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ESTIMATED PUBLIC USE WITHIN
TOGIAC NATIONAL WILDLIFE REFUGE
1984 - 1988

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ABSTRACT

Public use on the rivers of the Togiak National Wildlife Refuge has become a prominent management issue. The majority of use is sport fishing which occurs on the Kanektok, Togiak and Goodnews Rivers, and several tributary lakes and streams. Public use (sport fishing) is divided into seven (7) use or access types: Guided and Unguided; float, fly-in, and motorboat, and guided fly/motorboat. The amount of use in number of visitors and use days (visitor times length of stay) is estimated for all user types by river system for the years 1984 through 1988.

The refuge staff has estimated use levels from several data sources. These data sources include: public use survey camps at Kagati, Togiak and Goodnews Lakes; guide use reports; air taxi trip reports; and observations made during other projects conducted by Togiak Refuge and Alaska Department of Fish & Game staffs.

In 1981 public use was estimated at 450 visitors and 2,000 use days. By 1984 public use increased to nearly 3,000 visitors and over 11,000 use days.

Since 1984 public use on the refuge has ranged from a high of 2,544 visitors and 12,158 use days in 1986, to a low of 1,953 visitors and 10,426 use days in 1987. Guided use has accounted for between 74% and 83% of the total effort. Guided effort peaked in 1984 at 1,997 clients and 9591 use days. Unguided effort peaked in 1986 at 3,025 use days, although the number of unguided people visiting the refuge had peaked in 1984 (573).

Approximately 42% (4,903) of the 1988 refuge public use (10,950 use days) occurred on the Kanektok River. The remaining use occurred on the Goodnews River (2,611), Togiak River (2,504), Togiak tributaries and associated drainages (932), and the Arolik River (324).

Weather, sport fishing regulations, user fees, user conflicts, changes in user itinerary (ie trip length), use reporting requirements, and initial over-reporting by guides are all factors which may have influence estimated use levels on the refuge.

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INTRODUCTION

Public use on the rivers of the Togiak National Wildlife Refuge (Refuge) has become a prominent management issue. The Public Use Management Plan for the refuge is currently being written. To develop sound management alternatives the types and levels of public use must first be understood.

The primary activity sought by the public is sport fishing. Most of the sport fishing which occurs on the refuge is promoted by commercial sport fish guides. Sport fish effort is primarily concentrated on the Kanektok, Goodnews and Togiak Rivers with some use also occurring on Togiak tributary streams, lakes and associated drainages (Gechiak, Pungokebuk, Ongivinuck, Ungalikthluk, Negukthlik, Kulukak, Matogak and Osviak Rivers, and Amanka and Ualik Lakes) and the Arolik River (Figure 1).

In 1981 the United States Fish and Wildlife Service (Service) issued special use permits (permits) to five guides known to be operating commercially in the Togiak refuge. By 1983, eighteen (18) permits were issued to sport fish guides and in 1984, 22 permits were issued. Operators under permit have been required to submit an end of the season report of their activity on the refuge in number of clients and use days (number of clients multiplied by length of stay) (Appendix A & B). These early reports, together with refuge surveys and observations, have been used to estimate public use levels in the refuge.

Since the refuge was established in 1981 visitor use has increased. Early use estimates showed that 450 visitors and 2000 use days were expended on the refuge in 1981 (Refuge Files). By 1984, these figures had increased to nearly 3,000 visitors and 12,000 use days. Local residents (subsistence users) have voiced concerns related to this increase in sport fishing activity. They were concerned with the impact of sport fishing on subsistence activities, and fish and wildlife resources. Conflicts between locals and guides were reported to the refuge headquarters by residents of Quinhagak, Goodnews Bay and Togiak, and by guides. Sport fish guides also expressed concerns over the increasing visitor use, competition for fishing areas, and degradation of wilderness values. Unguided visitors stated similar observations as to competition for fishing areas, conflicts with guides, and degradation of wilderness values (USDI, 1986a).

During the Spring of 1984 a meeting was held with representatives of Alaska Departments of Fish & Game and Natural Resources, sport fish guides, and local residents to discuss refuge problems and conflict resolution. Issues centered on the increase of public use and conflicts between user groups (USDI, 1986b).

Based upon the issues and concerns raised, the refuge initiated a moratorium on issuing special use permits the Spring of 1984. This

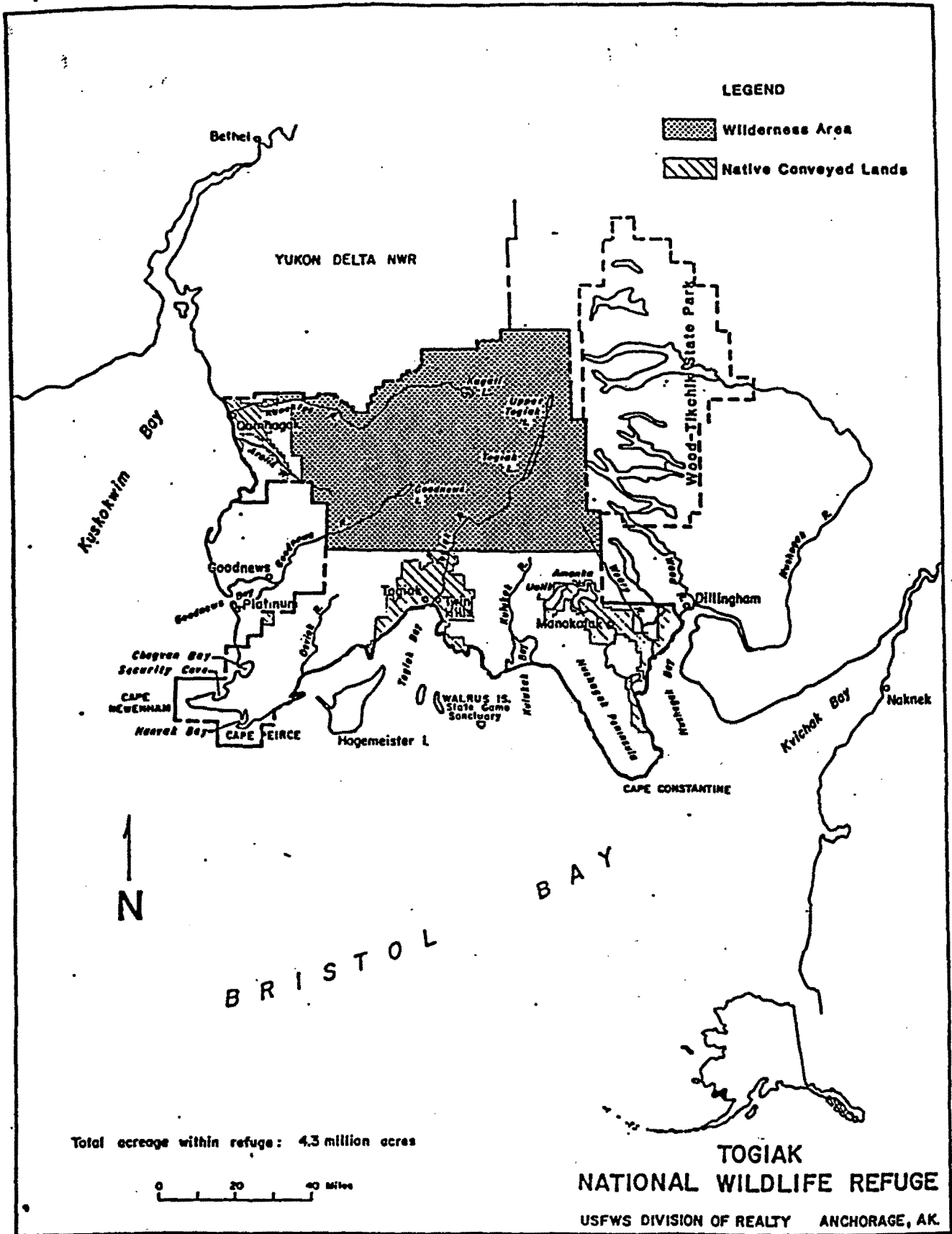


Figure 1. Togiak National Wildlife Refuge major drainages and wilderness area.

moratorium is in place until further direction is developed in the Refuge Comprehensive Conservation Plan and the subsequent Public Use Management Plan. Only those guides that could substantiate use prior to 1984 were issued a permit. In 1984 twenty two (22) guides were issued permits and required to submit reports of their activity on the refuge (Appendix A and Appendix B).

The number of clients and client use days allowed each operator were also limited. The 1984 guide use reports, submitted at the end of the season and after the moratorium was in place, provided the use figures (clients and use days) used in determining allocated use for the 1985 season. Verification of use days levels by individual guides was not possible in 1984.

In 1984 air taxi operators were also brought under the permit system to meet with service policy. Nine (9) air taxi operators with prior history of use on the refuge received permits. No limits were imposed on the number of trips or parties each air taxi could transport, but they were required to submit a trip report for each party transported to the refuge (Appendix C).

METHODS

Refuge public use is divided into seven user groups related to the type of access used and whether the party is guided or not.

Float visitors use a river raft, canoe or kayak descending a river course to access fishing holes and generally spend between six and ten days per trip. Fly visitors are those users who fly to a lake or river and fish from where the plane has landed for one to two days. Fly/motorboat, are guided users who fly to an area or guide camp on a daily basis and are provided with motorboat access to the actual fishing hole for up to three days. Motorboat are those visitors who are either staying at a base camp on the river and fish out of motorboats only or those that may own, rent, or borrow a motorboat and travel from the village upstream to fish. These visitors generally spend one to six days per trip.

The number of use days by user type are estimated by year for each system. A use day is calculated by multiplying the number of people by the number of days each had spent on the particular river or lake (ie. 4 people spending 2 days is equivalent to 8 use days). Guided and unguided use days are subtotaled separately and combined to estimate total system use.

The refuge public use monitoring program and permit reporting requirements have been expanded and improved during subsequent years (1985-88). Guide report forms have been revised in order to obtain more accurate information. The 1984 & 1985 reports requested operators

report the number of clients and use days by week to be compiled at the end of the season (Appendix A). These reports also requested use to be divided among the Kanektok, Togiak and Goodnews drainages. This information became confusing to analyze. The Togiak drainage included use on the Gechiak, Pungokepuk, Ongivinuck, Ungalikthluk, Negukthlik, Kulukak, Osviak and Matogak Rivers and Amanka and Ualik Lakes. The Goodnews Drainage includes use reported on the North, Middle, and South Forks of the Goodnews River. In 1986 the reporting requirements were refined (Appendix B). Information recorded on a daily basis has provided a more accurate picture of the amount of use as well as the areas of use. The current reporting requirements include the number of anglers, hours fished, area fished, fish caught and fish kept. Reporting compliance and accuracy has improved every year, but has never reached 100%. Interpolation of yearly use figures has been used when reporting was insufficient by some individual operators.

In 1984 the refuge initiated a public use survey program to determine the level of public use on the three main river systems of the refuge (Kanektok, Togiak and Goodnews Rivers). Camps were established at Kagati Lake (1984-88), Togiak Lake (1985-87), and Goodnews Lake (1985-88). From June through September, USF&WS personnel were stationed at these headwater lakes to contact all refuge visitors preparing to float the rivers. Trip characteristics were gathered in a standard format (Appendix D) to determine the number of people and user days logged by each user group. This data is summarized for each year and reported as guided and unguided float use for each river and respective years. Fly-in visitors that use these lakes on a daily basis are reported as a component of guided and unguided fly-in use. For the years when no refuge public use survey camps were in place (Togiak Lake 1984 & 1988 and Goodnews Lake 1984 & 1987) or the camp operated intermittently, air taxi trip reports and guide reports were used to supplement estimated float use.

Also in 1984 the refuge, under a cooperative agreement with the Alaska Department of Fish and Game, provided field personnel for on-grounds work, and aircraft time for a sport fish angler survey on the Togiak River. The Togiak River is easily accessible to all forms of transportation and provides visitors with a highly rated salmon sport fishery. The refuge staff flew 18 aerial surveys of the main Togiak River to estimate total angler effort at approximately 2,807 angler days (Minard and Lisac, 1984). Eighteen aerial surveys were flown in 1985 estimating 2,905 angler days (Togiak NWR files). These figures do not allow an accurate separation of the user type, guided or unguided proportions, but are included in the discussion section for comparison of guide use reporting compliance.

Guided motorboat, fly, and fly/motorboat use estimates are derived from the use reports submitted by each operator, separated into use type by river system. Individual guide reports were subtotaled by number of clients and number of use days using lotus spreadsheet data entry for 1986-1988. Use reports for 1984 and 1985 were hand tallied. Guided

float use is estimated from refuge public use survey data supplemented by air taxi trip reports and guide use reports when the survey was not conducted or conducted intermittently throughout the season.

Unguided fly and motorboat figures for all years are estimates derived from refuge staff observations during aerial surveys, creel censuses, and information provided by Alaska Department of Fish and Game staff, and air taxi trip reports. Unguided fly-in use recorded at refuge public use survey camps is incorporated into this unguided use component. Unguided float use is derived from refuge public use surveys and supplemented by air taxi trip reports when a survey was not conducted or conducted intermittently throughout the season.

Wilderness and non-wilderness area use days are subtotaled for all seven use types by year for the three main river corridors. Use levels for 1984 are for the entire river column and associated tributary streams and lakes. Separation of wilderness area and non-wilderness area use or tributary use was not possible in 1984. Wilderness area use has been determined by permit reports for 1986 through 1988 and by using interpolation for 1985. Wilderness area use is estimated for unguided visitors by interpolation from guide use patterns (ie. a float trip on the Kanektok River lasting 8 days spends typically 5.5 days in the wilderness area). Use reported on tributary streams and lakes is not included in the Wilderness area use subtotals or discussion.

Use reported on other refuge river systems during 1985 - 1988 is subtotaled, and combined in the major drainage total use estimates. Separation of the use occurring on the associated tributaries of the Togiak drainage are not complete for 1985 and 1986. To keep total use of the Togiak River comparable, tributary use is subtotaled, and included as a component of total use. Use on the Togiak tributaries and associated drainages is primarily fly-in access and is included as such when determining user type proportions.

Public use occurring on the Arolik River is primarily guided motorboat effort which is staged out of base camps located on the lower Kanektok River. For this reason Arolik River use days are included as motorboat use in use type proportions for the Kanektok River. Guided use occurring on the Arolik River is subtotaled separately (Table 2).

RESULTS

Estimated Public Use Combined for the Kanektok, Togiak and Goodnews Rivers and Tributaries

Combined total use day data from the three rivers and associated tributaries declined slightly from 1984 to 1988 (Figure 2). Total use days peaked at 12,158 in 1986 (Table 1). Total number of visitors declined steadily from 2,761 in 1984 to 1,987 in 1988. During 1988 float and motorboat use accounted for 43.4% and 31.2% of the total use respectively, with the two fly-in user types accounting for the remaining 25.4%. Between 1985 and 1988, approximately 54% of the total estimated use on the three major rivers occurred within the Togiak Wilderness Area (Figure 2).

Guided effort followed the same pattern as the total effort and accounted for between 74% and 83% of the total effort (Figure 2). Guided use declined from a reported 9,591 use days in 1984 to 8,051 in 1988 (Table 1). Motorboat use has been the primary guided activity for all four years and accounted for 39.5% of the 1988 refuge guided effort. Approximately 50% of the guided use (1985-88) occurred within the wilderness area.

Unguided use increased from 1,979 use days in 1984, to a peak of 3,025 in 1986, and declined to 2,899 use days in 1988 (Figure 2). River rafting (float use) has been the primary activity of unguided refuge visitors for all four years, and accounted for 89.5% of the 1988 unguided effort (Table 1). Approximately 68% of the unguided use (1985-88) occurred within the wilderness area.

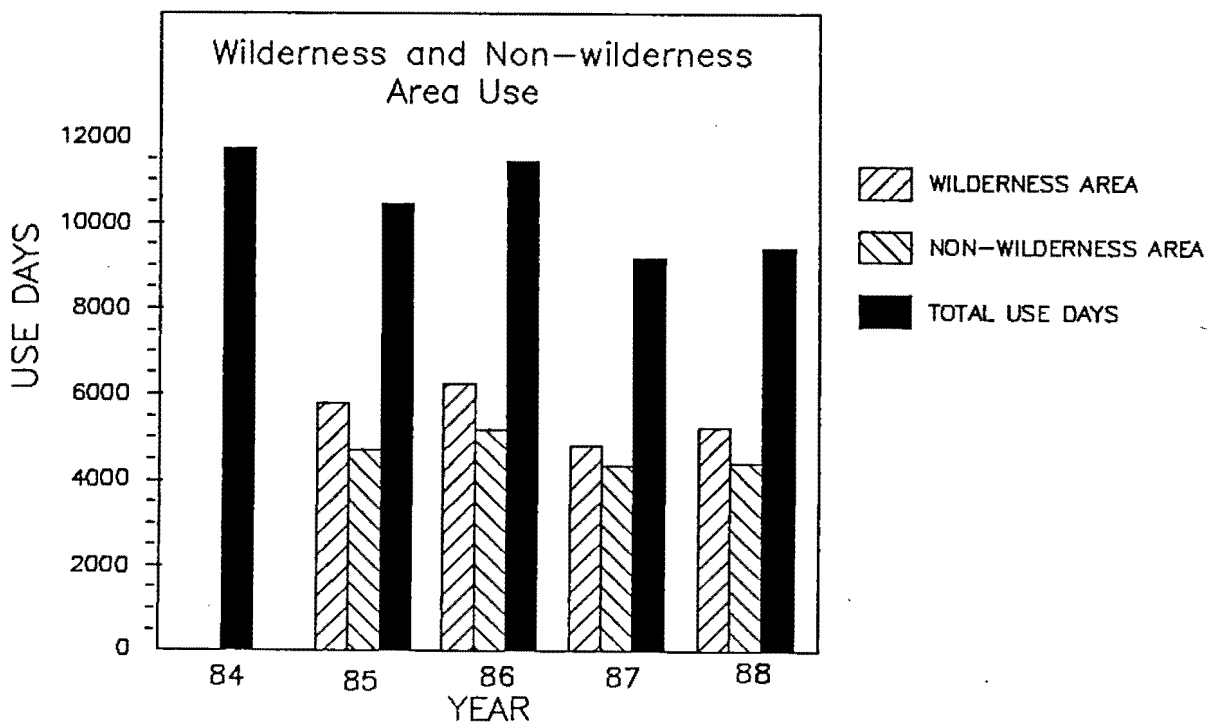
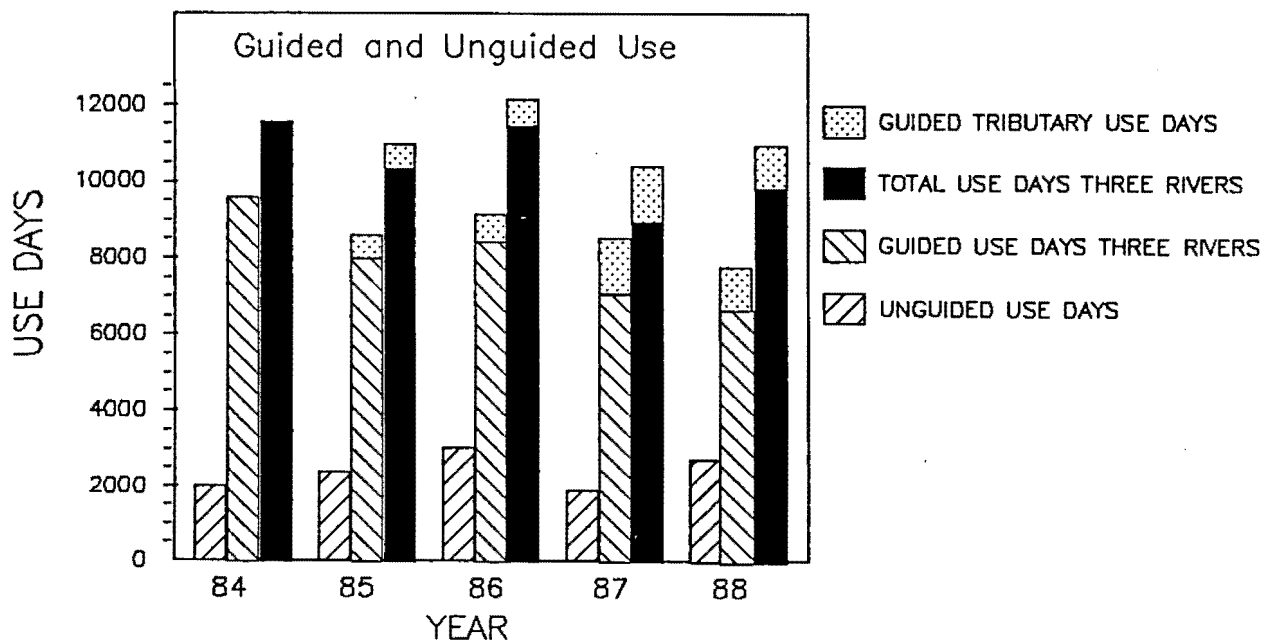


Figure 2. Estimated public use on the Togiak National Wildlife Refuge, and wilderness/non-wilderness area use on the Kanektok, Togiak and Goodnews Rivers, Alaska, 1984 - 1988.

Estimated Public Use for the Kanektok River

Total use days on the Kanektok River rose from 4,698 in 1984 to 5,900 in 1986, falling back to 4,579 by 1988 (Figure 3). Total visitors to the Kanektok River declined from 1,023 in 1984 to 731 in 1988 (Table 2). River rafting accounted for 62.6% (3,067 use days) of the total use on the Kanektok River in 1988. Motorboat use accounted for 34.4%, while the two fly in groups accounted for 3% of the total use in 1988. Use within the wilderness portion of the river has been approximately 61% from 1985 to 1988. Non-wilderness area use days have increased slightly from 1985 to 1987, but declined in 1988 (Figure 3).

Guided use days on the Kanektok River peaked in 1986 at 4,272 use days (Figure 3). Guided use days declined slightly from 1984 to 1985, and again from 1986 to 1988. The number of guided visitors ranged between 531 and 571 from 1984 to 1988 (Table 2). Guided effort accounted for between 72% (1986) and 84% (1987) of the total use days on the Kanektok River. Guided motorboat use has been higher than float use for all except the 1987 & 1988 seasons. In 1988 the proportions of guided use types on the Kanektok River were: float use 51.6%, motorboat use 45.2%, and the two fly in uses 3.2%. Between 51% and 64% of the guided effort during 1985 to 1988 occurred within the Kanektok wilderness portion. Guided use increased slightly within the non-wilderness portion of the river from 1985 to 1987 and declined in 1988.

Unguided use fluctuated from 1984 (1,069 use days) to a peak in 1986 (1,628 use days), and declined by more than half in 1987 to 763 use days. Unguided use days increased to 1,245 in 1988 (Figure 3). The number of unguided visitors decreased from 468 in 1984 to 173 in 1988 (Table 2). The bulk of this decrease is attributed to the decline in fly-in and motorboat use. Unguided fly-in and motorboat traffic is estimated to have declined sharply from 378 to 50 people from 1984 to 1987. Float use has been the dominant access activity for unguided visitors, accounting for 94.8% of the unguided use days in 1988. Approximately 72% of unguided use between 1985 to 1988 occurred within the wilderness area.

Public use on the Arolik River is primarily guided motorboat traffic with some float trips occurring in earlier years. Guided use of this river was reported to be zero in 1984 and 1985, and has increased to 324 use days by 1988 (Table 2).

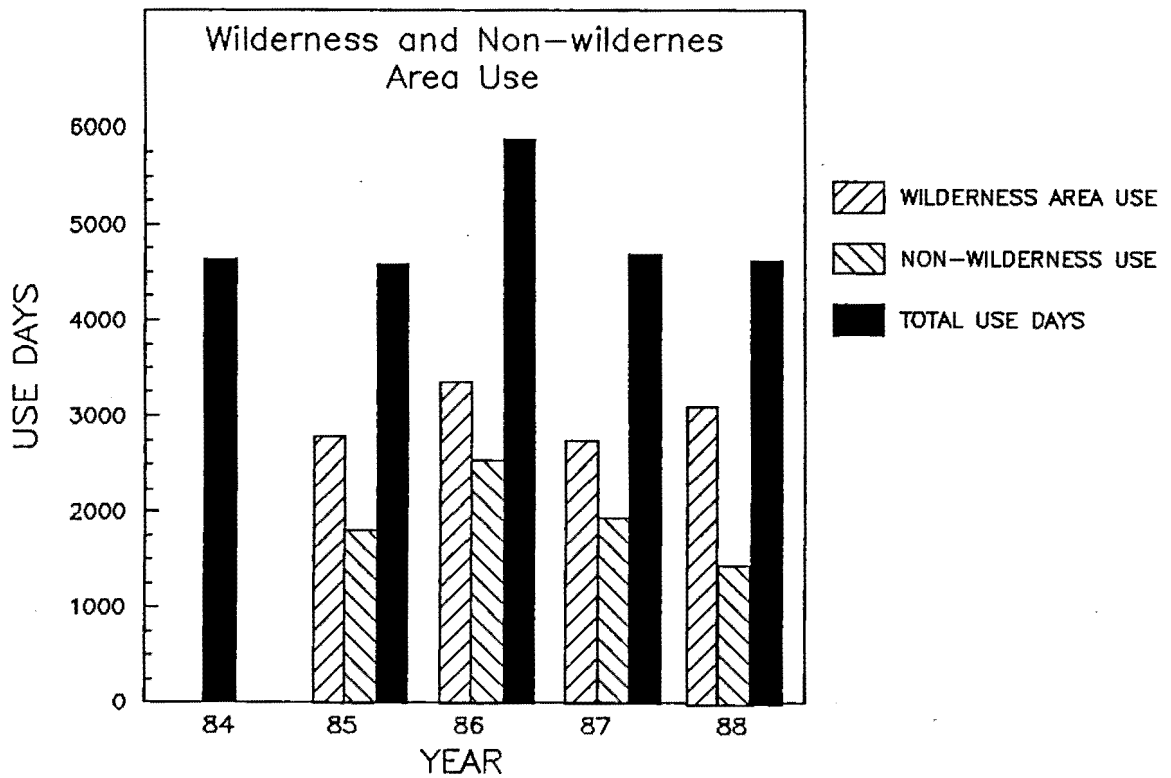
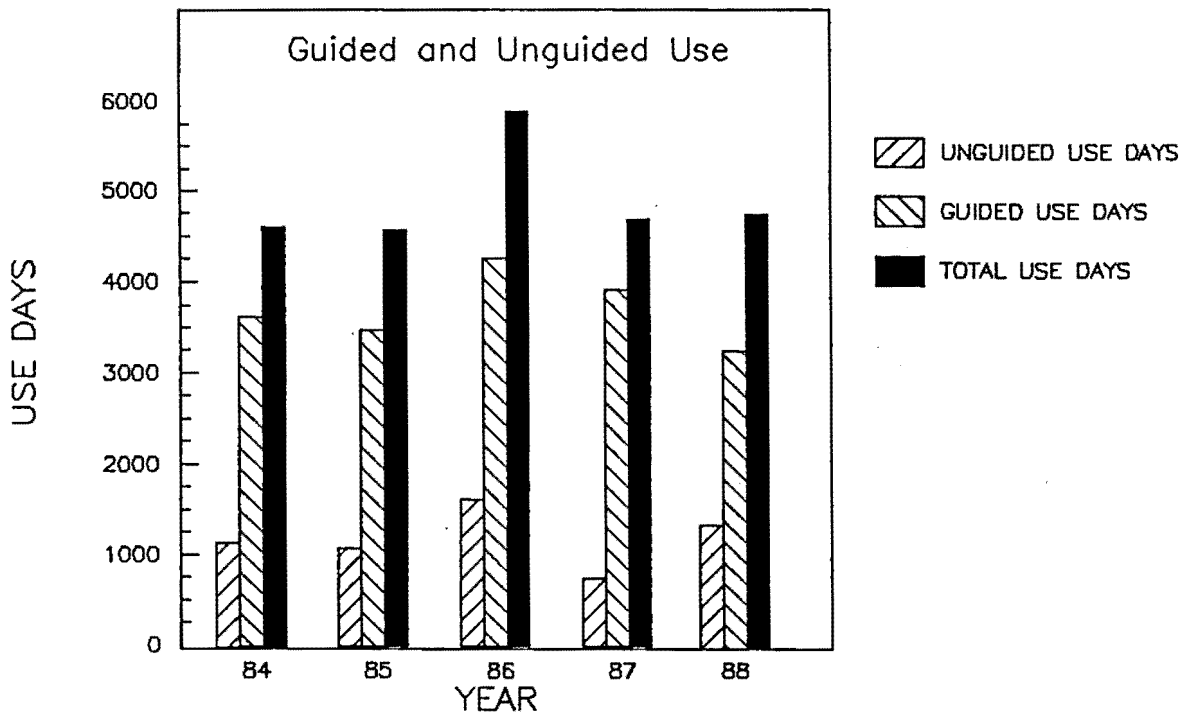


Figure 3. Estimated public use by guided and unguided users, and use within the wilderness and non-wilderness areas of the Kanektok River, Alaska, 1984 - 1988.

Estimated Public Use for the Togiak River and Associated Tributaries

Total use days on the Togiak River and associated tributaries declined from a peak in 1984 (4,520) to 1988 (3,436) (Figure 4). Total use days declined by 623 between 1984 and 1985. From 1985 to 1988, use on the main Togiak River has continued to decline while use on the other tributaries has increased. Use occurring on the Togiak tributaries is unknown for 1984. Visitor numbers on the Togiak River decreased from 1,280 in 1984 to 787 people in 1988 (Table 3).

Between 1984 and 1985 float and fly/motorboat access activity on the main Togiak River decreased with slight increases in the other use types (Table 3). Primary access activity is guided fly-in use (39.7% in 1987). Motorboat use days accounted for approximately 21.9%, fly/motorboat 23.1%, and float use 15.3% of the overall use in 1988. Approximately 43.4% of the total use days on the main Togiak River (1985-1988) occurred within the wilderness (Figure 4). Available data indicates that total non-wilderness area use declined by 571 use days between 1985 to 1988.

Guided use on the Togiak River and tributaries peaked in 1984 at 4,144 guided use days (Figure 4). Total guided use days declined to 2,824 in 1988, although the proportion of reported use on the Togiak tributaries increased. Guided use constitutes the only known component of public use in these areas. Guided use was reported to be 635 use days in 1985, peaked in 1987 at 1,190 use days, and was slightly less in 1988 (932 use days) (Figure 4).

Guided use accounted for between 92% (1984) to 82% (1988) of the total visitor use days within the Togiak Drainage (Figure 4). The use pattern shifted away from float trips between 1984 & 85, so did the level of use days (Table 3). A decline of 694 guided use days occurred between these two years, even though number of clients increased by 23. Fly-in use accounted for 47.6% of the guided access activity in the Togiak Drainage in 1988, with motorboat (21%), float (3.3%) and fly/motorboat (28.1%) making up the remaining 52.4% (Table 3). Approximately 38.6% of the guided use on the main Togiak River (1985-1988) occurred within the wilderness area.

Unguided use days increased from 1984 (376) to a peak in 1986 (730) and then declined to 612 in 1988 (Figure 4). The number of unguided visitors increased from 1984 (79) to 1988 (151) (Table 4). Float use comprised 70.6% of the unguided use in 1988. Approximately 61% of the unguided use between 1985-1988 occurred within the wilderness area.

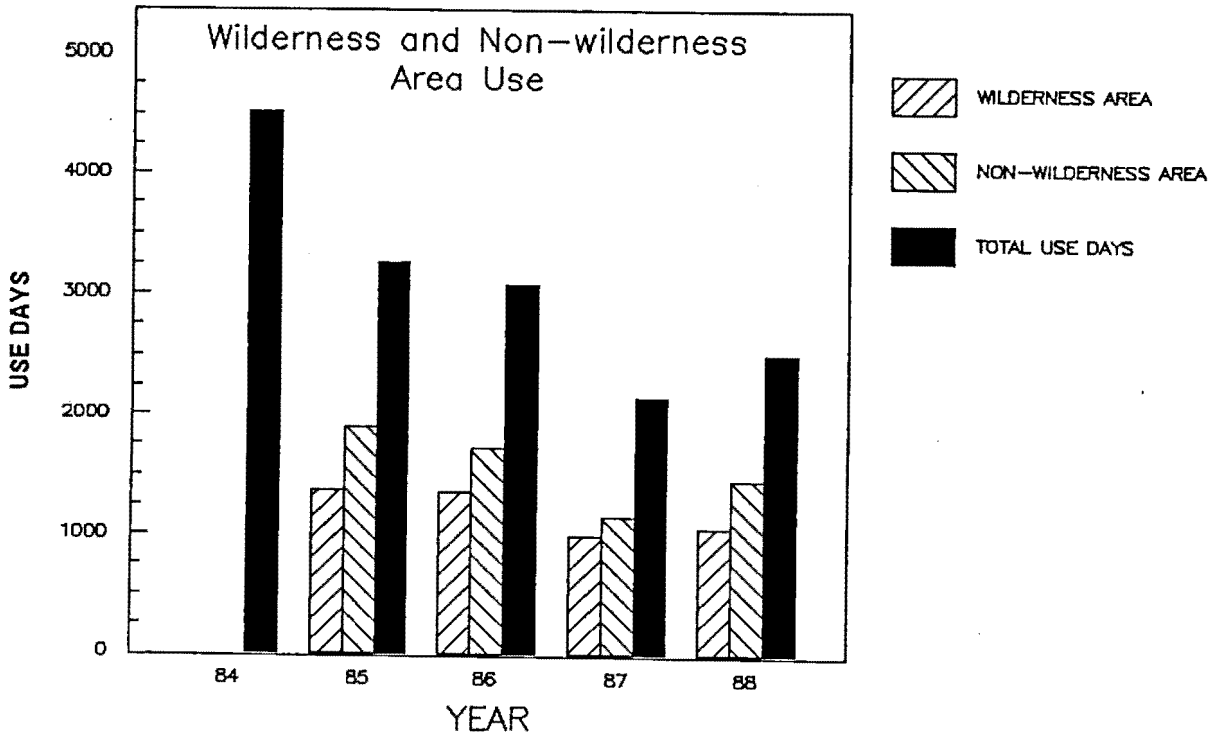
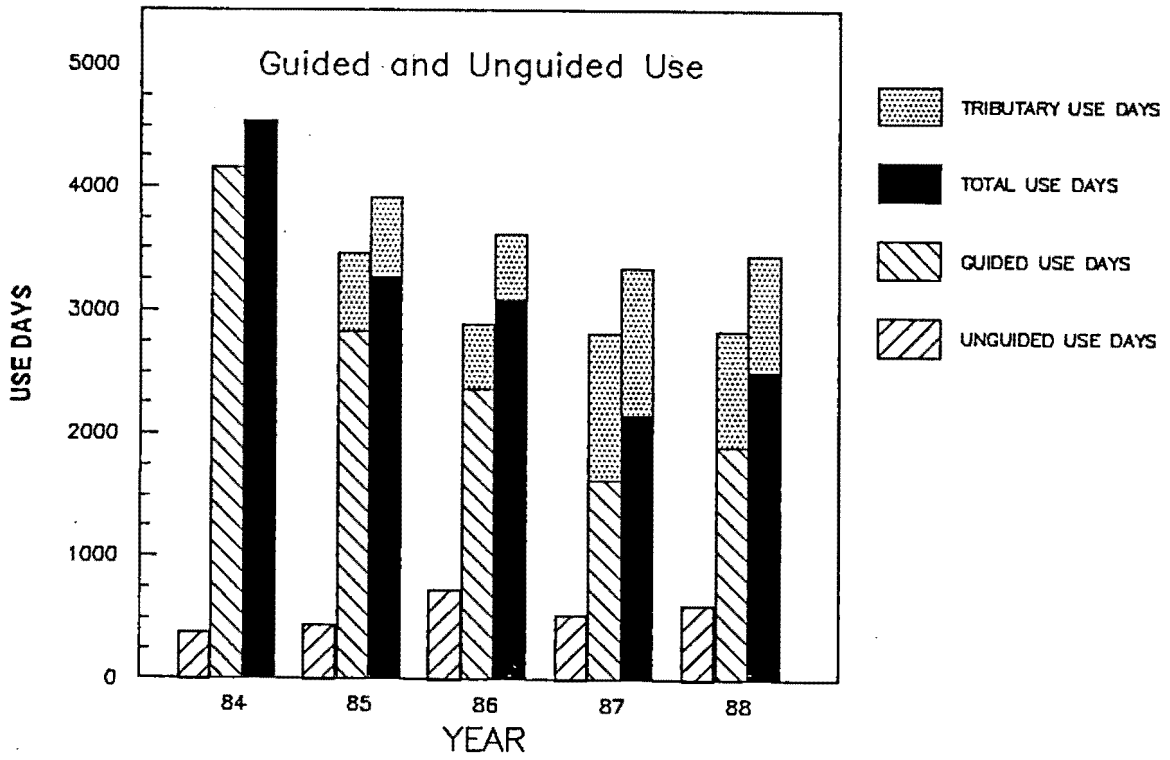


Figure 4. Estimated public use by guided and unguided users for the Togiak River and tributaries and use within the wilderness and non-wilderness areas of the main Togiak River, Alaska, 1984 - 1988.

Estimated Public Use for the Goodnews River

Total use days on the Goodnews River increased slightly from 1984 (2,352) to a peak estimate of 2,611 in 1988 (Figure 5). Motorboat use has been the primary access activity, but fell from 60% of the total use days in 1986 to 37.4% in 1988 (Table 4.). Float use increased to 44.3% of the total use days in 1988. The two fly in groups accounted for the remaining 18.3% of the 1988 total use. Wilderness area use declined from 1985 to 1988 with 1,605 and 1,032 use days respectively (Figure 5). Approximately 54% of the total use from 1985-1988 occurred within the wilderness area. Available data indicates that non-wilderness area use days remained relatively stable for the years 1985-87, and increased in 1988 by 519 use days over the previous year.

Guided use days averaged 69.5% of the total estimated use days on the Goodnews River between 1984 and 1988 (Figure 5). Guided use peaked in 1984 (1,818 use days) and 1986 (1,809), but declined to 1,569 use days by 1988. The number of guided visitors actually increased slightly in 1987 over the past three years (Table 4). Motorboat use is the primary use by guided visitors accounting for 59.7% of the guided effort in 1988. Guided non-wilderness area use on the Goodnews River increased 172 use days from 1985 to 1987, but decreased by 281 from 1987 to 1988.

Unguided use fluctuated between a low in 1984 of 534 use days and a peak in 1988 of 1,042 use days (Figure 5). The number of unguided users averaged 151 since 1984, with a high of 177 visitors in 1988 (Table 4). Float use is the primary unguided activity (94.2%) on the Goodnews River. Approximately 66% of the unguided use, from 1985 to 1988, occurred within the wilderness area.

DISCUSSION

Available data indicates that public use has declined slightly on the Togiak Refuge between 1984 and 1988. Fluctuations in guided effort, which constitutes between 74% and 83% of the total public use effort on the refuge, have influenced this overall apparent decline.

The decrease observed in guided effort from 1984 is a function of the following possibilities:

- The reporting requirements in 1984 were very liberal and allowed 'ballpark' estimates;
- In light of the use moratorium, established in the Spring of 1984, the 1984 use figures were inflated by some operators to make allowance for potential expansion in their operation;
- A reduction in the state sport fish harvest limit regulations for king salmon and rainbow trout in the Kuskokwim Bay drainages for the 1985 season may have influenced angler interest;
- A season of less than desirable weather (rain and high water) may have contributed in decreasing angler interest and accessibility in

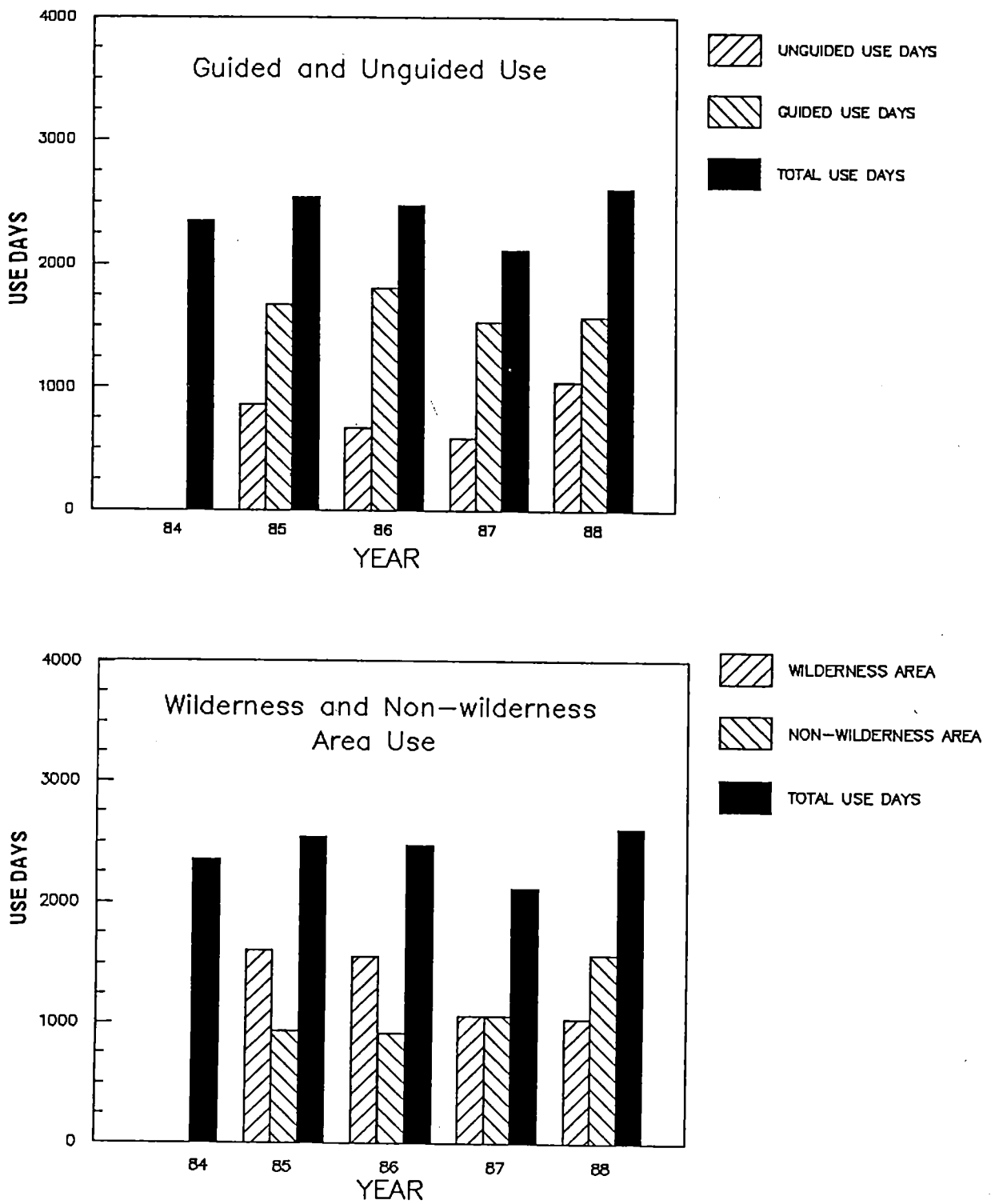


Figure 5. Estimated public use by guided and unguided users, and use within the wilderness and non-wilderness areas of the Goodnews Rivers, Alaska, 1984 - 1988.

1985;

-Guides may have felt that their use outside the refuge wilderness area did not need to be reported for the 1985 through 1988 seasons; or:

-Guides may have shifted their use pattern and actually use the refuge less since 1984.

The sport fish effort survey conducted by the Refuge and the Alaska Department of Fish and Game estimated total use on the Togiak River to be 2,807 use days in 1984 (Minard and Lisac, 1984) and 2,905 use days in 1985 (Refuge Files, 1985), an increase of approximately 100 use days. Guides operating on the Togiak River reported 4,144 and 3,450 use days in 1984 and 1985, respectively, for the Togiak River and tributaries, indicating a decrease of nearly 700 use days. The moratorium was implemented to limit the number of guides and their allocation of use at 1984 levels. The allocation of clients and use days to each operator established through the moratorium was actually implemented in 1985, but based on the use reported by the guides in 1984. This information along with more accurate required use reporting format suggest that guides may have inflated their actual 1984 use levels.

Institution of the moratorium in 1984 and the subsequent decision that only wilderness area use could be limited by the Service was proposed as the source for increased use, crowding and conflicts in the lower, non-wilderness portions of the Kanektok, Togiak and Goodnews Rivers. Guided use shows a slight increase in the proportion of non-wilderness use from 1985 (49%) to 1988 (52%). However, the guided non-wilderness and total use days of the combined three rivers did decline from 1985 to 1988. It does not appear that the refuge moratorium, preventing increases in use or operators in the Togiak Wilderness area, has promoted increased use in the non-wilderness river sections.

The non-wilderness portions of the Kanektok, Togiak and Goodnews Rivers have been determined to be navigable, hence, the submerged and surrounding lands belong to the State of Alaska, native corporations, and the Bureau of Land Management. The wilderness portions of these rivers are 'status undetermined waters' and the Service maintains management authority over the water column. Since the Service does not issue permits, or have jurisdiction over the activities occurring on the water columns in the non-wilderness portions of these three rivers, it is presumed that there is could be some public use unaccounted for in this report.

Air taxi trip reports combined with the public use survey camps have provided more accurate estimates of unguided public use levels. Unguided float use, which increased from 1984 to 1986, declined by 1,092 use days and 81 fewer people from 1986 to 1987. Preliminary results from the analysis of the National River Recreation Survey, a mail out questionnaire disseminated to refuge float visitors in 1986, suggest that a majority of the floaters were dissatisfied with the amount of motorboat traffic and other anglers. It is possible that some of these people have looked elsewhere for a wilderness float trip. Unguided float use was

again up in 1988 (2,899 use days).

The accuracy of unguided fly-in and motorboat use estimates are unknown. No means for acquiring this data, other than sporadic observations and as a side benefit of other projects, has been devised.

Approximately 42% (4,903) of the 1988 refuge public use occurred on the Kanektok River (Table 5). The remaining use occurred on the Goodnews River (24%), Togiak River (23%), Togiak tributaries and associated drainages (8%), and the Arolik River (3%).

Use of the Togiak River Tributary and associated drainages has been increasing from 1985 to 1987. 1985 is the first year that use is estimated for these areas. The 1986 estimate is interpolated for some operators who did not adequately report their use. It is not known whether this is an actual increase or whether current reporting requirements allow better separation of individual operators use areas. It is also possible that some guides could be looking for less crowded, more remote fishing areas to take their clients. The distribution of rainbow trout in the Togiak Drainage may be promoting tributary use. Rainbow trout are a valued sport fish and are relatively abundant in some of the Togiak Tributary waters and not in the main Togiak River. Use on the Arolic River has been linked to the Quinhagak Village Corporation willingness to allow operators to take clients onto their lands. One Kanektok River operator received permission to use corporation land on the Arolic River in 1986 and increased that use in 1987 and 1988.

Estimates presented in this report carry an unknown confidence interval and although not rounded off, should be considered ball park estimates of the overall use levels from the seven user types (guided or unguided-float, fly, or motorboat and guided fly/motorboat).

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TABLE 1. ESTIMATED PUBLIC USE FOR THE KANEK TOK, TOGI AK & GOODNEWS RIVERS, AND ASSOCIATED TRIBUTARIES, 1984-1988.

GUIDED USE =====	1984 REPORTED USE		1985 REPORTED USE DAYS				1986 REPORTED USE DAYS				1987 REPORTED USE DAYS				1988 REPORTED USE DAYS							
	USE		CLIENTS	WILD NON-WILD			CLIENTS	WILD NON-WILD			CLIENTS	WILD NON-WILD			CLIENTS	WILD NON-WILD						
	CLIENTS	DAYS		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL				
FLAT	378	2911	243	1515	452	1967	240	1658	528	2186	306	1869	609	2478	262	1669	487	2156				
FLY	102	304	453	90	443	533	361	58	303	361	199	81	22	103	376	209	321	530				
FLY/MBOAT	1039	2905	797	1310	808	2119	901	1065	787	1852	594	1018	713	1731	333	521	729	1250				
/MBOAT	478	3471	499	1201	2248	3363	570	1403	2628	4031	473	612	2159	2771	515	854	2005	2859				
TOTAL	1997	9591	1992	4116	3951	7982	2072	4184	4246	8430	1572	3580	3503	7083	1486	3253	3542	6795				
GUIDED TRIBUTARY USE																						
TOGI AK TRIBUTARIES							635				530				1190				932			
AROLIK RIVER							0				173				276				324			
TOTAL GUIDED USE DAYS							8617				9133				8549				8051			
UNGUIDED USE =====	1984 ESTIMATED USE		1985 ESTIMATED USE DAYS				1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS							
	USE		PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD						
	PEOPLE	DAYS		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL				
FLAT	195	1381	265	1492	536	2028	302	2023	746	2769	221	1198	479	1677	291	1839	755	2594				
FLY	286	286	144	101	73	174	70	43	43	86	50	3	47	50	60	26	49	75				
/MBOAT	240	312	105	50	115	165	100	35	135	170	110	25	125	150	150	55	175	230				
TOTAL	721	1979	514	1643	724	2367	472	2101	924	3025	381	1226	651	1877	501	1920	979	2899				
THREE RIVERS' TOTAL USE =====	1984 ESTIMATED USE		1985 ESTIMATED USE DAYS				1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS							
	USE		PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD			PEOPLE	WILD NON-WILD						
	PEOPLE	DAYS		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL		AREA	AREA	TOTAL				
FLAT	573	4292	508	3007	988	3995	542	3681	1274	4955	527	3067	1088	4155	553	3508	1242	4750				
FLY	388	590	597	191	516	707	431	101	346	447	249	84	69	153	436	235	370	605				
FLY/MBOAT	1039	2905	797	1310	808	2119	901	1065	787	1852	594	1018	713	1731	333	521	729	1250				
/MBOAT	718	3783	604	1251	2363	3528	670	1438	2763	4201	583	637	2284	2921	665	909	2180	3089				
TOTAL	2718	11570	2506	5760	4675	10349	2544	6285	5170	11455	1953	4806	4154	8960	1987	5173	4521	9694				
TRIBUTARY USE																						
TOGI AK TRIBUTARIES							635				530				1190				932			
AROLIK RIVER							0				173				276				324			
TOTAL REFUGE USE DAYS							10984				12158				10426				10950			

TABLE 2. ESTIMATED PUBLIC USE FOR THE KANEKTOK RIVER, 1984-1988.

GUIDED SUBTOTALS

	1984 REPORTED USE			1985 REPORTED USE DAYS			1986 REPORTED USE DAYS			1987 REPORTED USE DAYS			1988 REPORTED USE DAYS					
	CLIENTS	USE		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD				
		DAYS	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA		AREA	TOTAL			
FLOAT	194	1602	170	1067	340	1407	209	1395	482	1877	247	1479	498	1977	228	1472	415	1887
FLY	18	52	25	25	0	25	5	5	0	5	8	12	0	12	19	19	0	19
FLY/MBOAT	96	270	98	420	0	420	39	231	0	231	68	350	20	370	51	98	0	98
/MBOAT	247	1705	238	545	1182	1641	318	555	1604	2159	229	382	1193	1575	260	551	779	1330
TOTAL	555	3629	531	2057	1522	3493	571	2186	2086	4272	552	2223	1711	3934	558	2140	1194	3334

UNGUIDED SUBTOTALS

	1984 ESTIMATED USE			1985 ESTIMATED USE DAYS			1986 ESTIMATED USE DAYS			1987 ESTIMATED USE DAYS			1988 ESTIMATED USE DAYS					
	PEOPLE	USE		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD				
		DAYS	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA		AREA	TOTAL			
FLOAT	90	691	120	680	271	951	164	1168	380	1548	92	529	184	713	123	920	260	1180
FLY	210	210	45	51	24	75	40	17	23	40	20	3	17	20	20	21	14	35
/MBOAT	168	168	30	0	30	30	30	0	40	40	30	0	30	30	30	10	20	30
TOTAL	468	1069	195	731	325	1056	234	1185	443	1628	142	532	231	763	173	951	294	1245

KANEKTOK RIVER

TOTAL USE

	1984 ESTIMATED USE			1985 ESTIMATED USE DAYS			1986 ESTIMATED USE DAYS			1987 ESTIMATED USE DAYS			1988 ESTIMATED USE DAYS					
	PEOPLE	USE		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD				
		DAYS	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA		AREA	TOTAL			
FLOAT	284	2293	290	1747	611	2358	373	2563	862	3425	339	2008	682	2690	351	2392	675	3067
FLY	228	262	70	76	24	100	45	22	23	45	28	15	17	32	39	40	14	54
FLY/MBOAT	96	270	98	420	0	420	39	231	0	231	68	350	20	370	51	98	0	98
/MBOAT	415	1873	268	545	1212	1671	348	555	1644	2199	259	382	1223	1605	290	561	799	1360
TOTAL	1023	4698	726	2788	1847	4549	805	3371	2529	5900	694	2755	1942	4697	731	3091	1488	4579

AROLIK RIVER

0

173

276

324

4549

6073

4973

4903

TABLE 3. ESTIMATED PUBLIC USE FOR THE TOGIAK RIVER, 1984-1988.

GUIDED SUBTOTALS

	1984 REPORTED USE		1985 REPORTED USE DAYS				1986 REPORTED USE DAYS				1987 REPORTED USE DAYS				1988 REPORTED USE DAYS			
	USE		WILD NON-WILD				WILD NON-WILD				WILD NON-WILD				WILD NON-WILD			
	CLIENTS	DAYS	CLIENTS	AREA	AREA	TOTAL	CLIENTS	AREA	AREA	TOTAL	CLIENTS	AREA	AREA	TOTAL	CLIENTS	AREA	AREA	TOTAL
FLOAT	178	1257	68	408	102	510	28	224	40	264	33	184	59	243	12	87	6	93
FLY	76	228	428	65	443	508	356	53	303	356	191	69	22	91	327	162	251	413
FLY/MBOAT	896	2353	647	552	782	1335	808	533	764	1297	470	354	669	1023	214	322	471	793
/MBOAT	51	306	81	26	436	462	72	128	304	432	72	56	204	260	83	129	464	593
TOTAL	1201	4144	1224	1051	1763	2815	1264	938	1411	2349	766	663	954	1617	636	700	1192	1892
Reported Tributary Use*						635				530				1190				932
						3450				2879				2807				2824

UNGUIDED SUBTOTALS

	1984 ESTIMATED USE		1985 ESTIMATED USE DAYS				1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS			
	USE		WILD NON-WILD				WILD NON-WILD				WILD NON-WILD				WILD NON-WILD			
	PEOPLE	DAYS	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL
FLOAT	45	270	36	220	47	267	75	380	240	620	62	310	128	438	51	305	127	432
FLY	16	16	90	50	40	90	20	10	10	20	10	0	10	10	20	5	15	20
/MBOAT	18	90	30	45	45	90	30	30	60	90	40	20	60	80	80	40	120	160
TOTAL	79	376	156	315	132	447	125	420	310	730	112	330	198	528	151	350	262	612

TOGIAK RIVER
TOTAL USE

	1984 ESTIMATED USE		1985 ESTIMATED USE DAYS				1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS			
	USE		WILD NON-WILD				WILD NON-WILD				WILD NON-WILD				WILD NON-WILD			
	PEOPLE	DAYS	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL	PEOPLE	AREA	AREA	TOTAL
FLOAT	223	1527	104	628	149	777	103	604	280	884	95	494	187	681	63	392	133	525
FLY	92	244	518	115	483	598	376	63	313	376	201	69	32	101	347	167	266	433
FLY/MBOAT	896	2353	647	552	782	1335	808	533	764	1297	470	354	669	1023	214	322	471	793
/MBOAT	69	396	111	71	481	552	102	158	364	522	112	76	264	340	163	169	584	753
TOTAL	1280	4520	1380	1367	1895	3262	1389	1358	1721	3079	878	993	1152	2145	787	1050	1454	2504
GUIDED TRIBUTARY USE						635				530				1190				932
						3897				3609				3335				3436

TABLE 4. ESTIMATED PUBLIC USE FOR THE GOODNEWS RIVER, 1984-1988

GUIDED SUBTOTALS

	1984 REPORTED USE			1985 REPORTED USE DAYS			1986 REPORTED USE DAYS				1987 REPORTED USE DAYS				1988 REPORTED USE DAYS				
	CLIENTS	USE		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		CLIENTS	WILD NON-WILD		
		DAYS			AREA	AREA		TOTAL	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA	AREA
FLOAT	6	52		5	40	10	50	3	39	6	45	26	206	52	258	22	110	66	176
FLY	8	24		0	0	0	0	0	0	0	0	0	0	0	0	30	28	70	98
FLY/MBOAT	47	282		52	338	26	364	54	301	23	324	56	314	24	338	68	101	258	359
MBOAT	180	1460		180	630	630	1260	180	720	720	1440	172	174	762	936	172	174	762	936
TOTAL	241	1818		237	1008	666	1674	237	1060	749	1809	254	694	838	1532	292	413	1156	1569

UNGUIDED SUBTOTALS

	1984 ESTIMATED USE			1985 ESTIMATED USE DAYS			1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS				
	PEOPLE	USE		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		
		DAYS			AREA	AREA		TOTAL	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA	AREA
FLOAT	60	420		109	592	218	810	63	475	126	601	67	359	167	526	117	614	368	982
FLY	60	60		9	0	9	9	10	16	10	26	20	0	20	20	20	0	20	20
/MBOAT	54	54		45	5	40	45	40	5	35	40	40	5	35	40	40	5	35	40
TOTAL	174	534		163	597	267	864	113	496	171	667	127	364	222	586	177	619	423	1042

GOODNEWS RIVER
TOTAL USE

	1984 ESTIMATED USE			1985 ESTIMATED USE DAYS			1986 ESTIMATED USE DAYS				1987 ESTIMATED USE DAYS				1988 ESTIMATED USE DAYS				
	PEOPLE	USE		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		PEOPLE	WILD NON-WILD		
		DAYS			AREA	AREA		TOTAL	AREA		AREA	TOTAL		AREA	AREA		TOTAL	AREA	AREA
FLOAT	66	472		114	632	228	860	66	514	132	646	93	565	219	784	139	724	434	1158
FLY	68	84		9	0	9	9	10	16	10	26	20	0	20	20	50	28	90	118
FLY/MBOAT	47	282		52	338	26	364	54	301	23	324	56	314	24	338	68	101	258	359
MBOAT	234	1514		225	635	670	1305	220	725	755	1480	212	179	797	976	212	179	797	976
TOTAL	415	2352		400	1605	933	2538	350	1556	920	2476	381	1058	1060	2118	469	1032	1579	2611

TABLE 5. Public Use Summary 1984 - 1988, For The Kanektok, Togiak, Goodnews Rivers, and Other Systems*, Wilderness and Non-Wilderness Areas Combined.

		NUMBER OF USE DAYS BY YEAR FOR ENTIRE RIVER				
		<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
KANERICK R.	GUIDED	3629	3493	4272	3934	3334
	UNGUIDED	1069	1056	1628	763	1245
	TOTAL	4698	4549	5900	4697	4579
TOGIAK R.	GUIDED	4144	2815	2349	1617	1892
	UNGUIDED	376	447	730	528	612
	TOTAL	4520	3262	3079	2145	2504
GOODNEWS R.**	GUIDED	1818	1674	1809	1532	1569
	UNGUIDED	534	864	667	586	1042
	TOTAL	2352	2538	2476	2118	2611
OTHER SYSTEMS*	GUIDED	-	635	703	1466	1256
	UNGUIDED	-	-	-	-	-
	TOTAL	-	635	703	1466	1256
REFUGE TOTAL	GUIDED	9591	8617	9133	8549	8051
	UNGUIDED	1979	2367	3025	1877	2899
	TOTAL	11,570	10,984	12,158	10,426	10,950

*Other Systems include the Arolic, Gachiak, Pungkepuk, Ongivinuck, Kulukak, Negukthlik, Ungalikthluk, Ongoke, Matogak, Osviak, and Slug Rivers, and Amarka, Ualik, High, and Heart Lakes.

**Goodnews River includes the North, South and Middle Fork Rivers.

APPENDICES

Appendix A. 1984 & 1985 SUP guided end of season use report form.

Appendix B. 1986 & 1987 SUP guide weekly use report form.

Appendix C. Air taxi trip report form.

Appendix D. Togiak NWR public use survey recording form.

ATTACHMENT NO. 2--YEAR END REPORT FORM

TOGIAK NATIONAL WILDLIFE REFUGE

OPERATOR NAME: _____

SUP NUMBER _____

MONTH REPORTING SEPTEMBER

WEEK NO.	DATES	NO. OF CLIENTS	* TOGIAK DRAINAGE		° GOODNEWS DRAINAGE		' KANEKTOK DRAINAGE		+ OTHER DRAINAGE	
			Client Use Days	Location**	Client Use Days	Location	Client Use Days	Location	Client Use Days	Location
1										
2										
3										
4										
5										

KEY: SYMBOL DEFINITIONS:

* Separate into upstream and downstream from Pungokebuk River.

° Separate into upstream area only, above refuge wilderness boundary.

' Separate into areas above and below refuge wilderness boundary.

+ Include any lake or river that does not drain into the Togiak, Goodnews, or Kanektok Rivers

** Specify the exact location of use, either by lake or tributary for each drainage used.

1984 and 1985 Special Use Permit end of the season use report form.

Appendix A.

This form should be completed by each of your guides and pilots who spend fishing time with your clients on the refuge.
 You need to collect these weekly and return to the refuge office.

WEEK 1

THIS REPORT REFLECTS ACTIVITY FROM June 7
 TO June 13, 1987. MAIL ON June 14, 1987

TOGIAK NATIONAL WILDLIFE REFUGE

ATTACHMENT No. 2, Weekly Use Report Form

GUIDE OR ASSISTANTS' NAME _____

PILOTS' NAME _____

FLY OUT _____

PERMITTEE _____

CAMP LOCATION _____

PLANE # NUMBER (OR AIR TAXI NAME) _____

MOTORBOAT _____

SUP NO. _____

RAFT TRIP _____

DATE	NUMBER OF CLIENTS	NUMBER OF HOURS FISHED	AREAS FISHED (USE A SEPARATE LINE FOR EACH AREA FISHED: SEE (1)) (NOTE: CHECK SUP FOR ALLOWED AREAS OF USE)														NUMBER OF FISH (NO. CAUGHT (C)/NO. KEPT (K))											CONTENTS									
			Togiak Lake	Togiak River Above NB	Togiak River Below NB	Gechiak R. & Lake	Purokepuk R. & Lake	Ongivivluk R. & Lake	Other (Specify)	Ungavlitluk	Negullitluk	Kulukuk	Kagati Lake	Kavektok R. Above NB	Kavektok R. Below NB	Other Tributaries	Arclic R. Above NB	Arclic R. Below NB	Godnews Lake	Godnews Rivers	North F. Above NB	North F. Below NB	Middle F. Above NB	Middle F. Below NB	South Fork	Other Areas (Specify)	King		Chinook	Red	Chui	Pink	Char/Dolly	Grayling	Rainbow Trout	Lake Trout	Other (Specify)
			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	

(1) USE A SEPARATE LINE FOR EACH AREA FISHED: (IF YOU FISH 3 DIFFERENT AREAS IN ONE DAY USE 3 LINE W/ SAME DATE LABELED).
 (IF YOU DROP 2 SEPARATE GROUPS OFF, RECORD HOURS, AREA FISHED, AND CATCH DATA SEPARATLY FOR EACH — USE 2 SEPARATE LINES).

Appendix C.
Air taxi trip report form (1984 - 1988).

TOGIAK NATIONAL WILDLIFE REFUGE
P.O. Box 10201
DILLINGHAM, ALASKA 99576

MONTHLY SPECIAL USE PERMIT REPORT FORM

Company Name _____ S.U.P. NO. _____

Party Size _____ Guided Yes _____ No _____ Number of Guides _____

Party Destination _____ Departure Date _____
(drop off point)

Pick up point _____ Return Date _____

Proposed Length of Stay: _____ (days), _____ (nights)

Major Purpose: Fishing Hunting Claim Assessment Photography
(Circle One) Hunting Other (specify) _____

Other Activities: Fishing Hunting Claim Assessment Photography
(Circle One) Hiking Other (specify) _____

Equipment:
(Number of Each) Rafts _____ Kayak _____
(Own) _____ Canoe _____ Inflatable Sportboat _____
(Rent) _____ Other (specify) _____ No. _____

Please Print Clearly!

Party Leader Name and Address: _____
OR
Operators' Name _____

Phone: (____) _____

Bad weather can delay pickup dates.

Do you have food for extra days out? Yes _____ No _____

EMERGENCY NOTIFICATION INFORMATION:

NAME: _____ ADDRESS _____

CITY/STATE _____ ZIP _____

PHONE (____) _____

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PARTY NO.	NO. RAFTS	DATE				LAKE CAP PUBLIC USE SURVEY 1985										MONTH OF:			
		MONTH	ARRIVE	DEPART	PICK UP	No. DAYS		GUIDED	Number of Party / PEOPLE	No. USE DAYS		NUMBER GUIDES	No. USE DAYS		PARTY PURPOSE		ORIGIN	AIR TAXI & PLANE No.	Guide to person / COMMENTS
						LAKE	RIVER	Y		N	G		LAKE	RIVER					