

**Fishery Data Series No. 01-9**

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# **Southeast Alaska Recreational Cabin Survey, 1999**

by

**J. Douglas Jones**

and

**Kurt Kondzela**

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June 2001

Alaska Department of Fish and Game

Division of Sport Fish



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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Mathematics, statistics, fisheries</b>	
centimeter	cm	All commonly accepted abbreviations.	e.g., Mr., Mrs., a.m., p.m., etc.	alternate hypothesis	$H_A$
deciliter	dL	All commonly accepted professional titles.	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	e
gram	g	and	&	catch per unit effort	CPUE
hectare	ha	at	@	coefficient of variation	CV
kilogram	kg	Compass directions:		common test statistics	F, t, $\chi^2$ , etc.
kilometer	km			confidence interval	C.I.
liter	L			correlation coefficient	R (multiple)
meter	m	east	E	correlation coefficient	r (simple)
metric ton	mt	north	N	covariance	cov
milliliter	ml	south	S	degree (angular or temperature)	$^\circ$
millimeter	mm	west	W	degrees of freedom	df
		Copyright	©	divided by	$\div$ or / (in equations)
<b>Weights and measures (English)</b>		Corporate suffixes:		equals	=
cubic feet per second	ft <sup>3</sup> /s	Company	Co.	expected value	E
foot	ft	Corporation	Corp.	fork length	FL
gallon	gal	Incorporated	Inc.	greater than	>
inch	in	Limited	Ltd.	greater than or equal to	$\geq$
mile	mi	et alii (and other people)	et al.	harvest per unit effort	HPUE
ounce	oz	et cetera (and so forth)	etc.	less than	<
pound	lb	exempli gratia (for example)	e.g.,	less than or equal to	$\leq$
quart	qt	id est (that is)	i.e.,	logarithm (natural)	ln
yard	yd	latitude or longitude	lat. or long.	logarithm (base 10)	log
Spell out acre and ton.		monetary symbols (U.S.)	\$, ¢	logarithm (specify base)	log <sub>2</sub> , etc.
<b>Time and temperature</b>		months (tables and figures): first three letters	Jan, ..., Dec	mideye-to-fork	MEF
day	d	number (before a number)	# (e.g., #10)	minute (angular)	'
degrees Celsius	$^\circ\text{C}$	pounds (after a number)	# (e.g., 10#)	multiplied by	x
degrees Fahrenheit	$^\circ\text{F}$	registered trademark	®	not significant	NS
hour (spell out for 24-hour clock)	h	trademark	™	null hypothesis	$H_0$
minute	min	United States (adjective)	U.S.	percent	%
second	s	United States of America (noun)	USA	probability	P
Spell out year, month, and week.		U.S. state and District of Columbia abbreviations	use two-letter abbreviations (e.g., AK, DC)	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
<b>Physics and chemistry</b>				probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
all atomic symbols				second (angular)	"
alternating current	AC			standard deviation	SD
ampere	A			standard error	SE
calorie	cal			standard length	SL
direct current	DC			total length	TL
hertz	Hz			variance	Var
horsepower	hp				
hydrogen ion activity	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***FISHERY DATA SERIES NO. 01-9***

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by

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## ABSTRACT

We conducted a mail survey of parties reserving any of 75 U.S. Forest Service (USFS) recreational cabins located on cutthroat trout *Oncorhynchus clarki* and rainbow/steelhead *Oncorhynchus mykiss* systems in Southeast Alaska in 1999. The survey was used to estimate trout (cutthroat and rainbow, combined) and steelhead catch, harvest, and effort by users of these USFS cabins. The overall response rate to our survey was 78%. In 1999, anglers spent an estimated total of 14,964 hours during 3,662 days fishing at the 75 cabins surveyed to harvest 1,814 trout and 2,667 hours during 691 days to harvest 10 steelhead. Anglers also released another 24,993 trout and 714 steelhead for an overall retention rate of 7% for trout and 1% for steelhead. Anglers fishing at cabins located on trout systems in 1999 reported being limited in harvest by trout regulations on 15% of the days they fished. On steelhead systems, anglers reported being limited by regulations only 9% of the days in 1999. At USFS cabins surveyed in both 1993 and 1999, effort and trout and steelhead catches declined in 1999 from those estimated in 1993.

Keywords: Harvest, catch, steelhead, cutthroat trout, rainbow trout, effort, angler, Southeast Alaska, recreation, cabin survey, mail survey.

## INTRODUCTION

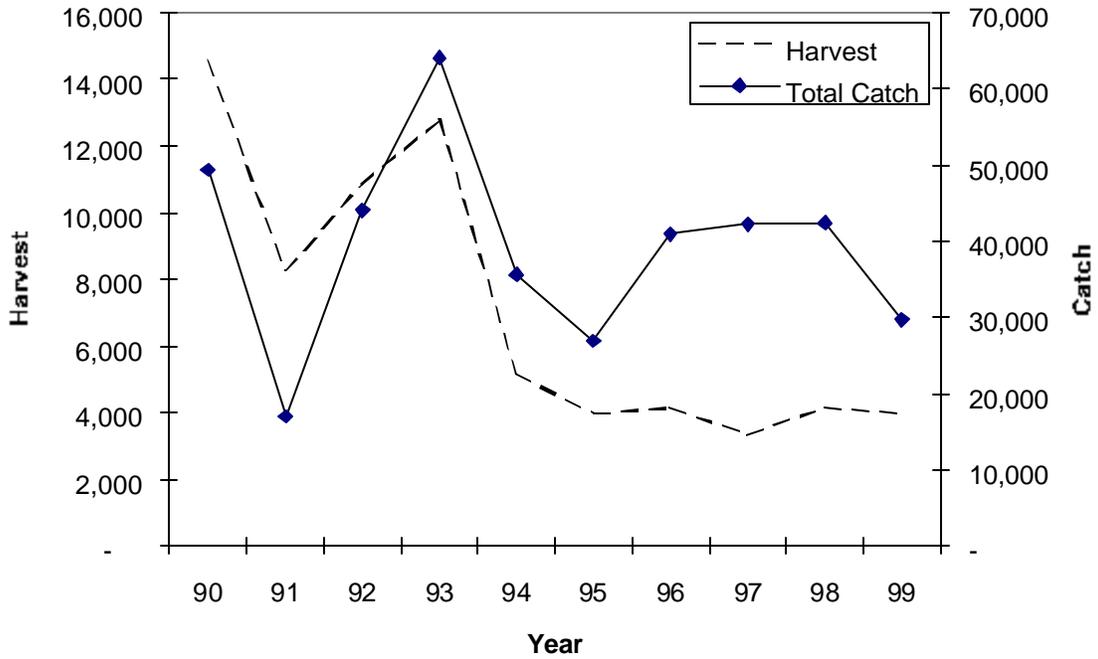
The Alaska Board of Fisheries promulgated more restrictive bag limits and minimum size regulations for trout (cutthroat *Oncorhynchus clarki* and rainbow trout *Oncorhynchus mykiss* combined) and steelhead *Oncorhynchus mykiss* in Southeast Alaska in 1994 which were subsequently modified in 1997 and 2000. Current regionwide regulations for trout include a daily bag and possession limit of two fish from 11 to 22 inches in length. More restrictive regulations apply in a number of lakes and a few local areas with intensive fisheries (e.g., along the Juneau road system). Current regionwide regulations for steelhead include a daily bag limit of one fish, 36 inches or more in length and an annual limit of two fish.

Sport harvest and total catch of trout and steelhead (and other species) in Southeast Alaska are estimated through an annual mail survey conducted by the Alaska Department of Fish and Game (ADF&G), Division of Sport Fish (Howe et al. 2001). This comprehensive survey of all people buying licenses to sport fish in Alaska (hereafter called the Statewide Harvest Survey, or SWHS) shows that a high percentage (85% for cutthroat trout and 69% for steelhead in 1999) of the trout and steelhead harvested by sport fishers in Southeast Alaska are taken in freshwater. The SWHS also shows that Southeast Alaska harvests of cutthroat trout, rainbow trout, and steelhead in freshwater have remained stable since 1994 (Figures 1, 2, and 3). Regulations promulgated in

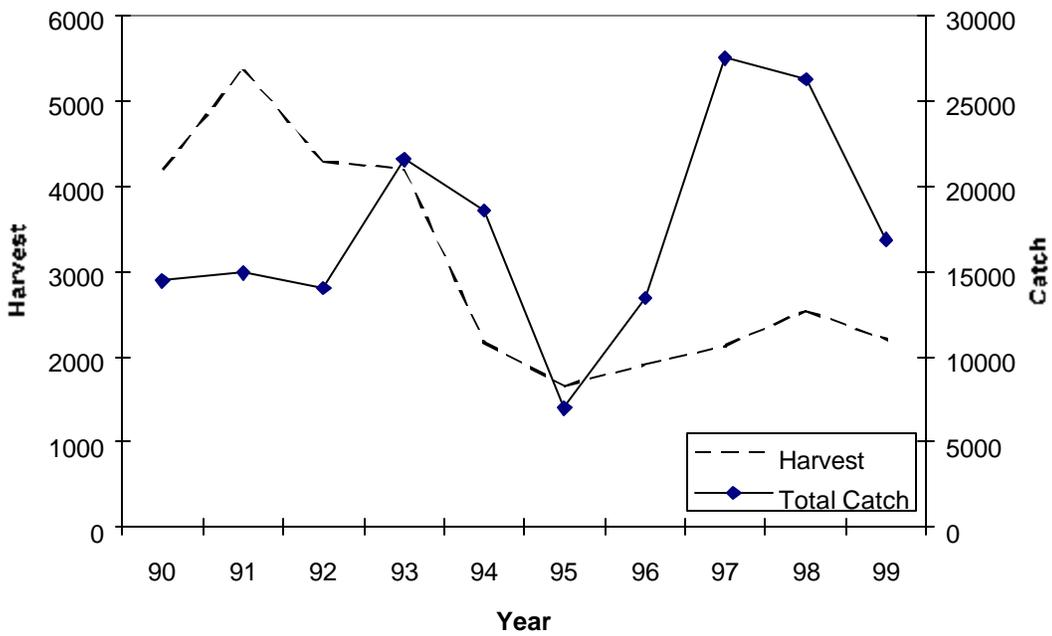
1994 were largely responsible for the decline from relatively large harvests in the early 1990s. Total catch of steelhead reached a peak in 1999 of about 24,000 (Figure 3), while total catches of rainbow trout and cutthroat trout have averaged about 17,000 and 43,000, respectively, since 1990.

Because angler use of most Southeast Alaska drainages is relatively low, sampling rates maintained by the SWHS yield annual harvest estimates for only the largest or most heavily used freshwater systems in the region. As a result, there is a demonstrable need to better evaluate remote fisheries in the region (Schwan 1990). USFS cabins occur on over 50 important cutthroat lakes and steelhead streams in remote areas of Southeast Alaska. Due to the recreational opportunities provided by these cabins, sport fishing from these cabins accounts for a significant proportion of the freshwater trout harvest (e.g., over 30% for cutthroat trout in 1993 and 1994) in the region (Jones 1994, 1995). Periodic monitoring of the angler effort, catch, and harvest at the USFS cabins prior to Board of Fisheries meetings helps us identify potential resource problems and areas where regulations might be liberalized, evaluate effects of regulations, and provide information for Board of Fisheries meetings.

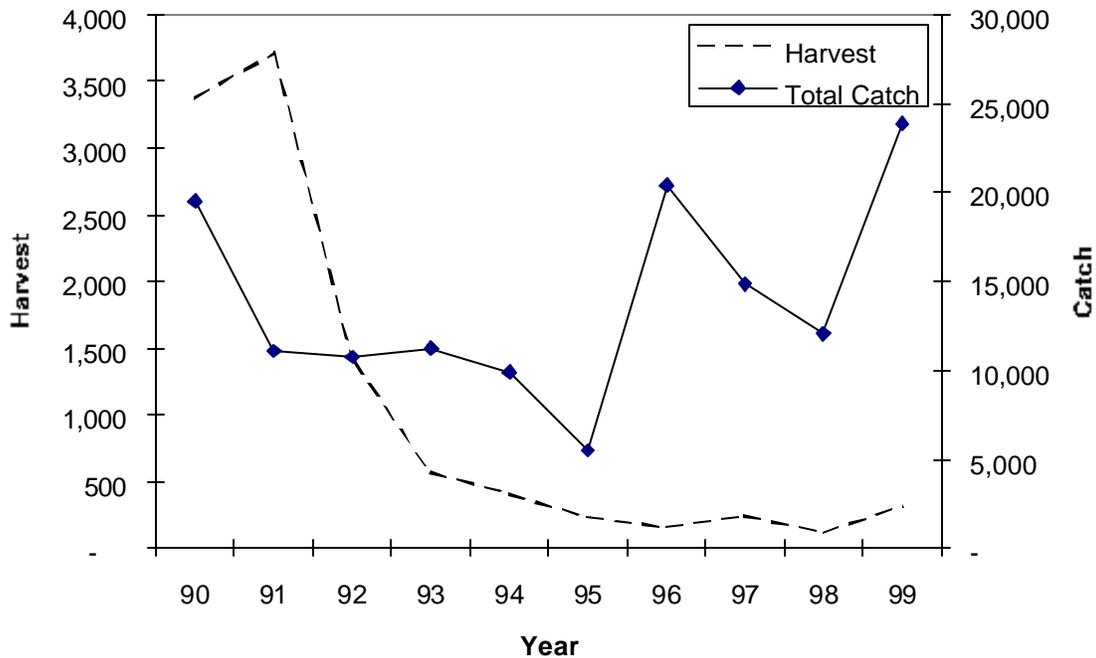
This project queried users of 75 USFS recreational cabins in Southeast Alaska using a mail survey similar to that used in past years (Jones 1993, 1994, 1995). All 75 cabins were on systems that had either cutthroat or rainbow trout, and 34 of the cabins were on streams with



**Figure 1.—Freshwater sport harvests and total catches of cutthroat trout in Southeast Alaska from the Statewide Harvest Survey, 1990–1999.**



**Figure 2.—Freshwater sport harvests and total catches of rainbow trout in Southeast Alaska from the Statewide Harvest Survey, 1990–1999.**



**Figure 3.—Freshwater sport harvests and total catches of steelhead in Southeast Alaska from the Statewide Harvest Survey, 1990–1999.**

steelhead. The objective of sampling in 1999 was to estimate angler effort, catch, and harvest of steelhead and trout (cutthroat and rainbow, combined) in 1999 by system (stream or lake) by parties registered to use these USFS cabins.

The survey also presented the opportunity to query USFS cabin users about the quality of their fishing experience (excellent, good, fair, poor) and attitudes about fishing regulations for trout in Southeast Alaska. Anglers were asked to list particular systems where current regulations might be modified (to allow bait or catch and release fishing only, for example). Similar questions in previous years helped us to monitor the experiences and preferences of these users. The survey also queried USFS cabin users to estimate the proportion of days fished at USFS cabins in 1999 when trout or steelhead harvests were limited because a bag or possession limit was reached.

## METHODS

A mail survey was used to estimate angler effort and trout and steelhead catch and harvest by

registered users of 75 USFS cabins (Appendices A1–A4) in 1999. There are 136 USFS cabins in Southeast Alaska providing fishing opportunities ranging from none to both outstanding marine and freshwater. Sport Fish Area Management Biologists selected 75 cabins for the survey by including USFS cabins on known cutthroat/rainbow systems in Southeast Alaska. The cabins chosen included 34 cabins on steelhead systems. We did not survey any cabins in the Yakutat area.

Mailing addresses of party “heads” registered to use USFS cabins in 1999 were obtained from cabin reservation lists, and a questionnaire and cover letter (see Appendices B1–B3) were sent to all of these parties. Responses from returned questionnaires were used to estimate angler effort for trout and steelhead as well as catch, harvest, and the proportion of fishing days where trout harvests were limited by the bag or possession limit. This survey did not estimate catch, effort, or harvest statistics for anglers not on USFS lists as this was not an objective of this study. These other anglers might include users with day access (by float-plane, for example), users with other lodging, or those who gained access through job-

related activities (i.e., employees of logging companies, ADF&G, or the USFS).

Because users in different seasons tend to have different objectives (e.g., spring steelhead and fall hunting), the survey was stratified by season: spring (January 1 to May 31), summer (June 1 to August 31) and fall (September 1 to December 31). For example, the total and average effort fished for trout in the summer stratum is higher than in the spring or fall (Appendix A2 and A3). Similarly, most reported effort for steelhead occurred in the spring stratum, simply because this is when most steelhead runs occur in Southeast Alaska. Also, providing the questionnaires nearer the time of the visit allowed party heads to more accurately recall their visits.

USFS reservation lists were requested on May 31, September 30, and December 31, 1999. Mailings started on June 7 and October 11, 1999 and January 10, 2000. Mailings to party heads in each list were conducted separately: e.g., all party heads scheduled to have completed use of a cabin between January 1 and May 31 were sent surveys as if they represented a unique population. Within each stratum, up to 3 mailings were sent to each party head. The first mailing was sent to all party heads. If a response was not received within 3 weeks, a reminder letter was sent (see Appendix B4). If after an 3 additional weeks a response was still not received, a second reminder was sent (see Appendix B5).

More than one USFS cabin is found on many trout lakes and steelhead systems. Since angler catches at a given trout lake are assumed a function of the lake (not the cabin) and time of year, estimated totals by seasonal period and lake were made by summing responses across cabins. Thus, non-response from users of one cabin would not lead to a biased total for the lake if responses occurred from another cabin(s). In contrast, angler catches at a given steelhead stream could be a function of the cabin (stream location). Thus, estimated totals for steelhead streams by season were made by summing estimated totals for individual cabins. In this case, non-response from all users of one cabin would have led to a biased total for the stream. The extent of such occurrences was tracked through the data analysis, including summations across seasonal periods.

While our questionnaire was designed to estimate effort for anglers fishing primarily for trout or steelhead, we also asked about angler-days fished for other species (or no target, Appendix B3) because some cabins provide fishing opportunity for a variety of salmon *Oncorhynchus* species as well as Dolly Varden *Salvelinus malma*. Data collected for targets of trout and steelhead allowed estimation of effort in angler-days and angler-hours for both these targets separately, while only angler-days of effort for species other than trout and steelhead were calculated.

In each temporal stratum, the total harvest of responding parties  $H_r$  at each cabin (for the steelhead systems) or lake (for the trout systems) was the sum over mailings  $m = 1..3$ :

$$H_r = \sum_{m=1}^3 H_{r,m} \quad (1)$$

Since response was not 100%, histograms of mean harvest per responding party, total reported harvest, and number of respondents for each mailing were used to decide if response to each mailing was similar. Harvest rates per responding party for cutthroat trout during the spring sharply increased by mailing while release rates during the summer decreased sharply by mailing (Appendix A2). Because these trends were contrary to patterns observed in past surveys (Appendix A4), they were considered sampling artifacts and ignored when expanding for non-responding parties. Similarly, rates of fish release and angler-hours per responding party for steelhead increased by mailing during the summer. These potential trends were also ignored due to the low number of respondents in this stratum that fished for steelhead (6, 2, and 3, Table 1), and the general absence of steelhead from streams during the summer. Since response to each mailing was considered similar, total harvest  $H$  at the cabin (for the steelhead systems) or lake (for the trout systems) was calculated as:

$$H = \left( \frac{N}{N_r} \right) H_r \quad (2)$$

where  $N_r$  = number of responding parties and  $N$  = number of parties on the USFS reservation

list. Variance in each temporal stratum was computed by the formula for simple random sampling (Cochran 1977):

$$\text{var}[H] = \left(1 - \frac{N_r}{N}\right) N^2 \frac{\sum_{i=1}^{N_r} (H_r - \bar{H}_r)^2}{N_r(N_r - 1)} \quad (3)$$

Total effort  $E$  and catch  $C$  at each cabin or lake for trout and steelhead was estimated as above after substituting the appropriate variable for  $H$ .

Estimates by system for the year were the sum of estimates across temporal strata and, for steelhead, cabins on the same stream. Estimates by species for all USFS cabins in 1999 were the sum of all temporal estimates.

Occasionally, items were missing in a response received from a party head. A party head might, for example, have listed catch but not effort, or listed effort but not catch. When this occurred the mean value of the responses received from parties reporting characteristics (effort, catch, party size, etc) similar to those of the party not responding was used to estimate the value of the missing item. This method of imputation seemed preferable to a hot-deck type procedure in which a missing value could be replaced with a sample drawn from existing responses, due to the small and highly skewed distribution of values in the responses to some questions.

The proportion of angler-days that trout harvests were limited because a bag or possession limit was reached at each USFS cabin or lake was estimated as:

$$p_r = D_r / D \quad (4)$$

where  $D_r$  = estimated total number of days that angling was restricted by a bag or possession limit,  $D$  = estimated total number of days of angling, and  $D_r$  and  $D$  are estimated using equations (1) and (2) after substitution of  $D_r$  for  $H_r$  and  $D$  for  $H$ . The proportion of angler-days restricted at all surveyed USFS cabins was estimated by  $\sum D_r / \sum D$ . The proportion of party heads reporting either excellent, good, fair, and poor fishing experiences at each USFS cabin or lake was calculated as  $p_r = E_r / E$ , where  $E_r$

= count of respondents reporting experience  $r$  and  $E = \sum E_r$ .

## RESULTS

Of the 1,226 parties that reserved cabins in 1999, 962 responded to the survey for an overall response rate of 78% (Table 1). Given this high response rate, the likelihood of a substantial non-response bias was minimal. About 87% (841) of the 962 parties that responded to the survey reported they used their cabin reservation in 1999. Average size of responding parties that used their cabin reservation was 2.3 members. About 63% (528) of the 841 respondents using their reservation reported they had fished during their stay (Table 1).

Users from 44 different states in the USA reserved USFS recreational cabins in Southeast Alaska. About 66% (804 of 1,223 total parties) listed Alaskan addresses. Other parties reserving cabins in Southeast Alaska in 1999 were from as far away as Japan, Germany, Switzerland, and Malaysia.

The Windfall Lake cabin, a 3.5 mile (one-way) hike off the road system near Juneau, had the most registered parties with a total of 158 parties reserving the cabin in 1999 (Table 2). Peterson Lake, a 4.3 mile (one-way) hike off the Juneau roadside, was the second highest with 110 registered parties.

Anglers fished an estimated total of 14,964 hours during 3,662 days at the USFS recreational cabins to harvest 1,814 trout and 2,667 hours during 691 days to harvest 10 steelhead (Table 2). Anglers also released another 24,993 trout for an overall retention rate of 7% and 714 steelhead for an overall retention rate of 1.4%. Anglers reported their fishing was restricted by current regulations on 15% of the days they fished for trout and on just under 9% of the days they fished for steelhead.

Effort and catch for trout and steelhead was highly variable regionwide with some sites being much more popular than others (Table 2). The Peterson and Windfall Lake cabins, which had the highest number of reservations, were not used that heavily for fishing and produced only modest catches. The lakes with the most effort for trout were

**Table 1.—Number of parties responding to the cabin survey, number not responding, and numbers fishing for trout, steelhead, and all species by mailing and survey stratum.**

SEASON	TYPE OF RESPONSE	No. of parties	Parties who fished	Parties who fished for:	
				Trout	Steelhead
Spring (238 parties)	Responded 1st mailing	89	42	27	24
	Responded 2nd mailing	67	34	22	19
	Responded 3rd mailing	25	13	6	7
	Total responding	181	89	55	50
	Undeliverable	7			
	No response	50			
Summer (799 parties)	Responded 1st mailing	366	243	196	6
	Responded 2nd mailing	185	107	79	2
	Responded 3rd mailing	77	47	42	3
	Total responding	628	397	317	11
	Undeliverable	35			
	No response	136			
Fall (189 parties)	Responded 1st mailing	105	35	27	8
	Responded 2nd mailing	30	3	3	0
	Responded 3rd mailing	18	4	4	1
	Total responding	153	42	34	9
	Undeliverable	5			
	No response	31			
All combined (1,226 parties)	Responded 1st mailing	566	320	250	38
	Responded 2nd mailing	282	144	104	21
	Responded 3rd mailing	120	64	52	11
	Total responding	968	528	406	70
	Undeliverable	47			
	No response	217			

Wilson Lake (2 cabins) near Ketchikan with 1,118 angler-hours spent to catch a total of 4,299 cutthroat trout (4,251 released and 48 kept), followed by Turner Lake (2 cabins) near Juneau with a total of 943 angler-hours to catch 797 trout, and Young Lake on Admiralty Island with 704 angler-hours to catch 864 cutthroat trout (also 2 cabins). For steelhead, Fish Creek near Ketchikan had more effort than other surveyed systems with just over 451 angler-hours of effort to catch 160 steelhead; Sitkoh Lake (2 cabins) was second with 381 angler-hours for 80 steelhead, followed by Karta Lake/River (2 cabins) with 287 angler-hours of effort for 200 steelhead.

Parties that fished for cutthroat trout were asked to rank their fishing experience for this species and we received 434 replies to that question (Table 3).

The lakes rated highest by anglers were Baranof Lake, Honker Lake, and Wilson Lake with nothing but good to excellent reports on their fishing experience. The lowest rated lake was Peterson Lake near Juneau with 12 replies, all rating the fishing as poor. For many systems, responses were distributed among all 4 categories. Regionwide, 38% of the responses reported good or excellent cutthroat fishing while 62% of the responses ranked the cutthroat fishing fair or poor.

There was a wide diversity of responses to the question about changing trout regulations in specific watersheds (Figure 4). Overall, a total of 463 comments ranged from recommending total catch and release and flyfishing only to recommending removing all fishing restrictions for resident anglers. Some party heads recommended

**Table 2.—Number of registered parties, responding parties, and total estimated effort (angler-days and angler-hours) by target species, fish kept and released, and percentage of angler-days where harvest was restricted by trout and steelhead regulations at USFS recreational cabins in Southeast Alaska in 1999.** Standard errors for effort, catch, and harvest statistics listed can be found in Appendix A4.

System <sup>a</sup>	Number registered	Number responding	Trout (cutthroat and rainbow)					Steelhead					Other
			Angler-days <sup>b</sup>	Angler-hours	Fish kept	Fish released	% of days restricted	Angler-days <sup>b</sup>	Angler-hours	Fish kept	Fish released	% of days restricted	Angler-days <sup>c</sup>
Admiralty Cove	55	49	48	117	17	140	0%	17	100	0	5	0%	63
Anan Bay	22	18	0 <sup>d</sup>	0	2	8	0%	3	12	0	3	100%	19
Avoss Lake	0	0	0	0	0	0	0%	0	0	0	0	0%	0
Bakewell Lake	8	8	70	470	60	396	17%						76
Baranof Lake	7	6	20	69	15	89	0%						0
Black Bear Lake	3	2	12	9	0	71	0%						0
Castle River (2)	36	21	91	264	149	891	25%	36	75	0	5	0%	155
Control Lake	24	22	47	234	19	359	17%	6	36	0	14	0%	114
Davidof lake	2	2	16	32	4	3	0%						0
DeBoer Lake	3	2	0	0	0	0	0%						0
Distin Lake (2)	11	9	43	224	11	83	47%						0
Duncan Salt Chuck	18	15	22	30	5	28	0%	0		0	0	0%	5
Eagle Lake	7	6	26	131	15	327	46%						0
Ella Lake	13	9	78	464	56	393	65%						0
Essowah Lake	4	3	11	39	1	9	0%						7
Fish Creek	51	40	125	369	39	485	22%	94	451	0	160	7%	134
Florence Lake	18	14	75	101	88	317	15%						4
Gouldling Lake	6	5	17	65	23	264	59%						0
Harding River	16	11	17	55	0	0	0%	24	161	0	0	0%	89
Hasselborg Lake (3)	26	22	126	485	67	1,528	29%						0
Heckman Lake	21	16	88	436	34	400	10%	28	146	-	20	0%	32
Honker Lake	3	2	22	99	5	142	5%	-	-	-	-	-	0
Hugh Smith Lake	3	2	11	39	0	48	0%	-	-	-	-	-	0
Humpback Lake	7	6	63	222	61	715	0%	-	-	-	-	-	0
Jim's Lake	20	16	118	421	19	354	34%	-	-	-	-	-	15
Jordan Lake	26	19	88	508	41	650	10%	43	187	-	43	9%	39
Kadake Creek	7	7	26	51	13	19	8%	31	107	0	52	0%	36
Kah Sheets Creek	23	15	31	107	14	78	26%	24	78	6	6	25%	24
Karta (3)	46	40	170	769	72	1,241	0%	117	287	0	200	6%	283
Kegan Creek <sup>e</sup> (2)	26	21	45	195	58	170	7%	0	0	0	0	0%	201
Kook Lake	8	4	159	159	21	485	0%						98
Lake Alexander	9	8	29	160	14	108	21%						0

-continued-

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System <sup>a</sup>	Number registered	Number responding	Trout (cutthroat and rainbow)					Steelhead					Other
			Angler-days <sup>b</sup>	Angler-hours	Fish kept	Fish released	% of days restricted	Angler-days <sup>b</sup>	Angler-hours	Fish kept	Fish released	% of days restricted	Angler-days <sup>c</sup>
Lake Eva	20	16	100	625	48	1,568	26%	0	0	0	0	0%	123
Lake Kathleen	10	7	6	0	0	8	0%						0
Manzanita Lake (2)	15	13	119	575	61	2,331	4%	1	5	0	2	0%	0
Martin Lake	5	2	5	8	5	50	0%						0
McDonald Lake <sup>c</sup>	16	13	100	543	55	776	0%	35	198	2	5	0%	51
Orchard Lake	6	6	19	72	11	187	42%						0
Patching Lake	7	4	60	120	16	60	0%						0
Petersburg Lake	17	12	35	90	15	138	0%	16	118	0	23	0%	0
Peterson Lake	110	82	31	56	0	128	16%						0
Plotnikof Lake	6	6	17	142	3	88	0%	6	34	0	2	0%	51
Rainbow Lake	3	1	0	0	0	0	0%						0
Red Bay Lake	9	9	20	53	1	39	0%	0	0	0	0	0%	23
Reflection Lake	12	11	81	460	14	235	0%	0	0	0	0	0%	60
Salmon Bay Lake	15	13	97	409	50	678	0%	24	140	1	43	42%	52
Salmon Lake	30	27	100	211	33	294	3%	1	2	0	0	0%	7
Sarkar Lake	26	21	63	531	37	226	29%	0	0	0	3	0%	141
ShIPLEY Bay	4	4	25	106	2	130	0%	4	8	1	1	25%	28
Sitkoh Lake (2)	22	15	98	405	151	670	30%	119	381	0	80	0%	43
Staney Creek	34	28	20	196	6	74	0%	34	71	0	0	0%	160
Suloia Lake	0	0	0	0	0	0	0%	0	0	0	0	0%	0
Sweetwater Lake	12	10	26	96	6	72	15%						18
Turner Lake (2)	40	32	199	943	58	739	27%						44
Twin Lakes	14	8	11	37	6	37	0%						7
Upper Checats Lake	4	3	32	213	9	147	16%						0
Virginia Lake <sup>c</sup>	20	12	150	284	81	1,182	20%						0
Wilson Lake (2)	17	16	177	1,118	48	4,251	24%						0
Windfall Lake	158	124	92	211	14	149	12%	3	11	0	3	0%	12
Winstanley Lake	8	4	71	282	59	59	0%						12
Young Lake (2)	37	28	177	704	97	767	4%	1	8	-	17	0%	81
Totals	1,226	962	3,662	14,964	1,814	24,993	15%	691	2,667	10	714	9%	2,362

<sup>a</sup> If more than one cabin occurs at a given system, the number is listed in parentheses.

<sup>b</sup> Days fished primarily for trout or steelhead.

<sup>c</sup> Days fished primarily for other species (i.e., salmon, Dolly Varden, etc.).

<sup>d</sup> Effort is 0 because catch/harvest occurred while anglers were fishing for other species.

<sup>e</sup> Estimates may be biased low because no responses were received from one or more seasonal strata in which cabin reservations were logged.

**Table 3.–Summary of how parties rated cutthroat trout fishing from the cabins they visited during 1999.**

System	Number of responses			
	Excellent	Good	Fair	Poor
Admiralty Creek		2	1	5
Anan River				
Avoss Lake				
Bakewell Lake		4	2	1
Baranof Lake	1	2		
Black Bear				
Castle River	3	4	5	1
Upper Checats Lake		1		1
Control Lake	1	6	3	4
Davidof Lake				
DeBoer Lake				
Distin Lake		1	2	3
Duncan Salt Chuck	1	1	1	2
Eagle Lake	1	1	1	2
Ella Lake	3	1	1	
Essowah Lake			2	1
Fish Creek		3	5	10
Florence Lake	5	1	4	
Goulding Lake		1	1	
Harding River			2	3
Hasselborg Lake	4	4	7	1
Heckman Lake	2	3		6
Honker Lake	1	1		
Hugh Smith Lake			2	
Humpback Lake	1	1	2	
Jim's Lake	4	2	3	3
Jordan Lake	1	2	2	4
Kadake Creek			2	3
Kah Sheets Creek		2	3	2
Kah Sheets Lake			2	3
Karta	1	7	7	6
Lake Kathleen				2

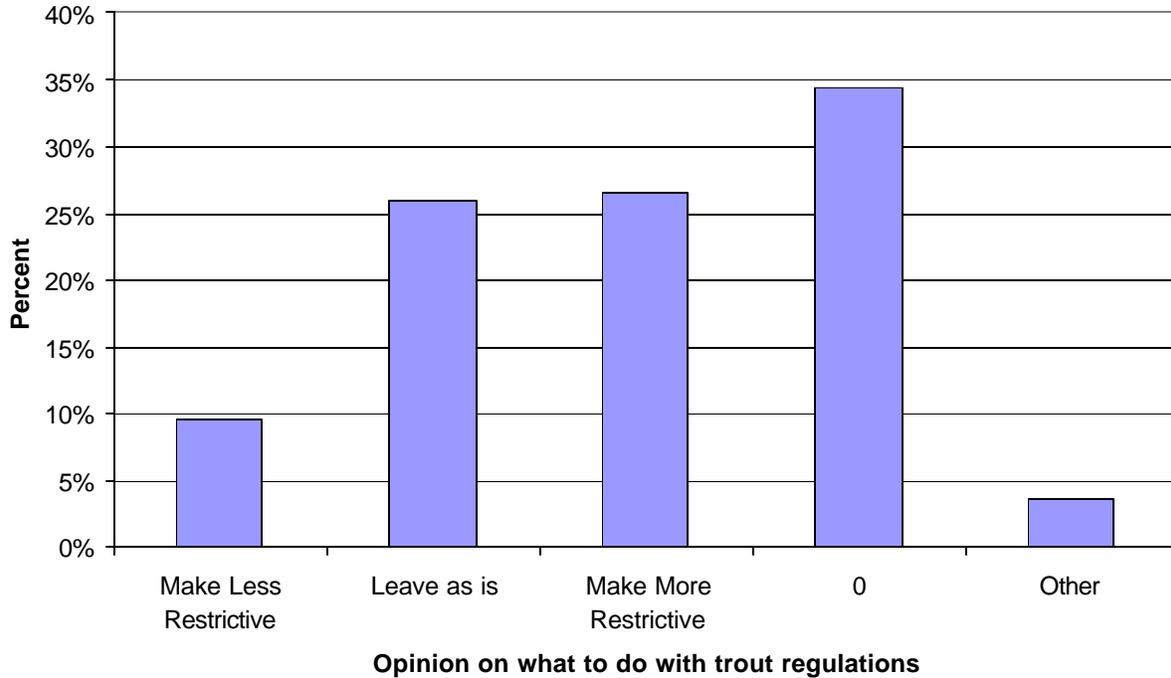
System	Number of responses			
	Excellent	Good	Fair	Poor
Kegan Creek		2	3	1
Kook Lake		1		1
Lake Alexander		1	1	3
Lake Eva	3	2	3	2
Manzanita Lake	1	4	3	2
Martin Lake				
McDonald Lake		3	2	4
Orchard Lake	2	1	1	
Patching Lake			1	3
Petersburg Lake	1	1	1	1
Peterson Lake				12
Plotnikof Lake				1
Rainbow Lake				
Red Bay Lake		1	3	1
Reflection Lake		4	3	3
Salmon Bay Lake	2	2	2	3
Salmon Lake	3	2	1	7
Sarka r Lake	2		2	4
Shiple y Bay		1		1
Sitkoh Lake		4	1	
Staney Creek			2	7
Suloia Lake				
Sweetwater Lake		2	1	
Turner Lake	3	4	7	8
Twin Lakes			1	1
Virginia Lake	3	2	1	2
Wilson Lake	6	5		
Windfall Lake	4	6	10	16
Winstanley Lake		1	1	1
Young Lake	1	4	5	9
Total	60	103	115	156
Percent of total	14	24	26	36

changes in regulations for specific river or lake systems (Table 4). The system most mentioned was Karta Lake/River with 7 specific comments recommending more restrictive regulations. Lake Eva, Hasselborg Lake/River, and the Naha river system were each mentioned 5 times by separate parties as needing additional restrictions to protect fish stocks.

Most comments to the question on whether regulation changes were needed, however, were general and did not pertain to any particular

system. The comments (Figure 4) were summarized into five broad categories: 44 (10%) which called for less restrictive regulations, 120 (26%) which suggested keeping the current regulations, 123 (27%) which recommended more restrictive regulations, 159 (34%) which had no specific recommendation, and 17 (4%) which could not be easily categorized.

Of the 123 comments that recommended more restrictive trout regulations, 77 (63%) recommended catch and release for all trout, 22 (18%)



**Figure 4.–Summary of 463 comments to the question on whether regulations needed to be changed in Southeast Alaska.** (0 represents those that expressed no clear opinion on the regulations).

recommended flyfishing only waters, eight (7%) preferred gear restrictions (like single barbless hooks, for example), seven (6%) recommended reducing the bag limit, and five (4%) wanted increased minimum sizes.

Of the 44 comments that recommended less restrictive trout regulations, six (14%) suggested bait should be allowed for trout, nine (20%) were in favor of larger bag limits, and 19 (43%) preferred a smaller minimum size. Ten (23%) of the comments had no specific recommendation but suggested regulations should be relaxed somehow.

Twenty-three (23) parties commented on steelhead regulations. Sixteen of those (70%) recommended catch and release only for steelhead. Three (13%) recommended making some waters flyfishing only with catch and release. The other four comments only mentioned catching steelhead and did not recommend any regulatory changes. No one recommended less restrictive steelhead regulations.

Thirteen (13) comments mentioned Dolly Varden in their reply. Most of the responses just mentioned catching Dolly Varden with trout, and none recommended any regulatory changes. Two (15%) of those suggested that if someone needed to eat fish they should eat Dolly Varden not trout.

Most of the trout fishing effort (89% of the total hours fished) and resulting catch (91%) occurred from June through September (Table 5). Current regulations allow anglers to use bait regionwide from September 15 to November 15 except in some trophy trout lakes and fall steelhead systems. Assuming that half of the September and November catch occurred when the use of bait was allowed, about 2,342 trout (11% of total) were caught when bait was allowed in freshwater. The use of bait is a concern with trout because the mortality rate for cutthroat trout caught and released using bait is high (Mongillo 1984, Wright 1992).

**Table 4.—Specific systems where party heads mentioned they thought regulations needed to be either liberalized or made more restrictive. (C&R = catch and release.)**

<b>Regulatory change mentioned</b>	<b>System mentioned &amp; comment</b>	<b>Number of comments</b>
Need more liberal regulations:	Wilson Lake - Liberalize trout bag limit	2
	Kah Sheets Lake - Liberalize trout limits	1
	Turner Lake - 12 inch minimum size for trout	1
Need more restrictive regulations:	Karta Lake/River - Make trout & steelhead C&R	7
	Eva Lake - Make trout C&R	5
	Fish Creek (Ketchikan) - C&R for all species	5
	Hasselborg Lake/River - Make trout C&R only	5
	Naha River - Make steelhead C&R	5
	Windfall Lake - C&R & 1 single hook artificial only for trout	4
	Peterson Lake - Make trout C&R	3
	Wilson Lake - Flyfishing only	3
	Kah Sheets Lake - Flyfishing only	2
	Peterson Creek <sup>a</sup> - Make steelhead C&R	2
	Red Bay Lake - Make trout C&R	2
	Sitkoh Lake/River - make trout & steelhead C&R	2
	Admiralty Creek - Make steelhead C&R	1
	Anan River - Limit fishing (no species mentioned)	1
	Bear Creek <sup>b</sup> (Admiralty Island) - Make steelhead C&R	1
	Castle River - Make trout C&R	1
	McDonald Lake - Make steelhead C&R	1
	Situk River <sup>c</sup> (near Yakutat) - Flyfishing only	1
	Thorne River <sup>b</sup> (Prince of Wales I.) - C&R or bag limit of 1/day	1
	Turner Lake - Flyfishing C&R only	1
Young Lake - C&R only	1	

<sup>a</sup> This comment applies to anadromous portion of system well below USFS cabin.

<sup>b</sup> There is no USFS cabin on this system.

<sup>c</sup> This system has USFS cabins but they were not surveyed.

## DISCUSSION

The overall response rate of 78% to this survey was nearly identical to the 77% response rate observed during the first Southeast Alaska cabin survey conducted in 1992 (Jones 1993). The overall response rate dropped to 65% in 1993 (Jones 1994), and 39% in 1994 (Jones 1995). In 1994, we decided to survey cabin users only once every three years (prior to each Board of Fisheries meeting), and the return to a high response rate in 1999 suggests cabin users were receptive to this decision. The preliminary 1999 results were presented at the Board of Fisheries meeting in February 2000.

Anglers fishing at USFS recreational cabins located on trout systems in 1999 reported being limited by trout regulations on almost 15% of the days they fished. That is double the 7% reported in 1993 (Jones 1994), just prior to the Alaska Board of Fisheries extensively restricting the trout regulations in 1994. In 2000, the minimum size limit for cutthroat trout was made less restrictive when it was changed from 12 inches to 11 inches. Thus, we think that fewer anglers would have felt restricted after this regulation change. Steelhead anglers in 1999 reported being limited by regulations just under 9% of the time; we did not ask that question in the 1993 survey so we have no basis for comparison with years prior to the regulation change.

The estimated total freshwater catch of trout (cutthroat and rainbow, combined) from the 1999 SWHS for Southeast Alaska was 46,590. Estimated total trout catch from the 1999 USFS cabin survey was 26,807, about 57.5% of the SWHS estimate. This suggests that these cabins provide a substantial proportion of the remote fishing opportunities for trout in the region.

Overall catch rates for trout in 1999 were comparable with prior recreational cabin surveys. In 1999, anglers caught an average of 1.8 trout per targeted angler-hour at recreational cabins. In 1994, the overall trout catch rate was 0.6 per angler-hour, 1.3 trout per angler-hour in 1993, and 1.8 trout per angler-hour in 1992. Catch per unit effort for trout in 1999 was highest at Black Bear Lake with an average of 7.8 trout per angler-hour. Black Bear Lake was stocked with 5,000 rainbow trout from Deer Mountain hatchery in 1960, and no other species are resident in that lake.

Comparison of total catches in 1999 with the cabin survey done in 1993, before the regional trout regulations were revised, (Table 6) showed that cabin reservations and total catches were both higher in 1993. Cabin reservations were 49% lower in 1999 than in 1993, trout catches were 28% lower in 1999, and steelhead catches were 38% lower in 1999. It is unknown why cabin reservations have declined since 1993, but high air charter costs may be one factor since the most heavily reserved cabins were accessible by trail from the Juneau road system.

A total of 137 anglers reported fishing for steelhead in the spring season of 1999. Of those, 63% (86) reported catching at least one steelhead during their cabin stay. For comparison, 56% reported catching at least one steelhead in 1992, 46% in 1993, and 50% in 1994.

## ACKNOWLEDGMENTS

We would like to thank Paul Suchanek, Bob Marshall, and Roger Harding for their help designing and implementing this survey and for help editing this report. We also thank the Sport Fish Area Management Biologists for their help selecting cabins for inclusion in this survey. As always, this was a group effort and projects like this would not be possible without the help of many people; everyone's efforts are much appreciated.

**Table 5.—Reported trout effort and catch by month for all cabins in the survey.** (These numbers are not expanded for non-response.)

Month	Days fished	Hours fished	Reported catch	
			Number	Percent
January	10	23	4	<0.05
February	5	9	3	<0.05
March	6	24	100	0.5
April	42	216	98	0.5
May	190	601	985	4.7
June	360	1,389	2,674	12.6
July	773	3,552	7,843	37.0
August	659	3,489	5,327	25.2
September	586	2,069	3,436	16.2
October	110	375	558	2.6
November	57	91	132	0.6
December	5	13	11	0.1
Total	2,803	11,851	21,171	

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**Table 6.—Comparison between the 1993 (pre-regulation change) and 1999 Cabin Survey estimates of total catch for trout (cutthroat and rainbow) and steelhead in systems that were surveyed both years.**

System	Registered Parties		Trout		Steelhead	
	1993	1999	1993	1999	1993	1999
Admiralty Creek	67	55	442	157	5	5
Anan River	15	22	107	10	10	3
Bakewell Lake	17	8	545	456		
Baranof Lake	16	7	500	104		
Castle River	29	36	802	1,080	2	5
Distin Lake	29	11	154	95		
Eagle Lake	5	7	9	410		
Ella Lake	86	13	2,539	449		
Essowah Lake	9	4	7	11		
Fish Creek	74	51	474	524	474	160
Florence Lake	27	18	2,187	405		
Goulding Lake	9	6	76	287		
Hasselborg Lake	87	26	2,992	1,595		
Heckman Lake	33	21	1,267	434	20	20
Hugh Smith Lake	11	3	8	48		
Humpback Lake	33	7	2,818	776		
Jim's Lake	29	20	835	403		
Jordan Lake	36	26	283	691	33	43
Kadake Creek	7	7	75	32	0	52
Kah Sheets Lake/Ck	44	43	319	228	5	39
Karta <sup>a</sup>	112	46	3,125	1,313	327	195
Kegan Creek	48	25	1,047	236		
Kook Lake	14	8	141	506		
Lake Alexander	31	9	550	122		
Lake Eva	38	20	477	1,738		
Manzanita Lake	61	15	1,247	2,392	0	2
McDonald Lake	33	15	282	831	216	6
Orchard Lake	18	6	1,274	198		
Patching Lake	25	7	1,639	76		
Petersburg Lake	21	17	17	152	0	23
Red Bay Lake	18	9	32	40		
Reflection Lake	20	12	121	249		
Salmon Bay Lake	29	15	646	728	38	44
Salmon Lake	42	30	463	345		
Sarkar Lake	51	26	175	263	0	3
Sitkoh Lake	35	22	342	820	5	80
Staney Creek	76	34	666	95		
Sweetwater Lake	74	12	986	78		
Turner Lake	77	40	752	848		
Virginia Lake	19	19	1,201	1,264		
Wilson Lake	42	17	4,410	4,913		
Young Lake	68	37	721	1,007	0	19
<b>Total</b>	<b>1,615</b>	<b>830</b>	<b>36,753</b>	<b>26,466</b>	<b>1,135<sup>a</sup></b>	<b>700<sup>a</sup></b>

<sup>a</sup> Does not include Salmon Lake, which was not surveyed for steelhead catch in 1993.



## **APPENDIX A**



**Appendix A1.–Surveyed USFS recreational cabins in Southeast Alaska by ranger district, system, cabin name, presence of steelhead and trout, and 1999 ADF&G trout regulations.**

<b>USFS Ranger District</b>	<b>Freshwater system/lake</b>	<b>Cabin name</b>	<b>Steelhead</b>	<b>Trout</b>	<b>Trout regulations<sup>a</sup></b>
Admiralty Island	Admiralty Creek	Admiralty Cove	Yes	Yes	12"
Admiralty Island	Distin Lake	Distin Shelter		Yes	25"
Admiralty Island	Distin Lake	Sportsmen		Yes	25"
Admiralty Island	Florence Lake	East Florence		Yes	Bait Lake
Admiralty Island	Hasselborg Lake	Big Shaheen		Yes	25"
Admiralty Island	Hasselborg Lake	Hasselborg Creek		Yes	12"
Admiralty Island	Hasselborg Lake	Little Shaheen		Yes	25"
Admiralty Island	Jim's Lake	Jim's Lake		Yes	25"
Admiralty Island	Lake Alexander	Lake Alexander		Yes	14"
Admiralty Island	Lake Kathleen	Lake Kathleen		Yes	12"
Admiralty Island	Young Lake	North Young Lake		Yes	14"
Admiralty Island	Young Lake	South Young Lake	Yes <sup>b</sup>	Yes	14"
Juneau	Peterson Lake	Peterson Lake		Yes	14"
Juneau	Turner Lake	East Turner Lake		Yes	C&R
Juneau	Turner Lake	West Turner Lake		Yes	C&R
Juneau	Windfall Lake	Windfall Lake	Yes	Yes	14"
Ketchikan	Fish Creek	Fish Creek	Yes	Yes	12"
Ketchikan	Heckman Lake	Heckman Lake	Yes	Yes	14"
Ketchikan	Jordan Lake	Jordan Lake	Yes	Yes	14"
Ketchikan	McDonald Lake	McDonald Lake	Yes	Yes	14"
Ketchikan	Orchard Lake	Plenty Cutthroat		Yes	25"
Ketchikan	Patching Lake	Patching Lake		Yes	25"
Ketchikan	Rainbow Lake	Rainbow Lake		Yes	12"
Ketchikan	Reflection Lake	Reflection Lake	Yes	Yes	25"
Misty Fiords	Bakewell Lake	Bakewell		Yes	14"
Misty Fiords	Ella Lake	Ella Narrows		Yes	25"
Misty Fiords	Ella Lake	Red Alders		Yes	25"
Misty Fiords	Hugh Smith Lake	Hugh Smith Lake		Yes	12"
Misty Fiords	Humpback Lake	Humpback Lake		Yes	25"
Misty Fiords	Manzanita Lake	Beaver Camp	Yes	Yes	25"
Misty Fiords	Manzanita Lake	Manzanita Lake	Yes	Yes	25"
Misty Fiords	Upper Checats Lake	Checats		Yes	12"
Misty Fiords	Wilson Lake	Wilson Narrows		Yes	25"
Misty Fiords	Wilson Lake	Wilson View		Yes	25"
Misty Fiords	Winstanley Lake	Winstanley Lake		Yes	12"
Petersburg	Castle River	Castle Flats	Yes	Yes	12"
Petersburg	Castle River	Castle River	Yes	Yes	12"
Petersburg	Deboer Lake	Deboer Lake		Yes	12"
Petersburg	Duncan Salt Chuck	Salt Chuck East	Yes	Yes	12"
Petersburg	Kadake Creek	Kadake Bay	Yes	Yes	12"
Petersburg	Kah Sheets Creek	Kah Sheets Bay	Yes	Yes	12"
Petersburg	Kah Sheets Lake	Kah Sheets Lake	Yes	Yes	14"
Petersburg	Petersburg Lake	Petersburg Lake	Yes	Yes	14"

- continued -

Appendix A1.–Page 2 of 2.

USFS Ranger District	Freshwater system/lake	Cabin name	Steelhead	Trout	Trout regulations <sup>a</sup>
Prince of Wales	Control Lake	Control Lake	Yes	Yes	12"
Prince of Wales	Honker Lake	Honker Lake		Yes	12"
Prince of Wales	Karta	Karta Lake	Yes	Yes	14"
Prince of Wales	Karta	Karta River	Yes	Yes	14"
Prince of Wales	Karta	Salmon Lake		Yes	14"
Prince of Wales	Red Bay Lake	Red Bay Lake	Yes	Yes	14"
Prince of Wales	Salmon Bay Lake	Salmon Bay Lake	Yes	Yes	14"
Prince of Wales	Sarkar Lake	Sarkar Lake	Yes	Yes	14"
Prince of Wales	Shiple Lake	Shiple Bay	Yes	Yes	12"
Prince of Wales	Staney Creek	Staney Creek	Yes	Yes	14"
Prince of Wales	Sweetwater Lake	Sweetwater Lake		Yes	12"
Prince of Wales	Black Bear	Black Bear Lake		Yes	12"
Prince of Wales	Essowah Lake	Essowah Lake		Yes	12"
Prince of Wales	Kegan Creek	Kegan Cove	Yes	Yes	14"
Prince of Wales	Kegan Creek	Kegan Creek	Yes	Yes	14"
Sitka	Avoss Lake	Avoss Lake		Yes	12"
Sitka	Baranof Lake	Baranof Lake		Yes	14"
Sitka	Davidof Lake	Davidof Lake		Yes	12"
Sitka	Goulding Lake	Goulding Lake		Yes	14"
Sitka	Kook Lake	Kook Lake		Yes	14"
Sitka	Lake Eva	Lake Eva	Yes	Yes	14"
Sitka	Plotnikof Lake	Plotnikof Lake	Yes <sup>b</sup>	Yes	12"
Sitka	Salmon Lake	Salmon Lake	Yes	Yes	14"
Sitka	Sitkoh Lake	Sitkoh Lake East	Yes	Yes	14"
Sitka	Sitkoh Lake	Sitkoh Lake West	Yes	Yes	14"
Sitka	Suloia Lake	Suloia Lake		Yes	12"
Wrangell	Anan River	Anan Bay	Yes	Yes	12"
Wrangell	Eagle Lake	Eagle Lake		Yes	25"
Wrangell	Harding River	Harding River	Yes	Yes	12"
Wrangell	Martin Lake	Martin Lake		Yes	12"
Wrangell	Twin Lakes	Twin Lakes		Yes	12"
Wrangell	Virginia Lake	Virginia Lake		Yes	14"
<b>Total number of cabins</b>			<b>34</b>	<b>75</b>	

<sup>a</sup> 12" = 12-inch minimum size, 14" = 14-inch minimum size, 25" = 25-inch minimum size; C&R = catch and release only; Bait Lake = bait allowed, no minimum size.

<sup>b</sup> Plotnikof Lake and Young Lake both have cabins located above barrier falls on streams with steelhead. At Plotnikof Lake you can take about a 4-mile boat ride to the outlet stream, and then a 4- to 5-mile trail leads to the stream below the barrier falls where you can fish steelhead, so it is listed as a system with steelhead in this table. At Young Lake, it is possible to hike down the outlet stream and access the creek below the barrier falls to fish steelhead.

Appendix A2.–Sums and means of effort (days and hours), harvest, and fish released per responding party for trout and steelhead by target species, survey strata and mailing, 1999.

Target species	Strata <sup>a</sup>	Mailing	Angler-days <sup>b</sup>		Angler-hours		Fish harvested		Fish released	
			Sum	Mean/party	Sum	Mean/party	Sum	Mean/party	Sum	Mean/party
Trout	Spring	1	117	3.6	279	9.0	18	0.56	256	8.0
		2	101	4.2	482	21.0	55	2.29	685	28.5
		3	35	4.4	112	14.0	41	5.13	127	15.9
	Summer	1	1,533	6.9	7,091	32.5	728	3.37	13,521	63.2
		2	582	6.1	2,436	29.3	317	3.69	3,395	40.9
		3	218	4.7	725	17.3	99	2.25	911	21.2
	Fall	1	148	5.1	393	13.6	63	2.17	459	17.0
		2	8	2.7	15	5.0	0	0.00	22	7.3
		3	16	4.0	71	17.8	0	0.00	116	29.0
			<b>2,758</b>		<b>11,603</b>		<b>1,321</b>		<b>19,492</b>	
Steelhead	Spring	1	190	6.8	951	38.0	2	0.08	218	8.4
		2	156	6.5	961	41.8	1	0.05	209	9.5
		3	52	6.5	314	44.9	0	0.00	18	2.6
	Summer	1	17	0.7	67	3.5	0	0.00	7	0.4
		2	61	15.3	30	10.0	0	0.00	2	0.7
		3	9	3.0	47	15.7	0	0.00	12	4.0
	Fall	1	52	5.2	217	21.7	0	0.00	106	10.6
		2	--	--	--	--	--	--	--	--
		3	13	13.0	52	52.0	0	0.00	16	16.0
			<b>549</b>		<b>2,639</b>		<b>3</b>		<b>588</b>	

<sup>a</sup> Spring = January 1–May 31; summer = June 1–August 31; fall = September 1–December 31.

<sup>b</sup> Days fished primarily for trout or salmon.

**Appendix A3.–Standard errors of estimates (in Table 2) by system for effort (days and hours fished), and fish kept and released by species in Southeast Alaska in 1999.**

System <sup>a</sup>	VBIAS <sup>b</sup>	Trout (cutthroat and rainbow)				Steelhead				Other species
		Days	Hours	Kept	Released	Days	Hours	Kept	Released	Days <sup>c</sup>
Admiralty Cove	0	11	30	5	51	3	15	0	2	13
Anan Bay	0	0	0	0	0	0	0	0	0	5
Avoss Lake	0	0	0	0	0	0	0	0	0	0
Bakewell Lake	0	0	0	0	0					0
Baranof Lake	0	4	15	3	18					0
Black Bear Lake	0	7	5	0	41					0
Castle River (2)	0	24	70	37	236	15	53	0	3	37
Control Lake	0	4	21	3	52	0	0	0	0	27
Davidof lake	0	0	0	0	0					0
DeBoer Lake	0	0	0	0	0					0
Distin Lake (2)	0	4	37	3	11					0
Duncan Salt Chuck	0	5	4	1	4	0	0	0	0	2
Eagle Lake	0	3	16	4	73					0
Ella Lake (2)	0	18	106	24	94					0
Essowah Lake	0	4	5	1	2					3
Fish Creek	0	10	30	9	60	15	98	0	50	25
Florence Lake	0	9	14	18	51					1
Gouldling Lake	0	4	16	8	96					0
Harding River	0	6	27	0	0	9	51	0	0	22
Hasselborg Lake (3)	0	10	55	16	231					0
Heckman Lake	1	6	52	6	71	1	2	0	0	8
Honker Lake	1	0	0	0	0					0
Hugh Smith Lake	0	4	19	0	24					0
Humpback Lake	0	9	36	19	189					0
Jim's Lake	0	16	60	6	47					7
Jordan Lake	0	14	70	12	158	11	47	0	10	12
Kadake Creek	0	0	0	0	0	0	0	0	0	0
Kah Sheets Creek	0	8	28	5	22	0	15	5	5	5
Kah Sheets Lake	0	9	45	2	30	12	25	0	13	18
Karta (3)	0	14	61	10	156	13	38	0	30	24
Kegan Creek <sup>d</sup> (2)	0	6	26	11	24	0	0	0	0	25
Kook Lake	0	90	60	8	268					50
Lake Alexander	0	4	33	5	19					0

-continued-

Appendix A3.–Page 2 of 2.

System <sup>a</sup>	VBIAS <sup>b</sup>	Trout (cutthroat and rainbow)				Steelhead				Other species
		Days	Hours	Kept	Released	Days	Hours	Kept	Released	Days <sup>c</sup>
Lake Eva	1	12	58	8	254	0	0	0	0	21
Lake Kathleen	0	0	0	0	0					0
Manzanita Lake (2)	0	10	71	7	604	0	2	0	1	0
Martin Lake	0	4	6	4	39					0
McDonald Lake <sup>d</sup>	0	10	59	4	119	11	67	1	3	0
Orchard Lake	0	0	0	0	0					0
Patching Lake	0	7	51	8	42					0
Petersburg Lake	0	12	37	10	60	0	0	0	0	0
Peterson Lake	0	6	11	0	57					0
Plotnikof Lake	0	0	0	0	0	0	0	0	0	0
Rainbow Lake <sup>e</sup>	1	na	na	na	na					0
Red Bay Lake	0	0	0	0	0	0	0	0	0	0
Reflection Lake	0	5	37	2	19	0	0	0	0	7
Salmon Bay Lake	0	31	95	16	125	0	0	0	0	11
Salmon Lake	0	8	19	4	35	0	0	0	0	2
Sarkar Lake	1	7	102	2	31	0	0	0	1	24
ShIPLEY Bay	0	0	0	0	0	0	0	0	0	0
Sitkoh Lake (2)	0	25	109	49	199	24	67	0	11	22
Staney Creek	0	3	58	2	19	3	17	0	0	23
Suloia Lake	0	0	0	0	0	0	0	0	0	0
Sweetwater Lake	0	3	20	0	16					7
Turner Lake (2)	0	19	91	12	89					14
Twin Lakes	0	5	20	4	25					5
Upper Checats Lake	0	2	11	5	54					0
Virginia Lake <sup>d</sup>	0	43	49	16	406					0
Wilson Lake (2)	0	10	82	6	376					0
Windfall Lake	0	8	24	4	27	1	5	0	1	3
Winstanley Lake	0	24	73	29	17					10
Young Lake (2)	0	15	95	21	142	1	4	0	9	24

<sup>a</sup> If multiple cabins occur at a given system, the number is listed in parentheses.

<sup>b</sup> If vbias>0, the standard error estimate is biased low (or undefined) because only 1 (or 0) responses were received in 1 or more seasonal strata.

<sup>c</sup> Days fished primarily for salmon, char, or other species.

<sup>d</sup> Estimate may be biased low because no responses were received from some seasonal strata.

<sup>e</sup> SE = na, since n = 1.

**Appendix A4.–Comparison of numbers of cutthroat trout harvested and released per responding party by mailing in 1993, 1994, and 1999.**

<b>Stratum</b>	<b>Mailing</b>	<b>Fish harvested per party</b>			<b>Fish released per party</b>		
		1993	1994	1999	1993	1994	1999
Spring	1	7	1	0.6			
	2	3	0	2.3			
	3	0	0	5.1			
Summer	1				37	13	63.2
	2				43	9	40.9
	3				34	16	21.2

**APPENDIX B**

**QUESTIONNAIRE & REMINDER LETTERS**

**Appendix B1.–Cover letter sent with each questionnaire.**

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**Alaska Department of Fish and Game  
Recreational Cabin Survey**

Dear Mr/Ms. ????:

The Alaska Department of Fish and Game, the Division of Sport Fish is doing a study of fishing effort and harvest at USFS Recreational Cabins in Southeast Alaska in 1999. Because you reserved the cabin at (name of system), we are asking for your assistance. Information about any fishing you or anyone with you (your party) may have done while using that reservation is important to our study. Please complete the attached form to the best of your ability, then return the form in the enclosed addressed and stamped envelope. Your responses will remain strictly confidential; only the summary of information from all respondents will be published. If you wish a copy of the summary, please specify so in the additional comment box, and we will mail you one as soon as they are available.

Thank you for your participation in our study. Your information and that of other anglers will help perpetuate our opportunities to enjoy Alaska through recreational fishing.

Douglas Jones  
Fisheries Biologist  
Division of Sport Fish

Lake or Stream system

Date of reservation

**GENERAL QUESTIONS**

1. Did you stay at the U.S. Forest Service cabin you reserved at the location and date above?

Yes  No

If you answered YES, please go to question 2. If you answered NO, did someone else use your reservation?

Yes  No

If your cabin reservation was not used, this is all the information we need. Please return this form in the enclosed envelope. Thanks for your help.

2. How many people stayed at the cabin? \_\_\_\_\_

3. Did anyone staying at the cabin fish during your reservation?

Yes  No  I don't know.

If you answered YES, please go to Question 4. If you answered NO or I don't know, this is all the information we need. Please return this form in the enclosed envelope. Thanks for your help.

4. If you fished for cutthroat trout during your stay at the cabin, please rate the overall quality of your fishing experience:

Poor  Fair  Good  Excellent

5. Some people have suggested that bag or size limits for trout in particular systems in Southeast Alaska should be liberalized. In contrast, others think that particular systems should be considered as catch and release or flyfishing only. If you share either of these concerns, please list the particular systems and provide clarifying comments for us to consider.

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7. Please complete the information on the back of this form and return the form in the enclosed envelope.

Thanks for your assistance.

<SEQUEN>

Appendix B3.-Questionnaire, side B.

ESTIMATES OF EFFORT AND CATCH

Please provide information for **each person** that fished during your reservation at the cabin. If you do not recall the exact numbers, please estimate.

Angler Number	If you fished for trout:					If you fished for steelhead:					Days fished primarily for other species (or no target)
	Days fished primarily for trout	Total Hours Fished for trout	Number Kept	Number Released	Number of days harvest was restricted by bag, possession or size limits	Days fished primarily for steelhead	Total Hours Fished for Steelhead	Number Kept	Number Released	Number of days harvest was restricted by bag, possession or size limits	
1*	3	17	0	12	0	0	4	0	1	0	0
2*	1	8	2	2	1	2	9	1	0	0	0

Additional Comments:

\* Numbers in the shaded boxes provide an example where two anglers each fished for three days. The first angler fished primarily for trout each day but spent a little time fishing for steelhead. The second angler fished primarily for steelhead on two days and primarily for trout on one day.

**Appendix B4.–First reminder letter to survey non-respondents.**

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Dear Alaska Angler:

Some time has passed since I first requested information about your fishing activities in (name of system). I still have not received your reply.

Even if you did not fish during your stay, your response to the general questions on the first page of the survey questionnaire is important. If you haven't completed the questionnaire, please answer the questions that pertain to your trip and return the questionnaire in the enclosed postage-paid envelope.

Each questionnaire is significant to the outcome of our study. We are very interested in your fishing and experiences in this system, and the information you provide will enhance our understanding of the existing sport fishery.

If you have already returned the questionnaire, please disregard this letter and accept my sincere thanks.

Sincerely,

Douglas Jones  
Fisheries Biologist  
Alaska Dept. of Fish and Game  
P.O. Box 240020  
Douglas, Alaska 99824  
Phone (907) 465-4270

**Appendix B5.–Second reminder letter to survey non-respondents.**

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Dear Alaska Angler:

I have not yet received a completed cabin survey questionnaire regarding your use of <name of system>. Even if you did not use the cabin or fish during your stay, your response to the general questions on the first page of the survey questionnaire is important. Please complete the questionnaire and return it in the postage-paid envelope that is provided for your use. Your response will be considered confidential.

Please do not underestimate the importance of your fishing activities. The information you provide is valuable to our study, and may have significant impact on the future management of our sport fish resources.

If you have already returned your questionnaire, please disregard this letter and accept my sincere thanks.

Sincerely,

Douglas Jones  
Fisheries Biologist  
Alaska Dept. of Fish and Game  
P.O. Box 240020  
Douglas, Alaska 99824  
Phone (907) 465-4270