

Fishery Data Series No. 93-53

Southeast Alaska Recreational Cabin Survey, 1992

by

J. Douglas Jones

December 1993

Alaska Department of Fish and Game

Division of Sport Fish



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ABSTRACT

A postal survey was conducted that censused parties reserving United States Forest Service (USFS) recreational cabins located in cutthroat trout or steelhead systems in Southeast Alaska. The purpose of the survey was to collect information on trout catches, harvest, and effort from USFS cabins in Southeast Alaska. This report presents findings for the 1992 survey. The portion of the survey that targeted cutthroat trout (*Oncorhynchus clarki*) anglers estimated that 525 anglers spent 6,338 hours to catch 11,653 cutthroat trout, 136 rainbow trout (*Oncorhynchus mykiss*), 94 kokanee (*Oncorhynchus nerka*), and 994 Dolly Varden (*Salvelinus malma*). The portion of the survey that targeted steelhead trout (*Oncorhynchus mykiss*) anglers estimated that 1,035 anglers fishing a total of 17,875 hours to catch 1,369 steelhead, 3,106 rainbow trout, 6,347 cutthroat trout, 490 kokanee, and 6,958 Dolly Varden.

KEY WORDS: Harvest, catch, steelhead, cutthroat, rainbow, trout, kokanee, Dolly Varden, effort, angler, Southeast Alaska, recreation, cabin survey.

INTRODUCTION

Harvests of cutthroat trout (*Oncorhynchus clarki*) in freshwater systems in Southeast Alaska are declining (1977-1992), while angler effort in freshwater is increasing (Figures 1 and 2) (Mills 1979-1993). Also fewer large cutthroat trout are being harvested (based on entries to the Department of Fish and Game (ADF&G) Trophy Fish Program) suggesting that populations in the most productive lakes have declined in the past decade. Current regulations, which may be too liberal, include a daily bag limit of five fish, only one of which can be over 16 inches, and a possession limit of 2 daily bag limits. Due to a growing concern by the public and ADF&G for the cutthroat trout fisheries in Southeast Alaska, catch-and-release only fishing for cutthroat trout in Turner, Reflection, and Wilson lakes was imposed in 1992 and 1993.

In contrast, harvests of steelhead trout (*Oncorhynchus mykiss*) in Southeast Alaska increased from 1977 to 1989 but have declined by 75% since then (Figure 3). There is considerable concern for populations of steelhead trout in Southeast Alaska because catch rates and escapements in some well known streams have declined (Harding et al. 1993). Current regulations include a daily bag limit of 5 fish, only one of which can be over 16 inches, and a possession limit of 2 daily bag limits. To halt declines in steelhead trout abundance, ADF&G imposed catch-and-release only fishing in 24 streams in 1992, and 48 streams in 1993.

Changes in cutthroat and steelhead trout populations may be related to a number of factors including: increased effort (Figure 2) because cutthroat are very susceptible to fishing pressure (Behnke 1985), increasing angler skill, stocking of other salmonid species because cutthroat are easily displaced by many other species (Griffith 1988), and land use practices like logging which increases access to streams with roads and alters the habitat in and around the small streams important to cutthroat (Meehan 1991).

The U.S. Forest Service (USFS) maintains recreational cabins on most of the important cutthroat trout lakes and steelhead streams in Southeast Alaska. The number of visitor-days to USFS cabins has steadily increased in the past 15 years. We believe that most angler effort for these species originates from these cabins. This study estimated angler effort, catch and harvest of all species of fish at USFS recreational cabins on steelhead trout streams and on trophy cutthroat trout lakes in Southeast Alaska. Trophy cutthroat trout lakes were defined as lakes that have had a trophy sized (three pounds or larger) cutthroat trout entered in the ADF&G Trophy fish database. Site-specific data on effort, catch, harvest, and release rate was needed to help identify potential problems in remote fisheries, a need identified in the Strategic Plans for Juneau, Sitka, and Ketchikan (Schwan 1990). This survey information will be used to help managers evaluate the effects of regulations and to develop a region-wide management plan in late 1993.

The objectives for 1992 were:

1. to estimate angler effort, catch, and harvest of steelhead trout, cutthroat trout, rainbow trout (*Oncorhynchus mykiss*), kokanee (*Oncorhynchus nerka*), and Dolly Varden (*Salvelinus malma*) by all parties registered to use USFS cabins on stream systems in Southeast Alaska with steelhead fisheries.

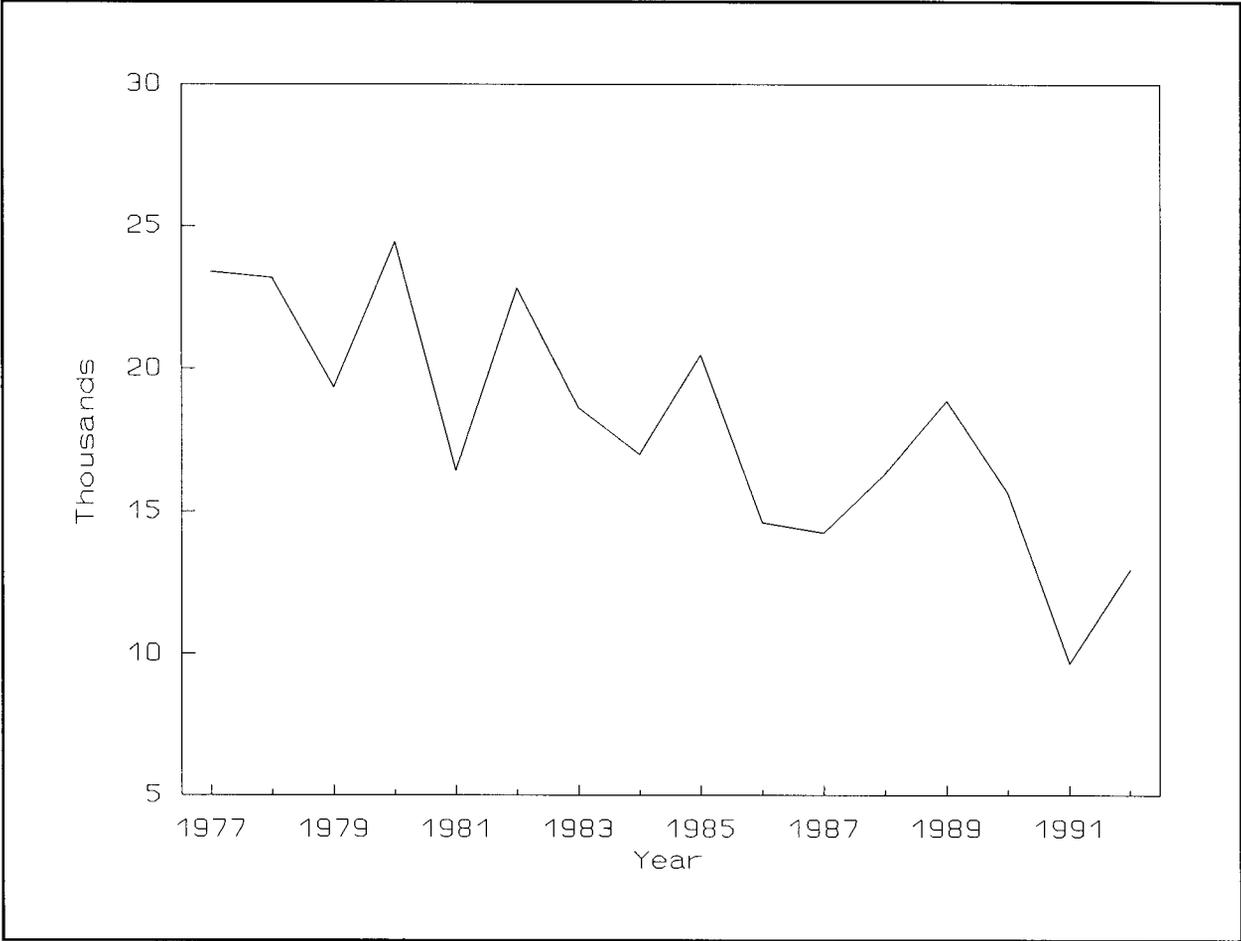


Figure 1. Harvests of cutthroat trout in freshwater in Southeast Alaska, 1977-1992. Data is from the Statewide Harvest Survey (Mills, 1979-1993).

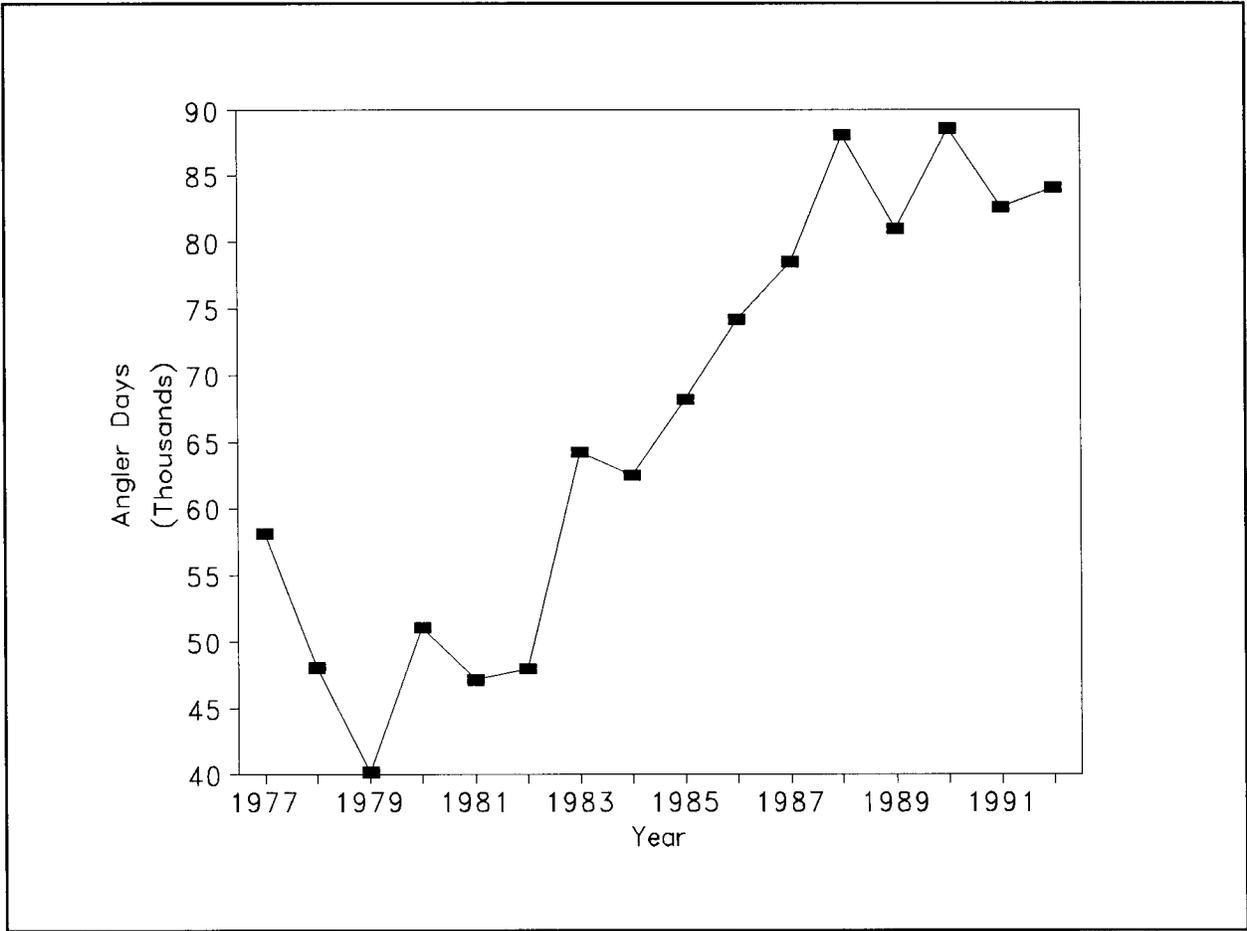


Figure 2. Angler effort (days fished) in freshwater in Southeast Alaska, 1977-1992. Data is from the Statewide Harvest Survey (Mills, 1979-1993).

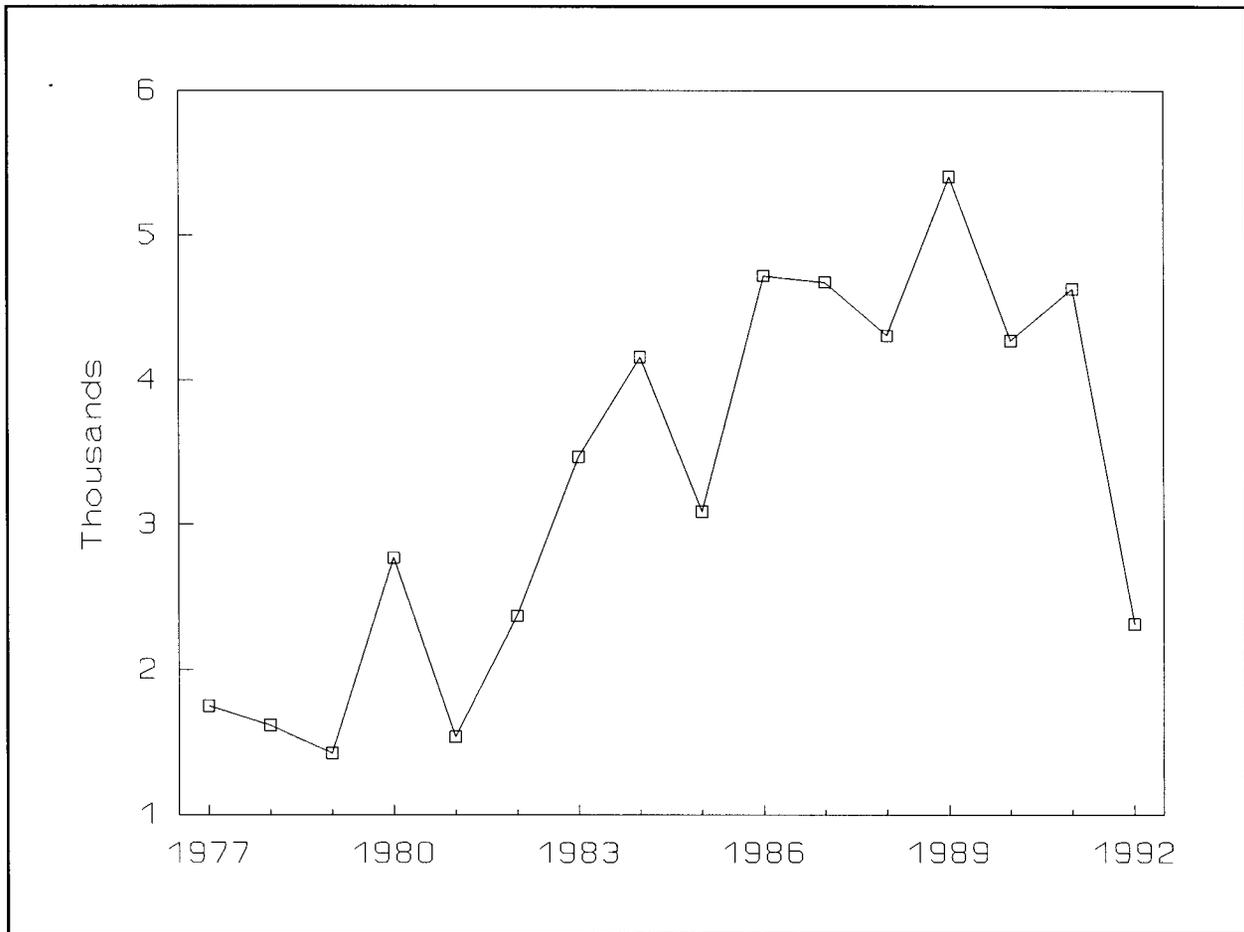


Figure 3. Steelhead trout harvests in southern (SSE) and northern (NSE) Southeast Alaska, 1977-1992. Data is from the Statewide Harvest Survey (Mills, 1979-1993).

2. to estimate angler effort, catch, and harvest of cutthroat trout, rainbow trout, kokanee, and Dolly Varden by all parties registered to use USFS cabins on lake systems with trophy cutthroat trout fisheries.
3. to estimate the proportion of days fished by parties registered to use selected USFS cabins where cutthroat trout harvests were limited because a bag or possession limit was reached.

METHODS

A postal survey was used to estimate angler effort, catch, and harvests by registered users of 60 different USFS cabins in 1992. Users of USFS cabins were obtained from USFS cabin reservation lists.

Angler effort, catch, harvest, and the proportion of fishing days where harvests of cutthroat trout were limited by the bag or possession limit, at 22 cabins on 13 cutthroat trout lakes (Table 1, Appendix A) was censused by sending questionnaires to parties registered to use each of the cabins from January 1 through December 31, 1992. The 22 cabins include all USFS cabins on a cutthroat lake in Southeast Alaska where trophy-size cutthroat trout have been caught and entered into the ADF&G trophy fish program.

Angler effort, catch and harvest of steelhead trout at 38 cabins on 25 river systems (Table 2, Appendix A, B, and C) was censused by sending questionnaires to parties registered to use each of the cabins from January 1 through December 31, 1992. The 38 cabins include all USFS cabins on known steelhead trout systems in Southeast Alaska.

Each registered "party head" was sent a 2-page questionnaire and a cover letter. The first page of the questionnaire (Appendix D) asks the party head if the reservation was used, the number of members in the group, if any members of the party fished, how they would rate the fishing (if they fished), and if they wanted a summary report of our results.

The second page of the questionnaire (Appendix D) asks about the number of days and hours party members fished, the numbers of steelhead, cutthroat trout, rainbow trout, kokanee, and Dolly Varden caught and kept, and the numbers of each species caught and released, by angler (this page was slightly different for the two surveys). The second page sent to users of cabins on cutthroat trout lakes also asks whether bag limits for cutthroat trout were restrictive and about catches of cutthroat trout above and below 18" in length. Information on bag or possession limits from steelhead anglers was not requested since the bag limit was one fish per day. For these anglers, the proportion of days fished with a catch or harvest (angler success) was more informative. Also, anglers in these systems were not asked about harvests of large and small cutthroat trout.

Reservation lists were obtained from the USFS just after April 30, June 30, August 31, October 31, and December 31, 1992. Mailings to party "heads" in each list were conducted separately: e.g., all anglers scheduled to have completed the use of a cabin between January 1 and April 30 were sent surveys as if they represented a unique population. The survey thus had seasonal stratification. Response data for each stratum was processed independently of data in other strata.

Table 1. Number of registered parties and total estimated anglers, effort (days and hours fished), and fish kept and released by species for USFS cabins on trophy cutthroat trout systems in Southeast Alaska in 1992.

System ¹ (# of Cabins)	Total		Days	Days	Hours	Cutthroat Trout		Rainbow Trout		Kokanee		Dolly Varden	
	Parties	Anglers	Fished	Restricted ²		Kept	Released	Kept	Released	Kept	Released	Kept	Released
Baranof Lake	22	43	113	0	528	298	1,442	14	46	0	0	2	0
Distin Lake (2)	16	26	94	28	339	51	219	0	0	0	0	0	51
Ella Lake (2)	29	49	151	38	580	193	610	0	0	0	1	1	9
Eagle Lake	0	0	0	0	0	0		0		0		0	
Florence Lake (2)	18	28	59	28	332	175	844	0	0	1	0	3	350
Goulding Lake	5	13	41	6	148	27	71	1	0	0	0	7	19
Hasselborg Lake (3)	51	132	454	97	1,467	509	1,433	4	9	2	17	18	52
Humpback Lake	15	40	141	14	832	252	2,071	0	0	0	0	1	2
Jims Lake	23	32	81	26	386	170	843	1	0	1	1	0	1
Orchard Lake (2)	17	32	74	3	355	80	574	0	11	0	2	16	208
Patching Lake (2)	10	14	53	13	182	76	203	4	4	0	1	0	11
Turner Lake ³ (2)	54	94	241	74	912	11	259	13	29	9	58	37	192
Wilson Lake ³ (2)	9	22	71	45	277	16	1,227	0	0	0	0	7	5
Total	269	525	1,573	372	6,338	1,858	9,795	37	99	13	81	93	901

¹ Cabins at Reflection Lake, Lake Eva, Anan and Kah Sheets which were included in both surveys are reported in Table 2. Since one form for both trout and steelhead was sent to these cabins steelhead was the target species.

² The number of days anglers reported cutthroat trout fishing was restricted by bag and possession limits.

³ Catch and release only fishing for cutthroat trout imposed at this location by emergency order on May 8, 1992.

Table 2. Number of registered parties, and total estimated anglers, effort (days and hours fished), and fish kept and released by species for USFS cabins on steelhead trout systems in Southeast Alaska in 1992.

System (Cabins)	Total		Days Fished	Hours Fished	Steelhead		Rainbow Trout		Cutthroat Trout		Kokanee		Dolly Varden	
	Parties	Anglers			Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released
Admiralty Cove	28	25	26	78	0	0	0	0	54	33	0	0	3	5
Anan Creek ¹ (2)	15	41	117	658	0	35	0	10	0	5	0	0	14	36
Castle River ¹ (2)	48	89	277	1,071	0	4	19	138	139	367	6	0	55	395
Essowah Lake ²	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fish Creek ¹ (Ktn)	45	92	214	822	14	72	60	179	63	191	15	55	75	221
Harding River ¹	4	4	4	12	0	0	0	0	6	0	0	0	0	8
Hugh Smith Lake ¹	11	17	44	212	0	9	1	16	36	101	0	0	0	28
Italio River	3	1	1	1	0	0	0	0	0	0	0	0	0	0
Jordan Lake	26	58	224	1,105	8	141	200	939	89	248	6	0	172	284
Kadake Creek (2)	7	23	95	398	3	46	0	0	20	442	0	0	4	69
Kah Sheets River ¹ (3)	18	30	73	268	4	7	4	0	31	111	0	0	2	0
Karta River ¹ (4)	59	156	672	3,260	20	246	85	534	296	719	0	0	180	708
Kegan Cove ¹	20	54	185	927	0	0	33	264	4	6	0	1	1	7
Kook Lake	10	21	100	436	0	0	5	32	70	499	0	0	21	93
Lake Eva ¹	51	93	263	1,354	4	63	6	74	146	915	92	314	116	3,297
McDonald Lake ¹	20	41	200	1,257	10	77	47	126	52	173	0	0	38	402
Petersburg Lake	22	26	61	317	0	76	6	23	40	202	0	0	13	53
Red Bay Lake	3	1	3	18	0	0	0	0	0	3	0	0	0	0
Reflection Lake	15	45	184	919	0	0	23	70	24	286	0	0	0	1
Salmon Bay Lake ¹	3	12	48	254	0	0	0	0	64	226	0	0	0	16
Sarkar Lake ¹	12	20	34	117	0	0	0	0	21	64	0	0	0	0
Sitkoh Lake ¹ (2)	16	49	178	1,086	1	14	33	121	117	450	0	1	117	230
Situk River ¹ (5)	26	66	347	2,765	0	502	0	9	0	5	0	0	9	266
Staney Creek ¹	46	65	157	514	0	13	1	48	4	19	0	0	6	13
Andrew Creek	4	6	6	26	0	0	0	0	2	4	0	0	0	0
Grand total	512	1,035	3,513	17,875	64	1,305	523	2,583	1,278	5,069	119	371	826	6,132

¹ Catch and release only fishing for steelhead imposed by emergency order on May 8, 1992.

² These cabins had no reservations with the USFS in 1992.

Within each stratum, three mailings were conducted. The first mailing was sent to all party heads. If a response was not received within three weeks a second mailing was sent. If after an additional 3 weeks a response was not received, a final mailing was sent. Appendix D also contains copies of these letters.

In each temporal stratum, total reported harvest H_r at each cabin was the sum over mailings $m=1..3$:

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

If response was not 100%, means, medians, and histograms of harvest per responding party for each mailing were made to decide if response to each mailing was similar. Comparisons between and across cabins was used to help identify trends in reported harvest per responding party by mailing. Since responses to each mailing at a cabin were similar, therefore total harvest H at the cabin was calculated

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

where N_r = number of responding parties, N = number of parties on the USFS reservation list. Calculation of total effort E and total catch C at each cabin by species was as above after substituting the appropriate variable for H .

Occasionally, items were missing in an response received from a party head. A party head, for example, listed catch but not effort, or listed effort but not catch. Because this occurred at very low rate in this survey (all were less than 3%), no adjustments or estimates for missing data items were made.

More than one USFS cabin is found on some cutthroat lakes and steelhead streams. Effort, catch, and harvest for each cutthroat trout lake (Table 1, Appendix A and B) or steelhead stream (Table 2, Appendix A and B) was obtained by summing the point estimates for the individual cabins.

The proportion of days that bag or possession limits for cutthroat trout was restricted was included to provide an indication of the effect of current and proposed management regulations at these fishing areas. The proportion was estimated

$$P_r = \frac{D_r}{D} \quad (3)$$

where D_r = number of days in which respondents report angling was restricted by a bag or possession limit, and D = number of days of angling reported.

RESULTS

There were no apparent trends in the median or mean harvest per responding party (Appendix B) or in frequency distributions of harvest by party, in any of the three mailings for steelhead or cutthroat trout. As a result, direct expansions (equation 2) were used to calculate total effort, catch, and harvest.

An estimated 525 anglers spent 6,338 hours spread over 1,573 days to harvest 1,858 cutthroat trout, 37 rainbow trout, 13 kokanee, and 93 Dolly Varden from the 13 trophy cutthroat lakes with USFS cabins in Southeast Alaska (Table 1, Appendix A and C). Anglers also caught and released another 9,795 cutthroat trout, 99 rainbow trout, 81 kokanee, and 901 Dolly Varden in these systems.

In 25 steelhead streams with USFS cabins, an estimated 1,035 anglers spent 17,875 hours spread over 3,513 days to harvest 64 steelhead trout, 523 rainbow trout, 1,278 cutthroat trout, 119 kokanee, and 826 Dolly Varden in 1992 (Table 2, Appendix A and C). Anglers also reported catch and release 1,305 steelhead, 2,583 rainbow trout, 5,069 cutthroat trout, 371 kokanee, and 6,132 Dolly Varden from these systems.

In total, 3,136 cutthroat trout, 64 steelhead trout, 560 rainbow trout, 132 kokanee, and 919 Dolly Varden were harvested in 24,213 hours of angler effort spread over 5,086 days at USFS cabins included in this survey. An additional 14,864 cutthroat trout, 1,305 steelhead, 2,682 rainbow trout, 452 kokanee, and 7,033 Dolly Varden were caught and released.

Respondents to the cutthroat trout survey reported fishing a total of 1,573 days. Of that total, they reported that their harvest was restricted by bag limits on only 372 days or 24% of the total days fished.

Party heads rated fishing for cutthroat trout at the cabin they visited from excellent to poor (Table 3, Figure 4). The two most extreme ratings were for west Turner Lake cabin which received only good to poor ratings for cutthroat fishing while Baranof Lake got only good to excellent ratings.

In the steelhead survey, 56% of the anglers reported catching a steelhead during the period from January through May. For the whole year, 26% of the anglers reported catching a steelhead.

Over 85% of the respondents to the survey used their cabin reservation. Four hundred thirty seven (437) of the respondents who used their reservations (84.5%) reported that they fished at some time during their stay (Appendix A). The average party was 3.3 people with a range from 1 to 13 people per party.

Five hundred and one (501) of the responding parties (65.7%) originated from within Alaska and the remaining 262 (34.3%) parties originated from outside of Alaska. One hundred ninety five (74.1%) of the out-of-state parties used their cabin reservation, and 323 (62.2%) of the parties originating from Alaska used their reservations. Out-of-state parties also fished longer while at a USFS cabin: out-of-state anglers fished for an average of 22.7 hours, while anglers from Alaska fished an average of 10.6 hours.

DISCUSSION

About 24% (or 3,136) of the 12,957 cutthroat trout harvested in fresh water in Southeast Alaska in 1992 (Mills 1993) were sampled in this survey. Thus, harvests from the 60 USFS cabins surveyed on trophy cutthroat trout systems represent an important, but not dominant share of harvests from freshwater systems in 1992.

Table 3. Summary of how parties rated cutthroat trout fishing from the cabins they visited during 1992.

System	Excellent	Good	Fair	Poor	Total
Baranof Lake	8	3	0	0	11
Distin Lake	1	2	2	2	7
Ella Lake	2	6	4	3	15
Florence Lake	2	2	2	0	6
Goulding Lake	0	1	1	3	5
Hasselborg Lake	8	15	7	4	34
Humpback Lake	6	3	2	0	11
Jims Lake	3	3	2	0	8
Orchard Lake	3	2	2	1	8
Patching Lake	2	2	3	0	7
Turner Lake	0	2	4	14	20
Wilson Lake	3	2	1	0	6
Grand total	38	43	30	27	138

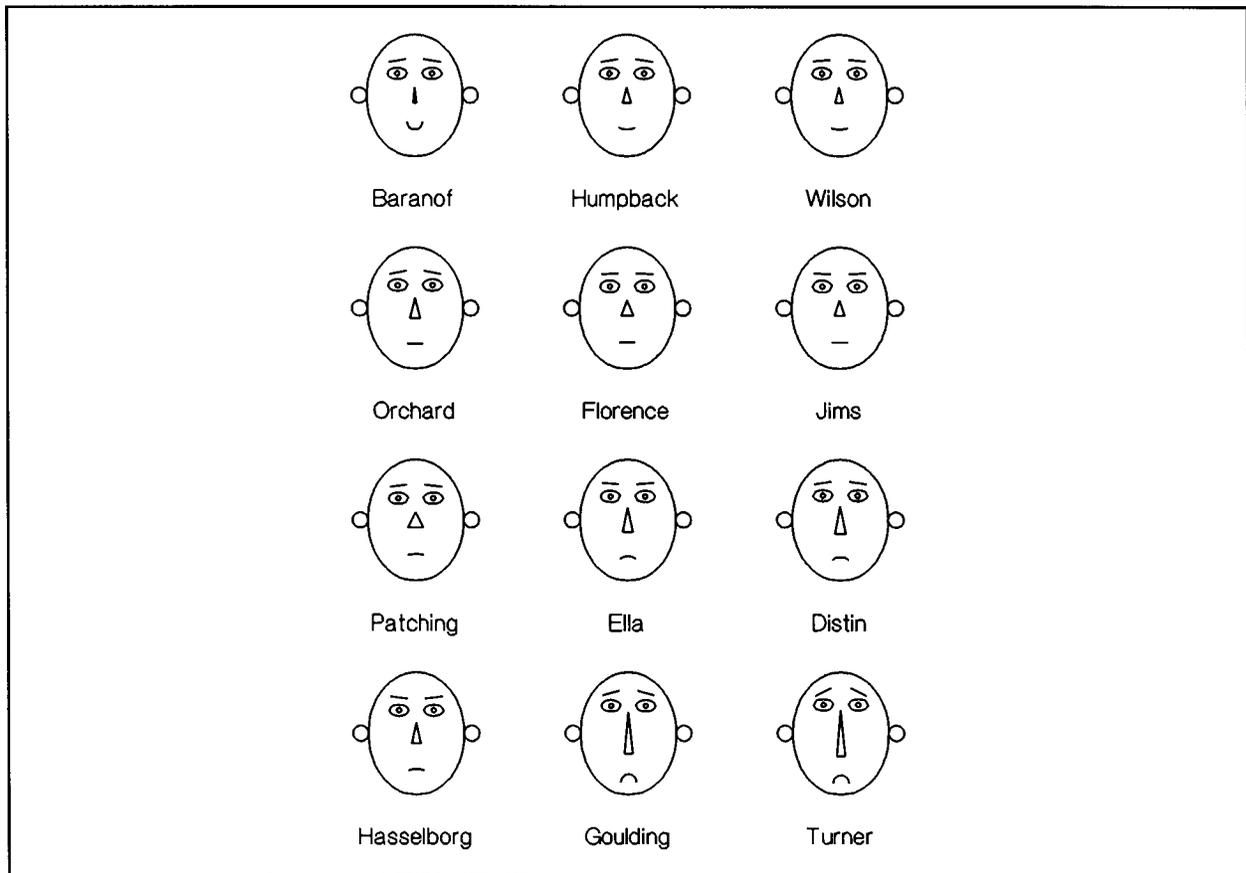


Figure 4. Graphic characterization of angler responses about fishing quality at cutthroat lakes in Southeast Alaska. The icons were generated in SYSTAT (Wilkinson 1990). Variables (the rating as proportions of all responses) are: excellent (curvature of the mouth), good (angle of brow), fair (width of nose), and poor (length of nose). The faces are ordered in the plot by subjective criteria. Also see data on Table 3.

According to the SWHS, about 7% (or 889 fish) of the total harvest occurred at seven locations (Hasselborg Lake, Sitkoh Lake, Lake Eva, Karta River, Stoney Creek, McDonald Lake, and Anan River, Table 4 and 5). These systems were the only ones with enough responses to the SWHS to allow expanded estimates for total harvest. Our survey estimated the harvest of cutthroat trout in these systems at 1,124 fish. Thus, for those seven systems, most of the fishing originated from the USFS cabins.

Of the 84,150 angler days spent fishing in fresh water in Southeast Alaska in 1992, only 6% was expended at USFS cabins. Therefore, harvests from the 60 USFS cabins surveyed represent a small portion of the effort expended in all freshwater systems in Southeast Alaska in 1992.

According to the SWHS, 12,281 steelhead were caught in Southeast Alaska. The 1,369 estimated in this survey represents just over 11% of total from the SWHS (Mills 1993). The SWHS also indicates that 2,439 steelhead were harvested in Southeast Alaska in 1992. Only about 3% (or 64 fish) of this total were harvested from the 60 USFS cabins surveyed (Table 2).

Some of the USFS recreational cabins were much more popular than others. Lake Eva near Sitka, had the most parties (51) in a season. The Karta River cabin (located at the river mouth) had the most anglers (95) and total fishing effort (2,156 hours, Appendix A). In contrast, the cabin on the Italio River had only three registered parties visit and no catch was reported.

Anglers at USFS cabins located in trophy cutthroat trout lakes in 1992 reported being limited by harvest regulations (bag and possession limits) on 24% of the days they fished. We could not separate the extent this was due to possession or bag limits.

Angler perceptions of the fishing experience in several lakes (with USFS cabins) in Southeast Alaska were surprisingly low (Table 3, Figure 4). For example, significant proportions of respondents reported only poor to fair fishing at some lakes where our experience indicates quality fishing is available (e.g., Hasselborg and Florence Lakes (Jones et al. 1991)). Some anglers may thus hold very high expectations, or they may base the quality of their fishing experience on criteria that were seldom met.

Steelhead anglers reported being successful at catching a fish about 56% of the days they fished from January through May. This was an encouraging statistic given some present perceptions of the low quality of fishing experience for steelhead in Southeast Alaska.

Fifteen of the 25 streams surveyed were restricted to catch-and-release steelhead fishing in 1992 which influenced the release rate for steelhead in those systems. In systems that were partially or completely open to harvest the release rate was 96% (11 steelhead were kept and 263 were released) indicating that anglers released steelhead at a high rate even when they could have been kept for consumption.

The survey was well received by most of the people we contacted. Over 80% of the questionnaires from the cutthroat and steelhead portions of the survey were completed and returned. In addition, we received useful comments on the fishing, net-marked steelhead, and a wide range of other fishing and USFS cabin issues.

Table 4. Comparison of 1992 effort and catch in this USFS recreational cabin survey and the Statewide Harvest Survey (Mills 1993)¹.

System	Survey	Days				Dolly	
		Fished	Steelhead	Rainbow	Cutthroat	Varden	Kokanee
McDonald Lake	Mills	395	86	230	293	631	
	Cabin	200	87	173	225	440	
Karta River	Mills	2,358	605	871	898	1,426	
	Cabin	672	266	619	1,015	888	
Staney Creek	Mills	928	776	158	183	303	
	Cabin	157	13	49	23	19	
Anan River	Mills	971	39	8	18	205	
	Cabin	117	35	10	5	50	
Lake Eva	Mills	405	116	712	742	1,819	
	Cabin	263	67	80	1,061	3,413	406
Sitkoh Lake	Mills	437	171	451	2,447	885	
	Cabin	178	15	154	567	347	1
Hasselborg Lake	Mills	1,600	0	0	935	1,163	151
	Cabin	454	0	13	1,942	70	19
Totals	Mills	7,094	1,793	2,430	5,516	6,432	
	Cabin	2,041	483	1,098	4,838	5,227	
Percent of Mills		-28%	-27%	-45%	-88%	-81%	
Situk River	Mills	6,626	2,887	55	37	3,933	
	Cabin	347	502	9	5	275	

¹ Statewide Harvest Survey (Mills, 1993).

² Data for the Situk River is separated from the sub-total because so few anglers use the USFS cabins on the Situk River.

Table 5. Comparison of 1992 effort and harvest in this USFS recreational cabin survey and the Statewide Harvest Survey (Mills 1993)¹.

System	Survey	Days				Dolly	
		Fished	Steelhead	Rainbow	Cutthroat	Varden	Kokanee
McDonald Lake	Mills	395	39	47	27	74	
	Cabin	200	10	47	52	38	
Karta River	Mills	2,358	47	119	64	41	
	Cabin	672	20	85	296	180	
Staney Creek	Mills	928	62	40	37	123	
	Cabin	157	0	1	4	6	
Anan River	Mills	971	8	8	9	8	
	Cabin	117	0	0	0	14	
Lake Eva	Mills	405	0	8	202	311	
	Cabin	263	4	6	146	116	92
Sitkoh Lake	Mills	437	0	119	229	115	
	Cabin	178	1	33	117	117	
Hasselborg Lake	Mills	1,600	0	0	321	123	62
	Cabin	454	0	4	509	18	2
Totals	Mills	7,094	156	341	889	795	
	Cabin	2,041	35	176	1,124	489	
Percent of Mills		-28%	-22%	-52%	+126%	-62%	
Situk River	Mills	6,626	8	0	0	844	
	Cabin	347	0	0	0	9	

¹ Statewide Harvest Survey (Mills, 1993).

² Data for the Situk River is separated from the sub-total because so few anglers use the USFS cabins on the Situk River.

ACKNOWLEDGEMENTS

We would like to thank Brenda Dick with the USFS in Sitka for her patience and help with this project, without her it could never have been completed. She coordinated with each of the Ranger Districts in Southeast Alaska to provide the reservation lists used in this project. We would also like to thank Heidi Champion who did most of the data entry for this project, her help, suggestions and time were very much appreciated.

LITERATURE CITED

- Behnke, R.J. 1985. About trout-greenback cutthroat. *Trout* 26(1):42-46.
- Jones, J.D., R. Marshall, R. Harding. 1992. Cutthroat trout studies at Florence and Hasselborg Lakes, Southeast Alaska, 1991. Alaska Department of Fish and Game. Fisheries Data Series No. 92-43. 41 pp. Anchorage.
- Griffith, J.S. 1988. Review of Competition between cutthroat trout and other salmonids. *American Fisheries Society Symposium* 4:135-140.
- Harding, R., D. Jones. 1993. Karta River Steelhead: 1992 escapement and creel survey studies. *Fishery Data Series* No. 93-30. 25 pp. Anchorage.
- Meehan, W.R., editor. Influences of forest and rangeland management on salmonid fished and their habitats. *American Fisheries Society Special Publication* 19; 1991.
- Mills, M. J. 1979. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1978-1979, Project F-9-11, 20 (SW-I-A), Juneau. 122 p.
- _____. 1980. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1979-1980, Project F-9-12, 21 (SW-I-A), Juneau. 65 p.
- _____. 1981a. Alaska statewide sport fish harvest studies (1979). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1980-1981, Project F-9-13, 22 (SW-I-A), Juneau. 77 p.
- _____. 1981b. Alaska statewide sport fish harvest studies (1980). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1980-1981. Project F-9-13, 22 (SW-I-A), Juneau. 107 p.
- _____. 1982. Alaska statewide sport fish harvest studies (1981). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1981-1982, Project F-9-14, 23 (SW-I-A), Juneau. 115 p.
- _____. 1983. Alaska statewide sport fish harvest studies (1982). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1982-1983, Project F-9-15, 24 (SW-I-A), Juneau. 118 p.
- _____. 1984. Alaska statewide sport fish harvest studies (1983). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1983-1984, Project F-9-16, 25 (SW-I-A), Juneau. 123 p.

LITERATURE CITED (Continued)

- _____. 1985. Alaska statewide sport fish harvest studies (1984). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1984-1985, Project F-9-17, 26 (SW-I-A), Juneau. 137 p.
- _____. 1986. Alaska statewide sport fish harvest studies (1985). Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1985-1986, Project F-10-1, 27 (RT-2), Juneau. 137 p.
- _____. 1987. Alaska statewide sport fisheries harvest report (1986). Alaska Department of Fish and Game, Fishery Data Series No 2, Anchorage. 140 p.
- _____. 1988. Alaska statewide sport fisheries harvest report (1987). Alaska Department of Fish and Game, Fishery Data Series No. 52, Anchorage. 142 p.
- _____. 1989. Alaska statewide sport fisheries harvest report (1988). Alaska Department of Fish and Game, Fishery Data Series No. 122, Anchorage. 142 p.
- _____. 1990. Harvest and participation in Alaska sport fisheries during 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-44, Anchorage. 152 p.
- _____. 1991. Harvest, catch, and participation in Alaska sport fisheries during 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-58, Anchorage. 184 p.
- _____. 1992. Harvest, catch, and participation in Alaska sport fisheries during 1991. Alaska Department of Fish and Game, Fishery Data Series No. 92-40, Anchorage. 189 p.
- _____. 1993. Harvest, catch, and participation in Alaska sport fisheries during 1992. Alaska Department of Fish and Game, Fishery Data Series No. 92-42, Anchorage. 228 p.
- Schwan, M. 1990. Strategic plans for the Juneau, Ketchikan, and Sitka recreational fisheries. Alaska Department of Fish and Game, Juneau.

APPENDIX A

Appendix A. Total number of registered parties, number of parties responding, undeliverable questionnaires, total estimated effort (days fished and hours fished) and total estimated number of anglers by cabin surveyed in 1992. Shaded cabins were included in the cutthroat survey, unshaded cabins were in the steelhead survey.

Cabin	System	Registered Parties	Parties Responding	Undeliverable	Days Fished	Hours Fished	Number of Anglers
Admiralty Cove	Admiralty Cove	28	25	1	26	78	25
Anan Bay	Anan Bay	10	4	1	77	418	23
Anan River	Anan River	5	2	0	40	240	18
Baranof Lake	Baranof Lake	22	19	0	113	528	43
Castle Flats	Castle River	21	18	0	86	433	30
Castle River	Castle River	27	20	1	191	638	59
Distin Lake ¹	Distin Lake	0	0	0	0	0	0
Sportsmans	Distin Lake	16	12	1	94	339	26
Eagle Lake ¹	Eagle Lake	0	0	0	0	0	0
Ella Lake ¹	Ella Lake	0	0	0	0	0	0
Red Alders	Ella Lake	29	20	2	151	580	49
Essowah Lake ¹	Essowah Lake	0	0	0	0	0	0
Fish Creek	Fish Creek	45	39	2	214	822	92
East Florence Lake	Florence Lake	15	13	0	50	254	23
West Florence Lake	Florence Lake	3	3	0	9	78	5
Goulding Lake	Goulding Lake	5	5	0	41	148	13
Harding River	Harding River	4	4	0	4	12	4
Big Shaheen	Hasselborg Lake	30	25	2	290	1,028	82
Hasselborg Creek	Hasselborg Lake	3	2	0	20	69	8
Little Shaheen	Hasselborg Lake	18	13	1	144	370	42
Hugh Smith Lake	Hugh Smith Lake	11	10	1	44	212	17
Humpback Lake	Humpback Lake	15	13	0	141	832	40
Italio River	Italio River	3	3	0	1	1	1
Jims Lake	Jims Lake	23	17	0	81	386	32
Jordan Lake	Jordan Lake	26	17	2	224	1,105	58
Kadake Bay	Kadake Creek	5	5	0	41	138	13
Kadake Creek	Kadake Creek	2	2	0	54	260	10
Kah Sheets Bay	Kah Sheets River	4	4	0	34	135	7
Kah Sheets Lake	Kah Sheets River	9	7	0	30	95	15
Kah Sheets River	Kah Sheets River	5	4	0	9	38	8
Karta Lake	Karta River	17	13	1	185	844	44
Karta River	Karta River	31	24	1	408	2,156	95

-continued-

Appendix A. (Page 2 of 2).

Cabin	System	Registered Parties	Parties Responding	Undeliverable	Days Fished	Hours Fished	Number of Anglers
McGilvery Creek	Karta River	3	3	0	6	36	4
Salmon Lake	Karta River	8	7	0	73	224	13
Kegan Cove	Kegan Cove	20	17	0	185	927	54
Kook Lake	Kook Lake	10	4	3	100	436	21
Lake Eva	Lake Eva	51	39	2	263	1354	93
McDonald Lake	McDonald Lake	20	18	0	200	1,257	41
Orchard Lake ¹	Orchard Lake	0	0	0	0	0	0
Plenty Cutthroat	Orchard Lake	17	10	1	74	355	32
Patching Lake	Patching Lake	10	9	0	53	182	14
Portage ¹	Patching Lake	0	0	0	0	0	0
Petersburg Lake	Petersburg Lake	22	13	1	61	317	26
Red Bay Lake	Red Bay Lake	3	1	2	3	18	1
Reflection Lake	Reflection Lake	15	14	0	184	919	45
Salmon Bay Lake	Salmon Bay Lake	3	1	1	48	254	12
Sarkar Lake	Sarkar Lake	12	9	1	34	117	20
East Sitkoh Lake	Sitkoh Lake	13	10	0	178	1,086	46
Sitkoh Lake	Sitkoh Lake	3	1	0	0	0	3
Middle Situk R. (North)	Situk River	4	2	1	48	351	9
Middle Situk R. (South)	Situk River	4	4	0	41	305	7
Middle Situk River	Situk River	9	7	1	72	570	22
Situk River	Situk River	6	6	0	112	1,054	17
Situk Weir	Situk River	3	3	0	74	485	11
Staney Creek	Staney Creek	46	34	3	157	514	65
Mount Rynda	Stikine River	4	2	0	6	26	6
East Turner Lake	Turner Lake	23	19	1	65	286	27
West Turner Lake	Turner Lake	31	20	3	176	626	67
Wilson Narrows ¹	Wilson Lake	0	0	0	0	0	0
Wilson View	Wilson Lake	9	7	1	71	277	22

¹ There were no reservations for these cabins in 1992.

APPENDIX B

Appendix B. Median and average hours fished, harvest, and numbers released per responding party, for cutthroat trout and steelhead trout recreational surveys, by survey strata and mailing, 1992.

Cutthroat Trout Survey								
Strata ¹	Mailing	Median			Average			
		Hours	Kept	Released	Hours	Kept	Released	
1	1	24.0	1.0	8.0	34.0	7.5	36.8	
	2	29.0	0.0	16.5	33.8	11.1	88.5	
	3	16.5	1.0	20.5	24.3	4.8	24.0	
2	1	24.0	5.5	16.0	32.8	10.1	54.4	
	2	13.0	7.0	13.0	29.6	11.9	56.9	
	3	8.0	2.0	0.0	18.0	7.4	14.0	
3	1	2.0	0.0	0.0	9.2	1.3	13.5	
	2	0.0	0.0	0.0	0.0	0.0	0.0	
	3	0.0	0.0	0.0	4.0	0.0	8.3	

Steelhead Survey								
Strata	Mailing	Median			Average			
		Hours	Kept	Released	Hours	Kept	Released	
1	1	26.5	0	1	67.5	0.1	20.2	
	2	6.0	0	0	40.7	0.3	2.1	
	3	10.0	0	0	42.6	0.0	1.7	
2	1	17.0	0	0	45.1	0.2	3.4	
	2	16.5	0	0	47.0	0.4	4.0	
	3	13.0	0	0	32.7	0.4	4.0	
3	1	20.0	0	0	38.4	0.0	0.5	
	2	14.0	0	0	38.6	0.0	0.0	
	3	70.7	0	0	85.6	0.1	0.6	

¹ Survey strata are: 1= January 1 - June 30; 2= July 1 - October 31; 3= November 1 - December 31. Surveys from April were combined with June to encompass the steelhead season, and the survey through August was combined through October to complete the summer cutthroat trout season.

APPENDIX C

Appendix C. Summary of harvest and catch by species and cabin for both surveys in 1992. Shaded cabins were included in the cutthroat survey, unshaded cabins were in the steelhead survey.

Cabin	System	Cutthroat		Steelhead		Rainbow		Dolly Varden		Kokanee	
		Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released
Admiralty Cove	Admiralty Cove	54	33	0	0	0	0	3	5	0	0
Anan Bay	Anan Bay	0	5	0	27	0	2	14	36	0	0
Anan River	Anan River	0	0	0	8	0	8	0	0	0	0
Baranof Lake	Baranof Lake	298	1,442	0	0	14	46	2	0	0	0
Castle Flats	Castle River	28	186	0	0	5	39	35	334	6	0
Castle River	Castle River	111	181	0	4	14	99	20	61	0	0
Distin Lake	Distin Lake	51	219	0	0	0	0	0	51	0	0
Sportsman	Distin Lake	0	0	0	0	0	0	0	0	0	0
Eagle Lake	Eagle Lake	0	0	0	0	0	0	0	0	0	0
Ella Lake	Ella Lake	193	610	0	0	0	0	1	9	0	1
Red Alders	Ella Lake	0	0	0	0	0	0	0	0	0	0
Essowah Lake	Essowah Lake	0	0	0	0	0	0	0	0	0	0
Fish Creek	Fish Creek	63	191	14	72	60	179	75	221	15	55
East Florence Lake	Florence Lake	155	760	0	0	0	0	3	350	1	0
West Florence Lake	Florence Lake	20	84	0	0	0	0	0	0	0	0
Goulding Lake	Goulding Lake	27	71	0	0	1	0	7	19	0	0
Harding River	Harding River	6	0	0	0	0	0	0	8	0	0
Big Shaheen	Hasselborg Lake	287	935	0	0	4	9	16	47	0	16
Hasselborg Creek	Hasselborg Lake	38	47	0	0	0	0	0	0	2	2
Little Shaheen	Hasselborg Lake	184	451	0	0	0	0	3	5	0	0
Hugh Smith Lake	Hugh Smith Lake	36	101	0	9	1	16	0	28	0	0
Humpback Lake	Humpback Lake	252	2,071	0	0	0	0	1	2	0	0
Italio River	Italio River	0	0	0	0	0	0	0	0	0	0
Jims Lake	Jims Lake	170	843	0	0	1	0	0	1	1	1
Jordan Lake	Jordan Lake	89	248	8	141	200	939	172	284	6	0
Kadake Bay	Kadake Creek	20	430	1	24	0	0	1	27	0	0
Kadake Creek	Kadake Creek	0	12	2	22	0	0	3	42	0	0
Kah Sheets Bay	Kah Sheets River	13	22	2	1	4	0	2	0	0	0
Kah Sheets Lake	Kah Sheets River	18	89	1	3	0	0	0	0	0	0
Kah Sheets River	Kah Sheets River	0	0	1	3	0	0	0	0	0	0
Karta Lake	Karta River	37	106	9	96	2	55	27	181	0	0
Karta River	Karta River	179	496	11	148	65	431	136	513	0	0
McGilvery Creek	Karta River	0	0	0	2	0	0	1	3	0	0
Salmon Lake	Karta River	80	117	0	0	18	48	16	11	0	0
Kegan Cove	Kegan Cove	4	6	0	0	33	264	1	7	0	1
Kook Lake	Kook Lake	70	499	0	0	5	32	21	93	0	0
Lake Eva	Lake Eva	146	915	4	63	6	74	116	3,297	92	314
McDonald Lake	McDonald Lake	52	173	10	77	47	126	38	402	0	0

Appendix C. (Page 2 of 2).

Cabin	System	Cutthroat		Steelhead		Rainbow		Dolly Varden		Kokanee	
		Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released
Orchard Lake	Orchard Lake	0	0	0	0	0	0	0	0	0	0
Plenty Cutthroat	Orchard Lake	80	574	0	0	0	11	16	208	0	2
Patching Lake	Patching Lake	76	203	0	0	4	4	0	11	0	1
Portage	Patching Lake	0	0	0	0	0	0	0	0	0	0
Petersburg Lake	Petersburg Lake	40	202	0	76	6	23	13	53	0	0
Red Bay Lake	Red Bay Lake	0	3	0	0	0	0	0	0	0	0
Reflection Lake	Reflection Lake	24	286	0	0	23	70	0	1	0	0
Salmon Bay Lake	Salmon Bay Lake	64	226	0	0	0	0	0	16	0	0
Sarkar Lake	Sarkar Lake	21	64	0	0	0	0	0	0	0	0
East Sitkoh Lake	Sitkoh Lake	117	450	1	14	33	121	117	230	0	1
Sitkoh Lake	Sitkoh Lake	0	0	0	0	0	0	0	0	0	0
Middle Situk R. (North)	Situk River	0	0	0	11	0	2	0	41	0	0
Middle Situk R. (South)	Situk River	0	0	0	14	0	1	0	37	0	0
Middle Situk River	Situk River	0	0	0	63	0	0	8	171	0	0
Situk River	Situk River	0	5	0	168	0	4	0	6	0	0
Situk Weir	Situk River	0	0	0	246	0	2	1	11	0	0
Staney Creek	Staney Creek	4	19	0	13	1	48	6	13	0	0
Mount Rynda	Stikine River	2	4	0	0	0	0	0	0	0	0
East Turner Lake	Turner Lake	1	68	0	0	0	0	3	32	3	52
West Turner Lake	Turner Lake	10	190	0	0	13	29	34	160	6	6
Wilson Narrows	Wilson Lake	0	0	0	0	0	0	0	0	0	0
Wilson View	Wilson Lake	16	1,227	0	0	0	0	7	5	0	0

APPENDIX D
QUESTIONNAIRE

Appendix D. Questionnaire

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

Dear Mr/Ms. ????:

An ever increasing number of anglers are fishing for and catching trout in Southeast Alaska. We are conducting studies to find out the effect this is having on trout populations. Of particular interest are trout harvests from (merged in lake or stream name).

I would appreciate your taking a few minutes to complete the enclosed questionnaire and to return it in the enclosed, self-addressed, stamped envelope. All information you provide will remain strictly confidential.

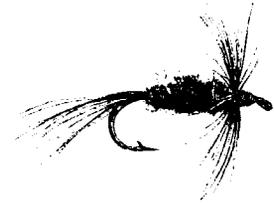
Sincerely,

Doug Jones
Fisheries Biologist
Division of Sport Fish



-continued-

Alaska Department
of Fish and Game
Recreational Cabin Survey



- Did you or a member of your party use your U.S. Forest Service cabin reservation?

Yes No

If Yes, please go to the next question; If No, please return this form in the enclosed envelope.

- How many people were in your party? _____

- Did anyone in your party fish while you were staying at the Forest Service cabin?

Yes No

- If members of your party fished for cutthroat trout, please rate the overall quality of your party's cutthroat trout fishing during your visit to this cabin.

Poor Fair Good Excellent

- Would you like a copy of our summary report when it is available?

Yes No

Please complete the information on the next page and return both forms in the enclosed envelope.

-continued-

Survey form for Steelhead Streams

Please provide information for each member of your party that fished during your stay at the cabin. If you do not recall the exact numbers, please estimate.

Angler Number	Days Fished	Total Hours Fished ¹	Steelhead		Cutthroat Trout		Rainbow Trout		Kokanee		Dolly Varden		Comments
			Number Kept	Number Released	Number Kept	Number Released	Number Kept	Number Released	Number Kept	Number Released	Number Kept	Number Released	
1	5	12	1	12		2					8		
2	3	4		9		1							
Additional Comments:													

¹ Total hours fished for all days combined.

-30-

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 are important. 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 the amount of fishing pressure and the catch rates in this system. The information you provide will help enhance our understanding of the existing sport fishery by indicating relative fish abundance and condition of the fish population.

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

Sincerely,

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

-continued-

Dear Alaska Angler:

I have not yet received your completed cabin survey questionnaire. Even if you did not use the cabin or fish during your stay, your response to the general questions are 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 vital to the success of this 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,

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

