              |      |     | Talkeetna      |              |      |     | Willow Creek   |              |      |     |
|------------------|----------------------------------|-----------------|--------------|------|-----|----------------|--------------|------|-----|----------------|--------------|------|-----|
|                  |                                  | Down<br>stream  | Up<br>stream | Both | Sum | Down<br>stream | Up<br>stream | Both | Sum | Down<br>stream | Up<br>stream | Both | Sum |
| Sep              | Main                             | 7               | 0            | 0    | 7   | 0              | 19           | 0    | 19  | 8              | 0            | 0    | 8   |
|                  | Yes                              | 41              | 0            | 0    | 41  | 0              | 1            | 0    | 1   | 20             | 0            | 0    | 20  |
|                  | No                               | 452             | 0            | 3    | 455 | 0              | 37           | 6    | 43  | 96             | 0            | 1    | 97  |
|                  | Blank                            | 7               | 0            | 2    | 9   | 0              | 0            | 0    | 0   | 1              | 0            | 0    | 1   |
|                  |                                  | 507             | 0            | 5    | 512 | 0              | 57           | 6    | 63  | 125            | 0            | 1    | 126 |

<sup>a</sup>The numbers presented are sample values. Missing data are indicated by --.

<sup>a</sup>'Downstream' indicates destinations that were downstream of the gauging station, 'Upstream' indicates destinations upstream of the gauging station, and 'Both' indicates destinations upstream and downstream of the gauging station.

<sup>c</sup>'Main' indicates sport fishing was the main activity, 'Yes' indicates secondary involvement in sport fishing, 'No' indicates no sport fishing, 'blank' indicates no response.

Table 7. First destinations for boaters exiting at Susitna Landing, 1984.<sup>a</sup>

| First<br>Destination | May   |      | Jun   |      | Jul   |      | Aug   |      | Sep   |      | Overall |      |
|----------------------|-------|------|-------|------|-------|------|-------|------|-------|------|---------|------|
|                      | Boats | %    | Boats | %    | Boats | %    | Boats | %    | Boats | %    | Boats   | %    |
| Alexander Slough     | 14    | 3.5  | 19    | 2.0  | 15    | 3.4  | 6     | 1.7  | 3     | 0.5  | 57      | 2.2  |
| Big Susitna          | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 19    | 3.7  | 19      | 0.7  |
| Caswell Creek        | 0     | 0    | 4     | 0.4  | 3     | 0.6  | 1     | 0.3  | 12    | 2.4  | 20      | 0.8  |
| Chase                | 2     | 0.5  | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 2       | 0.1  |
| Chulitna River       | 0     | 0    | 0     | 0    | 1     | 0.2  | 0     | 0    | 0     | 0    | 1       | 0    |
| Cook Inlet           | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 2     | 0.4  | 2       | 0.1  |
| Delta Islands        | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 10    | 2.0  | 10      | 0.4  |
| Deshka River         | 316   | 79.0 | 685   | 74.0 | 241   | 55.0 | 141   | 40.3 | 90    | 17.8 | 1,473   | 56.2 |
| Devil Canyon         | 2     | 0.5  | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 2       | 0.1  |
| Goose Creek          | 0     | 0    | 0     | 0    | 0     | 0    | 1     | 0.3  | 1     | 0.2  | 2       | 0.1  |
| Indian River         | 0     | 0    | 1     | 0.1  | 0     | 0    | 0     | 0    | 0     | 0    | 1       | 0    |
| Kashwitna River      | 1     | 0.3  | 1     | 0.1  | 0     | 0    | 3     | 0.9  | 13    | 2.6  | 18      | 0.7  |
| Kroto Slough         | 2     | 0.5  | 6     | 0.7  | 1     | 0.3  | 3     | 0.9  | 4     | 0.7  | 16      | 0.6  |
| L. Willow Creek      | 0     | 0    | 0     | 0    | 2     | 0.5  | 2     | 0.6  | 3     | 0.6  | 7       | 0.3  |
| Main Susitna         | 0     | 0    | 0     | 0    | 1     | 0.2  | 0     | 0    | 40    | 7.9  | 41      | 1.6  |
| Montana Creek        | 0     | 0    | 0     | 0    | 1     | 0.2  | 1     | 0.3  | 10    | 2.0  | 12      | 0.5  |
| Portage Creek        | 0     | 0    | 0     | 0    | 2     | 0.5  | 0     | 0    | 0     | 0    | 2       | 0.1  |
| Sheep Creek          | 0     | 0    | 0     | 0    | 4     | 1.0  | 39    | 11.1 | 20    | 4.1  | 63      | 2.4  |
| Sunshine             | 0     | 0    | 0     | 0    | 1     | 0.2  | 0     | 0    | 3     | 0.6  | 4       | 0.2  |
| Susitna Landing      | 0     | 0    | 11    | 1.2  | 1     | 0.2  | 4     | 1.1  | 26    | 5.2  | 42      | 1.6  |
| Susitna Station      | 4     | 0.9  | 3     | 0.3  | 4     | 0.9  | 1     | 0.3  | 11    | 2.1  | 23      | 0.9  |
| Talkeetna River      | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 3     | 0.6  | 3       | 0.1  |
| Trapper Creek        | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 1     | 0.2  | 1       | 0    |
| Willow Creek         | 0     | 0    | 51    | 5.5  | 36    | 8.2  | 55    | 15.7 | 24    | 4.7  | 166     | 6.3  |
| Yentna River         | 59    | 14.9 | 145   | 15.7 | 125   | 28.7 | 93    | 26.6 | 211   | 41.7 | 633     | 24.2 |
| Total                | 400   | 100  | 926   | 100  | 438   | 100  | 350   | 100  | 506   | 100  | 2,620   | 100  |

<sup>a</sup>The numbers presented are estimates.

had estimated frequencies of at least 10 boats. Only three second destinations were frequently mentioned: the Deshka River (44 boats), the Yentna River (38 boats), and Willow Creek (11 boats).

During the other salmon season there were more first destinations, but the Deshka River (433 boats) and the Yentna River (391 boats) were the most frequent, followed by Willow Creek (98 boats), and Sheep Creek (64 boats). Only Willow Creek (16 boats), the Deshka River (10 boats), and the Yentna River (10 boats) were listed as second destination by 10 or more boats.

#### By Put in or Starting Location

Overall, 97% of the boats exiting at Susitna Landing also put in there. A similar pattern existed for second destinations, with 94% of the boats listing second destinations having put in at Susitna Landing.

#### By Boat Class.

There were three major boat classes exiting at the Susitna Landing: outboard jets (1332 boats), inboard jets (1008 boats), and outboard props (213 boats). All other classes had an estimated frequency of less than 50 boats. Of the outboard jets, 60% had the Deshka River as a first destination while 19% listed the Yentna River. Willow Creek was the next most important first destination, but was listed by only 8% of the outboard jets. The Deshka River was the first destination for 54% and the Yentna River for 33% of the inboard jets. Some 45% of the boaters using outboard props indicated the Deshka River as their first destination, 20% the Yentna River, followed by Susitna Landing (11%), Willow Creek (8%), and Sheep Creek (5%).

Relatively few boaters had second destinations. There were an estimated 94 outboard jets with second destinations. Of these, 30% listed as their second destination as the Deshka River, 29% the Yentna River, and 20% Willow Creek. Only an estimated 64 inboard jets had second destinations. Of these, 33% were the Deshka River and 28% the Yentna River.

#### Talkeetna:

Approximately 89% of the destinations for boats exiting at the Talkeetna sites were upstream of the discharge gauging station at Sunshine (Table 6). Some 63% of the boats exiting at the Talkeetna sites listed the Talkeetna River as their first destination (Table 8). The second most frequent first destination was Gold Creek (47 boats). Overall, only 111 boats stayed overnight at their first destination. The number of boats listing second destinations was insignificant (12 for the July through September period).

Table 8. First destinations for boaters exiting at the Talkeetna boat launch or airstrip, 1984.<sup>a</sup>

| First<br>Destination | Jul   |      | Aug   |      | Sep   |      | Overall |      |
|----------------------|-------|------|-------|------|-------|------|---------|------|
|                      | Boats | %    | Boats | %    | Boats | %    | Boats   | %    |
| Birch Creek          | 6     | 3.0  | 18    | 12.3 | 2     | 3.3  | 26      | 6.6  |
| Chase                | 0     | 0    | 6     | 4.0  | 10    | 16.8 | 16      | 4.1  |
| Chulitna River       | 7     | 3.7  | 0     | 0    | 4     | 6.9  | 11      | 2.8  |
| Curry                | 1     | 0.7  | 0     | 0    | 1     | 1.7  | 2       | 0.5  |
| Devil Canyon         | 1     | 0.7  | 0     | 0    | 0     | 0    | 1       | 0.3  |
| Gold Creek           | 33    | 17.4 | 10    | 6.9  | 4     | 7.1  | 47      | 12.0 |
| Indian River         | 0     | 0    | 1     | 0.9  | 0     | 0    | 1       | 0.3  |
| Mi 232 AK RR         | 16    | 8.6  | 0     | 0    | 4     | 7.1  | 20      | 5.1  |
| Portage Creek        | 0     | 0    | 1     | 0.9  | 5     | 8.7  | 6       | 1.5  |
| Sunshine             | 1     | 0.7  | 3     | 2.0  | 2     | 3.5  | 6       | 1.5  |
| Talkeetna River      | 122   | 64.4 | 99    | 69.2 | 24    | 39.7 | 245     | 62.7 |
| Trapper Creek        | 0     | 0    | 3     | 1.9  | 0     | 0    | 3       | 0.8  |
| Whiskers Creek       | 1     | 0.7  | 3     | 1.9  | 3     | 5.2  | 7       | 1.8  |
| Total                | 188   | 100  | 144   | 100  | 59    | 100  | 391     | 100  |

<sup>a</sup>The numbers presented are estimates.



### Monthly.

The frequency of Talkeetna River as a first destination declined from 122 boats in July to 24 boats in September (Table 8). The number of boats staying overnight at their first destination ranged from about 45 boats in July and August to 25 boats in September.

### By Season.

Insufficient data were available for king salmon season at Talkeetna.

For the other salmon season an estimated 62% of the boats (244) had Talkeetna River, 12% (47) Gold Creek, and 7% (25) Birch Creek as their first destination. There were insufficient observations for second destinations.

### By Put in or Starting Location.

Approximately 74% of the estimated 400 boats exiting at the Talkeetna sites put in at the Talkeetna airstrip. Of these, 83% listed the Talkeetna River as their first destination. Nearly 25% of the boaters exiting at the Talkeetna sites, put in at the Talkeetna boat launch. Boaters who put in at the boat launch exhibited a more diverse selection of first destinations. Gold Creek was the first destination for 21% of these boaters, followed by Chase at 16%, Birch Creek and the Chulitna River at 12% each, and Whiskers Creek, Sunshine, Portage Creek and mile 232 Alaska Railroad at 7% each. Percentages under 7 represent less than 6 boats. Of the 10 boats with second destinations that exited at the Talkeetna sites, 100% put in at the Talkeetna boat launch.

### By Boat Class.

Inboard jets (284 boats) and outboard jets (110) were the only boat classes represented with any great frequency. For the inboard jets there were three main first destinations: Talkeetna River (69%), Gold Creek (11%), and Mile 232 Alaska Railroad (6%). For outboard jets the pattern was slightly different with Talkeetna River as a first destination for an estimated 47% of the boats, Birch Creek second at 20%, followed by Gold Creek at 17%, Chase at 6%, and Mile 232 Alaska Railroad at 4%. Second destinations were infrequent.

### Willow Creek:

Over 99% of the destinations for boaters exiting at Willow Creek were downstream of the discharge gauging station at Sunshine (Table 6). The two main first destinations were Willow Creek (53%) and the Deshka River (34%) (Table 9), and the two main second destinations were also Willow Creek (41%), and the Deshka River (23%). Overall, 277 boats stayed overnight at their first destinations, while only 5 boats stayed overnight at their second destinations.

Table 9. First destinations for boaters exiting at Willow Creek, 1984.<sup>a</sup>

| First<br>Destination | Jul   |      | Aug   |      | Sep   |      | Overall |      |
|----------------------|-------|------|-------|------|-------|------|---------|------|
|                      | Boats | %    | Boats | %    | Boats | %    | Boats   | %    |
| Alexander Slough     | 1     | 0.5  | 8     | 3.6  | 4     | 3.5  | 13      | 2.3  |
| Caswell Creek        | 0     | 0    | 0     | 0    | 1     | 0.8  | 1       | 0.2  |
| Deshka River         | 81    | 36.7 | 55    | 24.8 | 55    | 44.2 | 191     | 33.7 |
| Flathorn             | 0     | 0    | 0     | 0    | 1     | 0.8  | 1       | 0.2  |
| Kroto Slough         | 0     | 0    | 1     | 0.5  | 4     | 3.4  | 5       | 0.9  |
| L. Willow Creek      | 0     | 0    | 5     | 2.3  | 19    | 15.2 | 24      | 4.2  |
| Portage Creek        | 0     | 0    | 0     | 0    | 1     | 0.8  | 1       | 0.2  |
| Sheep Creek          | 0     | 0    | 4     | 1.8  | 0     | 0    | 4       | 0.7  |
| Susitna Landing      | 0     | 0    | 1     | 0.5  | 0     | 0    | 1       | 0.2  |
| Susitna Station      | 0     | 0    | 2     | 0.9  | 1     | 0.8  | 3       | 0.5  |
| Willow Creek         | 138   | 62.4 | 136   | 61.3 | 27    | 21.7 | 301     | 53.1 |
| Yentna River         | 1     | 0.5  | 10    | 4.5  | 11    | 8.6  | 22      | 3.9  |
| Total                | 221   | 100  | 222   | 100  | 124   | 100  | 567     | 100  |

<sup>a</sup>The numbers presented are estimates.

### Monthly.

The Deshka River was a first destination for 55 to 81 boats over the July to September period. Willow Creek was of major importance as a first destination in July and August (136-138 boats), but declined in September (27 boats) (Table 9). The number of boats that stayed overnight at their first destinations ranged from a low of 57 in August to a high of 85 in September.

### By Season.

Insufficient data were available for king salmon season at Willow Creek.

During the other salmon season 55% of the boaters indicated the Deshka River as their first destination while 32% listed Willow Creek. Willow Creek was the second destination for 16 boats, while the Deshka River and Little Willow Creek were listed by about 8 boats each.

### By Put in or Starting Location.

Over 96% of the boats exiting at Willow Creek also put in there. Of the 40 boats with second destinations at Willow, all but 1 also put in at Willow Creek.

### By Boat Class.

The two major boat classes at Willow Creek were airboats (362 boats) and outboard jets (151). Some 43% of the airboats listed the Deshka River as their first destination and 44% listed Willow Creek. Willow Creek was the first destination for 71% and Deshka River for 1% of the outboard jets. Of the estimated 40 boats with second destinations, 24 were airboats.

### Navigational Problems

#### Susitna Landing:

An estimated 804 navigational problems were encountered by boats that exited at the Susitna Landing a/. Each navigational problem was encountered by about 200 to 300 boats, except velocity which was a problem for 70 boats. No single problem was a hazard for more than 11% of the boats (Table 10).

### Monthly.

In May debris was the worst problem (63 boats), followed closely by velocity (47 boats). June was the worst month during the May to

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a/ Since a single boat may have experienced several different problems, the sum of the frequency of all problems may not equal the number of boats with problems. Yet for any single problem category, the number of problems does equal the number of boats with that problem.

Table 10. Boats with navigational problems by exit location, 1984.<sup>a</sup>

| Exit Location | Month/<br>Season | Debris |           |           | Bars  |           |           | Rocks |           |           | Velocity |           |           |
|---------------|------------------|--------|-----------|-----------|-------|-----------|-----------|-------|-----------|-----------|----------|-----------|-----------|
|               |                  | Boats  |           | %         | Boats |           | %         | Boats |           | %         | Boats    |           | %         |
|               |                  | Total  | With Prob | With Prob | Total | With Prob | With Prob | Total | With Prob | With Prob | Total    | With Prob | With Prob |
| Susitna       | May              | 406    | 63        | 16        | 406   | 17        | 4         | 407   | 8         | 2         | 407      | 47        | 12        |
|               | Jun              | 898    | 149       | 17        | 898   | 83        | 9         | 898   | 103       | 11        | 890      | 16        | 2         |
|               | Jul              | 427    | 16        | 4         | 429   | 40        | 9         | 427   | 19        | 4         | 427      | 3         | 1         |
|               | Aug              | 352    | 19        | 5         | 348   | 44        | 13        | 348   | 11        | 3         | 347      | 0         | 0         |
|               | Sep              | 499    | 12        | 2         | 502   | 96        | 19        | 500   | 54        | 11        | 496      | 4         | 1         |
|               | Overall          | 2,582  | 259       | 10        | 2,583 | 230       | 11        | 2,580 | 195       | 8         | 2,567    | 70        | 3         |
|               | Kings            | 1,400  | 214       | 15        | 1,401 | 105       | 7         | 1,401 | 114       | 8         | 1,393    | 63        | 5         |
| Talkeetna     | Other fish       | 1,181  | 44        | 4         | 1,181 | 174       | 15        | 1,178 | 80        | 7         | 1,172    | 6         | 1         |
|               | Jul              | 188    | 1         | 1         | 188   | 13        | 7         | 189   | 27        | 14        | 188      | 13        | 7         |
|               | Aug              | 146    | 0         | 0         | 146   | 0         | 0         | 146   | 0         | 0         | 146      | 0         | 0         |
|               | Sep              | 64     | 1         | 2         | 64    | 2         | 3         | 64    | 2         | 3         | 64       | 1         | 2         |
|               | Overall          | 398    | 2         | 1         | 398   | 15        | 4         | 399   | 29        | 7         | 398      | 14        | 4         |
|               | Other fish       | 397    | 2         | 1         | 397   | 15        | 4         | 398   | 29        | 7         | 397      | 14        | 4         |
|               |                  |        |           |           |       |           |           |       |           |           |          |           |           |
| Willapa       | Jul              | 224    | 4         | 2         | 223   | 7         | 3         | 223   | 6         | 3         | 224      | 1         | 1         |
|               | Aug              | 224    | 28        | 12        | 222   | 63        | 28        | 219   | 51        | 23        | 217      | 0         | 0         |
|               | Sep              | 122    | 7         | 6         | 122   | 20        | 16        | 124   | 17        | 14        | 122      | 2         | 2         |
|               | Overall          | 570    | 39        | 7         | 567   | 90        | 16        | 566   | 74        | 13        | 563      | 3         | 1         |
|               | Other fish       | 555    | 39        | 7         | 552   | 89        | 16        | 551   | 72        | 13        | 548      | 3         | 1         |

<sup>a</sup>The numbers presented are estimates. Since a single boat may have had several different navigational problems during a trip, the sum of boats with problems over all problem groups may not represent the number of unique boats with problems.

September period, with a total of 351 problems encountered (Table 10, Figure 7). Problems with bars decreased in July and August, but increased to 96 boats in September. A similar pattern existed for rock problems, with 54 boats encountering rocks during September (Table 10, Figure 7).

#### By Season.

During king salmon season, 214 boats encountered problems with debris, with rocks and bars being problems for 114 and 105 boats, respectively. Velocity problems were encountered by only 63 boats (Table 10).

During the other salmon season, bars were a major hazard for 174 boats. All other navigational problems were encountered by 80 or less boats (Table 10).

#### By Boat Class and Draft.

Of those boats that had problems with debris, 47% had shallow drafts, while 44% had medium drafts. Over the May to August period 38% to 52% of the boats with debris problems had shallow drafts, and 38% to 50% had medium drafts, yet in September 73% of the boats with debris problems had medium drafts. Over all months, 51% of the boats with debris problems were outboard jets while 37% were inboard jets. The remaining boats with debris problems were outboard props. The percent of boats with navigational problems for inboard jets was lowest in September (17%), while it was highest for outboard props in this month (32%).

For boats that had problems with bars, 41% had shallow drafts while 45% had medium drafts. The percent was highest in May (55%) for the shallow draft boats, and highest in September (53%) for the medium draft boats. Some 49% of the boats with bar problems were outboard jets, while 32% were inboard jets. In May 11% of boats with bar problems were airboats. From June through September, the only other boat class noted with any degree of frequency with bar problems was outboard props.

Overall, 39% of the boats that encountered problems with rocks had shallow drafts, and 49% had medium drafts. Only three boat classes had rock related navigational problems: outboard jets (46%), inboard jets (23%), and outboard props (29%). Inboard jets with rock problems ranged from 17% to 36%, with the low in June and September, while outboard jets ranged from 40% to 53%. Outboard props with rock problems ranged from 18% to 43%, with the low in August and the high in July.

There were insufficient data for boats with velocity related navigational problems, whose operators also listed their draft, for months other than May and June. In May 56% of the boats with velocity problems had shallow drafts, while 29% had medium drafts. For June 75% had medium drafts and 8% shallow drafts. Over all months 53% of the boats with velocity problems were outboard jets and 37% were inboard jets. The three main classes of boats with velocity problems were inboard jets (47% and 23%, May and June), outboard jets (51% and 46%), and outboard props (3% and 31%).

## Susitna --- Navigation Problems

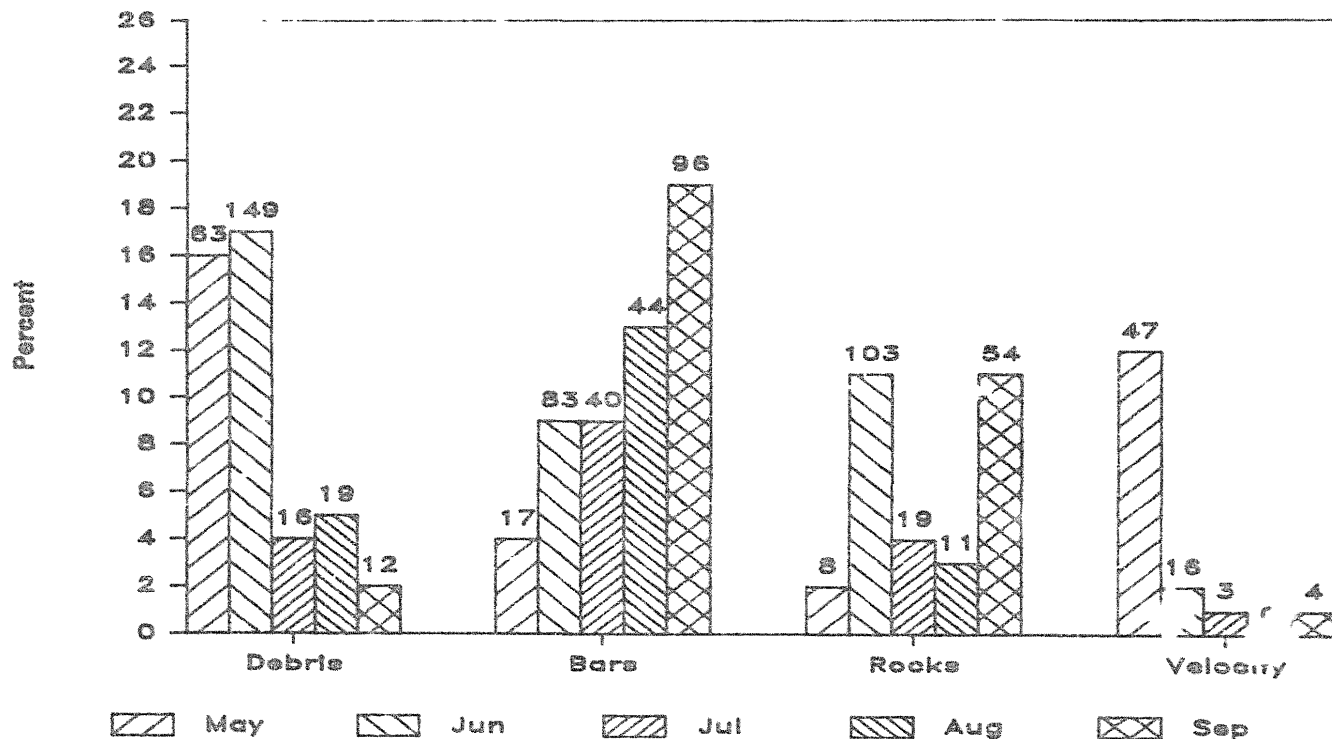


Figure 7. Navigational problems for boats exiting at Susitna Landing, 1984. The estimated number of boats is noted above each bar.

#### Talkeetna:

Of the estimated 705 boats exiting at the Talkeetna sites, rocks were a navigational problem for only 29 boats. Other problems occurred with even less frequency (Table 10).

#### Monthly.

Of the July to September period, July was the worst month for navigational problems for boaters exiting at the Talkeetna sites. Some 27 boats had problems with rocks, 13 with bars, and 13 with velocity (Table 10, Figure 8). In August none of the 146 boats encountered navigational problems of any kind.

#### By Season.

Insufficient data were available for king salmon season.

During other salmon season the occurrence of various navigational problems was nearly identical in frequency to those for the month of July (Table 10).

#### By Boat Class and Draft.

For July and September there were insufficient data for boats with debris problems whose operators indicated drafts. For August, none of the boats had navigational problems with debris.

Over all months, 87% of the boats with bar problems were inboard jets and 13% were outboard jets. For bar problems there were insufficient data for September and no boats had this as a navigational problem in August. Of those with bar problems in July, 100% had shallow drafts and 100% were inboard jets.

For rock related problems there were insufficient data for September and no boats had this as a navigational problem in August. During July there was an even split of boats with rock problems between the shallow and the medium draft boats. Over all months, 93% of the boats with rock problems were inboard jets while only 7% were outboard jets.

For velocity problems there were insufficient data for September, and no boats had this as a navigational problem in August. In July 100% of the boats with velocity problems were shallow draft outboard jets.

#### Willow Creek:

At Willow Creek an estimated 72 boats encountered problems with rocks while 89 had bar problems. Only 39 and 3 boats had problems with debris and velocity, respectively (Table 10).

## Talkeetna --- Navigation Problems

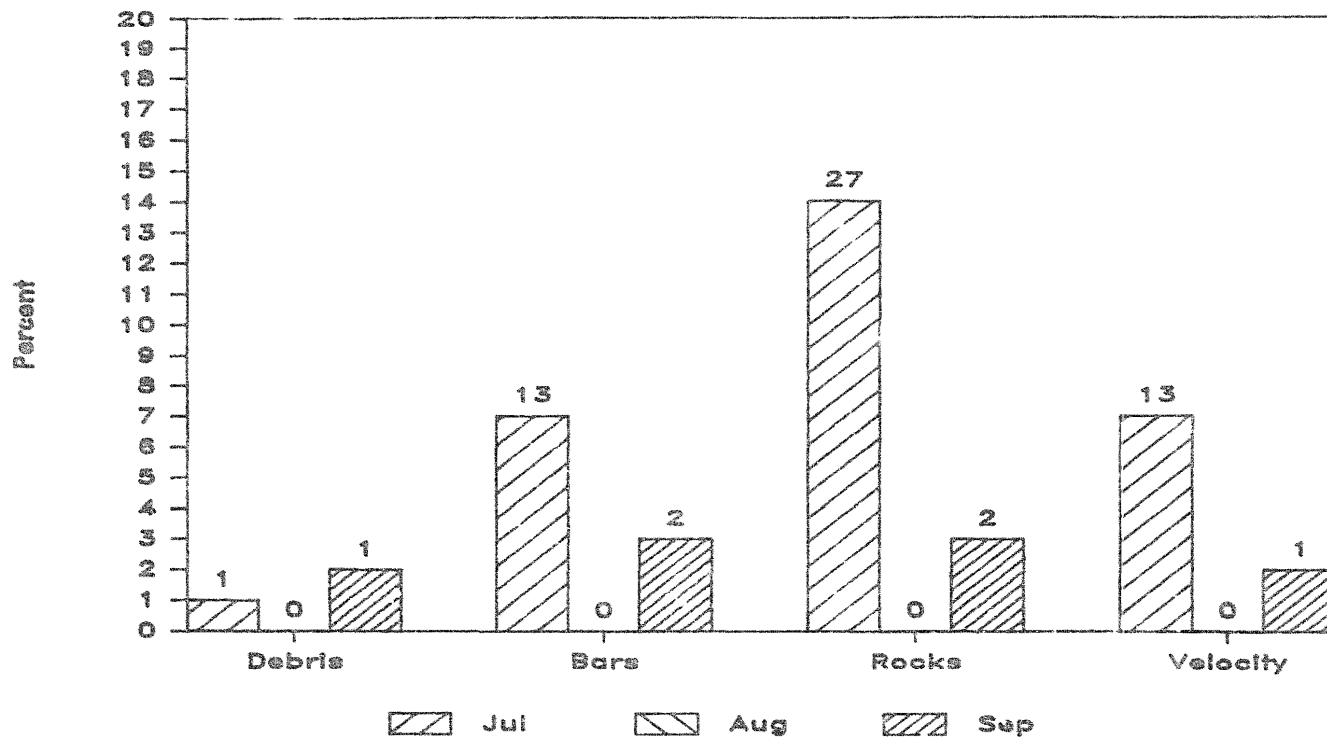


Figure 8. Navigational problems for boats exiting at the Talkeetna boat launch or airstrip, 1984. The estimated number of boats is noted above each bar.



### Monthly.

Velocity problems were infrequent in any month. August was the worst month for navigational problems, with bars a hazard for 63 boats and rocks for 51 boats. The month of July had the lowest frequency of navigational problems at Willow Creek (18) (Table 10, Figure 9).

### By Season.

Insufficient data were available for king salmon season.

For the other salmon season 69 boats had bar problems and 72 had rock problems (Table 10).

### By Boat Class and Draft.

The amount of data for debris problems by boat draft (or boat class) and month was limited. Over all months 59% of those boats with debris problems had shallow drafts and 35% had medium drafts. An estimated 54% of all boats with debris problems were outboard jets, while 36% were airboats.

Overall, 57% of the boats with bar problems had shallow drafts and 41% had medium drafts. By boat class, 53% of those with bar problems were outboard jets and 30% were airboats.

Of those boats with rock problems 58% had shallow drafts while 28% had medium drafts. In July only 6 boats had rock related problems. In August 55% of the boats with rock problems had shallow drafts and 45% had medium drafts, and 32% were outboard jets. Over all months 58% of the boats with rock problems were outboard jets and 32% airboats.

For velocity related problems, the total number of observations for boats with draft data were insufficient.

### Discharge at Sunshine:

The average monthly discharge measured at Sunshine ranged from near 42,000 cubic feet per second (cfs) in May to around 60-61,000 cfs over the June to August period. The low monthly average occurred in September at 24,000 cfs (Table 11). Within a month there could be 30,000 cfs difference between the high and low weekly averages. Not until the third week of August the weekly average cfs below 30,000 at Sunshine. There was an increase in the discharge from May to June, a plateau from June to late August, followed by a rather rapid decrease in the discharge by the third week of August (Table 11, Figure 10).

The proportion of boats with bar related navigational problems should be highest during those periods of lowest discharge. The relationship should be most obvious in late August and September, based on the average weekly discharge measured at Sunshine. At the Susitna Landing the proportion of boats with bar problems (19%) was greatest in

## Willow --- Navigation Problems

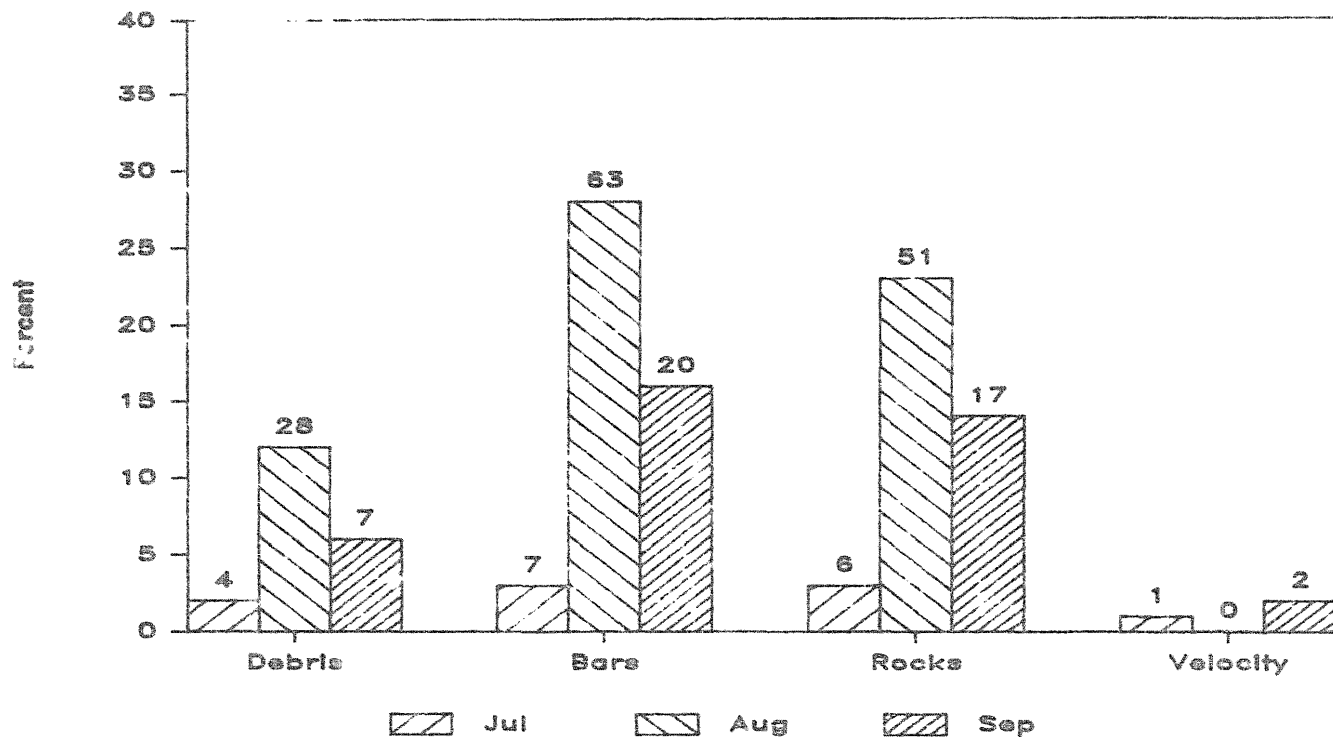


Figure 2. Navigational problems for boats exiting at Willow Creek, 1994. The estimated number of boats is noted above each bar.

Table 11. Average discharge (cubic feet/sec x 1000) measured at Sunshine, Alaska, 1984.

| Month | Sample Size | Monthly Average | Monthly Std Dev | Week | Sample Size | Weekly Average | Weekly Std Dev |
|-------|-------------|-----------------|-----------------|------|-------------|----------------|----------------|
| May   | 13          | 41.97           | 6.84            | 1    | 7           | 46.06          | 3.64           |
|       |             |                 |                 | 2    | 7           | 36.46          | 6.48           |
|       |             |                 |                 | 3    | 7           | 41.43          | 5.85           |
|       |             |                 |                 | 4    | 7           | 57.00          | 9.01           |
| Jun   | 30          | 61.03           | 16.13           | 5    | 7           | 78.01          | 8.28           |
|       |             |                 |                 | 6    | 7           | 70.90          | 2.85           |
|       |             |                 |                 | 7    | 7           | 63.60          | 2.26           |
|       |             |                 |                 | 8    | 7           | 57.09          | 2.38           |
| Jul   | 31          | 60.22           | 8.42            | 9    | 7           | 52.51          | 1.90           |
|       |             |                 |                 | 10   | 7           | 61.19          | 11.08          |
|       |             |                 |                 | 11   | 7           | 67.34          | 8.70           |
|       |             |                 |                 | 12   | 7           | 65.30          | 5.39           |
| Aug   | 31          | 60.46           | 14.37           | 13   | 7           | 50.10          | 6.37           |
|       |             |                 |                 | 14   | 7           | 59.39          | 6.84           |
|       |             |                 |                 | 15   | 7           | 67.56          | 26.46          |
|       |             |                 |                 | 16   | 7           | 28.6           | 3.61           |
| Sep   | 30          | 23.97           | 4.47            | 17   | 7           | 24.40          | 1.61           |
|       |             |                 |                 | 18   | 7           | 24.64          | 4.75           |
|       |             |                 |                 | 19   | 7           | 20.00          | 1.82           |
|       |             |                 |                 | 20   | 2           | 17.60          | 0.28           |

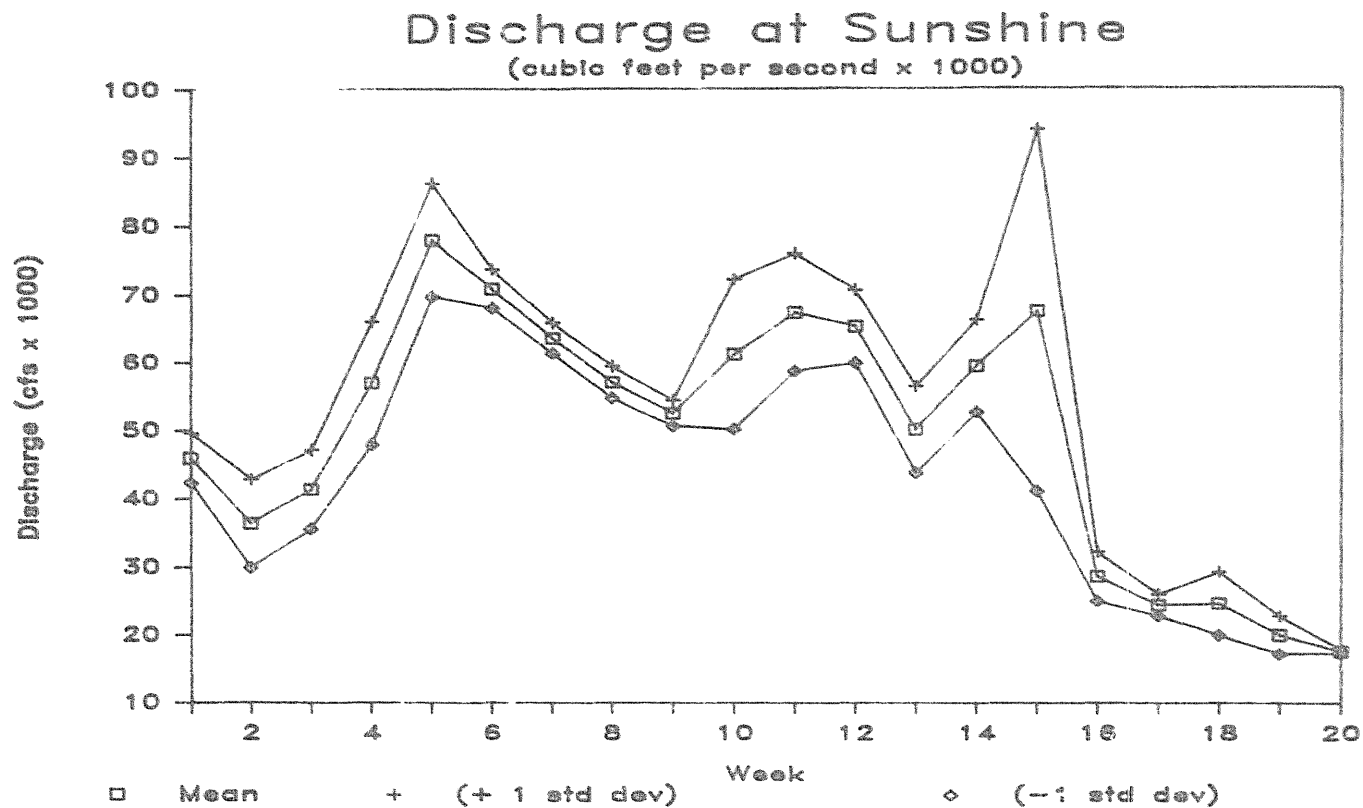


Figure 10. Discharge at Sunshine, Alaska May to September, 1984.

September, but peaked in August (28%) for boats at Willow Creek. Few boats at the Talkeetna sites encountered bar problems. These results seem to indicate that the 30,000 cfs level may be the threshold for increased problems with bars.

For boats at Willow Creek, the proportion with rock related navigational problems was greatest in August (23%), but at Susitna Landing 11% of the boats in June and 11% in September had rock problems. This latter observation does not make sense, if discharge alone governed the number of problems, since the average weekly discharge at Sunshine was quite high (57-78,000 cfs) during June. There is some evidence that destinations of the boaters may be important in explaining the above. In June 74% of the boats exiting at Susitna Landing listed the Deshka River as their first destination, but in September only 18% listed the Deshka while 42% listed the Yentna River (Table 7). This seems to indicate that navigational problems may be affected by the specific site visited, also. Of course we do not know exactly where any of the navigational problems were encountered.

I would expect the proportion of debris and velocity problems to be greatest during spring. The data for Susitna Landing seems to support this contention. Of course, any increase in discharge caused by localized storms could result in debris problems at times other than early spring. This may be an explanation for why August was the peak month for debris problems for those boats exiting at Willow Creek.

#### Activities

Susitna Landing:

##### Sport Fishing.

Approximately 1600 boats and 5100 people participated in sport fishing as the main activity of the trip. In addition, approximately 300 boats and 1500 people participated in sport fishing as a secondary activity. The number of boats sport fishing as their main activity increased from 328 in May to a peak of 783 in June, before declining. The number of people engaged in sport fishing as their main activity peaked at approximately 2500 in June. The number of people engaged in sport fishing as a secondary activity was greatest at approximately 900 in May and was at its lowest with 60 people in June (Tables 12, 13, 14).

Party Size. The number of people in a party for those that sport fished was fairly stable. Over the May to August period from 90% to 96% of the parties whose main purpose was sport fishing consisted of 2 to 5 people (Table 15).

Guides. Few boats that exited at Susitna Landing used guides when sport fishing. Over the entire May to September period 16 boats used a guide (Table 16).

Table 12. Number of people engaged in sport fishing by exit location, 1984.<sup>a,b</sup>

| Month/<br>Season | Susitna Landing |       |       |       |       | Talkeetna |     |     |       |       | Willow Creek |     |     |       |       |
|------------------|-----------------|-------|-------|-------|-------|-----------|-----|-----|-------|-------|--------------|-----|-----|-------|-------|
|                  | Main            | Yes   | No    | Blank | Sum   | Main      | Yes | No  | Blank | Sum   | Main         | Yes | No  | Blank | Sum   |
| May              | 1,095           | 865   | 172   | 0     | 2,132 | --        | --  | --  | --    | --    | --           | --  | --  | --    | --    |
| Jun              | 2,445           | 60    | 169   | 0     | 2,674 | --        | --  | --  | --    | --    | --           | --  | --  | --    | --    |
| Jul              | 840             | 233   | 298   | 35    | 1,406 | 80        | 95  | 258 | 0     | 433   | 636          | 95  | 56  | 0     | 787   |
| Aug              | 684             | 256   | 167   | 0     | 1,107 | 353       | 7   | 79  | 0     | 439   | 555          | 57  | 105 | 4     | 721   |
| Sep              | 19              | 105   | 1,124 | 20    | 1,268 | 53        | 3   | 83  | 0     | 139   | 19           | 59  | 247 | 0     | 325   |
| Overall          | 5,083           | 1,519 | 1,930 | 55    | 8,587 | 486       | 105 | 420 | 0     | 1,011 | 1,210        | 211 | 408 | 4     | 1,833 |
| King             | 3,736           | 318   | 436   | 0     | 4,490 | --        | --  | --  | --    | --    | --           | --  | --  | --    | --    |
| Other            | 1,346           | 547   | 1,494 | 35    | 3,422 | 486       | 104 | 421 | 0     | 1,011 | 1,172        | 208 | 403 | 4     | 1,787 |

<sup>a</sup>The numbers presented are estimates. Missing data are indicated by --.

<sup>b</sup>'Main' indicates sport fishing was the main activity; 'Yes' indicates secondary involvement in sport fishing, 'No' indicates did not sport fish, 'Blank' indicates non-responses.

Table 13. Number of boats by activity and month, Susitna Landing, 1984.<sup>a</sup>

| Activity           | Response <sup>b</sup> |  | May | June | July | Aug | Sept | Overall |
|--------------------|-----------------------|--|-----|------|------|-----|------|---------|
|                    | Category              |  |     |      |      |     |      |         |
| Sport Fishing      | Main                  |  | 328 | 783  | 252  | 215 | 7    | 1,585   |
|                    | No                    |  | 61  | 74   | 102  | 73  | 455  | 765     |
|                    | Yes                   |  | 21  | 83   | 81   | 67  | 41   | 293     |
| Trapping           | Main                  |  | 0   | 0    | 2    | 0   | 0    | 2       |
|                    | No                    |  | 406 | 936  | 428  | 354 | 504  | 2,628   |
|                    | Yes                   |  | 4   | 0    | 0    | 0   | 0    | 4       |
| Hunting            | Main                  |  | 15  | 5    | 2    | 1   | 16   | 39      |
|                    | No                    |  | 393 | 930  | 426  | 351 | 83   | 2,183   |
|                    | Yes                   |  | 3   | 0    | 0    | 2   | 412  | 417     |
| Commercial Fishing | Main                  |  | 1   | 0    | 2    | 0   | 0    | 3       |
|                    | No                    |  | 409 | 659  | 428  | 354 | 503  | 2,353   |
|                    | Yes                   |  | 0   | 0    | 0    | 0   | 0    | 0       |
| Commercial Supply  | Main                  |  | 3   | 4    | 13   | 2   | 5    | 27      |
|                    | No                    |  | 408 | 651  | 416  | 351 | 496  | 2,322   |
|                    | Yes                   |  | 0   | 5    | 1    | 1   | 3    | 10      |
| Private Supply     | Main                  |  | 9   | 70   | 81   | 83  | 50   | 293     |
|                    | No                    |  | 401 | 563  | 327  | 261 | 418  | 1,970   |
|                    | Yes                   |  | 0   | 33   | 22   | 10  | 35   | 100     |
| Transportation     | Main                  |  | 42  | 68   | 46   | 33  | 39   | 228     |
|                    | No                    |  | 365 | 530  | 354  | 295 | 454  | 1,998   |
|                    | Yes                   |  | 4   | 80   | 30   | 26  | 12   | 152     |
| Camping            | Main                  |  | 2   | 6    | 4    | 5   | 0    | 17      |
|                    | No                    |  | 271 | 584  | 285  | 256 | 193  | 1,589   |
|                    | Yes                   |  | 138 | 346  | 141  | 93  | 312  | 1,030   |
| Sight Seeing       | Main                  |  | 8   | 9    | 10   | 12  | 5    | 44      |
|                    | No                    |  | 388 | 846  | 407  | 329 | 488  | 2,458   |
|                    | Yes                   |  | 15  | 81   | 12   | 13  | 11   | 132     |
| Mining             | Main                  |  | 0   | 0    | 0    | 0   | 0    | 0       |
|                    | No                    |  | 410 | 656  | 430  | 352 | 504  | 2,352   |
|                    | Yes                   |  | 0   | 4    | 0    | 2   | 0    | 6       |
| Susitna Study      | Main                  |  | 0   | 3    | 10   | 5   | 6    | 24      |
|                    | No                    |  | 410 | 654  | 420  | 348 | 496  | 2,328   |
|                    | Yes                   |  | 0   | 4    | 0    | 1   | 2    | 7       |
| Other Activity     | Main                  |  | 22  | 15   | 11   | 10  | 14   | 72      |
|                    | No                    |  | 383 | 845  | 417  | 340 | 485  | 2,470   |
|                    | Yes                   |  | 6   | 76   | 0    | 4   | 6    | 92      |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).

Table 14. Percent of boats by activity and month,  
Susitna Landing, 1984.<sup>a</sup>

| Activity              | Response <sup>b</sup> |     | May | June | July | Aug | Sept | Overall |
|-----------------------|-----------------------|-----|-----|------|------|-----|------|---------|
|                       | Category              |     |     |      |      |     |      |         |
| Sport Fishing         | Main                  | 80  | 83  | 58   | 61   | 1   | 60   |         |
|                       | No                    | 15  | 8   | 23   | 21   | 90  | 29   |         |
|                       | Yes                   | 5   | 9   | 19   | 19   | 8   | 11   |         |
| Trapping              | Main                  | 0   | 0   | 0    | 0    | 0   | 0    |         |
|                       | No                    | 99  | 100 | 100  | 100  | 100 | 100  |         |
|                       | Yes                   | 1   | 0   | 0    | 0    | 0   | 0    |         |
| Hunting               | Main                  | 4   | 1   | 0    | 0    | 3   | 2    |         |
|                       | No                    | 96  | 99  | 100  | 99   | 16  | 83   |         |
|                       | Yes                   | 1   | 0   | 0    | 1    | 81  | 16   |         |
| Commercial<br>Fishing | Main                  | 0   | 0   | 0    | 0    | 0   | 0    |         |
|                       | No                    | 100 | 100 | 100  | 100  | 100 | 100  |         |
|                       | Yes                   | 0   | 0   | 0    | 0    | 0   | 0    |         |
| Commercial<br>Supply  | Main                  | 1   | 1   | 3    | 1    | 1   | 1    |         |
|                       | No                    | 99  | 99  | 97   | 99   | 98  | 98   |         |
|                       | Yes                   | 0   | 1   | 0    | 0    | 1   | 0    |         |
| Private<br>Supply     | Main                  | 2   | 11  | 19   | 23   | 10  | 12   |         |
|                       | No                    | 98  | 85  | 76   | 74   | 83  | 83   |         |
|                       | Yes                   | 0   | 5   | 5    | 3    | 7   | 4    |         |
| Transportation        | Main                  | 10  | 10  | 11   | 9    | 8   | 10   |         |
|                       | No                    | 89  | 78  | 82   | 83   | 90  | 84   |         |
|                       | Yes                   | 1   | 12  | 7    | 7    | 2   | 6    |         |
| Camping               | Main                  | 0   | 1   | 1    | 1    | 0   | 1    |         |
|                       | No                    | 66  | 62  | 6    | 72   | 38  | 60   |         |
|                       | Yes                   | 34  | 37  | 33   | 26   | 62  | 39   |         |
| Sight Seeing          | Main                  | 2   | 1   | 2    | 5    | 1   | 2    |         |
|                       | No                    | 94  | 90  | 95   | 93   | 97  | 93   |         |
|                       | Yes                   | 4   | 9   | 3    | 4    | 2   | 5    |         |
| Mining                | Main                  | 0   | 0   | 0    | 0    | 0   | 0    |         |
|                       | No                    | 100 | 99  | 100  | 99   | 100 | 100  |         |
|                       | Yes                   | 0   | 1   | 0    | 1    | 0   | 0    |         |
| Susitna Study         | Main                  | 0   | 0   | 2    | 1    | 1   | 1    |         |
|                       | No                    | 100 | 99  | 98   | 98   | 98  | 99   |         |
|                       | Yes                   | 0   | 1   | 0    | 0    | 0   | 0    |         |
| Other Activity        | Main                  | 5   | 2   | 3    | 3    | 3   | 3    |         |
|                       | No                    | 93  | 90  | 97   | 96   | 96  | 94   |         |
|                       | Yes                   | 1   | 8   | 0    | 1    | 1   | 3    |         |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).



Table 15. Number of people per boat by exit location, 1984.<sup>a</sup>

| Month or Season | People Per Boat | Susitna Landing |    |           |    | Talkeetna |    |           |     | Willow Creek |    |           |    |
|-----------------|-----------------|-----------------|----|-----------|----|-----------|----|-----------|-----|--------------|----|-----------|----|
|                 |                 | Main            |    | Secondary |    | Main      |    | Secondary |     | Main         |    | Secondary |    |
|                 |                 | Boats           | %  | Boats     | %  | Boats     | %  | Boats     | %   | Boats        | %  | Boats     | %  |
| May             | 1               | 8               | 2  | 0         | 0  | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 2               | 86              | 26 | 8         | 38 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 3               | 92              | 29 | 9         | 43 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 4               | 89              | 27 | 4         | 19 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 5               | 28              | 9  | 0         | 0  | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | Over 5          | 20              | 6  | 0         | 0  | --        | -- | --        | --  | --           | -- | --        | -- |
| June            | 1               | 28              | 4  | 9         | 11 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 2               | 259             | 33 | 36        | 43 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 3               | 238             | 31 | 14        | 17 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 4               | 146             | 19 | 18        | 22 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 5               | 54              | 7  | 1         | 1  | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | Over 5          | 52              | 7  | 5         | 6  | --        | -- | --        | --  | --           | -- | --        | -- |
| July            | 1               | 2               | 1  | 9         | 11 | 0         | 0  | 0         | 0   | 10           | 6  | 2         | 7  |
|                 | 2               | 80              | 32 | 28        | 34 | 20        | 61 | 20        | 67  | 40           | 23 | 8         | 30 |
|                 | 3               | 64              | 26 | 17        | 21 | 13        | 39 | 0         | 0   | 38           | 22 | 2         | 7  |
|                 | 4               | 73              | 29 | 15        | 18 | 0         | 0  | 1         | 3   | 40           | 23 | 8         | 30 |
|                 | 5               | 23              | 9  | 4         | 5  | 0         | 0  | 8         | 27  | 26           | 15 | 3         | 11 |
|                 | Over 5          | 6               | 2  | 9         | 11 | 0         | 0  | 1         | 3   | 20           | 11 | 4         | 15 |
| August          | 1               | 4               | 2  | 5         | 7  | 0         | 0  | 0         | 0   | 6            | 4  | 4         | 20 |
|                 | 2               | 61              | 29 | 20        | 30 | 51        | 49 | 0         | 0   | 40           | 25 | 5         | 25 |
|                 | 3               | 62              | 30 | 18        | 27 | 15        | 15 | 0         | 0   | 42           | 27 | 6         | 30 |
|                 | 4               | 49              | 23 | 14        | 21 | 16        | 15 | 0         | 0   | 35           | 22 | 3         | 15 |
|                 | 5               | 25              | 12 | 4         | 6  | 13        | 13 |           | 100 | 21           | 13 | 0         | 0  |
|                 | Over 5          | 8               | 4  | 6         | 9  | 8         | 8  | 0         | 0   | 13           | 8  | 2         | 10 |

Table 15 (Completed).

| Month or Season | People Per Boat | Susitna Landing |    |           |    | Talkeetna |    |           |     | Willow Creek |    |           |    |
|-----------------|-----------------|-----------------|----|-----------|----|-----------|----|-----------|-----|--------------|----|-----------|----|
|                 |                 | Main            |    | Secondary |    | Main      |    | Secondary |     | Main         |    | Secondary |    |
|                 |                 | Boats           | %  | Boats     | %  | Boats     | %  | Boats     | %   | Boats        | %  | Boats     | %  |
| September       | 1               | 0               | 0  | 5         | 13 | 8         | 42 | 0         | 0   | 1            | 13 | 1         | 5  |
|                 | 2               | 3               | 43 | 16        | 40 | 0         | 0  | 0         | 0   | 4            | 50 | 6         | 32 |
|                 | 3               | 3               | 43 | 10        | 25 | 0         | 0  | 1         | 100 | 3            | 38 | 5         | 26 |
|                 | 4               | 0               | 0  | 6         | 15 | 10        | 53 | 0         | 0   | 0            | 0  | 6         | 32 |
|                 | 5               | 1               | 14 | 1         | 3  | 1         | 5  | 0         | 0   | 0            | 0  | 1         | 5  |
|                 | Over 5          | 0               | 0  | 2         | 5  | 0         | 0  | 0         | 0   | 0            | 0  | 0         | 0  |
| King Season     | 1               | 35              | 3  | 9         | 8  | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 2               | 364             | 31 | 51        | 44 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 3               | 346             | 30 | 26        | 23 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 4               | 259             | 22 | 21        | 18 | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | 5               | 82              | 7  | 3         | 3  | --        | -- | --        | --  | --           | -- | --        | -- |
|                 | Over 5          | 74              | 6  | 5         | 4  | --        | -- | --        | --  | --           | -- | --        | -- |
| Other Salmon    | 1               | 6               | 1  | 19        | 11 | 8         | 5  | 0         | 0   | 17           | 3  | 7         | 11 |
|                 | 2               | 125             | 30 | 57        | 32 | 71        | 45 | 20        | 63  | 83           | 25 | 19        | 29 |
|                 | 3               | 116             | 28 | 42        | 24 | 30        | 19 | 1         | 3   | 74           | 23 | 12        | 18 |
|                 | 4               | 99              | 24 | 35        | 20 | 26        | 17 | 1         | 3   | 74           | 23 | 17        | 26 |
|                 | 5               | 49              | 12 | 7         | 4  | 1         | 9  | 9         | 28  | 46           | 14 | 4         | 6  |
|                 | Over 5          | 15              | 4  | 17        | 10 | 0         | 0  | 1         | 3   | 33           | 10 | 6         | 9  |

<sup>a</sup>The numbers provided are sample values. Missing data are indicated by --.

Table 16. Guide use by exit location, 1984.<sup>a</sup>

| Month/<br>Season | Susitna Landing |               | Talkeetna      |               | Willow Creek   |               |
|------------------|-----------------|---------------|----------------|---------------|----------------|---------------|
|                  | Total<br>Boats  | Used<br>Guide | Total<br>Boats | Used<br>Guide | Total<br>Boats | Used<br>Guide |
| May              | 412             | 2             | --             | --            | --             | --            |
| June             | 940             | 10            | --             | --            | --             | --            |
| July             | 441             | 4             | 189            | 29            | 227            | 24            |
| August           | 355             | 0             | 146            | 49            | 227            | 16            |
| September        | 511             | 0             | 64             | 9             | 126            | 0             |
| King Season      | 1449            | 14            | --             | --            | --             | --            |
| Other Salmon     | 1210            | 2             | 398            | 88            | 564            | 39            |

<sup>a</sup>The numbers presented are sample values. Missing data are indicated by --.

Destinations. The Deshka River as a first destination for those with the main activity of sport fishing declined from an estimated 91% in May to 44% in August, then increased to 57% in September. Some 46-73% of boaters who sport fished indicated their first destination was the Yentna River. Willow Creek was important in July and August as a first destination, also (Table 17).

During king salmon season 82% of those 1154 boats with sport fishing as the main activity indicated the Deshka River as their first destination, with only 9% listing the Yentna River. Of those 111 boats sport fishing as a secondary activity, the split between the Yentna and Deshka River was nearly equal at 47% and 44%, respectively.

During the other salmon season boats selected numerous first destinations, yet 59% of those with the main activity of sport fishing chose the Deshka River. The majority (53%) of the boats that sport fished as a secondary activity listed their first destination as the Yentna River.

Over 99% of the boats exiting at Susitna Landing that listed their main activity as fishing, and over 90% of the boats that indicated they had fished as a secondary activity, also put in at the Susitna Landing (Table 18).

Boat Class. Boat classes for those who sport fished were dominated by inboard and outboard jets. An estimated 34% to 43% of those boats with the main activity of sport fishing were inboard jets (May to August), while 48% to 58% were outboard jets. During king salmon season 33% of those with main activity of sport fishing used inboard jets, while 57% used outboard jets. During other salmon season 40% of those with main activity of sport fishing used inboard and 51% used outboard jets (Table 19).

#### Hunting.

Overall, hunting was the main activity of the trip for only 39 boats, but was a secondary activity for 417 boats. September had the most number of boats (428) involved in hunting activities (Tables 13, 14).

#### Private Supply.

This activity was the main one for 293 boats and a secondary one for another 100 boats. There were a total of 80 to more than 100 boats involved in private supplying during the June through September period. Only in May were the number of boats indicating this activity minor (Tables 13, 14).

#### Transportation.

An estimated 228 boats were engaged in transportation as the main activity, with another 152 involved as a secondary activity. June had the greatest number of boats involved at 148, while May had the least at 46 (Tables 13, 14).

Table 17. First destinations for boats by exit location for boats engaged in sport fishing, 1984.<sup>a,b</sup>

| Month/<br>Season | First<br>Destination | Subitna Landing |    |           |    | Talkeetna |     |           |     | Willow Creek |    |           |    |
|------------------|----------------------|-----------------|----|-----------|----|-----------|-----|-----------|-----|--------------|----|-----------|----|
|                  |                      | Main            |    | Secondary |    | Main      |     | Secondary |     | Main         |    | Secondary |    |
|                  |                      | Boats           | %  | Boats     | %  | Boats     | %   | Boats     | %   | Boats        | %  | Boats     | %  |
| May              | Deshka River         | 290             | 91 | 6         | 27 | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Yentna River         | 13              | 4  | 16        | 73 | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Alexander Slough     | 9               | 3  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Others               | 7               | 2  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
| Jun              | Deshka River         | 628             | 81 | 41        | 51 | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Yentna River         | 78              | 10 | 31        | 39 | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Alexander Slough     | 18              | 2  | 1         | 1  | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Willow Creek         | 45              | 6  | 3         | 4  | --        | --  | --        | --  | --           | -- | --        | -- |
|                  | Others               | 9               | 1  | 4         | 5  | --        | --  | --        | --  | --           | -- | --        | -- |
| Jul              | Deshka River         | 178             | 71 | 33        | 41 | 0         | 0   | 0         | 0   | 53           | 30 | 15        | 60 |
|                  | Yentna River         | 28              | 11 | 40        | 50 | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                  | Alexander Slough     | 4               | 2  | 5         | 6  | 0         | 0   | 0         | 0   | 1            | 1  | 0         | 0  |
|                  | Willow Creek         | 33              | 13 | 0         | 0  | 0         | 0   | 0         | 0   | 120          | 69 | 10        | 40 |
|                  | Talkeetna River      | 0               | 0  | 0         | 0  | 33        | 100 | 28        | 90  | 0            | 0  | 0         | 0  |
|                  | Others               | 2               | 4  | 2         | 3  | 0         | 0   | 5         | 10  | 0            | 0  | 0         | 0  |
| Aug              | Deshka River         | 95              | 44 | 21        | 31 | 0         | 0   | 0         | 0   | 41           | 26 | 4         | 21 |
|                  | Yentna River         | 19              | 9  | 40        | 60 | 0         | 0   | 0         | 0   | 2            | 1  | 0         | 0  |
|                  | Alexander Slough     | 4               | 2  | 1         | 1  | 0         | 0   | 0         | 0   | 1            | 1  | 0         | 0  |
|                  | Sheep Creek          | 36              | 17 | 3         | 4  | 0         | 0   | 0         | 0   | 4            | 3  | 0         | 0  |
|                  | Willow Creek         | 53              | 25 | 2         | 3  | 0         | 0   | 0         | 0   | 108          | 68 | 15        | 79 |
|                  | Talkeetna River      | 0               | 0  | 0         | 0  | 83        | 80  | 0         | 0   | 0            | 0  | 0         | 0  |
|                  | Birch Creek          | 0               | 0  | 0         | 0  | 13        | 13  | 0         | 0   | 0            | 0  | 0         | 0  |
|                  | Others               | 7               | 3  | 0         | 0  | 8         | 8   | 1         | 100 | 4            | 3  | 0         | 0  |

Table 17 (Completed).

| Month/<br>Season | First<br>Destination | Susitna Landing |    |           |    | Talkeetna |    |           |     | Willow Creek |    |           |    |
|------------------|----------------------|-----------------|----|-----------|----|-----------|----|-----------|-----|--------------|----|-----------|----|
|                  |                      | Main            |    | Secondary |    | Main      |    | Secondary |     | Main         |    | Secondary |    |
|                  |                      | Boats           | %  | Boats     | %  | Boats     | %  | Boats     | %   | Boats        | %  | Boats     | %  |
| Sep              | Deshka River         | 4               | 57 | 7         | 17 | 0         | 0  | 0         | 0   | 1            | 13 | 10        | 50 |
|                  | Yentna River         | 0               | 0  | 19        | 46 | 0         | 0  | 0         | 0   | 1            | 13 | 0         | 0  |
|                  | Talkeetna River      | 0               | 0  | 0         | 0  | 18        | 95 | 0         | 0   | 0            | 0  | 0         | 0  |
|                  | Willow Creek         | 1               | 14 | 1         | 2  | 0         | 0  | 0         | 0   | 6            | 75 | 2         | 10 |
|                  | Others               | 2               | 29 | 14        | 34 | 1         | 5  | 1         | 100 | 0            | 0  | 8         | 40 |
| Kir              | Deshka River         | 949             | 82 | 50        | 45 | --        | -- | --        | --  | --           | -- | --        | -- |
|                  | Yentna River         | 102             | 9  | 52        | 47 | --        | -- | --        | --  | --           | -- | --        | -- |
|                  | Alexander Slough     | 27              | 2  | 3         | 3  | --        | -- | --        | --  | --           | -- | --        | -- |
|                  | Willow Creek         | 60              | 5  | 3         | 3  | --        | -- | --        | --  | --           | -- | --        | -- |
|                  | Others               | 16              | 1  | 3         | 3  | --        | -- | --        | --  | --           | -- | --        | -- |
| Other Fish       | Deshka River         | 245             | 59 | 58        | 33 | 0         | 0  | 0         | 0   | 83           | 25 | 29        | 46 |
|                  | Yentna River         | 36              | 9  | 94        | 53 | 0         | 0  | 0         | 0   | 3            | 1  | 0         | 0  |
|                  | Alexander Slough     | 8               | 2  | 5         | 3  | 0         | 0  | 0         | 0   | 2            | 1  | 0         | 0  |
|                  | Sheep Creek          | 40              | 10 | 7         | 4  | 0         | 0  | 0         | 0   | 4            | 1  | 0         | 0  |
|                  | Talkeetna River      | 0               | 0  | 0         | 0  | 134       | 85 | 28        | 85  | 0            | 0  | 0         | 0  |
|                  | Birch Creek          | 0               | 0  | 0         | 0  | 13        | 8  | 0         | 0   | 0            | 0  | 0         | 0  |
|                  | L. Willow Creek      | 4               | 1  | 1         | 1  | 0         | 0  | 0         | 0   | 3            | 1  | 7         | 11 |
|                  | Willow Creek         | 72              | 17 | 3         | 2  | 0         | 0  | 0         | 0   | 234          | 71 | 26        | 41 |
|                  | Others               | 8               | 2  | 10        | 6  | 10        | 6  | 5         | 15  | 1            | 0  | 1         | 2  |

<sup>a</sup>The numbers presented are estimates. Missing data are indicated by --.

<sup>b</sup>'Main' indicates sport fishing was the main activity, 'Yes' indicates secondary involvement in sport fishing.

Table 18. Put in or starting point by exit location for boats engaged in sport fishing, 1984<sup>a,b</sup>

| Put in<br>Location | Month or<br>Season | Susitna Landing |     |           |     | Talkeetna |     |           |     | Willow Creek |     |           |     |
|--------------------|--------------------|-----------------|-----|-----------|-----|-----------|-----|-----------|-----|--------------|-----|-----------|-----|
|                    |                    | Main            |     | Secondary |     | Main      |     | Secondary |     | Main         |     | Secondary |     |
|                    |                    | Boats           | %   | Boats     | %   | Boats     | %   | Boats     | %   | Boats        | %   | Boats     | %   |
| Susitna Landing    | June               | 540             | 100 | 56        | 95  | --        | --  | --        | --  | --           | --  | --        | --  |
| Talkeetna River    |                    | 0               | 0   | 0         | 0   | --        | --  | --        | --  | --           | --  | --        | --  |
| Talkeetna Airstrip |                    | 0               | 0   | 0         | 0   | --        | --  | --        | --  | --           | --  | --        | --  |
| Willow Creek       |                    | 0               | 0   | 0         | 0   | --        | --  | --        | --  | --           | --  | --        | --  |
| Kroto Slough       |                    | 0               | 0   | 0         | 0   | --        | --  | --        | --  | --           | --  | --        | --  |
| Other              |                    | 1               | 0   | 3         | 5   | --        | --  | --        | --  | --           | --  | --        | --  |
| Susitna Landing    | July               | 249             | 99  | 81        | 100 | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |
| Talkeetna River    |                    | 0               | 0   | 0         | 0   | 0         | 0   | 3         | 10  | 0            | 0   | 0         | 0   |
| Talkeetna Airstrip |                    | 0               | 0   | 0         | 0   | 33        | 100 | 28        | 90  | 0            | 0   | 0         | 0   |
| Willow Creek       |                    | 0               | 0   | 0         | 0   | 0         | 0   | 6         | 0   | 174          | 100 | 27        | 100 |
| Other              |                    | 2               | 1   | 0         | 0   | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |
| Susitna Landing    | August             | 213             | 100 | 65        | 97  | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |
| Talkeetna River    |                    | 0               | 0   | 0         | 0   | 8         | 8   | 1         | 10  | 0            | 0   | 0         | 0   |
| Talkeetna Airstrip |                    | 0               | 0   | 0         | 0   | 96        | 92  | 0         | 0   | 0            | 0   | 0         | 0   |
| Willow Creek       |                    | 0               | 0   | 0         | 0   | 0         | 0   | 0         | 0   | 154          | 96  | 19        | 95  |
| Other              |                    | 1               | 0   | 2         | 3   | 0         | 0   | 0         | 0   | 6            | 4   | 1         | 5   |
| Susitna Landing    | September          | 7               | 100 | 36        | 90  | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |
| Deshka River       |                    | 0               | 0   | 3         | 8   | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |
| Talkeetna River    |                    | 0               | 0   | 0         | 0   | 1         | 5   | 1         | 100 | 0            | 0   | 0         | 0   |
| Talkeetna Airstrip |                    | 0               | 0   | 0         | 0   | 18        | 95  | 0         | 0   | 0            | 0   | 0         | 0   |
| Willow Creek       |                    | 0               | 0   | 0         | 0   | 0         | 0   | 0         | 0   | 8            | 100 | 20        | 100 |
| Other              |                    | 0               | 0   | 1         | 3   | 0         | 0   | 0         | 0   | 0            | 0   | 0         | 0   |

Table 18 (Completed).

| Put in<br>Location | Month or<br>Season | Susitna Landing |     |           |    | Talkeetna |    |           |    | Willow Creek |    |           |    |
|--------------------|--------------------|-----------------|-----|-----------|----|-----------|----|-----------|----|--------------|----|-----------|----|
|                    |                    | Main            |     | Secondary |    | Main      |    | Secondary |    | Main         |    | Secondary |    |
|                    |                    | Boats           | %   | Boats     | %  | Boats     | %  | Boats     | %  | Boats        | %  | Boats     | %  |
| Susitna Landing    | King Season        | 597             | 99  | 66        | 96 | --        | -- | --        | -- | --           | -- | --        | -- |
| Willow Creek       |                    | 0               | 0   | 0         | 0  | --        | -- | --        | -- | --           | -- | --        | -- |
| Kroto Slough       |                    | 0               | 0   | 0         | 0  | --        | -- | --        | -- | --           | -- | --        | -- |
| Other              |                    | 7               | 1   | 3         | 4  | --        | -- | --        | -- | --           | -- | --        | -- |
| Susitna Landing    | Other Fish         | 412             | 100 | 172       | 97 | 0         | 0  | 0         | 0  | 5            | 2  | 1         | 2  |
| Talkeetna River    |                    | 0               | 0   | 0         | 0  | 9         | 6  | 5         | 15 | 0            | 0  | 0         | 0  |
| Talkeetna Airstrip |                    | 0               | 0   | 0         | 0  | 147       | 94 | 28        | 85 | 0            | 0  | 0         | 0  |
| Willow Creek       |                    | 0               | 0   | 0         | 0  | 0         | 0  | 0         | 0  | 324          | 98 | 65        | 98 |
| Other              |                    | 2               | 0   | 6         | 3  | 0         | 0  | 0         | 0  | 1            | 0  | 0         | 0  |

<sup>a</sup>The numbers presented are estimates. Missing data are indicated by --.

<sup>b</sup>'Main' indicates sport fishing, was the main activity, 'Yes' indicates secondary involvement in sport fishing.



Table 19. Boat class by exit location for boats engaged in sport fishing, 1984.<sup>a,b</sup>

| Month or Season | Boat Class    | Susitna Landing |    |           |    | Talkeetna |     |           |     | Willow Creek |    |           |    |
|-----------------|---------------|-----------------|----|-----------|----|-----------|-----|-----------|-----|--------------|----|-----------|----|
|                 |               | Main            |    | Secondary |    | Main      |     | Secondary |     | Main         |    | Secondary |    |
|                 |               | Boats           | %  | Boats     | %  | Boats     | %   | Boats     | %   | Boats        | %  | Boats     | %  |
| May             | Inboard Jet   | 113             | 34 | 14        | 64 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard Jet  | 191             | 58 | 8         | 36 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Air boat      | 0               | 0  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard prop | 15              | 5  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Canoe         | 4               | 1  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Others        | 6               | 2  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
| June            | Inboard Jet   | 249             | 32 | 48        | 58 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard Jet  | 449             | 57 | 21        | 25 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Air boat      | 6               | 1  | 1         | 1  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard prop | 60              | 8  | 13        | 16 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Canoe         | 5               | 1  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Others        | 14              | 2  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
| July            | Inboard Jet   | 108             | 43 | 45        | 56 | 0         | 0   | 29        | 97  | 20           | 11 | 2         | 8  |
|                 | Outboard Jet  | 121             | 48 | 31        | 38 | 33        | 100 | 0         | 0   | 55           | 32 | 4         | 16 |
|                 | Air boat      | 7               | 3  | 0         | 0  | 0         | 0   | 0         | 0   | 96           | 55 | 19        | 76 |
|                 | Outboard prop | 14              | 6  | 5         | 6  | 0         | 0   | 1         | 3   | 0            | 0  | 0         | 0  |
|                 | Canoe         | 1               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Others        | 1               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 3            | 2  | 0         | 0  |
| August          | Inboard Jet   | 80              | 37 | 38        | 57 | 74        | 71  | 1         | 100 | 16           | 10 | 0         | 0  |
|                 | Outboard Jet  | 116             | 54 | 20        | 30 | 29        | 28  | 0         | 0   | 49           | 31 | 8         | 40 |
|                 | Air boat      | 5               | 2  | 2         | 3  | 0         | 0   | 0         | 0   | 92           | 58 | 12        | 60 |
|                 | Outboard prop | 13              | 6  | 7         | 10 | 1         | 1   | 0         | 0   | 2            | 1  | 0         | 0  |
|                 | Canoe         | 0               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Others        | 1               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 1            | 1  | 0         | 0  |

Table 19 (Completed).

| Month or Season | Boat Class    | Susitna Landing |    |           |    | Talkeetna |     |           |     | Willow Creek |    |           |    |
|-----------------|---------------|-----------------|----|-----------|----|-----------|-----|-----------|-----|--------------|----|-----------|----|
|                 |               | Main            |    | Secondary |    | Main      |     | Secondary |     | Main         |    | Secondary |    |
|                 |               | Boats           | %  | Boats     | %  | Boats     | %   | Boats     | %   | Boats        | %  | Boats     | %  |
| September       | Inboard Jet   | 2               | 29 | 17        | 41 | 19        | 100 | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Outboard Jet  | 1               | 14 | 13        | 32 | 0         | 0   | 1         | 100 | 3            | 38 | 7         | 35 |
|                 | Air boat      | 3               | 43 | 2         | 5  | 0         | 0   | 0         | 0   | 5            | 63 | 13        | 65 |
|                 | Outboard prop | 1               | 14 | 8         | 20 | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Canoe         | 0               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Others        | 0               | 0  | 1         | 2  | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
| King Season     | Inboard Jet   | 385             | 35 | 59        | 61 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard Jet  | 669             | 57 | 31        | 27 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Air boat      | 10              | 1  | 1         | 1  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Outboard prop | 77              | 7  | 13        | 11 | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Canoe         | 9               | 1  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
|                 | Others        | 19              | 2  | 0         | 0  | --        | --  | --        | --  | --           | -- | --        | -- |
| Other Fish      | Inboard Jet   | 166             | 40 | 92        | 52 | 93        | 59  | 31        | 94  | 36           | 11 | 2         | 3  |
|                 | Outboard Jet  | 209             | 50 | 62        | 35 | 63        | 40  | 1         | 3   | 107          | 32 | 18        | 27 |
|                 | Air boat      | 11              | 3  | 4         | 2  | 0         | 0   | 0         | 0   | 181          | 55 | 44        | 67 |
|                 | Outboard prop | 25              | 6  | 20        | 11 | 1         | 1   | 1         | 3   | 2            | 1  | 0         | 0  |
|                 | Canoe         | 1               | 0  | 0         | 0  | 0         | 0   | 0         | 0   | 0            | 0  | 0         | 0  |
|                 | Others        | 3               | 1  | 0         | 0  | 0         | 0   | 0         | 0   | 4            | 1  | 2         | 3  |

<sup>a</sup>The numbers presented are estimates. Missing data are indicated by --.

<sup>b</sup>'Main' indicates sport fishing was the main activity, 'Yes' indicates sport fishing was a secondary activity.

### Camping.

While camping was the main activity for only 17 boats, it was a secondary one for an estimated 1030 boats. The number of boats that were involved in camping activities was greatest in June at 352, yet the number in September was similar at 312 (Tables 13, 14).

Talkeetna:

### Sport Fishing.

Due to the insufficient data available for the king salmon season at Talkeetna, the estimates presented here are lower than the actual level of use. Care should be used to indicate this, should any of the following estimates be cited.

Approximately 160 boats and 500 people were involved in sport fishing as their main activity with an additional 30 boats and 100 people involved as a secondary activity during the July to September period (Tables 12, 20, 21).

Party Size. In July 60% of the 33 boats with the main activity of sport fishing had parties of 2 people, while in August 49% of the 104 boats with main activity of sport fishing had 2 people in the party. In September 10 of the 19 boats had parties of 4 people (Table 15). During the other salmon season, 90% of the 157 boats with sport fishing as their main activity had parties of 2 to 5 people (Table 15).

Guides. During July 29 boats that sport fished used a guide, while in August 49 boats used a guide. During the other salmon season an estimated 88 boats engaged in sport fishing used guides (Table 16).

Destinations. The first destination for those boats with sport fishing as their main activity declined from 100% of 33 boats for Talkeetna River in July to 79% of 104 boats in August. For those with sport fishing as a secondary activity, 91% of 31 boats listed the Talkeetna River as their first destination in July. During the other salmon season 86% (134 boats) of those with the main activity sport fishing listed the Talkeetna River as a first destination (Table 17).

In July 100% of the boats with sport fishing as their main activity put in at Talkeetna airstrip. In August 92% of the boats with the main activity of sport fishing put in at the airstrip, while only 8% put in at the boat launch (Table 18).

Boat Class. In July 100% of the boats with sport fishing as their main activity were outboard jets. In August 71% of the boats with main activity of sport fishing were inboard jets and 28% were outboard jets. During the other salmon season 59% of those boats with main activity sport fishing were inboard jets and 40% were outboard jets (Table 19).

Table 2. Percent of boats by activity and month for boats exiting at the Talkeetna boat launch or airstrip, 1984.<sup>a</sup>

| Activity           | Response <sup>b</sup> |  | July | Aug | Sept | Overall |
|--------------------|-----------------------|--|------|-----|------|---------|
|                    | Category              |  |      |     |      |         |
| Sport Fishing      | Main                  |  | 17   | 72  | 30   | 39      |
|                    | No                    |  | 66   | 28  | 69   | 53      |
|                    | Yes                   |  | 16   | 1   | 2    | 8       |
| Trapping           | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 100  | 100 | 100  | 100     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Hunting            | Main                  |  | 0    | 1   | 0    | 0       |
|                    | No                    |  | 100  | 99  | 69   | 95      |
|                    | Yes                   |  | 0    | 0   | 31   | 5       |
| Commercial Fishing | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 100  | 100 | 100  | 100     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Commercial Supply  | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 100  | 100 | 100  | 100     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Private Supply     | Main                  |  | 7    | 0   | 2    | 4       |
|                    | No                    |  | 93   | 98  | 95   | 95      |
|                    | Yes                   |  | 1    | 2   | 3    | 2       |
| Transportation     | Main                  |  | 16   | 13  | 14   | 15      |
|                    | No                    |  | 65   | 86  | 86   | 76      |
|                    | Yes                   |  | 19   | 1   | 0    | 9       |
| Camping            | Main                  |  | 1    | 0   | 0    | 0       |
|                    | No                    |  | 99   | 100 | 100  | 100     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Sight Seeing       | Main                  |  | 8    | 1   | 17   | 7       |
|                    | No                    |  | 84   | 79  | 78   | 81      |
|                    | Yes                   |  | 8    | 21  | 5    | 12      |
| Mining             | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 100  | 99  | 100  | 100     |
|                    | Yes                   |  | 0    | 1   | 0    | 0       |
| Susitna Study      | Main                  |  | 15   | 14  | 10   | 14      |
|                    | No                    |  | 84   | 86  | 90   | 86      |
|                    | Yes                   |  | 2    | 0   | 0    | 1       |
| Other Activity     | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 96   | 100 | 100  | 98      |
|                    | Yes                   |  | 4    | 0   | 0    | 2       |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).

Table 21. Number of boats by activity and month for boats exiting at the Talkeetna boat launch or airstrip, 1984.<sup>a</sup>

| Activity           | Response <sup>b</sup> |  | July | Aug | Sept | Overall |
|--------------------|-----------------------|--|------|-----|------|---------|
|                    | Category              |  |      |     |      |         |
| Sport Fishing      | Main                  |  | 33   | 104 | 19   | 156     |
|                    | No                    |  | 125  | 40  | 44   | 209     |
|                    | Yes                   |  | 31   | 1   | 1    | 33      |
| Trapping           | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 189  | 146 | 64   | 399     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Hunting            | Main                  |  | 0    | 1   | 0    | 1       |
|                    | No                    |  | 189  | 144 | 44   | 377     |
|                    | Yes                   |  | 0    | 0   | 20   | 20      |
| Commercial Fishing | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 189  | 146 | 64   | 399     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Commercial Supply  | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 189  | 146 | 64   | 399     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Private Supply     | Main                  |  | 13   | 0   | 1    | 14      |
|                    | No                    |  | 174  | 143 | 60   | 377     |
|                    | Yes                   |  | 1    | 3   | 2    | 6       |
| Transportation     | Main                  |  | 31   | 19  | 9    | 59      |
|                    | No                    |  | 122  | 125 | 54   | 301     |
|                    | Yes                   |  | 36   | 1   | 0    | 37      |
| Camping            | Main                  |  | 1    | 0   | 0    | 1       |
|                    | No                    |  | 187  | 146 | 64   | 397     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Sight Seeing       | Main                  |  | 15   | 1   | 11   | 27      |
|                    | No                    |  | 159  | 115 | 50   | 324     |
|                    | Yes                   |  | 15   | 30  | 3    | 48      |
| Mining             | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 189  | 144 | 64   | 397     |
|                    | Yes                   |  | 0    | 1   | 0    | 1       |
| Susitna Study      | Main                  |  | 28   | 20  | 6    | 54      |
|                    | No                    |  | 157  | 126 | 57   | 340     |
|                    | Yes                   |  | 3    | 0   | 0    | 3       |
| Other Activity     | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 181  | 146 | 61   | 388     |
|                    | Yes                   |  | 8    | 0   | 0    | 8       |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).

### Hunting.

Based on data obtained from the exit interviews, only a single boat was hunting as their main activity and an estimated 20 boats were engaged in hunting as a secondary activity (Tables 20, 21).

### Transportation.

There were an estimated 59 boats involved in transportation as their main activity, and another 37 indicated it was a secondary activity (Tables 20, 21).

### Sightseeing.

Overall an estimated 27 boats had this as their main activity, with another 48 noting it as a secondary activity (Tables 20, 21).

### Susitna Study.

An estimated 54 boats indicated that this was their main activity. July and August had the most involvement with 31 and 20 boats, respectively (Tables 20, 21).

### Willow Creek:

#### Sport Fishing.

Due to the insufficient data available for king salmon season at Willow Creek, the estimates presented here are lower than the actual level of use. Care should be taken to indicate this, should the following estimates be cited.

There were approximately 350 boats and 1200 people engaged in sport fishing as their main activity during July to September. In addition, approximately 70 boats and 210 people participated in sport fishing as a secondary activity (Tables 12, 22, 23).

Party Size. At Willow Creek 89% of the parties in July consisted of 2-5 people. The percentage was only slightly different in August and other salmon season (Table 15).

Guides. The use of guides was not common by those who sport fished, but insufficient data were available for a peak fishing period in June. In July 24 boats used a guide. During other salmon season an estimated 39 boats used guides.

Destinations. For July through September never more than 30% of those boats with the main activity of sport fishing indicated the Doshka was their first destination. During the same period, Willow Creek was the first destination for 68-75% of the boats (Table 17). For the other

Table 22. Percent of boats by activity and month for boats exiting at Willow Creek, 1984.<sup>a</sup>

|                    |          | Response <sup>b</sup> |     |      |         |  |
|--------------------|----------|-----------------------|-----|------|---------|--|
| Activity           | Category | July                  | Aug | Sept | Overall |  |
| Sport Fishing      | Main     | 78                    | 71  | 6    | 60      |  |
|                    | No       | 10                    | 20  | 77   | 29      |  |
|                    | Yes      | 12                    | 9   | 16   | 12      |  |
| Trapping           | Main     | 0                     | 0   | 0    | 0       |  |
|                    | No       | 100                   | 100 | 100  | 100     |  |
|                    | Yes      | 0                     | 0   | 0    | 0       |  |
| Hunting            | Main     | 0                     | 1   | 22   | 6       |  |
|                    | No       | 100                   | 99  | 33   | 82      |  |
|                    | Yes      | 0                     | 0   | 58   | 13      |  |
| Commercial Fishing | Main     | 0                     | 0   | 0    | 0       |  |
|                    | No       | 100                   | 100 | 100  | 100     |  |
|                    | Yes      | 0                     | 0   | 0    | 0       |  |
| Commercial Supply  | Main     | 0                     | 0   | 1    | 0       |  |
|                    | No       | 100                   | 100 | 99   | 100     |  |
|                    | Yes      | 0                     | 0   | 0    | 0       |  |
| Private Supply     | Main     | 3                     | 9   | 3    | 6       |  |
|                    | No       | 95                    | 90  | 94   | 95      |  |
|                    | Yes      | 2                     | 0   | 3    | 2       |  |
| Transportation     | Main     | 8                     | 9   | 13   | 10      |  |
|                    | No       | 82                    | 83  | 84   | 83      |  |
|                    | Yes      | 9                     | 8   | 3    | 8       |  |
| Camping            | Main     | 0                     | 1   | 0    | 1       |  |
|                    | No       | 72                    | 80  | 35   | 67      |  |
|                    | Yes      | 28                    | 19  | 65   | 32      |  |
| Sight Seeing       | Main     | 3                     | 2   | 3    | 3       |  |
|                    | No       | 88                    | 91  | 93   | 90      |  |
|                    | Yes      | 8                     | 7   | 4    | 7       |  |
| Mining             | Main     | 0                     | 0   | 0    | 0       |  |
|                    | No       | 100                   | 100 | 100  | 100     |  |
|                    | Yes      | 0                     | 0   | 0    | 0       |  |
| Susitna Study      | Main     | 0                     | 1   | 0    | 0       |  |
|                    | No       | 100                   | 99  | 100  | 100     |  |
|                    | Yes      | 0                     | 0   | 0    | 0       |  |
| Other Activity     | Main     | 7                     | 3   | 3    | 5       |  |
|                    | No       | 92                    | 95  | 95   | 94      |  |
|                    | Yes      | 1                     | 2   | 2    | 2       |  |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).

Table 23. Number of boats by activity and month for boats exiting at Willow Creek, 1984.<sup>a</sup>

| Activity           | Response <sup>b</sup> |  | July | Aug | Sept | Overall |
|--------------------|-----------------------|--|------|-----|------|---------|
|                    | Category              |  |      |     |      |         |
| Sport Fishing      | Main                  |  | 174  | 160 | 8    | 342     |
|                    | No                    |  | 23   | 46  | 96   | 165     |
|                    | Yes                   |  | 27   | 20  | 20   | 67      |
| Trapping           | Main                  |  | 1    | 0   | 0    | 1       |
|                    | No                    |  | 223  | 223 | 125  | 572     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Hunting            | Main                  |  | 1    | 2   | 29   | 32      |
|                    | No                    |  | 223  | 222 | 26   | 471     |
|                    | Yes                   |  | 0    | 0   | 75   | 75      |
| Commercial Fishing | Main                  |  | 1    | 0   | 0    | 1       |
|                    | No                    |  | 223  | 224 | 125  | 572     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Commercial Supply  | Main                  |  | 1    | 0   | 1    | 2       |
|                    | No                    |  | 223  | 223 | 124  | 570     |
|                    | Yes                   |  | 0    | 1   | 0    | 1       |
| Private Supply     | Main                  |  | 7    | 21  | 4    | 32      |
|                    | No                    |  | 213  | 202 | 118  | 533     |
|                    | Yes                   |  | 4    | 1   | 4    | 9       |
| Transportation     | Main                  |  | 19   | 21  | 16   | 56      |
|                    | No                    |  | 184  | 185 | 104  | 473     |
|                    | Yes                   |  | 21   | 18  | 4    | 43      |
| Camping            | Main                  |  | 1    | 2   | 0    | 3       |
|                    | No                    |  | 161  | 131 | 44   | 336     |
|                    | Yes                   |  | 62   | 42  | 80   | 184     |
| Sight Seeing       | Main                  |  | 7    | 5   | 4    | 16      |
|                    | No                    |  | 198  | 203 | 115  | 516     |
|                    | Yes                   |  | 19   | 16  | 5    | 40      |
| Mining             | Main                  |  | 0    | 0   | 0    | 0       |
|                    | No                    |  | 224  | 224 | 125  | 573     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Susitna Study      | Main                  |  | 0    | 2   | 0    | 2       |
|                    | No                    |  | 224  | 222 | 125  | 571     |
|                    | Yes                   |  | 0    | 0   | 0    | 0       |
| Other Activity     | Main                  |  | 15   | 7   | 4    | 26      |
|                    | No                    |  | 206  | 215 | 119  | 540     |
|                    | Yes                   |  | 3    | 4   | 2    | 9       |

<sup>a</sup>The numbers presented are estimates.

<sup>b</sup>Respondents indicated whether an activity was the main activity (Main), a secondary activity engaged in (Yes), or an activity they did not participate in (No).



salmon season, Willow Creek at 71% (234 boats) and Deshka River at 25% (83 boats) were the major first destinations. For the additional 63 boats that sport fished, an estimated 47% had Deshka River as a first destination, 41% Willow Creek, and 11% Little Willow Creek.

For July to September, an estimated 78-100% of the boats that indicated their main activity was sport fishing had put in at Willow Creek. During the other salmon season over 95% of all boats that sport fished, also put in at Willow Creek.

Boat Class. Of those boats in July with the main activity of sport fishing 55% were airboats, 32% outboard jets, and 12% inboard jets. During August 58% were airboats and 31% were outboard jets. For the other salmon season, there were 330 boats with the main activity of sport fishing split between airboats (55%) and outboard jets (32%).

#### Hunting.

Overall, an estimated 32 boats were engaged in hunting as their main activity with an additional 75 boats noting some involvement in the sport. September was the main month for hunting with a total of 104 boats (Tables 22, 23).

#### Private Supply.

Overall 35 boats indicated this was their main activity with an additional 16 also participating. The majority of these boats (22) occurred in August (Tables 22, 23).

#### Transportation.

There were an estimated 66 boats with transportation as their main activity, and another 43 boats noted this as a secondary activity (Tables 22, 23).

#### Camping.

Few boats indicated that camping was their main activity, but an estimated 210 had it as a secondary activity. There were 80 boats engaged in camping in September and 63 boats in July (Tables 22, 23).

#### Sightseeing.

Only 16 boats indicated that this was their main activity, but an additional 66 boats listed it as a secondary activity. The number of boats engaged in sightseeing remained steady over June through August at 21 to 26 boats, then declined in September to only 9 boats (Tables 22, 23).

## Boater Characteristics

### Susitna Landing:

#### Age.

Overall, 82% of the people interviewed were in the 16-49 year age group. There was some variation in percent of people in the 16-49 age group over time, with a high of 90% in June and a low of 77% in May (Table 24, Figure 11).

#### Sex.

Overall, 79% of the people exiting at the Susitna Landing were males, while 19% were females. Males peaked at 90% during September (Table 25, Figure 12).

#### Residence.

About 1900 people (66%) who exited at the Susitna Landing resided in the Anchorage area and another 800 (28%) lived in the Matanuska Valley and surrounding area (Table 26).

#### Anticipated Visits. <sup>a/</sup>

Overall, 46% of the people anticipated making 11-20 visits to the Susitna River this boating season. During May 22% of the people indicated more than 20 visits, but in no other month sampled was this category represented. The 11-20 visit group was at a low with 148 people in May, but for the June to September period it ranged from 229 to 299 people (Table 27, Figure 13).

#### Boat Time.

Overall, 85% of the boaters indicated a trip time of three or less days on the river. Some 29-40% of the boaters indicated a trip time of only 1 day during the May to September period (Table 28, Figure 14).

### Talkeetna:

#### Age.

For the entire June through September period, 86% of the people were in the 16-49 year age group. This group peaked at 95% during September (Table 24, Figure 11).

#### Sex.

There were nearly four times as many males as females exiting at the Talkeetna sites during the June through September period. The percent

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<sup>a/</sup> Boaters at each site were asked to estimate their number of trips during the 1984 boating season.

Table 24. Age groups (years) by exit location, 1984.<sup>a</sup>

| Exit<br>Location   | Month   | Under 16 |    | 16-49  |    | Over 49 |    |
|--------------------|---------|----------|----|--------|----|---------|----|
|                    |         | People   | %  | People | %  | People  | %  |
| Susitna<br>Landing | May     | 71       | 16 | 339    | 77 | 33      | 7  |
|                    | Jun     | 48       | 8  | 522    | 90 | 12      | 2  |
|                    | Jul     | 69       | 14 | 393    | 78 | 39      | 8  |
|                    | Aug     | 60       | 14 | 336    | 78 | 33      | 8  |
|                    | Sep     | 35       | 7  | 454    | 86 | 41      | 8  |
|                    | Overall | 283      | 11 | 2,044  | 82 | 158     | 6  |
| Talkeetna          | Jul     | 7        | 13 | 41     | 77 | 5       | 9  |
|                    | Aug     | 4        | 7  | 46     | 85 | 4       | 7  |
|                    | Sep     | 2        | 4  | 53     | 95 | 1       | 2  |
|                    | Overall | 13       | 8  | 140    | 86 | 10      | 6  |
| Willow<br>Creek    | Jul     | 47       | 14 | 256    | 74 | 42      | 12 |
|                    | Aug     | 43       | 14 | 228    | 73 | 41      | 13 |
|                    | Sep     | 13       | 7  | 145    | 81 | 20      | 11 |
|                    | Overall | 103      | 12 | 629    | 75 | 103     | 12 |

<sup>a</sup>The numbers presented are sample values.

## Age Groups

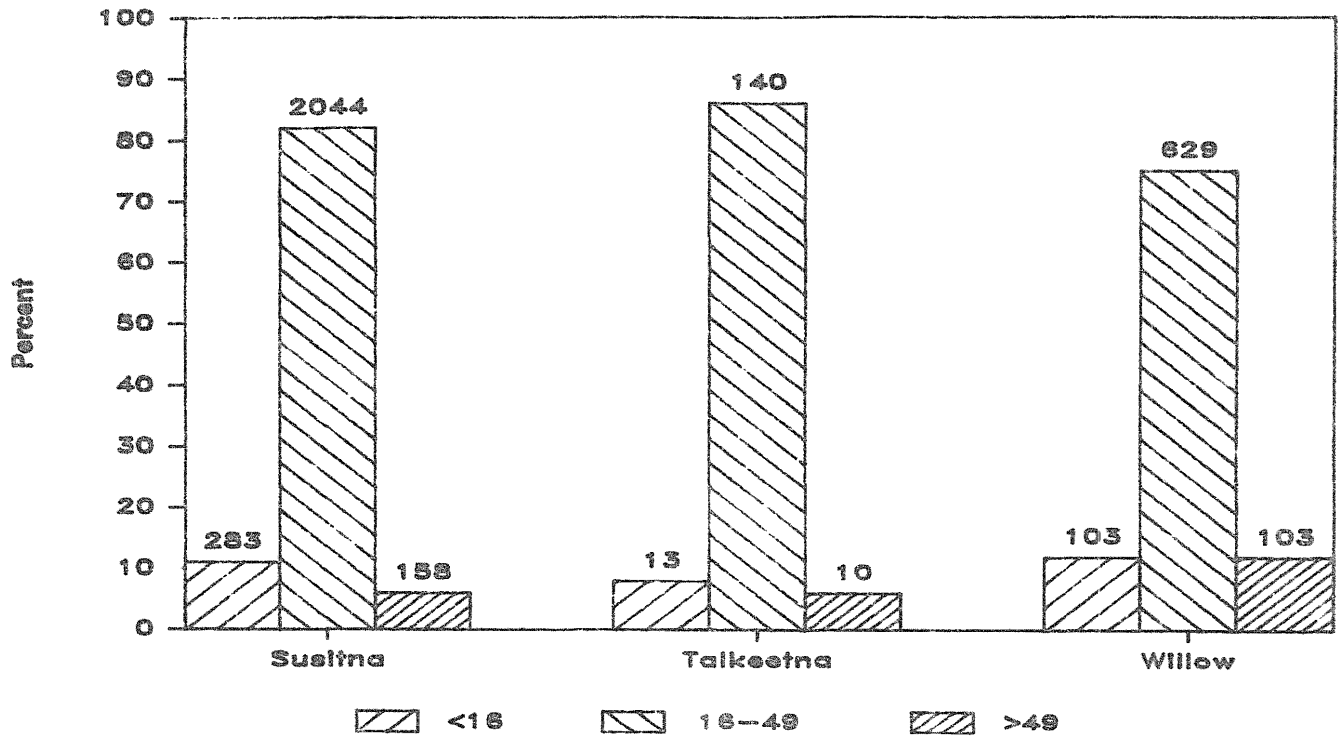


Figure 11. Boater age by exit location 1984. The number of people sampled is noted above each bar.

Table 25. Sex of boaters by exit location, 1984.<sup>a,b</sup>

| Exit<br>Location   | Month   | Male   |    | Female |    | Juvenile |   |
|--------------------|---------|--------|----|--------|----|----------|---|
|                    |         | People | %  | People | %  | People   | % |
| Susitna<br>Landing | May     | 298    | 71 | 118    | 28 | 1        | 0 |
|                    | Jun     | 429    | 82 | 68     | 13 | 26       | 5 |
|                    | Jul     | 296    | 74 | 104    | 26 | 0        | 0 |
|                    | Aug     | 284    | 76 | 90     | 24 | 0        | 0 |
|                    | Sep     | 436    | 90 | 47     | 10 | 0        | 0 |
|                    | Overall | 1,743  | 79 | 427    | 19 | 28       | 1 |
| Talkeetna          | Jul     | 32     | 64 | 18     | 36 | 0        | 0 |
|                    | Aug     | 46     | 85 | 8      | 15 | 0        | 0 |
|                    | Sep     | 45     | 92 | 4      | 8  | 0        | 0 |
|                    | Overall | 123    | 80 | 30     | 20 | 0        | 0 |
| Willow<br>Creek    | Jul     | 230    | 67 | 114    | 33 | 0        | 0 |
|                    | Aug     | 230    | 75 | 78     | 25 | 0        | 0 |
|                    | Sep     | 152    | 87 | 23     | 13 | 0        | 0 |
|                    | Overall | 612    | 74 | 215    | 26 | 0        | 0 |

<sup>a</sup> When the sex of an adolescent was not apparent, they were recorded as a 'Juvenile'.

<sup>b</sup> The numbers presented are sample values.

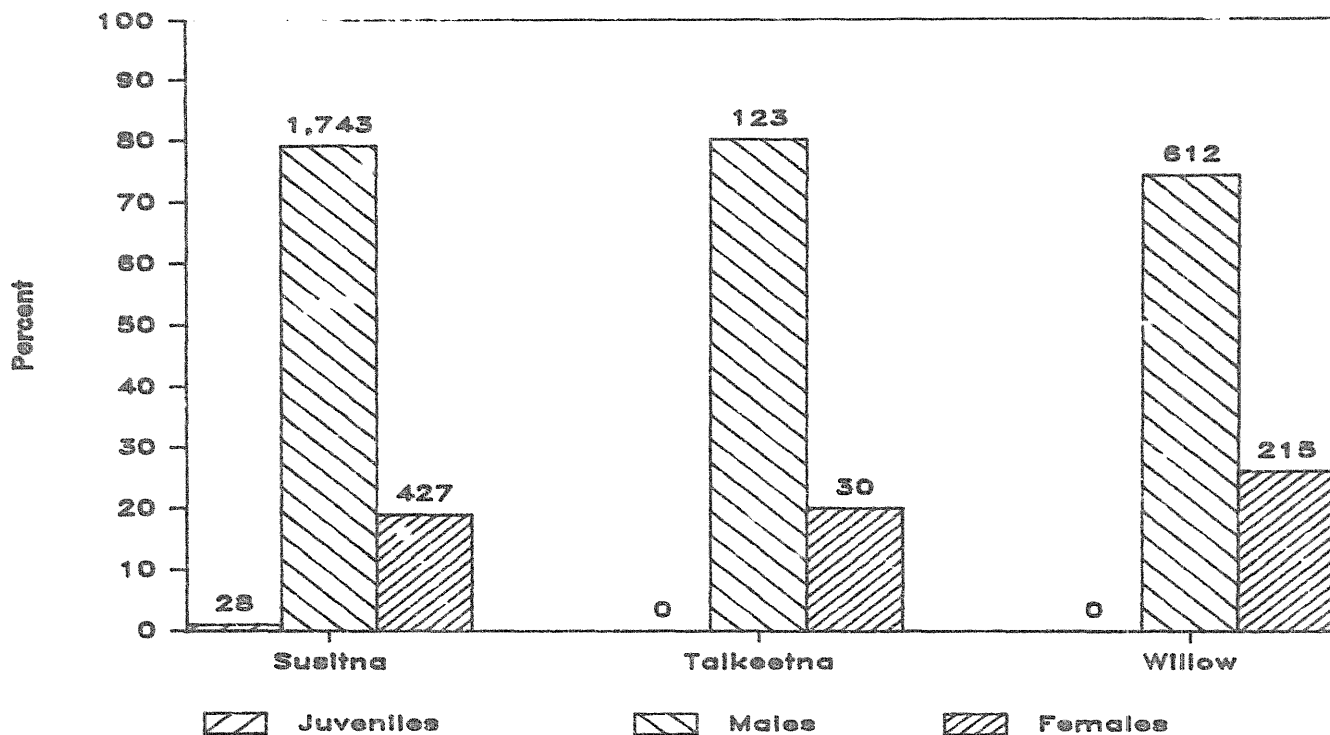


Figure 12. Boater sex by exit location 1984. The number of people sampled is noted above each bar.

Table 26. Number of people for residence groups by exit location, 1984.<sup>a,b</sup>

|                    |         | Residence Groups |       |    |    |   |   |   |    |    |    |    |    |
|--------------------|---------|------------------|-------|----|----|---|---|---|----|----|----|----|----|
| Interview Location | Month   | 1                | 2     | 3  | 4  | 5 | 7 | 8 | 9  | 10 | 11 | 12 | 99 |
| Susitna Landing    | May     | 149              | 261   | 3  | 2  | 0 | 0 | 0 | 15 | 0  | 15 | 0  | 12 |
|                    | Jun     | 226              | 560   | 8  | 8  | 1 | 1 | 0 | 6  | 0  | 26 | 1  | 5  |
|                    | Jul     | 157              | 370   | 5  | 7  | 1 | 0 | 0 | 3  | 0  | 14 | 0  | 3  |
|                    | Aug     | 116              | 311   | 1  | 6  | 0 | 0 | 0 | 8  | 2  | 14 | 1  | 3  |
|                    | Sep     | 146              | 388   | 0  | 8  | 0 | 0 | 1 | 0  | 3  | 5  | 0  | 4  |
|                    | Overall | 794              | 1,890 | 17 | 31 | 2 | 1 | 1 | 32 | 5  | 75 | 2  | 27 |
| Talkeetna          | Jul     | 2                | 35    | 0  | 10 | 1 | 0 | 0 | 1  | 0  | 5  | 0  | 3  |
|                    | Aug     | 7                | 37    | 0  | 8  | 2 | 0 | 0 | 0  | 0  | 4  | 0  | 0  |
|                    | Sep     | 5                | 42    | 0  | 6  | 0 | 0 | 0 | 2  | 2  | 1  | 0  | 2  |
|                    | Overall | 14               | 114   | 0  | 24 | 3 | 0 | 0 | 3  | 2  | 10 | 0  | 5  |
| Willow Creek       | Jul     | 74               | 220   | 0  | 7  | 0 | 0 | 0 | 3  | 0  | 45 | 0  | 0  |
|                    | Aug     | 48               | 231   | 2  | 4  | 0 | 0 | 0 | 0  | 0  | 22 | 0  | 9  |
|                    | Sep     | 23               | 150   | 1  | 0  | 0 | 0 | 0 | 1  | 0  | 3  | 0  | 2  |
|                    | Overall | 145              | 601   | 3  | 11 | 0 | 0 | 0 | 4  | 0  | 70 | 0  | 11 |

<sup>a</sup>The numbers presented are sample values.

|   |        |                                       |   |
|---|--------|---------------------------------------|---|
| b | Groups | 1 Montana Creek to Palmer/Wasilla     | 2 Chugiak to Girdwood                     |
|   |        | 3 Seward, Cooper Landing to Homer     | 4 Peter's Creek, Talkeetna, Trapper Creek |
|   |        | 5 Cantwell to Nenana                  | 6 Glennallen and Paxson                   |
|   |        | 7 Delta Junction, Tok, Valdez, Kodiak | 8 Juneau, Ketchikan                       |
|   |        | 9 Fairbanks                           | 10 Missing                                |
|   |        | 11 USA, non-Alaska                    | 12 Non-USA                                |
|   |        |                                       | 99 Others                                 |

Table 27. Number of anticipated visits by exit location, 1984.<sup>a</sup>

| Exit<br>Location   | Month   | Under 2 |    | 2-5    |    | 6-10   |    | 11-20  |    | Over 20 |    |
|--------------------|---------|---------|----|--------|----|--------|----|--------|----|---------|----|
|                    |         | People  | %  | People | %  | People | %  | People | %  | People  | %  |
| Susitna<br>Landing | May     | 69      | 16 | 66     | 18 | 48     | 11 | 148    | 35 | 93      | 22 |
|                    | Jun     | 117     | 14 | 218    | 36 | 190    | 23 | 297    | 36 | 0       | 0  |
|                    | Jul     | 31      | 6  | 88     | 19 | 130    | 24 | 299    | 55 | 0       | 0  |
|                    | Aug     | 51      | 11 | 105    | 30 | 71     | 16 | 229    | 50 | 0       | 0  |
|                    | Sep     | 58      | 11 | 104    | 23 | 109    | 20 | 278    | 51 | 0       | 0  |
|                    | Overall | 326     | 12 | 581    | 27 | 548    | 20 | 1,251  | 46 | 0       | 0  |
| Talkeetna          | Jul     | 11      | 22 | 1      | 2  | 5      | 10 | 32     | 65 | 0       | 0  |
|                    | Aug     | 23      | 43 | 10     | 23 | 2      | 4  | 19     | 35 | 0       | 0  |
|                    | Sep     | 17      | 31 | 24     | 80 | 2      | 4  | 11     | 20 | 0       | 0  |
|                    | Overall | 51      | 32 | 35     | 29 | 9      | 6  | 62     | 39 | 0       | 0  |
| Willow<br>Creek    | Jul     | 17      | 6  | 31     | 12 | 55     | 19 | 56     | 19 | 134     | 46 |
|                    | Aug     | 26      | 8  | 62     | 25 | 58     | 19 | 78     | 25 | 85      | 28 |
|                    | Sep     | 10      | 6  | 24     | 16 | 15     | 9  | 35     | 20 | 90      | 52 |
|                    | Overall | 53      | 7  | 117    | 15 | 128    | 16 | 169    | 22 | 309     | 40 |

<sup>a</sup>The numbers presented are sample values. Boaters were asked to estimate the number of visits during 1984.



## Anticipated Number of Visits

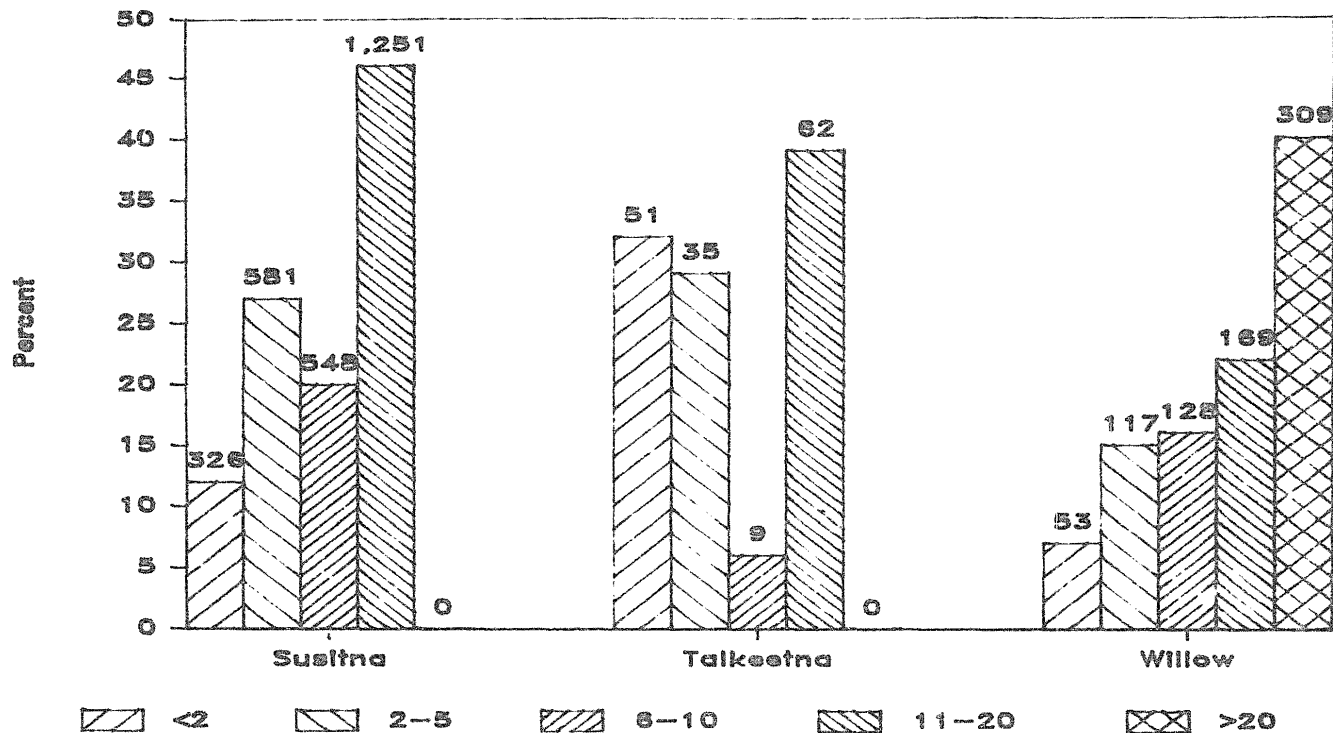


Figure 13. Anticipated number of visits by exit location 1984. The number of people sampled is noted above each bar. People were asked to estimate the number of trips.

Table 28. Days on the river by exit location, 1984.<sup>a</sup>

| Exit<br>Location   | Days | May   |     | Jun   |     | Jul   |     | Aug   |     | Sep   |     | Overall |     |
|--------------------|------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|---------|-----|
|                    |      | Boats | %   | Boats | %   | Boats | %   | Boats | %   | Boats | %   | Boats   | %   |
| Susitna<br>Landing | 1    | 154   | 38  | 378   | 40  | 129   | 29  | 135   | 38  | 64    | 13  | 860     | 32  |
|                    | 2    | 85    | 21  | 328   | 35  | 157   | 36  | 111   | 31  | 120   | 24  | 801     | 30  |
|                    | 3    | 109   | 27  | 170   | 18  | 107   | 24  | 75    | 21  | 144   | 28  | 605     | 23  |
|                    | 4    | 35    | 9   | 28    | 3   | 27    | 6   | 9     | 3   | 68    | 13  | 167     | 6   |
|                    | 5    | 10    | 2   | 10    | 1   | 9     | 2   | 9     | 3   | 50    | 10  | 88      | 3   |
|                    | 6    | 4     | 1   | 1     | 0   | 3     | 1   | 0     | 0   | 28    | 5   | 36      | 1   |
|                    | 7    | 6     | 1   | 11    | 1   | 2     | 0   | 4     | 1   | 17    | 3   | 40      | 2   |
|                    | 8-14 | 2     | 0   | 9     | 1   | 6     | 1   | 8     | 2   | 16    | 3   | 41      | 2   |
| Over 14            |      | 0     | 0   | 5     | 1   | 0     | 0   | 3     | 1   | 3     | 1   | 11      | 0   |
|                    |      | 405   | 100 | 940   | 100 | 440   | 100 | 354   | 100 | 510   | 100 | 2649    | 100 |
| Talkeetna          | 1    | --    | --  | --    | --  | 138   | 73  | 127   | 88  | 45    | 71  | 310     | 78  |
|                    | 2    | --    | --  | --    | --  | 0     | 0   | 4     | 3   | 1     | 2   | 5       | 1   |
|                    | 3    | --    | --  | --    | --  | 22    | 12  | 3     | 2   | 10    | 16  | 35      | 9   |
|                    | 4    | --    | --  | --    | --  | 1     | 1   | 0     | 0   | 3     | 5   | 4       | 1   |
|                    | 5    | --    | --  | --    | --  | 13    | 7   | 4     | 3   | 4     | 0   | 21      | 5   |
|                    | 6    | --    | --  | --    | --  | 0     | 0   | 0     | 0   | 0     | 0   | 0       | 0   |
|                    | 7    | --    | --  | --    | --  | 9     | 5   | 6     | 4   | 0     | 0   | 15      | 4   |
|                    | 8-14 | --    | --  | --    | --  | 6     | 3   | 0     | 0   | 0     | 0   | 6       | 2   |
| Over 14            |      | --    | --  | --    | --  | 0     | 0   | 1     | 1   | 0     | 0   | 1       | 0   |
|                    |      |       |     |       |     | 189   | 100 | 145   | 100 | 63    | 100 | 397     | 100 |
| Willow<br>Creek    | 1    | --    | --  | --    | --  | 156   | 70  | 169   | 75  | 43    | 34  | 368     | 64  |
|                    | 2    | --    | --  | --    | --  | 48    | 21  | 41    | 18  | 30    | 24  | 119     | 21  |
|                    | 3    | --    | --  | --    | --  | 16    | 7   | 12    | 5   | 20    | 16  | 48      | 8   |
|                    | 4    | --    | --  | --    | --  | 1     | 0   | 2     | 1   | 14    | 11  | 17      | 3   |
|                    | 5    | --    | --  | --    | --  | 0     | 0   | 1     | 0   | 7     | 6   | 8       | 1   |
|                    | 6    | --    | --  | --    | --  | 1     | 0   | 0     | 0   | 5     | 4   | 6       | 1   |
|                    | 7    | --    | --  | --    | --  | 0     | 0   | 1     | 0   | 4     | 3   | 5       | 1   |
|                    | 8-14 | --    | --  | --    | --  | 0     | 0   | 0     | 0   | 3     | 2   | 3       | 1   |
| Over 14            |      | --    | --  | --    | --  | 2     | 1   | 0     | 0   | 0     | 0   | 2       | 0   |
|                    |      |       |     |       |     | 224   | 100 | 226   | 100 | 126   | 100 | 576     | 100 |

<sup>a</sup>The numbers presented are estimates. Missing data are indicated by --.

# Trip Length—River Days

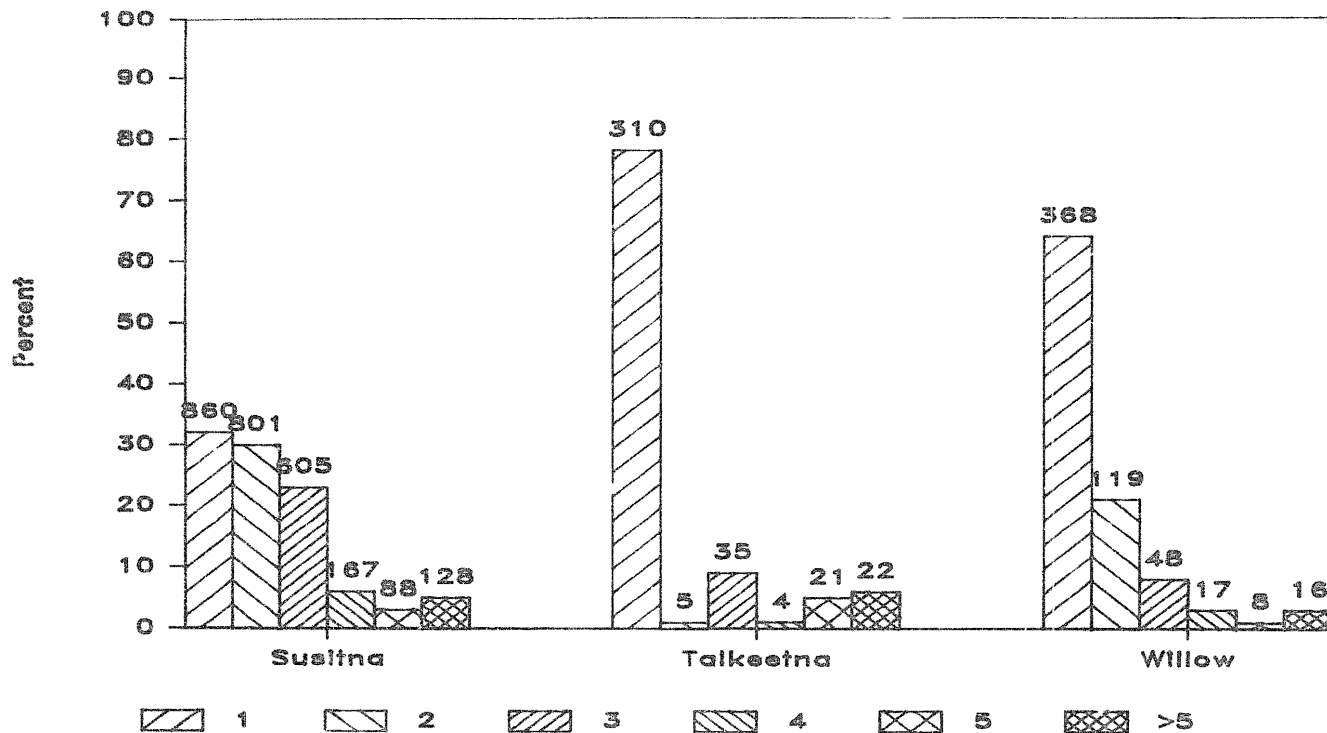


Figure 14. Trip duration by exit location 1984. The estimated number of boats is noted above each bar.

males ranged from a low of 64% in June to a high of 92% in September (Table 25, Figure 12).

#### Residence.

Over the July to September period 114 people (65%) exiting at the Talkeetna sites resided in the Anchorage area. The second largest group with 24 people (14%), was the Talkeetna area towns (Table 26).

#### Anticipated Visits.

Some 39% of the people anticipated 11-20 visits during this boating season, while another 32% responded less than 2 visits. The percent in the 11-20 visit group declined from 65% in July to 20% in September. During the same period the 2-5 visit group increased from 2% to 80% (Table 27, Figure 13).

#### Boat Time.

At Talkeetna, 78% of the people over the June to September period indicated their trip was of only one day duration. The percent with single day trips ranged from a low of 71% to a high of 88% (Table 28, Figure 11).

#### Willow Creek:

##### Age.

At Willow Creek 75% of the people were 16-49 years of age. This group was fairly stable at 73-81% for July to September. Neither the less than 16 years or greater than 49 year group exceeded 47 people in any single month (Table 5, Figure 12).

##### Sex.

Over the July to September period males accounted for 67-87% of the people exiting at Willow Creek (Table 25, Figure 12).

##### Residence.

There were approximately 600 people (71%) exiting at Willow Creek with residences in the Anchorage area. Another 145 (17%) lived in towns of the Matanuska Valley and surrounding area (Table 26).

##### Anticipated Visits.

Overall, 40% of the people anticipated making more than 20 during this boating season, while another 22% responded 11-20 visits. For the July to September period, the greatest percent of respondents anticipated over 20 visits (Table 27, Figure 13).

Boat Time.

At Willow Creek, 64% of the people over the July to September period had been on single day trips, while another 21% indicated there trips of two river days (Table 28, Figure 14).

## SUMMARY

An estimated 2700 boats and 8600 boaters exited at the Susitna Landing during the May to September 1984 period, 400 boats and 1000 boaters exited during July to September at the Talkeetna boat launch or airstrip, and 600 boats and 1800 boaters exited July through September at Willow Creek. The major activity of these people was sport fishing. An estimated 1900 boats and 6600 people at Susitna Landing were engaged in sport fishing, as were 200 boats and 600 people at the Talkeetna sites, and approximately 400 boats and 1400 people at Willow Creek. Several other activities, such as camping, transportation, private supply, and sightseeing were commonly engaged in, but typically they were considered secondary. Hunting was a seasonally important activity, with approximately 600 boats engaged over all three sample sites.

Non-power boats were uncommon. At Susitna Landing and the Talkeetna sites inboard jets (38% and 71%, respectively) and outboard jets (51% and 28%, respectively) dominated, while at Willow Creek airboats (64%) and outboard jets (27%) were most frequent. At Susitna Landing the 80 hp and smaller motors and the 81-160 hp motors were most common, while at Talkeetna and Willow Creek the 80 hp and smaller and the over 240 cubic inch motors were most frequent.

The first destinations for boaters at the Susitna Landing were Deshka (56%) and Yentna Rivers (24%). For the Talkeetna boaters, the Talkeetna River (63%) was the major destination, while at Willow Creek it was Willow Creek (53%) followed by the Deshka River (34%). Second destinations were relatively uncommon. Boaters that exited at Susitna Landing or Willow Creek had destinations that were downstream of the discharge gauging station at Sunshine, while those exiting at Talkeetna usually went upstream of Sunshine. While there was a trend toward more diverse destinations in September, few were encountered with any great frequency.

Over the entire sample period, no single navigational problem was encountered by more than 16% of the boats at any one of the three exit points sampled. In no single month did more than 28% of the boats exiting at any one of the three sites sampled encounter any one of the navigational problems we enquired about (i.e. rocks, bars, debris, velocity). While 58% of the boats exiting at Willow Creek were airboats, only 30-36% (depending on problem examined) of all boats exiting at Willow Creek that had navigational problems were airboats. All other boat classes and boat draft groups encountered navigational problems in a proportion similar to their frequency in the population.

While there seemed to exist a threshold of 30,000 cfs at which the proportion of navigational problems increased, there was evidence that the site visited may have as much of an effect on the proportion of boats with navigational problems as discharge. There is no clear explanation of the effect of discharge on navigational problems. Too many factors in the complex relationship could not be controlled.

Most people were in the 16-49 year age group, and most were males. As might be expected, the Anchorage area boaters were most prevalent at any of the sites sampled. Over half of the people at any site sampled indicated that they anticipated over 11 visits to the Susitna River during the 1984 boating season. A typical trip time was less than three days for boats exiting at Susitna Landing, and 60-70% of the people exiting at Talkeetna or Willow took single day trips.

#### ACKNOWLEDGEMENT

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APPENDIX A  
Data Collection Form

COLLECTOR:

← 2 → MONTH → DAY →

← BOAT INFO

- PEOPLE INFO

[illegible]