PROSPERITY
A Gold-Copper Project of Taseko Mines Limited

Taseko Prosperity Gold-Copper Project

Appendix 5-3-J

Taseko Mines Limited

Taseko Mines Limited

Prosperity Gold-Copper Project

Visitor and Creel Survey

Fish Lake, BC,

1997

Executive Summary

Fish Lake is located 127 km south west of Williams Lake and supports an abundant population of rainbow trout (*Oncorhynchus mykiss*). In 1995, 1996, and 1997 surveys were carried out at the Fish Lake Forest Service Recreation Site to gather information concerning use of the site and angling activity at the lake. In 1997, the Taseko Mines Ltd environmental monitors collected data from January 1 to September 28. Daily checks of the site were carried out from January 1 to May 28 while two daily visits (1100 hr and 1800 hr) were conducted from May 29 to September 28. Data was collected in the generally same manner in 1995 and 1996. However, an audit conducted in 1997 was identified visitors missed between the daily 1100 and 1800 hr surveys, the results of were applied to 1995, 1996, and 1997 data and presented in section 4 this document.

In 1997, recorded use of the Forest Service Recreation Site (173 individuals) was considerably lower than in 1996 (274 visitors) but was similar to that in 1995 (188 visitors). Recorded user-days decreased substantially in 1997 when 310 user-days were recorded compared to 542 user-days in 1996 and 505 user-days in 1995. Use of the site is primarily in July and August with no use recorded in winter months.

Coinciding with fewer visitors and user-days, the campground occupancy (53 % during peak season) was lower in 1997 than in 1995 and 1996. The surveys revealed the site is used by generally small user groups (average 2.9 to 3.5 people) and for generally short visits (recorded average length of stay was 1.7 to 2.3 days). The differences in average group size and length of stay were not found to be statistically significantly between years. The percent of visitors which resided in the Cariboo-Chilcotin decreased from 31 % in 1995 to 27 % 1996 and 16 % in 1997 while out-of-province visitors ranged from 8 % (1996) to 14 % (1995) of visitors.

In 1996 and 1997, 'fishing' was the most frequently provided reasons for coming to Fish Lake, but was only given by 45 % of respondents in 1997. First time visitors accounted

for more than 55 % of groups and visitors to the site in 1996 and 1997, while 66 % and 70% of those interviewed in these years respectively, were aware of the Prosperity Project. Over 50 % of visitors that responded had visited other Chilcotin lakes in 1997 while this percentage was slightly higher in 1996.

The 1997 creel survey recorded lower total angler effort (202 angler days and 668 hours recorded) compared to 1996 (275 angler days and 792 angler-hours recorded) but a similar level of effort compared to 1995. The average length of an angler day has remained similar and was not found to be statistically significantly different ($F_{2,160,}$= 1.40, P = 0.23), ranging from a low of 2.6 hours/day (SD = 1.44, n = 72) in 1996 to a high of (3.3 hours/day, SD = 1.99, n = 34) in 1997.

Angler success is high at Fish Lake and has remained similar with no significant difference ($F_{2,163}$=0.1, P=0.9) in the average catch-per-hour between 1995, 1996 or 1997. Angler success ranged from 2.7 fish/hour (SD = 3.4, 95% confidence interval: 2.7 and 4.5, n = 58) in 1995 to 2.9 fish /hour (SD = 3.0, 95% confidence interval: 2.9 to 4.9, n = 34) in 1997. After standardizing the angler day to 4 hours, the average daily angler success was 11.0 fish caught/day (95% confidence interval: 10.9 to 18.0) in 1995, 14.5 fish caught/day (95% confidence interval: 11.7 to 17.2) in 1996, and 11.7 fish caught/day (95% confidence interval: 11.7 to 19.7) in 1997.

The audit was carried out on 9 days in August and September 1997 and identified a significantly higher use of the site than previous recorded. A daily correction factor of 1.5 for groups and 1.6 for individuals was applied to the daily record for 1995, 1996 and 1997 to identify a revised number of groups, visitors, user-days, average length of stay, angler-days, and total fish kept, released, and caught.

As a result of the audit, the revised estimate of the number of groups is 171 in 1997, 286 in 1996 and 192 in 1995. The estimated number of visitors is revised to 460 in 1997, 814 in 1996 and 744 in 1995. As a result of the increase in visitors, the estimated number of

user-days is revised to 597 in 1997, 1,082 in 1996, and 1,061 in 1995. The average length of stay at the site is revised to 1.3 days in 1997, which is slightly lower than previously recorded. As a result of the increase in estimated user-days, the number of angler days is revised to 388 in 1997, 548 in 1996 and 458 in 1995. The estimated number of fish caught is revised to 4,869 fish in 1997, 4,900 fish in 1996, and 4,150 fish in 1995.

Based on the 1997 mark-recapture population estimates for Fish Lake (Triton 1998), current angler harvest from the lake is less than 4 % of the total population.

Acknowledgments

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Taseko Mines Limited

Dean Foster	Environmental Monitor
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1. INTRODUCTION

1.1 Background

Taseko Mines Limited (TKO) has applied for a Mine Development Certificate for the proposed Prosperity Mine; a copper-gold ore body located at Fish Lake, British Columbia (BC) (Figure 1). Fish Lake has a rainbow trout population that has been actively managed by the Ministry of Environment, Lands and Parks (MELP) for a number of years and is considered to be component of the recreational fishing opportunities in the Cariboo-Chilcotin region. The lake is accessible by road and has one BC Forest Service Recreation Site (FSRS) which is used in the summer months. The environmental assessments carried out for this project have therefore included a study of visitor and angler use of the lake.

Since 1994, TKO has been collecting data on visitors and anglers at the FSRS. The primary focus of the data collection has been to identify the extent of fishing effort and success at Fish Lake over the year. The data collected throughout the 4 years of study will be used to identify the potential effects of the proposed mine development and will be presented in the Project Report.

Hallam Knight Piesold Ltd (HKP) directed the surveys from 1994 to 1996. In 1997, Triton Environmental Consultants Ltd (TECL) was retained by TKO to direct the visitor and creel survey and present the study results. Although minor modifications have been made to the survey questionnaire each year, the primary questions have remained constant. In 1997, the questionnaire was modified to capture additional information regarding visitor angling preferences. The most significant change to the 1997 methodology however, was the inclusion of an audit to identify the number of user days and amount of fishing effort that might be missed when monitors only visit the site daily at 1100 hr and 1800 hr.

1.1.1 Fish Lake Facilities

Fish Lake is located 127 km south west of Williams Lake at an elevation of 1,457 m asl. The lake has an area of 111 ha and has one FSRS which is maintained by the BC Ministry of Forests under the Forest Recreation Program (Figure 1). The Fish Lake FSRS is located at the north end of the lake and is accessible by a rough, unpaved 80 km road branching from Hwy 20. Travel time by car from Williams Lake to the lake is approximately 3 hours. The site has five gravel pads, pit privies, two picnic tables and a boat launching area. Garbage is collected by a private contractor who also provides firewood and is responsible for routine campground maintenance. The site has no running water, electrical hookups or sewage disposal. A trail begins at the east side of the FSRS and follows the shore of Fish Lake for approximately 1.5 km. There are no other recreational facilities which are accessed through the Fish Lake FSRS and no other formal recreational facilities within the proposed mine development area.

1.1.1.1 Use of Recreation Site

Taseko environmental monitors have lived full-time at a camp adjacent to Fish Lake from 1994 to the present and were instructed to record visitor use of the lake over the winter months in 1996 and 1997. During the summers months monitors were responsible for conducting visitor surveys twice daily. The access road to the FSRS is not snow-plowed making the site accessible only by skis and snowmobiles during the winter months. During spring snowmelt and early winter the road is accessible only to four-wheel drive vehicles while during dry conditions, the road is accessible by 2-wheel drive vehicles. Ice break-up on Fish Lake was recorded to be on May 7 in 1997. The first visitor group was recorded on the evening of June 7.

1.2 Scope and Purpose

Visitor and creel surveys were conducted at the Fish Lake FSRS in 1995, 1996 and 1997 with the purpose of:

1. assessing the extent and nature of the use of the FSRS
2. assessing the extent and nature of the angling effort and success at Fish Lake

The results of the visitor and creel surveys at the lake will be presented in the Project Report submitted to the BC Environmental Assessment Office (BCEAO). This report provides detailed summaries and analysis of the data collected in 1997 with comparison to the 1995 and 1996 survey results.

2. METHODS

2.1 1997 Surveys

2.1.1 Visitor and Creel Surveys 1997

Fish Lake was monitored daily for visitors from January 1 to May 28, 1997. From May 29 to September 28, 1997, Fish Lake was visited twice daily (1100 hr and 1800 hr) by TKO environmental monitors. The site was visited twice daily on 122 days, with only one day missed, July 11.

In 1997, the monitors were supplied with an instruction package and two survey forms to facilitate data collection; a visitor survey (Form B) and a creel survey (Form A) (Appendix A). The Visitor Survey Form documented general demographic data such as group size and age composition, place of residence, reasons and number of visits to Fish Lake, use of other Chilcotin and provincial lakes. The creel survey questions focused on fishing effort and success. Specific questions regarding the number of anglers in the party, number of rods, hours fished, number and size of fish caught/kept/released, and angler satisfaction with the lake were asked. The surveys did not elicit personal information such as marital status, family status or income. However, monitors did record information such as family status if visitors volunteered it. Children and teen-agers accompanied by adults were assumed to be members of the family groups.

Each group observed at the lake was assigned a Group Identifier Number which allowed the monitors to track the duration of a group's stay and avoided repeat questioning of some data. During the initial interview with each group, the monitor explained the purpose of the angler survey and asked if the visitor was willing to participate in the survey. Questions in both visitor survey (Form B) and creel survey (Form A) were asked

during the initial interview. During subsequent interviews with the same group, the monitor asked only creel survey questions to identify angling effort and catch since the last interview.

The data was primarily collected through verbal discussion, however, in some instances visitors preferred to fill out the forms themselves. In 1997, one visitor group choose not to participate in the survey and the only data that could be collected on this group was the date, time, group size and length of stay. On several occasions, groups were on the lake at the time of the survey. Where possible, the Group Identifier Number and the number of people on the lake was recorded by the monitor. Yearly average data such as average angler hours and success rates were applied to such groups in the data analysis.

2.1.2 1997 Visitor Survey Audit

To assess the angling effort missed between the regular 1100 and the 1800 hr visitor surveys, a total of 9 visitor survey audits were carried out. The audits were conducted between July 4 and September 7, 1997, and involved the hourly documentation of visitors at the lake between 9:00 and 1800 hr. The audit concentrated on effort missed on Saturdays and Sundays, but also included one Friday. The data collected during the audit was compared to the data collected during the visitor survey and the number and percent of missed groups, visitors, and user days was calculated.

2.2 Visitor and Creel Surveys 1995 and 1996

In 1995 and 1996, the visitor and creel surveys at Fish lake were carried out under the direction of HKP. TKO environmental monitors who lived at the camp conducted the visitor interviews with guidance from HKP. HKP analyzed the data and produced a report outlining the results and finding for 1995 and 1996.

The data collection methodology in 1995 and 1996 is detailed in the a report produced by HKP (HKP 1997). The timing, frequency, and way in which information was obtained from visitors has been consistent from 1995 to 1997. However, the questionnaire was

slightly modified in 1997 to include additional questions concerning visitor angling habits and preferences.

In our review of the 1995 and 1996 data it was our assessment that the analyses that were applied under-estimated the use of the site and the fishing effort. For example, a group which was recorded in an evening survey and in the following the morning survey but not recorded the following evening, was only considered to have spent one day at the site. In addition, groups that were seen at the site but not interviewed, were not included in the total angler effort or catch estimates.

Therefore, the following modifications were made to the 1995 and 1996 databases and necessitated re-calculation of previously reported statistics:

1. User-days were adjusted to reflect the maximum possible number of user days. That is, if a group was first recorded at 1800 hr on June 23 and last recorded on June 24th at 1100 hr, the number of user days was adjusted from 1 user day per group member to 2 user days per group member.

2. Groups that were seen on the lake but for which no data could be collected were included in the angler effort by applying average data to fill the record.

3. In section 4.0, the results of the audit are used to adjust the 1997 data. Since the basic visitor and creel survey methodology has remained consistent from 1995 to 1996, the results of the 1997 visitor survey audit were also applied to 1995 and 1996 data to account for visitors and angler effort which may have been missed.

The modification to the 1995 and 1996 data were made from the database supplied to TKO and not from the original survey forms. The modifications are therefore based on the assumption that all information contained on the survey forms was entered into the

database and that the same level of detail was used each year in recording information about groups that were on the lake at the time of the site visit.

2.3 Database Analysis

All 1997 data collected was entered into an Excel ver. 5a spreadsheet while the 1996 and 1996 Excel spreadsheets were obtained from TKO. All data was sorted and statistically analyzed. The data analysis is based on the following assumptions:

1. Government vehicles and staff observed at the site for work-related activities were not considered visitors or site users.
2. A user day has no minimum hours associated with it, but was considered any visit to the site by a person. That is, if a group visited the site for 2 hours, one user day was recorded for each member of the group. Therefore, a group of two which were first recorded at the site at 1800 hr on June 3, 1997 and were last recorded at the site at 1100 hr on June 4, 1997 and departed by 1800 hr were considered to have spent 2 days at the site. For this group, 4 user days would have been recorded.
3. Family groups were only those groups with children or teenagers present.
4. For groups where no interview was possible, data collected through observations and yearly average data was applied to group size, angler hours, and success rates.
5. If a group was seen on the lake at the time of the survey, they were considered to be fishing.
6. If a group was not interviewed in the morning but was interviewed in the evening of the same day, it was assumed the evening interview captured to full day's angling effort and data. No average data was applied to the morning record.
7. If a group was interviewed in the morning but no interview was possible for the evening because they on the lake at the time of the survey, average data was applied to the group for the afternoon data.
8. All anglers were considered to have an equal skill level. Angler hours for adults and children were considered the same.

3. RESULTS AND DISCUSSION

The visitor and creel surveys were conducted on 122 days in 1997, 121 days in 1996 and 119 days in 1995. A total of 285 questionnaires were completed in 1997 with 146 records of groups at the site and 90 records of angling activity.

3.1 Visitor Use of Fish Lake

3.1.1 Number of Groups and Individuals

In 1997, 62 groups totally 173 individuals were recorded at the Fish Lake FSRS (Table 1). The month of August recorded the highest number of groups (24 groups) and individuals (68 visitors), while from January to May no visitors were recorded at the site.

The data collected in 1997 indicates there were considerably fewer groups and visitors at the site than in 1996 (90 groups and 274 visitors)(Figure 2). Compared to the data collected in 1995, there were slightly more groups but fewer visitors in 1997 (53 groups and 188 visitors recorded in 1995) due to a smaller average groups size in 1997.

In 1995 and 1997, the greatest number of groups and individuals used the site in August while in 1996 these numbers were highest in July (Figure 3). No visitors were recorded at the site during the late fall, winter and early spring months; from November 1995 to the end of April 1996, and from November 1996 to May 1997. In 1995, no surveys were conducted from January to the end of May.

It should be noted that the results of the audit increase the estimated number of groups and visitors at the site each year. Although the trends remain similar, revised numbers are found in section 4.3.

3.1.2 User-Days and Timing of Visitation

Using the number of individuals recorded at the site as well as the recorded dates for each group, the number user-days were calculated. In the analysis, the amount of time spent at the site is not considered and an individual spending any part of a day at the site would be

registered as one user day. For example, a group of 3 people using the site for 2 days would result in 6 user-days while a group of 2 people using the site for 3 hours on one day would account for 2 user-days.

Table 2 presents the user-days by month from 1993 to 1997 and shows that 1997 had the lowest recorded total user-days since the visitor surveys were started. In 1997, 310 user-days were recorded for the site, with the peak user-days in the month of August (134 user-days) (Figure 4). The number of user days was considerably higher in 1996 (542 user-days) and in 1995 (505 user-days). In all three years, user days were higher in July and August then in other months. No user days were recorded during the winter months; January 1, 1996 to May 17, 1996 and October 22 ,1996 to May 27, 1997.

It should be noted that the results of the audit increase the estimated user days at the site each year. Although the trends remain similar, revised numbers are found in section 4.3.

3.1.3 Campground Occupancy

In 1997, the campground was occupied by one or more groups for 26 % of the time (71 days) between January 1 and September 28. However, during winter when the access road is not plowed and no visitors were recorded. During peak season (Victoria Day weekend to September 28) the Fish Lake FSRS was occupied 53 % of the days (Table 3).

As with the number of visitors and user-days, the yearly and peak season occupancy rate was slightly higher in 1996 (27 % and 61 % respectively) and 1995 (60 % peak season).

3.2 Visitor Characteristics

3.2.1 Size of Groups

Table 4 provides the group size frequency distribution at the Fish Lake FSRS from 1995 to 1997. In 1997, the average group size was 2.9 people (SD = 1.4, n = 62). These results are similar to those of the 1996 (3.0 people, SD = 1.7, n = 90) but slightly lower

than in 1995 (3.5 people, SD = 1.8, n = 53). However, there is no significant statistical difference in the average group size from 1995, 1996 to 1997 ($F_{2,202}$=2.6, P=0.1).

In 1997, groups of 2 people accounted for 44 % of the groups visiting the site while groups of 3 people accounted for an additional 32 % of the groups. Groups greater than 3 people only attributed to 18 % of groups at the site. This is slightly different than in 1996 and 1995 where 61 % and 49 % of the groups, respectively, consisted of 2-3 people. The data collected indicates the site is used primarily by small groups of 2-4 people and that in 1997 there was a shift from medium sized groups to smaller groups at the site.

The minimum group size was 1 person and accounted for less than 7 % of the total number of groups from 1995 to 1997. The maximum group size was 9 in 1995, 12 in 1996, and 7 in 1997.

3.2.2 Length of Stay

Table 5 presents the frequency distribution for the length of stay at the Fish Lake Recreation site from 1995 to 1997. The majority of groups are one-day users and accounted for 63 % in 1997, 54 % in 1996, and 51 % in 1995. Less than 40 % of the groups using the site each year are there 2-3 days, while less than 15 % use the site for more than 4 days. However, there are some groups which stay at the site for longer stays. The maximum length of stay was 13 days in 1995, 11 days in 1996 and 9 days in 1997.

The average length of stay has varied slightly each year but had no significant statistical difference ($F_{2,202}$=1.5, P=0.2). In 1997, the average length of stay was 1.7 days (SD = 1.4, n = 62), in 1996 it was 2.0 days (SD = 1.8, n = 90), and in 1995 it was 2.3 days (SD = 2.2, n = 53).

However, the survey method under-estimates of the number of one day users. As seen by the audit (section 4.0), a number of visitors make use of the site outside of 1100 hr and 1800 hr and were not recorded by the monitors. All visitors estimated to have been

missed by the monitors are assumed to be one-day users since a longer visit would have documented their presence. Revised length of stay data is provided in section 4.3.

3.2.3 Family Status

The survey included the collection of information concerning the age category and gender of visitors (male or female, adult, teenager or child). This information was then used to identify family groups and adult only groups. Although groups were asked whether or not they were a family group, the data analysis only considered those groups which included children or teenage members to be family groups.

Table 6 presents the family data recorded 1995, 1996 and 1997. In 1997, 15 family (24 % of groups), 24 adult only (39 %) and 23 unknown groups (37 %) were recorded at the Forest Service Recreation Site. Families accounted for 32 % of the visitors and 45 % of the user days in 1997.

The data collected in 1997 suggests there has been a decrease in family use of the Fish Lake FSRS. In 1995, 45 % of the groups were family groups, yet 62 % of the visitors were in family groups indicating that family groups were generally larger than adult only groups. In 1995, 71 % of the user days came from families. However, family groups accounted for less than 50 % of the visitors and user days in 1996 and 1997. The percentage of family groups decreased from 33 % in 1996 to 24 % in 1997. Similarly, the percentage of visitors in family groups dropped to 46 % in 1996 and to 32 % in 1997, while the percentage of family user-days dropped to 47 % in 1996 and to 45 % in 1997. However, there was a large unknown component in 1997, some of which may have been family groups.

It is interesting to note that for all three years, family groups had a statistically significant longer stay than all groups combined, with 2.6 days and 1.7 days respectively in 1997 ($F_{1,75}$= 4.22, P = 0.04 in 1997). Additional information concerning the monthly variation

in the number of family groups, family visitors, family user-days, and length of stay can be found in Appendix B Table 1 to Appendix B Table 3.

3.2.4 Age and Gender

In 1997, there were 173 visitors to the Fish Lake FSRS, the majority of which were adults (50 %) (Table 7). Only 8 % of the visitors were children while 6 % were teenagers. Unfortunately, 36 % of the visitors in 1997 were recorded as unclassified age and gender. The largest category of user was adult males which made up 34 % of visitors. These results are similar to those of 1996 which recorded adult males as the category of largest user (44 %) and a low number of teenage visitors (6%).

3.2.5 Origin of Visitors

In all three years of visitor surveys, the interviewers posed questions regarding the place of residence for visitors (Table 8). In 1997, the Greater Vancouver-Fraser Valley was the most common residence with 32 visitors while the second most common area of residence was the Cariboo with 17 visitors. Unfortunately, this information could not be collected from 79 visitors (46 %) in 1997.

The 1997 results are similar to 1996, although the numbers were greater - 127 visitors from Greater Vancouver-Fraser Valley and 56 from the Cariboo. In 1995, the greatest number of people came from the Cariboo (54 visitors), while 44 visitors resided in the Greater Vancouver- Fraser Valley area and 41 visitors were from Vancouver Island-Gulf Islands. The percent of visitors which resided in the Cariboo-Chilcotin decreased from 31 % in 1995 to 27 % 1996 and 16 % in 1997. Out-of-province visitors generally are a small component of the users of the site and ranged from 8 % (1996) to 14 % (1995) of visitors.

3.2.6 Reasons for Visiting Fish Lake

Visitors were asked about their reasons for coming to the Fish Lake FSRS and it was assumed that the answer provided by the person interviewed represented all members of

the group. The reasons for visiting the lake are presented in Table 9 and indicate visitors come to the lake for a variety of reasons. In 1997 and 1996, the primary reason given was 'fishing', although in 1997 only 45 % of respondents gave this answer. The secondary reason in 1997 was 'holiday' while in 1996 it was 'camping'. In 1995, the primary reason for visiting the site was for camping, with fishing as the second most frequent response. Unfortunately, 42 % of groups in 1997 either failed to answer the question or data could not be collected for them. It is interesting to note that the response of 'fishing' was highest in 1996 (82 %), the same year in which user-days, number of visitors, and harvest rates were highest at the site.

3.2.7 Repeat Visitors

The number and percent of first time visitors to Fish Lake for 1996 and 1997 are presented in Table 10. Since there were a large number of groups for which no data could be collected in 1997, the percentage was based on records for 88 of the 173 visitors. It was assumed that the answer provided by the person interviewed represented all members of the group. In 1997 and 1996 more than 55 % of the groups and visitors which answered the question, were first time visitors to the site.

3.2.8 Visitor Awareness of Prosperity Project

Interviewees were asked about their awareness of the Prosperity Project. The data was examined only in the context of the interviewee and not extrapolated to all members of the group since it is conceivable that not all group members would have the same level of awareness of the project. The calculated percentage is based on the 30 of 62 groups which provided an answer to this question. As seen in Table 11, of those that responded most were aware of the project. In 1996 and 1997, 66 % and 70% of those responding respectively, were aware of the project.

Table 12 presents a comparison of project awareness and first time/return visitors. While 29 % of visitors were aware of the project and first-time visitors in 1996, 40 % of visitors were aware of the project and were first-time visitors in 1997. In both years, 30 % or

more of the visitors were return visitors and were aware of the project. These survey results indicate there has been an increase in the number of first-time visitors that are aware of the project and could be related to increased publicity and curiosity surrounding the Prosperity project.

3.2.9 Other Chilcotin Lakes Visited

Visitors were asked which, if any, other Chilcotin Lakes had been visited during their stay at Fish Lake. In 1997, 28 responses were obtained while 86 responses were obtained in 1996 and 13 responses were obtained in 1995 (Table 13). Since there were a large number of groups for which no data could be collected in 1997, the percentage are based on known data only. The names of the other lakes visited are found in Appendix B Table 4.

In 1997, 50 % of those responding had visited other Chilcotin Lakes providing a list of 43 different lakes. The most frequently named lakes were Chaunigan Lake (15 % of groups) and Chilko Lake (11 % of groups). In 1996, 61 % of those responding had visited other lakes, with 38 other lakes named. In 1996, the most frequently named other lake destinations were Chilko Lake (15 % of groups) and Chaunigan Lake (13 % of groups). Both Chilko Lake and Chaunigan Lake were the most frequently named other lakes visited in 1995, however, fewer other lakes were named.

3.2.10 Visitor Satisfaction with Fish Lake

Visitors were asked to rate their satisfaction with the recreational and angling experience at Fish Lake and compare Fish Lake experiences to other Chilcotin Lakes. The results of these questions are presented in Table 14 and indicate that most visitors are happy with their experiences at Fish Lake. It was assumed the opinions of the individual interviewed represented all group members. The calculated percentage is based on the 29 of 62 groups which provided an answer to this question in 1997.

Both in 1996 and 1997, over 90 % of respondents rated their angling and recreational experiences as 'good' or 'excellent'. In 1996 and 1997, 78 % and 73 % of respondents, respectively, replied the Fish Lake experience was 'good' or 'excellent' compared to other Chilcotin Lakes.

3.3 Angler Effort and Success

3.3.1 Angler-Hours

During the interviews, visitors were asked how many hours they had spent angling at Fish Lake. This data was then used to calculate the total number of angler-hours for each year. In the event that no interview was possible with a group at the time of an evening survey, average data were applied to the record. This was not done for morning surveys since it was assumed that the evening survey would capture the full days data. Since the surveys were carried out twice daily, a fairly accurate record of total angler hours was recorded. However, it possible that additional angling occurred after the 1800 hr survey. In this case, the data may have been collected if the group was surveyed at 1100 hr the following morning. Additional angler hours may have been missed on days where anglers were surveyed at 1100 hr, angled for a period, and then left before being interviewed again. While it could be argued that the data collected represents angler hours to the time of interview, it is assumed for the purpose of this report, that the data collected represents total angler hours for each day.

In 1997, 668 hours angler-hours were recorded in the creel survey and were found to be 16 % lower than in 1996 (792 hours), but similar to those recorded in 1995 (656 hours) (Table 15). In examining the average length of an angler day, it is revealed that while anglers spent an average of 3.3 hours/day (SD = 1.99, n= 34) in 1997, the average angler day was 2.6 hours/day (SD = 1.44, n = 72) in 1996 and 2.9 hours/day (SD = 2.37, n = 57) 1995. While the length of the angler day was slightly greater in 1997 than in 1996 and 1995, the difference is not statistically different ($F_{2,160}$= 1.40, P = 0.25).

Tables 16, 17 and 18 present a monthly examination of total angler effort in angler-hours and indicate August consistently has the highest angler effort (245 hours recorded in 1997, 265 hours in recorded in 1996 and 216 hours in recorded in 1995). The 1997, 1996, and 1995 angler-hour databases and are presented in Appendix B Tables 5, 6, and 7, respectively.

Figures 6, 7, and 8 present weekly recorded angler effort (unadjusted) and demonstrate that the level of weekly angler effort varies in 1995, 1996 and 1997. In 1997, weekly effort is greater during the early and late summer weeks of the season while in 1996 effort is greatest on Victoria Day weekend and mid-summer. In 1995, the pattern of weekly angler effort is generally irregular. The data for these figures is found in Appendix B Tables 8, 9 and 10.

3.3.2 Angler-Days

Angler-days is the sum of the number of days each visitor fished at Fish Lake. For the purpose of this report, no minimum length of time was assigned to an angler day, that is, if a group of 4 anglers fished for 1 hour the group accounted for four angler days. However, if a group was interviewed twice on the same day (1100 hr and 1800 hr interviews) only one day was counted for each group member.

In 1997, the creel survey recorded 202 angler-days, compared to 310 user-days (Table 15) and revealed that 35 % of the user-days at the Fish Lake FSRS did not including fishing. This is generally consistent with the information collected concerning the reasons for visiting Fish Lake (Table 9) which shows that 55 % of groups questioned did not give 'fishing' as the reason for their visit to the lake.

In 1996, the survey recorded considerably more angler days (275 days), while in 1995 a similar level of effort was recorded (218 days)(Figure 5). However, the estimated angler effort actually higher due to the audit results (see section 4.3).

A comparison of angler-days to user-days suggests that in 1997 visitors are focusing more on angling than in 1995 and 1996. The percent of user-days that were angler days was 43 % in 1995, 50 % in 1996 and rose to 65 % in 1997. Therefore, while the number of user-days at the site decreased by 43 % from 1996 to 1997, the number of angler-days only fell by 27 %.

3.3.3 Angler-Success

3.3.3.1 Success in Relation to Angler-Hours

The number of fish caught over a known time frame (effort) can be used to identify catch-per-unit-effort or 'angler success'. One such calculation examines the number of fish caught and the number of hours spent fishing. In 1997, anglers caught an average of 3.9 fish per hour (SD = 3.0, 95% confidence interval: 2.9 to 4.9, n = 34), keeping 1.0 fish per hour (SD = 1.1, 95% confidence interval: 0.6 to 1.4, n = 34) and releasing 2.9 fish per hour (SD = 2.6, 95 % confidence interval: 2.0 to 3.8, n = 34) (Table 15).

In 1997, the mean monthly angler-success ranged from 2.5 fish caught/hour (SD = 4.3, n = 6) in September to 5.1 fish caught/hour (SD = 2.6, n = 12) in August (Table 16). The weekly variation in angler success is found in Appendix B Table 8 and shows the highest success in 1997 was recorded from August 30 to September 5 (Labor Day weekend) at 11.3 fish per hour, but is based on a small sample size (n=1). During the same year, the highest daily calculated catch per angler-hour was 11.3 fish/hour (September 4) while the highest calculated fish kept per angler-hour was 8.0 fish/hour (August 19).

An examination of the success rates in 1995, 1996 and 1997 revealed that the fish kept, released and total catch are similar each year and that mean success does not exhibit statistically significant differences (kept $F_{2,163}$= 1.8, P = 0.2; released $F_{2,163}$= 0.5, P = 0.6; caught $F_{2,163}$= 0.1, P = 0.9). The highest monthly mean angler success rate in 1996 and 1995 occurred in June (4.4 fish caught/hour, SD = 2.7, n = 19; and 5.8 fish caught/hour, SD = 5.2, n = 8, respectively) (Tables 17 and 18). The highest weekly mean angler

success rate was 6.1 fish caught/hour in 1996 and 9.8 fish caught/hour in 1995 (Appendix B Tables 9 and 10).

3.3.3.2 Success in Relation to Angler-Days

Given the variation in the length of an angler day and the idea that the survey may not have been conducted at a time when complete data on an angler day could have been collected, angler success per day was calculated using angler success per hour and average hours per angler day. The data collected on the number of days each visitor fished at Fish Lake was combined with the calculated hourly success rates to identify fish caught per angler day. A summary of overall angler success in 1997, 1996 and 1995 is presented in Table 15.

The results of the creel survey indicate that in 1997, on average 3.2 fish per day were kept by anglers and 9.5 fish per day were released by anglers for a total catch per day of 12.7 fish. The number of fish caught in 1997 was 26 % higher than in 1996 when 9.4 fish/day were caught. However, at the same time the average hours per angler day increased by 21 % from 2.5 hours per angler day in 1996 to 3.3 hours per angler day in 1997 (section 3.3.1).

3.3.4 Success in Relation to Standardized Angler Day

To allow for better comparison of daily angler success between years of data for Fish Lake as well as with data contained in MELP files, the angler day at Fish Lake was standardized to 4 hours. The angler success rates for 1995, 1996 and 1997 were converted by multiplying the hourly success rate by 4 and are shown in Table 15 and Figure 9. In 1997 an average 15.7 fish/day were caught (95 % confidence interval: 11.7 to 19.7 fish/day) while in 1995 and 1996, an average 14.5 fish/day were caught (95 % confidence interval: 10.9 to 18.0 and 11.7 to 17.2, respectively. Anglers are keeping an average 3.5 (1995) to 5.0 (1996) fish per day a difference which is not statistically significant. In comparison, the BC Freshwater Fishing Regulations Synopsis for Fish Lake indicate a daily quota of 8.0 trout (MELP 1996).

3.3.5 Species and Size of Fish

All fish caught in Fish Lake were rainbow trout. During the interviews anglers were asked for the size of the fish they kept and released. In general, anglers provided estimates of size ranges, since it is assumed that they did not measure the fish.

In 1997, most anglers reported fish kept were primarily 20 cm to 30 cm in length while fish released had a greater range in size; 15 cm to 30 cm in length. The smallest fish reported kept in 1997 was 19 cm while the smallest released was 8 cm. The largest kept was 35 cm while the largest released was 30 cm.

The size range of fish reported caught in 1997 is generally similar to that reported in 1995 and 1996. However, it is interesting to note that while 5 groups reported keeping fish 35 cm in length or greater in 1996, only 2 groups reported keeping fish that were 35 cm in length in 1997 and no groups reported fish of this size in 1995.

These size estimates generally coincide with the mark-recapture study findings which reported a mean fork length of 202 mm (SD = 63, n = 2,059) and no fish greater than 320 mm fork length (Triton Environmental Consultants Ltd 1998).

3.3.6 Total Angler Harvest From Fish Lake

Based on the data collected during the creel survey, the total recorded number of fish kept, released and caught could be calculated for each year. As shown in Table 15 and Figure 10, 590 fish were recorded kept in 1997. The recorded number of fish kept by anglers was highest in 1996 when 718 fish were recorded kept and was lowest in 1995 when 400 fish were recorded kept by anglers. These estimates are revised by the audit results (section 4.3).

As shown in Figures 6, 7, and 8, the weekly distribution of total fish caught varies in 1995, 1996, and 1997. In 1997, the number of fish caught was highest in August while in

1996, catch peaked in mid-summer and on the Victoria day weekend in May. In 1995, catch was generally irregular throughout the summer season.

4. VISITOR SURVEY AUDIT

4.1 Audit Results

The 1997 audit of the visitor survey was carried out on 9 days between July 4 and September 7, 1997. The audit recorded 16 groups, 9 of which were also recorded by the environmental monitors during their daily 1100 hr and 1800 hr surveys. The audit recorded a total of 49.8 visitors and user days of which 15.8 visitors and user days were not recorded by the visitor survey. As with the regular surveys, average yearly data was applied to groups for which incomplete data was collected (e.g. group size). The data collected during the audit is found in Appendix B Table 11.

4.2 Use of Audit Data

There are a number of ways in which the results of the audit can be applied to the visitor survey data to account for missed visitors and anglers. Using the totals collected for the 9 audit days, the percent of groups and visitors missed by the survey could be calculated. However, in calculating the percentage in this way the effect of extreme days, when all or none of the groups recorded by the audit were recorded by the visitor survey, is damped.

Rather than looking at the percent of groups and visitors missed each year, the average number of missed groups and visitors per survey day could be calculated (i.e. 0.78 groups and 1.76 individuals were missed per audit day). The 'number missed per day' could be applied to each of the 122 days during the visitor survey period. However, the audit was conducted on weekends and would therefore overestimate weekday use of the site. By applying the 'number missed per day' only to weekends and holidays, weekday missed visitors would be under-estimated. In addition, these methods would not account for seasonal fluctuation in use of the site. The audit was conducted on weekends in mid-late summer, when user-days were recorded to be highest. Therefore, the data missed could be highest in August. If this method was applied to the winter months when no use has

been documented, it would still count 0.78 groups and 1.76 individuals using the site per day and would drastically overestimate use of the site and lake.

After careful consideration of the audit information and methodology, it was concluded that the percentage of groups and visitors missed by the survey would be calculated on a daily basis. The percent for each of the 9 days was then averaged. This method allows for more representative consideration of days when no groups or visitors were missed by the survey, since all 9 days are treated equally and independently. Since this method is based on the number of visitors recorded at the site each day, there is no over-estimation for winter months when no visitors are recorded (i.e. 0 visitors x 1.5 = 0 visitors).

To account for missed user days, it was assumed that groups and visitors missed by the survey were only at the site for one day. It is argued that if visitors had stayed for more than one day, the creel survey would have recorded their presence. Therefore each visitor missed represents one missed user day. Angler days were estimated by considering the proportion of user days that are angler days each year.

The audit estimated that an average 37.4 % of groups and 33.7 % of individuals were missed on a daily basis. The resulting correction factors was 1.6 for groups and 1.5 for individuals and are presented in Table 19 along with a summary of 1997 survey results. The correction factor is applied to the data on a daily basis to account for groups and individuals missed per day due to the survey method.

4.3 Revised 1995, 1996 and 1997 Data

Using the results of the audit, the following 1995, 1996 and 1997 data was revised:

- number of groups;
- number of visitors;
- number of user days;
- average length of stay;
- angler effort (hours and days); and

- angler catch (kept, released and caught).

Since the survey method was similar in 1995, 1996 and 1997, the same correction factor has been applied to all years. The revised data is presented in Table 20 and while the numbers are higher than those presented in section 3, the relationship between the years of data remains similar. Angler success remains unchanged by the results of the audit.

It is estimated that the survey did not record 109 groups and 287 individuals in 1997 and the revised total group and visitor estimated are presented in Figure 11. Given the assumption that each missed visitor represents one user day, the total number of user days is revised to 597 in 1997, 1,082 in 1996, and 1,061 in 1995. The average length of stay per group changes as a result of the audit because it is assumed that each group missed stayed at the FSRS for only 1 day. Therefore, by adding an additional 109 groups which only stayed 1 day, the average length of stay in 1997 was 1.3 days compared to the previously calculated 1.7 days, a difference which is statistically highly significant ($F_{1,232} = 8.72$, $P = 0.003$).

With an increase in user days, angler days were re-calculated by considering the portion of user-days which were also angler days. As a result of the audit, the angler effort was increased to 388 angler days in 1997, 548 angler days in 1996, and 458 angler days in 1995. By applying the yearly average hours per angler day to each 'missed' angler day, the hourly angler effort to increases to 1,275 hours in 1997, 1,502 hours in 1996, and 1,356 hours in 1995. By applying the yearly average angler success rate to the added angler hours, the estimated total number of fish caught increases to 4,869 in 1997, 4,900 in 1996 and 4,150 in 1995 (Figure 12).

The fisheries studies which have been undertaken at Fish Lake since 1994 conclude the lake has an abundant rainbow trout population. Estimates based on a mark-recapture program carried out in 1997 suggest the lake supports a total population of approximately

85,180 rainbow trout (Triton Environmental Consultants Ltd 1997). The annual angler harvest is estimated to be less than 4 % of the sub-adult and adult population in the lake.

5. SUMMARY

The visitor and creel surveys have been carried out for 28 consecutive months and have documented use of the FSFS as well as Fish Lake. Over this period, the annual number of groups using the site has ranged from 171 groups to 286 groups with annual visitor numbers ranging from 460 to 814 individuals. Groups generally tend to be small and use the site for short periods. Total annual angling effort at the lake ranged from 1,275 hours to 1,502 hours and 388 days to 548 days. A comparison of angler days to user days suggests use of the lake for fishing has increased from 1995 to 1997. Annual average angler success at the lake ranged from 14.5 to 15.7 fish caught per 4 hour angler day. Total annual angler catch ranged from 4,150 to 4,900 fish of which 24 % to 33 % was kept by anglers.

The annual data collected by the visitor and creel surveys suggests a slightly greater interest in the FSRS in 1996. A greater number of groups, visitors, and angler hours were recorded during this year. In addition, the estimated number of fish kept is considerably higher than documented during other years. In spring 1996, Columbia Pacific Ltd, on behave of TKO, conducted a public liaison program in the Cariboo-Chilcotin region to solicit comments on the proposed Prosperity Project. It is possible that this liaison program increased public awareness of the lake and resulted in greater visitors and angler effort in 1996.

6. LITERATURE CITED

Hallam Knight Piesold. 1997. Sport Fishery Statistics From Fish Lake, British Columbia 1995 and 1996. Prepared for Taseko Mines Ltd., Vancouver, BC. 30 p.

Ministry of Environment, Land and Parks. 1996. Freshwater Fishing Regulations Synopsis. British Columbia 1996 - 1997.

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Appendix A

Visitor and Angler Questionnaires

Appendix B

Tables

Appendix B Table 3. Monthly User-days at Fish Lake Forest Service Recreation Site by Family Groups, 1995 to 1998.

	Total User Days											
	All Groups				Family Groups				% Family Groups			
Month	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
$n_{(groups)}$=	53	90	62	50	24	30	15	22	45	33	24	44
May		49	0	15		11		6		22		40
June	40	72	44	35	28	8	8	16	70	11	18	45
July	159	186	77	106	141	115	43	73	89	62	56	69
August	206	161	134	257	159	92	88	204	77	57	66	79
September	90	22	56		24	10	0		27	45	0	
October	10	52			6	20			60	38		
Over Year	505	542	310	413	358	256	139	299	71	47	45	72

Note: Raw data presented. Data is unadjusted by audit.

adjusted by audit

	Total User Days											
	All Groups				Family Groups				% Family Groups			
Month	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
n(groups)=	85	144	99		24	30	13					
May	0	61	0		0	#REF!	0			#REF!		
June	54	94	58		#REF!	#REF!	8		#REF!	#REF!	14	
July	190	232	105		#REF!	#REF!	43		#REF!	#REF!	41	
August	240	203	168		#REF!	#REF!	88		#REF!	#REF!	52	
September	103	31	68		#REF!	#REF!	0		#REF!	#REF!	0	
October	14	58			#REF!	#REF!			#REF!	#REF!		
Over Year	601	680	399		#REF!	#REF!	139		#REF!	#REF!	35	

Appendix B Table 2. Length of Stay and User-days at Fish Lake Forest Service Recreation Site, 1995 to 1998.

	Average Length of Stay								Average Number of User-Days							
	All Groups				Family Groups				All Groups				Family Groups			
Month	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
May		1.7		1.3		1.5		2.0		8.2		5.0		5.5		6.0
June	1.3	1.7	1.6	1.3	1.8	1.5	1.0	2.5	3.8	4.0	4.4	3.9	7.0	4.0	4.0	8.0
July	2.4	1.9	1.3	1.9	3.0	2.1	2.0	2.1	9.9	6.1	4.3	6.2	14.1	8.2	8.6	8.1
August	2.4	2.0	1.9	3.0	3.4	2.4	3.4	4.6	11.7	6.4	5.6	12.2	20.4	9.2	11.0	20.4
September	3.6	1.1	2.2		5.0	5.0	0.0		12.3	3.1	5.6		20.0	10.0	0.0	
October	1.5	5.0			1.0	5.0			5.0	13.0			6.0	20.0		
Year's Average	2.3	2.0	1.7	2.2	2.9	2.2	2.6	3.3	9.5	6.0	5.0	8.3	14.9	8.5	9.3	13.6
Maximum	13.0	11.0	9.0	13.0	13.0	11.0	9.0	13.0	104.0	44.0	27.0	65.0	104.0	44.0	27.0	65.0

Note: Raw data presented. Data is unadjusted by audit.

1997 Length of Stay - Family groups vs all groups

F-Test Two-Sample for Variances from creel97.xsl

	All groups	*Children groups*
Mean	1.73	2.60
Variance	1.78	3.97
Observations	62.00	15.00
df	61.00	14.00
F	2.24	
P(F<=f) one-tail	0.02	
F Critical one-tail	0.45	

1998 Length of Stay - Family groups vs all groups

F-Test Two-Sample for Variances from creel 98.xls

	(all groups)	*(family groups)*
Mean	2.24	3.27
Variance	4.19	7.26
Observatio	50.00	22.00
df	49.00	21.00
F	1.73	
P(F<=f) on	0.06	
F Critical c	0.52	

							Average Number of User Days					
							All Groups			Family Groups		
							1995	1996	1997	1995	1996	1997
								5.5			#REF!	
June	1.2	1.5	1.4	#REF!	#REF!	1.0	2.8	2.9	3.1	#REF!	#REF!	4.0
July	1.9	1.6	1.2	#REF!	#REF!	2.0	6.6	4.2	3.1	#REF!	#REF!	0.0
August	1.9	1.6	1.5	#REF!	#REF!	2.8	7.7	4.3	3.9	#REF!	#REF!	8.5
September	2.6	1.1	1.8	#REF!	#REF!	0.0	8.1	2.3	3.9	#REF!	#REF!	0.0
October	1.3	3.5		#REF!	#REF!		3.5	8.5		#REF!	#REF!	
Year's Average	2.3	2.0	1.7	2.8	2.2	2.4	6.3	4.1	3.5	14.3	8.5	8.2
Maximum	13	11	9	13	11	9	104	44	27	104	44	27.0

Appendix B Table 1. Family and Adult Group Visitation of Fish Lake Forest Service Recreation Site by Month 1995 to 1998.

Month	Number of Confirmed Family Groups[a]				Number of Confirmed Adult Only Groups				Persons in Confirmed Family Groups[a]				Persons in Confirmed Adult Only Groups			
	1995	1996	1997[b]	1998	1995	1996	1997[b]	1998	1995	1996	1997[b]	1998	1995	1996	1997[b]	1998
January		0	0			0	0			0	0			0	0	
February		0	0			0	0			0	0			0	0	
March		0	0			0	0			0	0			0	0	
April		0	0			0	0			0	0			0	0	
May		2	0	1		4	0	2		7	0	3		17	0	9
June	4	2	2	2	6	16	7	5	17	5	8	6	10	39	17	14
July	10	14	5	9	6	16	6	6	46	56	21	34	14	39	13	15
August	7	10	8	10	10	15	6	8	40	47	26	44	27	46	11	18
September	2	1	0		6	6	6		8	8	0		18	12	13	
October	1	1			1	3			6	5			2	6		
November		0				0				0				0		
December		0				0				0				0		
Total[b]	24	30	15	22	29	60	25	21	117	129	55	87	71	149	54	56

Note: Raw data presented. Data is unadjusted by audit.
a. Family groups were those parties with children or teenaged group members.
b. In 1997, 23 groups accounting for 67 people could not be checked to confirm age composition and family status.

Used for other calculations - before correction for error

Month	1995	1996	1997[b]		1995	1996	1997[b]		1995	1996	1997[b]		1995	1996	1997[b]
May															
June															
July															
August															
September															
October															
November															
December															

Month	Number of Confirmed Family Groups				Number of Confirmed Adult Only Groups				Persons in Confirmed Family Groups				Persons in Adult Only Groups		
	1995	1996	1997		1995	1996	1997		1995	1996	1997		1995	1996	1997
January		0	0			[illegible]	[illegible]			0	0			0	0
February		0	0			0	0			0	0			0	0
March		0	0			0	0			0	0			0	0
April		0	0			0	0			0	0			0	0
May		2	0			4	0			7	0			17	0
June	3	2	2		7	16	7		17	5	[illegible]		10	39	17
July	10	14	6		6	16	6		46	56	21		14	39	13
August	8	10	6		9	14	6		44	47	26		23	33	16
September	1	1	0		7	6	6		4	5	[illegible]		22	12	13
October	1	1			1	3			6	5			2	6	
November		0				0				0				0	
December		0				0				0				0	
Total	23	30	14		30	52	25		117	122	53		51	146	54

Adult added

1995	1996	1997		1995	1996	1997
family groups				family people		
0	#REF!	[illegible]		0	#REF!	[illegible]
#REF!	#REF!	0		#REF!	#REF!	0
#REF!	#REF!	1		#REF!	#REF!	0
#REF!	#REF!	2		#REF!	#REF!	0
#REF!	#REF!	0		#REF!	#REF!	0
#REF!	#REF!	0		#REF!	#REF!	0
0	#REF!	0		0	#REF!	0
0	#REF!	0		0	#REF!	0
0	0	0		0	[illegible]	0
1	0	1		0	0	0

audit adjusted

Month	Number of Confirmed Family Groups				Number of Confirmed Adult Only Groups				Persons in Confirmed Family Groups				Persons in Confirmed Adult Only Groups		
	1995	1996	1997[b]		1995	1996	1997[b]		1995	1996	1997[b]		1995	1996	1997[b]
January		0	0			0	0			0	0			0	0
February		0	0			0	0			0	0			0	0
March		0	0			0	0			0	0			0	0
April		0	0			0	0			0	0			0	0
May		3	0			6	0			11	0			26	0
June	6	3	3		10	26	11		26	8	12		15	59	26
July	16	22	8		10	26	8		69	85	32		21	59	15
August	11	16	10		16	24	10		60	71	39		41	54	17
September	3	2	0		10	10	10		12	8	0		27	18	20
October	2	2			2	5			9	8			3	9	
November		0				0				0				0	
December		0				0				0				0	
Totals	38	48	21		48	95	28		177	189	[illegible]		107	225	77

a. Family groups were those parties with children or teenaged group members.
b. In 1997, 23 groups accounting for 67 people could not be checked to confirm age composition and family status.

Figure 3. Monthly Distribution of Visitors at the Fish Lake Forest Service Recreation Site, 1995-1998 (uncorrected by audit).

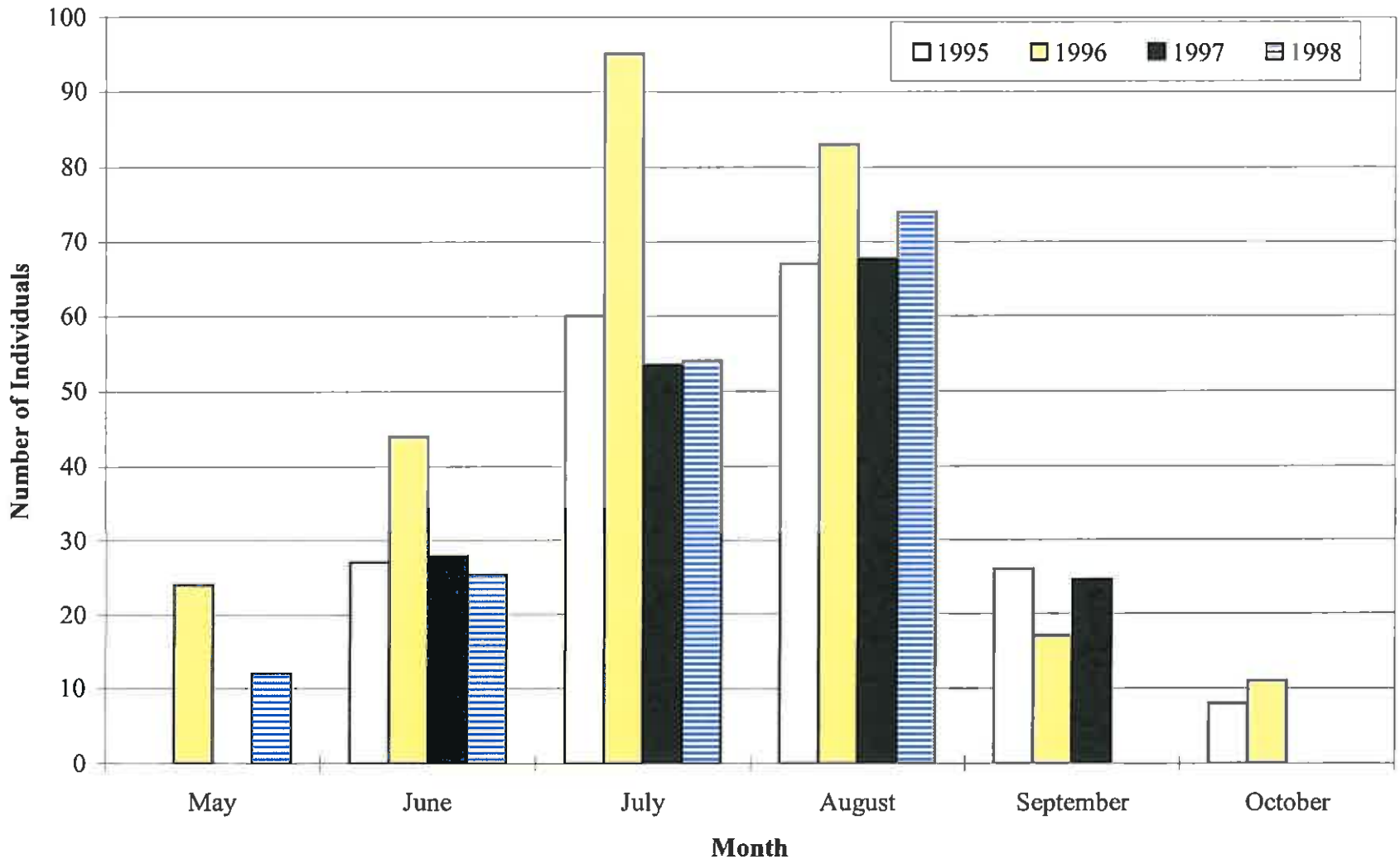

Table 20. Calculated Survey Error and Selected Adjusted Data for 1997 Creel Survey, Fish Lake Forest Service Recreation Site.

	Audit and Sampling Error Results				
	Number of Groups	Number of Individuals	User Days	Angler Days[a]	Angler Hours[b]
1997 Interview Data	62	173	310	202	668
Audit Correction Factor	1.60	1.51	1 Person = 1 day	individuals x % user days	b
Adjusted 1997 Data[c]	171	460	597	388	1274.5
difference	109	287	287	186	606.3

Notes
Groups & individuals based on percent missed, assumes only 1 user day per person missed

a Assumes that missed user days also represents missed angler days

b Missed angler hours derived using missed angler days and average hours per angler day recorded at Fish Lake

c Correction factor is applied on a daily basis rather than a yearly basis

Table 6. Number of Family Groups, Visitors and User-days at Fish Lake Forest Service Recreation Site, 1995-1998.

	1995	1996	1997	1998
Number of Family Groups	24	30	15	22
Percent Family Groups	45%	33%	24%	44%
Number of Family Visitors	117	125	55	87
Percent Family Visitors (%)	62%	46%	32%	53%
Total Number of Family User Days	358	256	139	299
Percent Family User Days (%)	71%	47%	45%	72%

Note: Raw data presented. Data is unadjusted by audit.

Table 5. Frequency Distribution of Length of Stay at Fish Lake Forest Service Recreation Site, 1995-1998.

	1995		1996		1997		1998	
Estimated Length of Stay (Days)	Number of Groups	% of Total	Number of Groups	% of Total	Number of Groups	% of Total	Number of Groups	% of Total
1	27	51%	31	51%	36	67%	20	40%
2	11	21%	21	23%	11	18%	18	36%
3	8	15%	13	14%	[illegible]	15%	5	10%
4	0	1%	5	5%	2	3%	0	0%
5	2	4%	0	0%	1	2%	1	2%
6	1	2%	1	1%	0	0%	0	0%
7	3	6%	0	0%	0	0%	2	4%
8	0	0%	0	0%	0	0%	0	0%
9	0	0%	1	1%	1	2%	0	0%
10	0	0%	1	1%	0	0%	0	0%
11	0	0%	1	1%	0	0%	0	0%
12	0	0%	0	0%	0	0%	0	0%
13	1	2%	0	0%	0	0%	1	2%
13	0	0%	0	0%	0	0%	0	0%
Total Groups	53		90		62		50	
Average Length of Stay	2.3		2.0		1.7		2.2	
Standard Deviation	2.2		1.8		1.1		2.0	

Note: Raw data presented. [illegible]

ge Length of Stay - unadjusted

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
1995	53	123	2.32	4.99
1996	90	178	1.98	3.19
1997	62	108	1.74	2.03
1998	50	112	2.24	4.19

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	12.03	3	4.01	1.15	0.33	2.64
Within Groups	872.49	251	3.48			
Total	884.53	254				

1995	1996	1997	1998
27	31	36	20
11	21	11	18
[illegible]	13	11	5
[illegible]	5	[illegible]	[illegible]
2	0	2	1

Raw data

1995 1996 1997 1998

[illegible]

Count	53
Mean	2.3
SD	2.2
Total	123

50	Count
2.2	Mean
2.0	SD
112	Total

count	90	62 Count
mean	2.0	1.7 Mean
sd	1.8	1.4 SD

raw 1997 adjusted 1997

Average Length of Stay - adjusted vs raw

Anova: Single Factor

SUMMARY

[illegible]

ANOVA

[illegible]

F-Test Two-Sample for Variances

[illegible]

groups added 110

raw 1998 adjusted 1998

Anova: Single Factor

SUMMARY

[illegible]

ANOVA

[illegible]

F-Test Two-Sample for Variances

[illegible]

Table 4. Frequency Distribution of Visitor Group Sizes at Fish Lake Forest Service Recreation Site, 1995-1998.

	1995		1996		1997		1998	
Visitor Group Size	Number of Groups	% of Total	Number of Groups	% of Total	Number of Groups	% of Total	Number of Groups	% of Total
1	3	6%	6	7%	4	6%	2	4%
2	17	32%	43	48%	27	44%	17	34%
3	9	17%	12	13%	20	32%	9	18%
4	11	21%	16	18%	5	8%	11	22%
5	4	8%	6	7%	0	0%	8	16%
6	6	11%	2	2%	3	5%	2	4%
7	1	2%	4	4%	3	5%	1	2%
8	1	2%	0	0%	0	0%	0	0%
9	1	2%	0	0%	0	0%	0	0%
10	0	0%	0	0%	0	0%	0	0%
11	0	0%	0	0%	0	0%	0	0%
12	0	0%	1	1%	0	0%	0	0%
12+	0	0%	0	0%	0	0%	0	0%
Total Groups	53		90		62		50	
Total Number of Visitors	188		274		173		165	
Average Group Size	3.5		3.0		2.8		3.3	
Standard Deviation	1.8		1.7		1.4		1.4	

Note: Raw data presented. Data is unadjusted by audit.

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
1995	53	188.00	3.55	3.29
1996	90	274.04	3.04	3.03
1997	62	172.40	2.78	1.96
1998	50	165.31	3.31	1.97

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	18.98	3	6.33	2.42	0.07	2.64
Within Groups	657.10	251	2.62			
Total	676.08	254				

1995		1996		1997	
Mean	3.54717	Mean	3.0444444	Mean	2.854839
Standard Er	0.249187	Standard Er	0.1835366	Standard E	0.17938
Median	3	Median	2	Median	2.5
Mode	2	Mode	2	Mode	2
Standard D	1.814112	Standard D	1.7411807	Standard D	1.412436
Sample Var	3.291001	Sample Var	3.0317104	Sample Va	1.994976
Kurtosis	0.563967	Kurtosis	7.1242565	Kurtosis	2.526044
Skewness	0.935278	Skewness	2.1246878	Skewness	1.636321
Range	8	Range	11	Range	6
Minimum	1	Minimum	1	Minimum	1
Maximum	9	Maximum	12	Maximum	7
Sum	188	Sum	274	Sum	177
Count	53	Count	90	Count	62
Largest(1)	9	Largest(1)	12	Largest(1)	7
Smallest(1)	1	Smallest(1)	1	Smallest(1)	1
Confidence	0.488398	Confidence	0.3597245	Confidence	0.351577

1995	1996	1997	1998
1	4	1	7
1	7	6	2
1	2	2	3
2	4	2	2
2	4	2	2
2	3	6	4
2	1	2	2
2	1	2	2
2	3	2	2
2	2	3	4
2	2	3	4
2	1	6	3
2	3	4	5
2	2	3	2
2	3	2	5
2	2	7	3.0
2	2	2	2.0
2	2	3	5.0
	7	3	2.0
2	2	2	3.0
2	4	3	2.0
3	2	2	3.0
3	2	3	3.0
3	3	2	5.0
3	7	3	3.0
3	6	2	2.0
3	2	3	2.0
3	3	2	2.0
3	7	3	5.0
3	2	3	6.0
4	4	2	1.0
4	2	3	1.0
4	5	3	3.0
4	4	3	4.0
4	4	3	4.0
4	2	3	4.0
4	4	2	2.0
4	3	7	2.0
4	2	3	5.0
4	2	3	3.0
4	2	2	4.0
5	2	2	3.0
5	2	2	4.0
5	4	2	5.0
5	1	2	6.0
6	2	2	2.0
6	2	1	2.0
6	2	2	4.0
6	2	2	5.0
6	2	4	4.0
6	4	2	
7	3	7	
8	2	2	
9	6	4	
	5	2	
	2	3	
	12	1	
	4	3	
	4	1	
	2	3	
	3.04	4	
	4	2	
	3		
	2		
	4		
	3		
	2		
	2		
	2		
	4		
	4		
	5		
	2		
	1		
	3		
	1		
	2		
	2		
	5		
	5		
	2		
	2		
	2		
	2		
	2		
	2		
	2		
	5		
	2		
	2		

1.402681 SD 1998
165.3061
3.306122

Table 2. Number of User-Days by Month at the Fish Lake Forest Service Recreation Site, 1993 - 1998.

Year	May	June	July	August	Sept	Oct	Total
1993	27	40	135	94	70		366
1994	122	60	149	76	77		484
1995		40	159	206	90	10	505
1996	49	72	186	161	22	52	542
1997	0	44	77	134	56		310
1998	15	35	106	257			413

Note: Raw data presented. Data is unadjusted by audit.

Figure 4. Monthly Distribution of User-days at the Fish Lake Forest Service Recreation Site, 1995-1998, (uncorrected by audit).

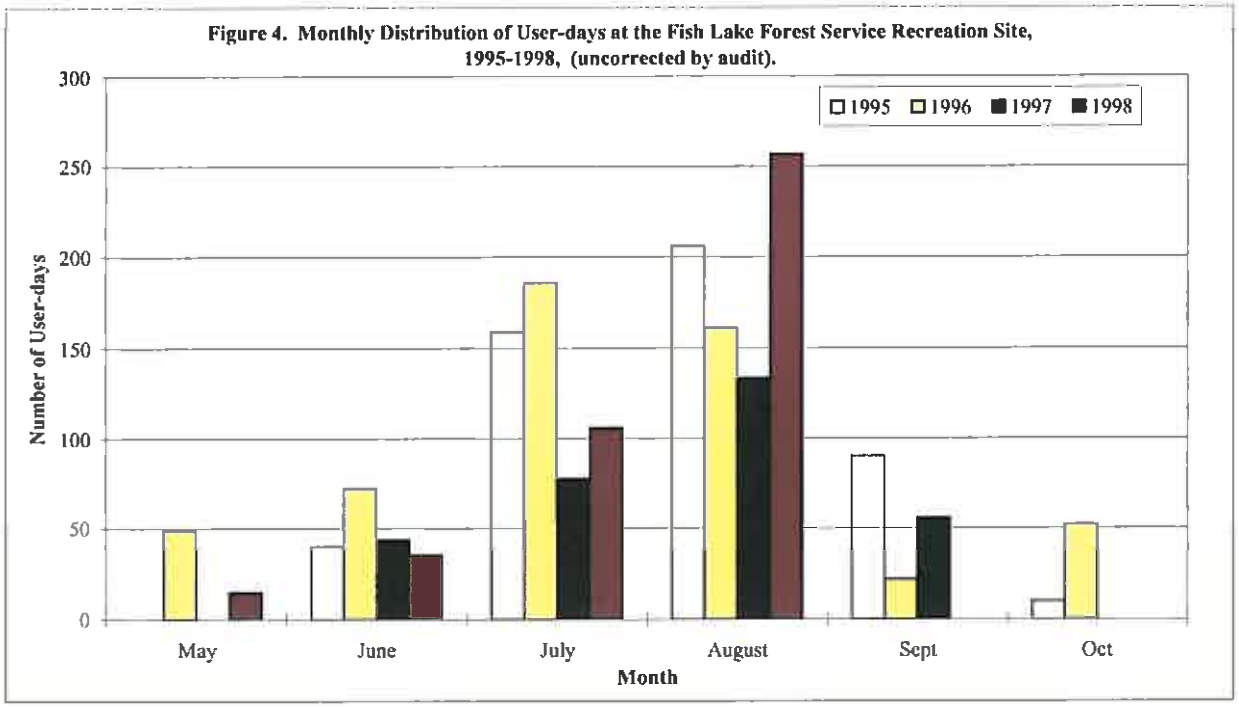

Table 1. Number of Groups Using Fish Lake Forest Service Recreation Site by Month, 1995-1998.

	Number of Groups				Number of Individuals				Average Group Size			
Month	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1998
January		0	0			0	0					
February		0	0			0	0					
March		0	0			0	0					
April		0	0			0	0					
May		6	0	3		24	0	12		4.0		4.0
June	10	18	10	9	27	44	28	25	2.7	2.4	2.8	2.8
July	16	30	18	17	60	95	53	54	3.8	3.2	3.0	3.2
August	17	25	24	21	67	83	68	74	3.9	3.3	2.8	3.5
September	8	7	10		26	17	25		3.3	2.4	2.5	
October	2	4			8	11			4	2.8		
November	0	0			0	0						
December	0	0			0	0						
Total	53	90	62	50	188	274	173	165				

Note: Raw data presented. Data is unadjusted by audit.

adjusted by audit

Month												
January		0	0			0	0					
February		0	0			0	0					
March		0	0			0	0					
April		0	0			0	0					
May		10	0			36	0			4.0		
June	16	29	16		41	66	42		2.7	2.4	2.6	
July	26	48	29		91	143	81		3.8	3.2	2.8	
August	27	40	38		101	125	102		3.9	3.3	2.7	
September	13	11	16		39	26	37		3.3	2.4	2.3	
October	3	6			12	17			4.0	2.8		
November	0	0			0	0						
December	0	0			0	0						
Total	85	144	99		284	414	262					

#REF!

added by audit

used for effort calcuk (all added groups = 1day stay)

1995		1996		1997		
groups	people	groups	people	groups	people	
		#REF!	#REF!			May
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	June
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	July
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	August
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	September
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	October
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	November
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	December
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	year
				#REF!	#REF!	

adjusted days

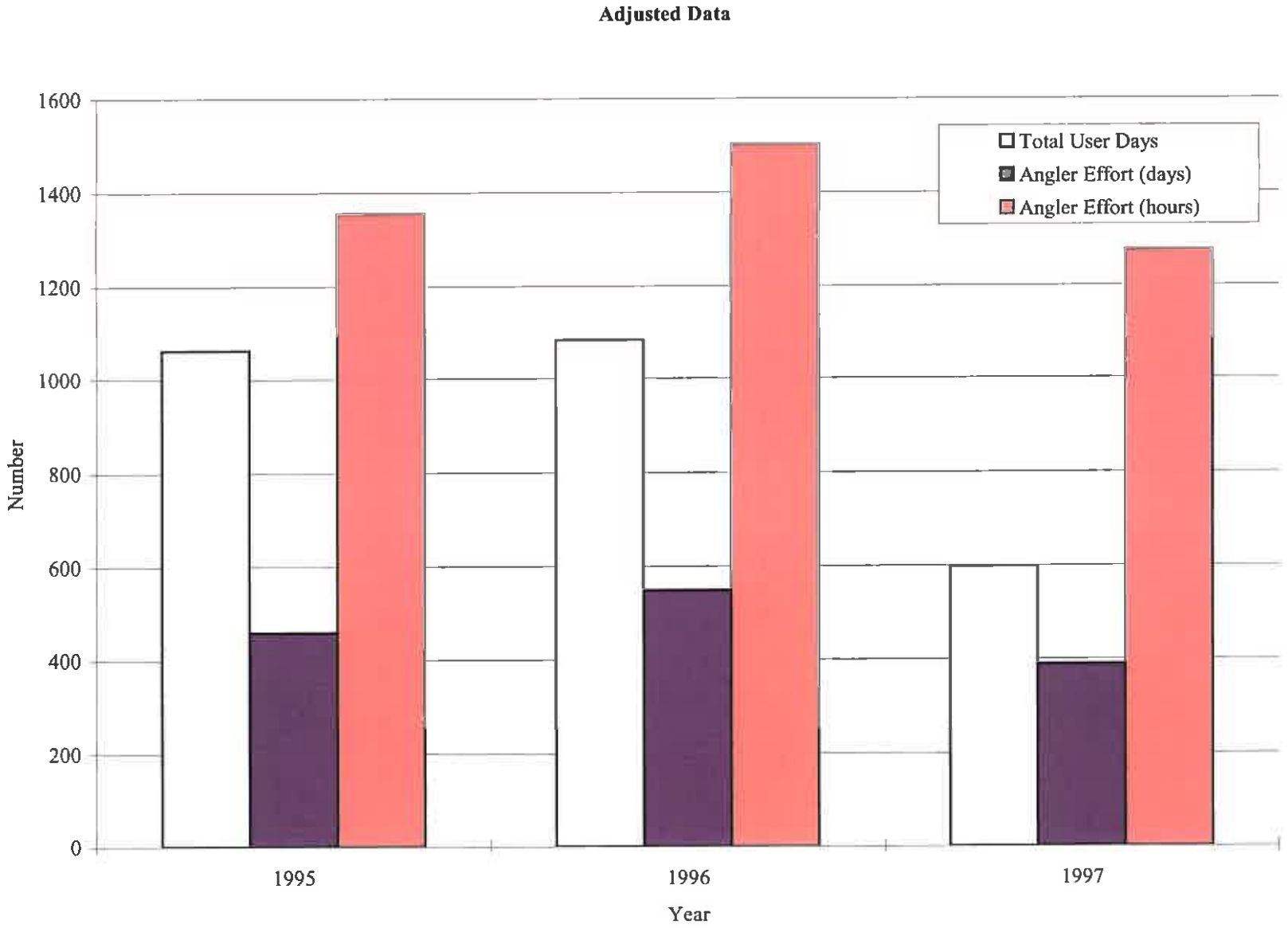

Figure 12. Total Groups, Visitors and User-days as Adjusted by Audit, Fish Lake Forest Service Recreation Site, 1995-1998.

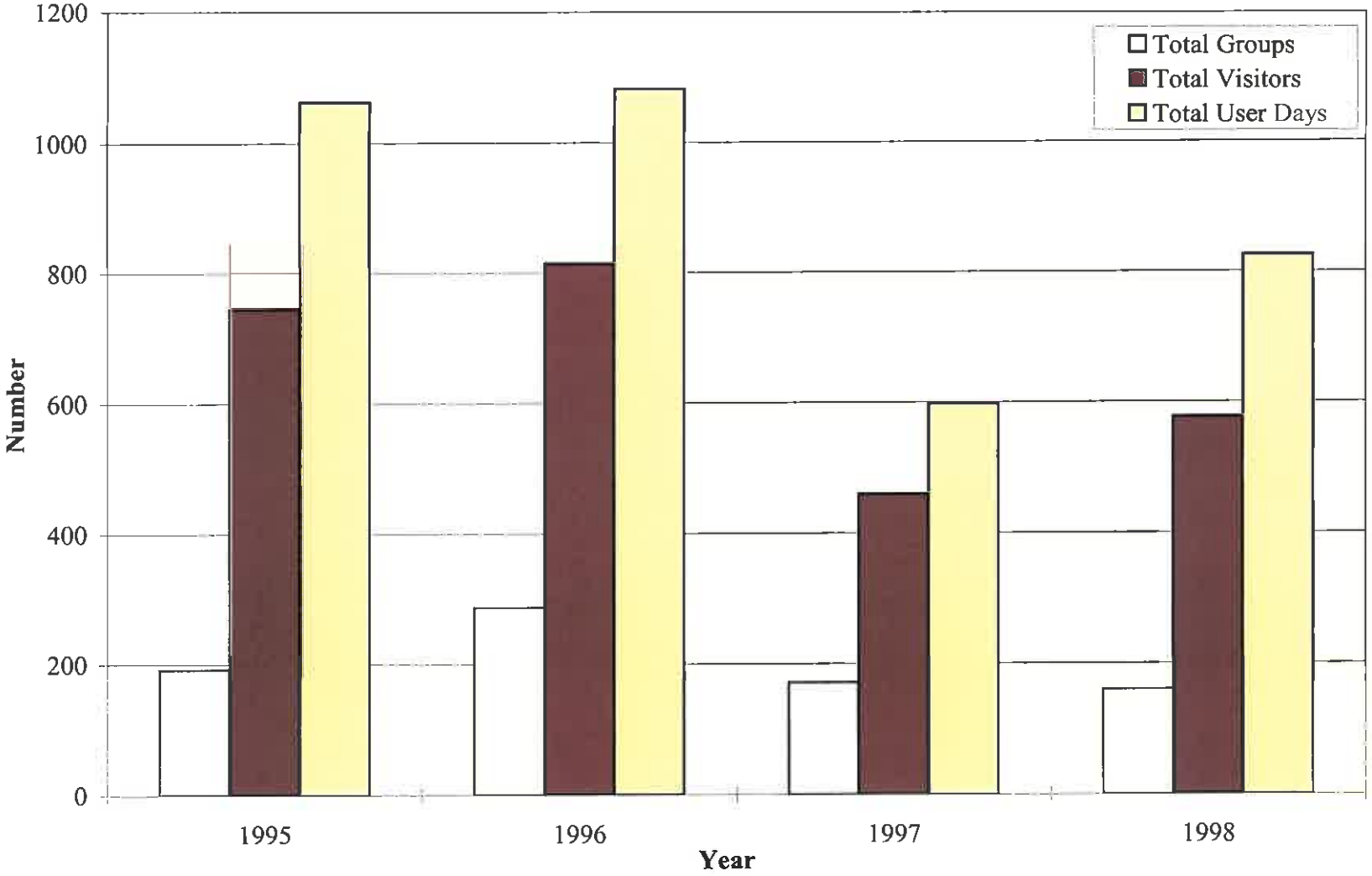

Figure 13. Adjusted Total Annual Angler Catch at Fish Lake Forest Service Recreation Site, 1995-1998.

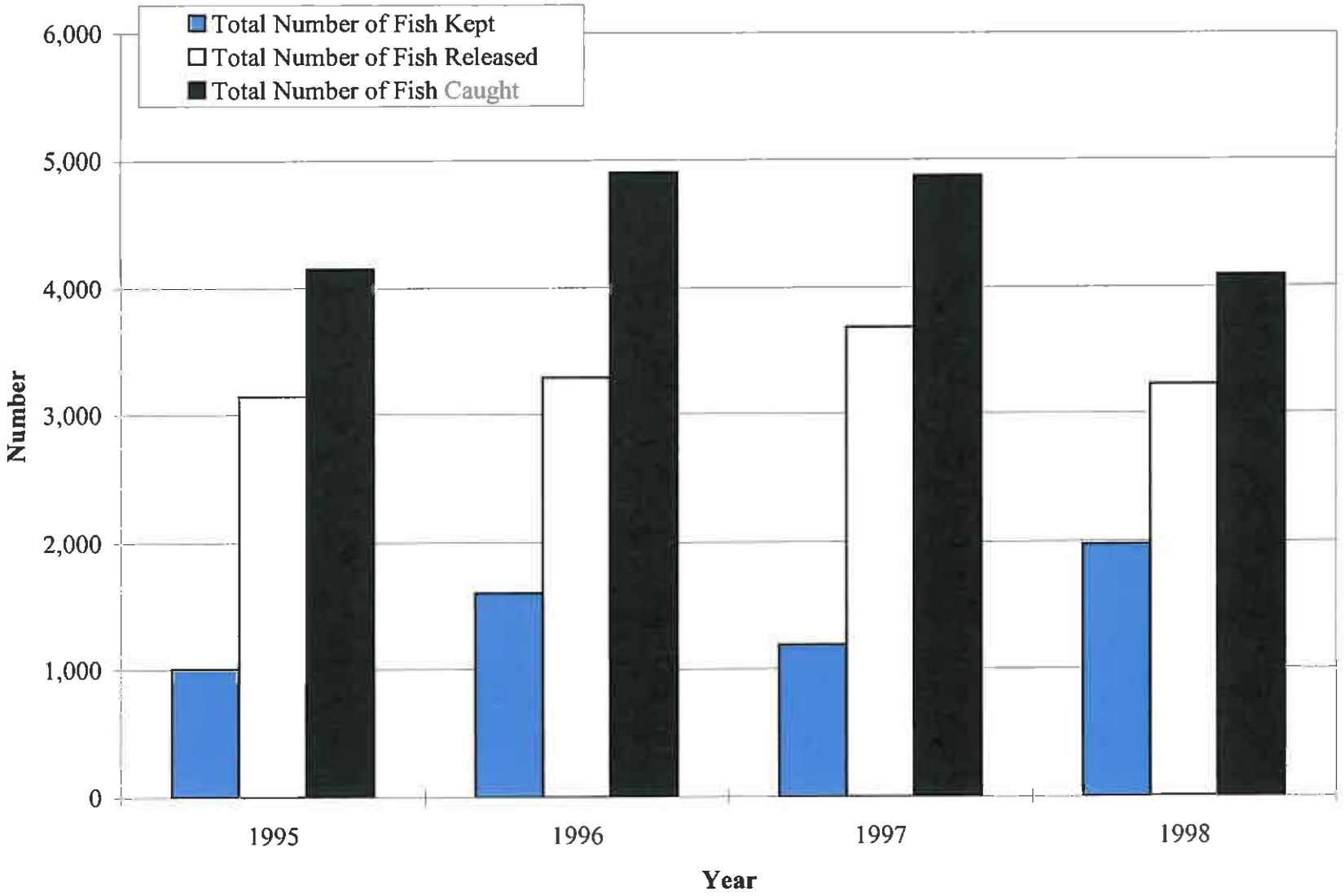

Table 21. Summary of Audit Adjusted Data Collected at Fish Lake Forest Service Recreation Site, 1995-1998.

		1995	1996	1997	1998
Groups and Visitors	Total Groups	192	286	171	160
	Total Visitors	744	814	460	577
	Total User Days	1061	1082	597	825
Angler Effort	Number of Angling Records	95	122	90	109
	Angler Effort (days)	458	548	388	653
	Angler Effort (hours)	1,356	1,502	1,275	2,840
	Average Hours per Angler Day	2.9	2.6	3.3	4.4
Angler Success	Fish Kept per Angler Day	2.5	3.2	3.2	3.4
	Fish Released per Angler Day	8.0	6.1	9.5	7.9
	Fish Caught per Angler Day	10.6	9.4	12.7	11.3
	Fish Kept per Angler Hour	0.9	1.2	1.0	0.8
	Fish Released per Angler Hour	2.7	2.4	2.9	1.8
	Fish Caught per Angler Hour	3.6	3.6	3.9	2.6
	Fish Kept per Standardized Angler Day [a]	3.5	5.0	4.0	3.1
	Fish Released per Standardized Angler Day [a]	11.0	9.4	11.7	7.1
	Fish Caught per Standardized Angler Day [a]	14.5	14.5	15.7	10.2
Angler Catch	Total Number of Fish Kept	1,009	1,602	1,189	1,978
	Total Number of Fish Released	3,141	3,287	3,680	3,224
	Total Number of Fish Caught	4,150	4,900	4,869	4,088

a. To allow for more accurate comparison between years as well as with MELP data for other lakes, the daily angler effort was adjusted to a standard 4 hour angler day.

Individuals missed by audit (used for revised calculations)

1995	1996	1997	1998
556	540	287	412

Ratio Angler days to User days

1995	1996	1997	1998
43%	51%	65%	79%

2.53	3.23	3.22	3.42	
0.24	0.32685	0.24423	0.48384	

Harvest from lake (subad's & adults)

	pop est.	
juv's	36121	<140
sub adults	22318	141 - 229
adults	26739	230 - 330
	85,178	total

1995	2.1
1996	3.3
1997	2.4
1998	4.0

Table 14. Visitor Rating of Satisfaction with Fish Lake Forest Service Recreation Site Experience, 1995-1998.

	1996 (n=89)			1997 (n=62)			1998 (n=62)		
Percent of Answers	Angling Experience	Recreation Experience	Comparison to other Chilcotin Lakes	Angling Experience	Recreation Experience	Comparison to other Chilcotin Lakes	Angling Experience	Recreation Experience	Comparison to other Chilcotin Lakes
Very Poor (%)	0%	0%	0%	0%	0%	0%	6%	3%	3%
Poor (%)	0%	0%	2%	3%	0%	3%	0%	0%	0%
Fair (%)	7%	8%	20%	7%	7%	24%	3%	6%	23%
Good (%)	51%	65%	32%	34%	21%	17%	16%	15%	23%
Excellent (%)	43%	26%	46%	55%	72%	55%	74%	76%	52%
records with no answer	20	6	48	33	33	33	19	17	19

Note: Raw data presented. Data is unadjusted by audit.

1 1 1 1 1 1 1 1 1

1 1 1 1 1 1

dont convert 1996 - percentages

audit adjusted

	1996 (n=89)			1997 (n=99)		
Percent of Answe	gling Experie	eation Exper	on to other Chilc	gling Experie	eation Exper	on to other Chilcotin Lakes
Very Poor (%)	0	0	0	0	0	0
Poor (%)	0	0	2	3	0	3
Fair (%)	7	8	20	7	7	24
Good (%)	51	66	32	35	21	17
Excellent (%)	43	27	46	56	73	56

Table 13. Visitor Use of Other Chilcotin Lakes, 1995 - 1998.

	1995		1996		1997		1998	
	Number of Groups	%	Number of Groups	%	Number of Groups	%	Number of Groups	%
Visited Other Chilcotin Lakes	13	[illegible]	51	60%	14	50%	10	30%
Had not Visited Other Chilcotin Lakes	[illegible]	[illegible]	35	41%	14	50%	23	70%
Unknown	40		4		34		17	
Total	53		90		62		50	

Note: Raw data presented. Data is unadjusted by audit

Appendix B Table 4. What other Chilcotin lakes have you visited, besides Fish Lake?

Lake Name	1995 Number of Responses	1995 % of 53 Groups	1996 Number of Responses	1996 % of 80 Groups	1997 Number of Responses	1997 % of 62 Groups	1998 Number of Responses	1998 % of 50 Groups
Alexis			2	2%				
Anahim			4	4%	1	2%	3	6%
Big	1	2%	10	11%	2	3%	4	8%
Big Stick			1	1%	1	2%		
Blake					1	2%	1	2%
Bluff					1	2%		
Bonapart					1	2%		
Brittany			1	1%				
Caribou							1	2%
Charlotte			1	1%				
Chaunigan	11	21%	12	13%	9	15%	5	10%
Chilko	8	15%	13	15%	7	11%	7	14%
Chuchquat			1	1%				
Circle					1	2%		
Cochin							1	2%
Comne					4	6%		
Cricket			1	1%				
Cuisawa					1	2%		
Devat							1	2%
Dugan							1	2%
Earl					1	2%		
Elkin	3	6%	1	1%				
Fir							1	2%
Fishem			1	1%	1	2%		
Fisher			1	1%				
Fletcher	2	4%	4	4%	4	6%	6	12%
Francois							1	2%
Gwyenth					1	2%		
Hammer			1	1%				
Hook					1	2%		
Hord					1	2%		
Horn					1	2%		
Horsefly			1	1%	1	2%		
Horsefly					1	2%		
Howard			1	1%				
Kapan			2	2%	1	2%	1	2%
Kentz			1	1%				
Kingdown					1	2%		
Kloakut			2	2%			1	2%
Knott					1	2%		
Koon	1	2%	3	3%				
Lastman			3	3%	1	2%	1	2%
Little Big Bar							1	2%
Little Onion							1	2%
McLeese			1	1%				
Miner							1	2%
Monica							1	2%
Mud					1	2%		
Nimpo	1	2%	2	2%	1	2%	1	2%
One-eye			1	1%				
Onion					1	2%		
Palmer			2	2%	3	5%	3	6%
Pelican			1	1%				
Poison			1	1%				
Punsie					3	5%	2	4%
Qualaquai					1	2%		
Raven			1	1%	2	3%	2	4%
Rimrock					1	2%		
Sapaze							1	2%
Sapeye			1	1%	5	8%	1	2%
Scum			5	6%				
Shawnigan							1	2%
Shelter	1	2%						
Slim					1	2%		
Swartz					1	2%		
Tagan			1	1%				
Tapoca					1	2%		
Taseko	2	4%	6	7%	4	6%	1	2%
Tatla							2	4%
Tatlayoko	2	4%			1	2%		
Tatner					1	2%		
Till							1	2%
Tsunit							1	2%
Tsuniah			2	2%	5	8%	1	2%
Tuan			1	1%				
Two Lakes					1	2%		
Vedan	5	9%	5	6%	3	5%	2	4%
Voberta			1	1%				
90% of all lakes in Chilcotin region, many			1	1%	2	3%	2	4%
No response to question	40	75%	4	4%	27	44%	16	32%
No other Chilcotin lakes were visited, Fish Lake was sole destination			35	39%	5	8%	4	8%

Note: Raw data presented. Data is unadjusted by audit

Count of 1998	
FISH	Total
ANAHEIM	3
BIG LAKE	4
CARIBOU	1
CHAINIGAN	2
CHAUNIGAN	3
CHILKO	7
COCHIN	1
DEVAT	1
DUGAN	1
FIR	1
FLETCHER	6
FRANCOIS	1
KAPPAN	1
KLOAKUT	1
LASTMAN	1
LITTLE BIG BAR	1
LITTLE ONION	1
MANY	1
MINOR	1
MONICA	1
N	4
PALMER	3
PONTZI	1
RAVEN	2
SAPAZE	1
SAPEYE	1
SHAWNIGAN	1
TASEKO	1
TATLA	2
TILL	1
TSUMIT	1
TSUNIAH	1
VARIES	1
VEDAN	2
BLAKE	1
NIMPO	1
Grand Total	64

Table 12. Percent of First Time and Return Visitors to Fish Lake Forest Recreation Site That Were Aware of Prosperity Project, 1996-1998.

	1996			1997			1998		
	Previously Aware	Not Aware	Total	Previously Aware	Not Aware	Total	Previously Aware	Not Aware	Total
First Time Visitor (%)	29%	32%	61%	40%	27%	67%	15%	30%	44%
Return Visitor (%)	38%	2%	40%	30%	3%	33%	48%	7%	56%
Total	67%	34%	101%	70%	30%	100%	63%	37%	100%

Note: Raw data presented. Data is unadjusted by audit.

don't convert - precentages!!!

Table 11. Visitor Awareness of Prosperity Project Prior to Visitor Interview, 1996-1998.

	1996		1997		1998	
	Interviewee		Interviewee		Interviewee	
	Number	%	Number	%	Number	%
Not aware of project	30	34%	9	30%	10	37%
Aware of Project	58	66%	21	70%	17	63%
Unknown	2		32		23	
Total	90		62		50	

Note: Raw data presented. Data is unadjusted by audit.

30
58
2

audit adjusted

	1996 Interviewee		1997 Interviewee	
	Number	%	Number	%
Not aware of project	47.929	33.7	14.3787	3000%
Aware of Project	92.6627	66	33.5503	7000%
Unknown	3.19527		51.1243	
Total	143.787		99.0533	

Table 10. Number and Percent of First-time Visitors to Fish Lake Forest Service Recreation Site, 1996-1998.

	1996				1997				1998			
	Groups		Persons		Groups		Persons		Groups		Persons	
	Number	%[a]	Number	%[a]	Number	%[a]	Number	%[a]	Number	%[a]	Number	%[a]
First-time Visitors	53	60%	151	56%	21	66%	51	58%	12	40	38	38%
Return Visitors	35	40%	118	44%	11	34%	37	42%	18	60	62	62%
Unknown	2		5		30		85		20		65	
Total	90		274		62		173		50		165	

Note: Raw data presented. Data is unadjusted by audit.

a. Percent of known responses.

53		151
35		118
2		5

Table 9. Visitor Reasons for Visiting Fish Lake Forest Service Recreation Site, 1995 - 1998.

Reason	1995 Responses		1996 Responses		1997 Responses		1998 Responses	
	Number Responses[a]	% of 53 Groups	Number Responses[a]	% of 90 Groups	Number Responses[a]	% of 62 Groups	Number Responses[a]	% of 50 Groups
Fishing	15	28%	74	82%	28	45%	21	42%
Camping	16	30%	56	62%	9	15%	7	14%
Sight-seeing, scenery	10	19%	5	6%	4	6%	4	8%
Holiday	5	9%	5	6%	11	18%		
Hunting	2	4%	3	3%	2	3%		
Get-away, solitude	1	2%	5	6%			3	6%
Nature appreciation	4	8%					1	2%
Partying, drinking			1	1%				
Wildlife photography			1	1%			1	2%
Dirt-biking			1	1%				
Unknown			2	2%	26	42%	10	20%
Herding Livestock	1	2%						
Publicity about mining project	3	6%						
Guidebooks, tourist promotion	2	4%						
Relax							3	6%
Other					3	5%	15	30%
Number of Responses	59		153		83		65	

Note: Raw data presented. Data is unadjusted by audit.

a. Groups often gave more than one answer. Therefore the percentage may total more than 100 %.

1997

reason for visit
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
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10
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10
10
10
10
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10
10
10
10
10
10
10
10
10
10
10
10

Count of # reason for	
# reason	Total
1	28
2	9
3	4
4	11
5	2
9	3
10	26
visit	1
Grand To	84

1998

reason for visit
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
2
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11
11
11
11
11
15
15
15
15
15
15
15
15
15
15
15
15
15
16
16
16

Count of visit	
visit	Total
1	21
2	7
3	4
4	2
6	3
7	1
9	1
11	10
15	13
16	3
Grand Total	65

Table 8. Place of Residence of Visitors to Fish Lake Forest Service Recreation Site, 1995-199

	1995		1996		19
	Number of Groups[a]	Number of Persons	Number of Groups[a]	Number of Persons	Number of Groups[a]
Greater Vancouver - Fraser Valley	13	44	40	127	13
Cariboo (Williams Lake, Quesnel, 150 Mile House, 100 Mile House)	14	54	19	56	6
Chilcotin Local (Nemiah Valley, Big Lake, Alexis Creek)	2	4	6	17	3
Thompson Okanagan			6	15	2
Pemberton - Whistler - Squamish	2	8	4	14	1
Vancouver Island - Gulf Islands	9	41	6	13	3
Northern BC (Prince George, Smithers)	1	4	1	2	1
Other British Columbia	3	6			1
Other Canada (Alberta)	1	3	1	1	1
USA (Washington, Oregon, AZ)	5	17	1	2	6
Switzerland			2	6	
Holland			1	6	
Germany	1	2	3	4	
Poland			1	2	
Taiwan			1	2	
Denmark	1	4			
Unkowns[b]	1	1	2	7	27
Total[a]	53	188	90	274	62

Note: Raw data presented. Data is unadjusted by audit.

a. The totals include blended groups.

b. Groups where no information could be collected .

out-of province	#	26	23
	%	13.90	8.61
Cariboo-Chilcotin	#	58	73
	%	31.02	27.34

8.

97	1998	
Number of Persons	Number of Groups[a]	Number of Persons
32	18	55
17	10	34
10	1	4
6	4	19
2	1	1
7	7	23
2	3	12
1		
3	1	4
14		
79	5	13
173	50	165

17	4
18.09	2.63
27	38
28.72	25.00

Table 7. Gender and Age of Visitors to Fish Lake Forest Service Recreation Site, 1995-1998.

			Adult		Teenage		Children		
		Unclassified	Male	Female	Male	Female	Male	Female	Total
1995	Number	0	130		8		50		188
	%	0%	69%		4%		27%		100%
1996	Number	6	137	67	11	6	26	21	274
	%	2%	50%	24%	4%	2%	9%	8%	100%
1997	Number	63	59	28	5	5	8	5	173
	%	36%	34%	16%	3%	3%	5%	3%	100%
1998	Number	30	60	35	6	7	19	8	165
	%	18%	36%	21%	4%	4%	11%	5%	100%

Note: Raw data presented. Data is unadjusted by audit.

Table 3. Fish Lake Forest Service Recreation Site Campground Occupancy, 1995-1998.

	1995	1996	1997	1998
Total Survey Days	only surveyed	366	271	122
Days Occupied	peak	99	71	60
Percent Occupied (%)	season	27%	26%	49%
Peak Season Days[a]/ Survey Days	128	150	135	107
Peak Season Days Occupied	77	92	71	60
Percent Occupied Peak Season (%)	60%	61%	53%	56%

Note: Raw data presented. Data is unadjusted by audit.

a. Peak season began on Victoria Day weekend and continued until the end of the detailed survey each year; Thanksgiving weekend in 1995 and 1996, September 28 in 1997 and September 4 in 1998.