Fishery Data Series No. 12-81

Survey of Anglers Using Southeast Alaska Recreational Cabins During 2009

by

Roger D. Harding

December 2012

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ABSTRACT

A creel survey was mailed to parties reserving any of 79 U.S. Forest Service (USFS) recreational cabins located near cutthroat trout *Oncorhynchus clarkii* and rainbow/steelhead trout *O. mykiss* systems in Southeast Alaska during 2009. The survey was used to estimate trout (cutthroat and rainbow, combined) and steelhead catch and harvest, by users of these USFS cabins. A total of 3,444 nights were reserved among 79 USFS recreational cabins during 2009. At the time the reservations were made, 1,283 party heads reported that 4,508 people would be using these reservations. The overall response rate to the survey was 83% (1,013). Approximately 83% (840) of the parties responding to the survey reported that they used their cabin reservation, and 60% (503) of the party heads reported that someone in their party fished. Anglers utilizing these recreational cabins caught and released an estimated 12,383 trout (SE = 789) and 441 steelhead (SE = 57). These anglers also harvested an estimated 1,176 trout (SE = 87) and 25 steelhead (SE = 19). Comparing similar surveys conducted in 1999, 2002, and 2006 at USFS cabins, the number of registered parties in 2009 decreased slightly from 2006, but was very similar to the number of reservations made in 1999 and 2002. The average catch of trout during previous surveys is 27,796 (range 21,219–42,946), but during the 2009 survey estimated catches were substantially less than average. The estimated total steelhead catch in 2009 was significantly below the average catch of 1,141 estimated since 1999 (range 724–1,549).

Keywords: Harvest, catch, steelhead, cutthroat trout, rainbow trout, Southeast Alaska, U. S. Forest Service recreational cabin; mail survey, creel survey; creel census

INTRODUCTION

The Alaska Board of Fisheries (BOF) promulgated more restrictive bag limits and minimum size regulations for trout (cutthroat *Oncorhynchus clarkii* and rainbow trout *O. mykiss* combined) and steelhead *O. mykiss* in Southeast Alaska in 1994. There have been several small modifications of these regulations by the BOF since 1994, but the core regulations are still in place (Appendix A1). The wide distribution of trout and steelhead populations throughout Southeast Alaska makes monitoring of these mostly remote populations difficult. This creel or "cabin" mailout survey was developed as a means to cost effectively monitor angler catch and harvest in many of the more popular and remote freshwater systems in Southeast Alaska.

There are 79 U. S. Forest Service (USFS) recreational cabins in 65 different systems throughout Southeast Alaska that are available for public rental near lakes and streams that have populations of cutthroat and rainbow trout and steelhead. The access to sport fishing opportunities from these cabins generates a significant proportion of the catch and harvest of freshwater trout and steelhead in Southeast Alaska. Periodic monitoring of angler catch, and harvest at the USFS cabins prior to BOF meetings held every year years helps us identify potential conservation concerns and areas where regulations might be liberalized, evaluate effects of regulations, and provide information for BOF proposals.

A similar project for estimating angler harvest and catch in Southeast Alaska is the annual Statewide Harvest Survey (SWHS; for example, Jennings et al. 2010a). The focus of the SWHS is much larger and angler effort in most Southeast Alaska systems with USFS cabins is relatively low. The sampling rates required by the SWHS yield only annual estimates for a few of the largest or most heavily used freshwater systems in Southeast Alaska (Schwan 1990). Specifically, the SWHS does not generate estimates if fewer than 12 responses from a specific location (e.g., Jim's Lake) are received and instead these responses are rolled up in to a larger geographic area (e.g., Admiralty Island). The cabin survey provides estimates of angler catch and harvest for individual system which the SWHS does not do.

The SWHS does provide a means of evaluating the cabin survey, but only on a large geographic scale. Results from the latest SWHS survey show that 90% of cutthroat trout and 66% of

steelhead trout harvested during 2009 in Southeast Alaska were taken in fresh water (Jennings et al. *In prep*). The SWHS also shows that Southeast Alaska harvests of cutthroat trout, rainbow trout, and steelhead in fresh water have remained relatively stable since 1994, but there was a near record estimate of steelhead catch in 2008, and an increasing trend in cutthroat trout catch during 2008 and 2009 (Figures 1, 2, and 3). The more restrictive regulations adopted by the BOF in 1994 are assumed to be largely responsible for the decline from relatively large harvests in the early 1990s. The average annual catch of steelhead between 1990 and 2009 has been 15,442 with peak catches occurring in 2000 (24,885) and 2008 (26,155); the total annual catches of rainbow trout and cutthroat trout have averaged 16,542 and 35,577, respectively, since 1990 (Mills 1991 –1994; Howe et al. 1995, 1996, 2001 a–d; Walker et al. 2003; Jennings et al. 2004, 2006 a–b, 2007, 2009a–b, 2010b, *In prep*).

This project queried users of 79 USFS recreational cabins in Southeast Alaska using a mail survey similar to that used in past years (Jones 1993–1995; Jones and Kondzela 2001; Harding et al. 2005, 2009). The 2002 survey queried users of 75 USFS cabins. Four cabins were added to the 2006 survey (SE Heckman Lake, Harvey Lake, Swan Lake, and Anan Lake) that were either new or had been overlooked in previous surveys. All 79 cabins were near water bodies that had either cutthroat or rainbow trout, and about half of the cabins were near streams that also have steelhead runs. The objective of sampling in 2009 was to estimate angler catch and harvest of steelhead and trout (cutthroat and rainbow, combined) for each of the 65 systems.

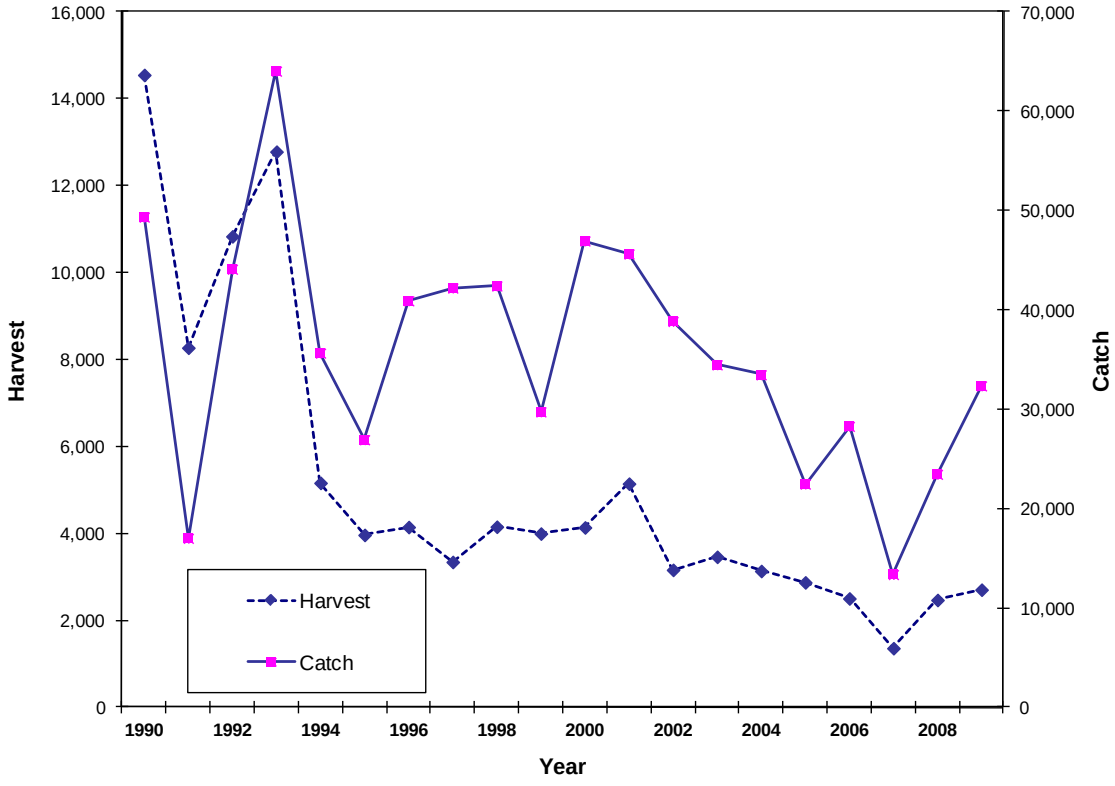

Figure 1.–Freshwater sport harvests and total catches of cutthroat trout in Southeast Alaska from the Statewide Harvest Survey, 1990–2009.

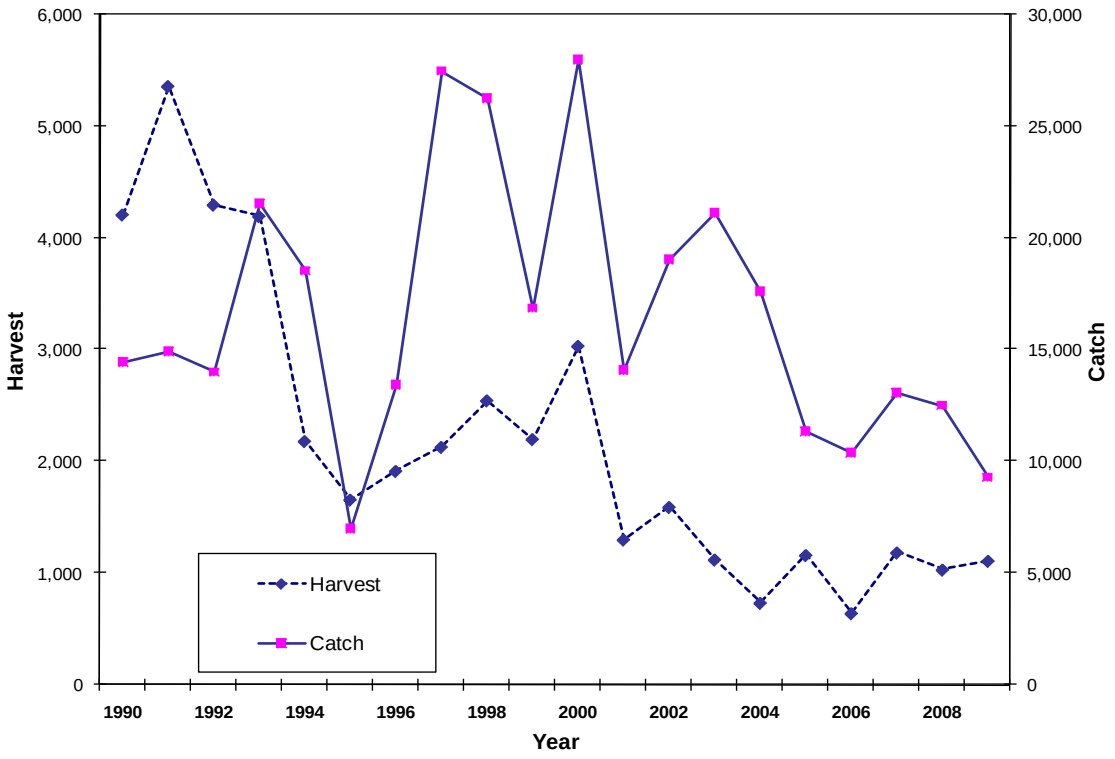

Figure 2.–Freshwater sport harvests and total catches of rainbow trout in Southeast Alaska from the Statewide Harvest Survey, 1990–2009.

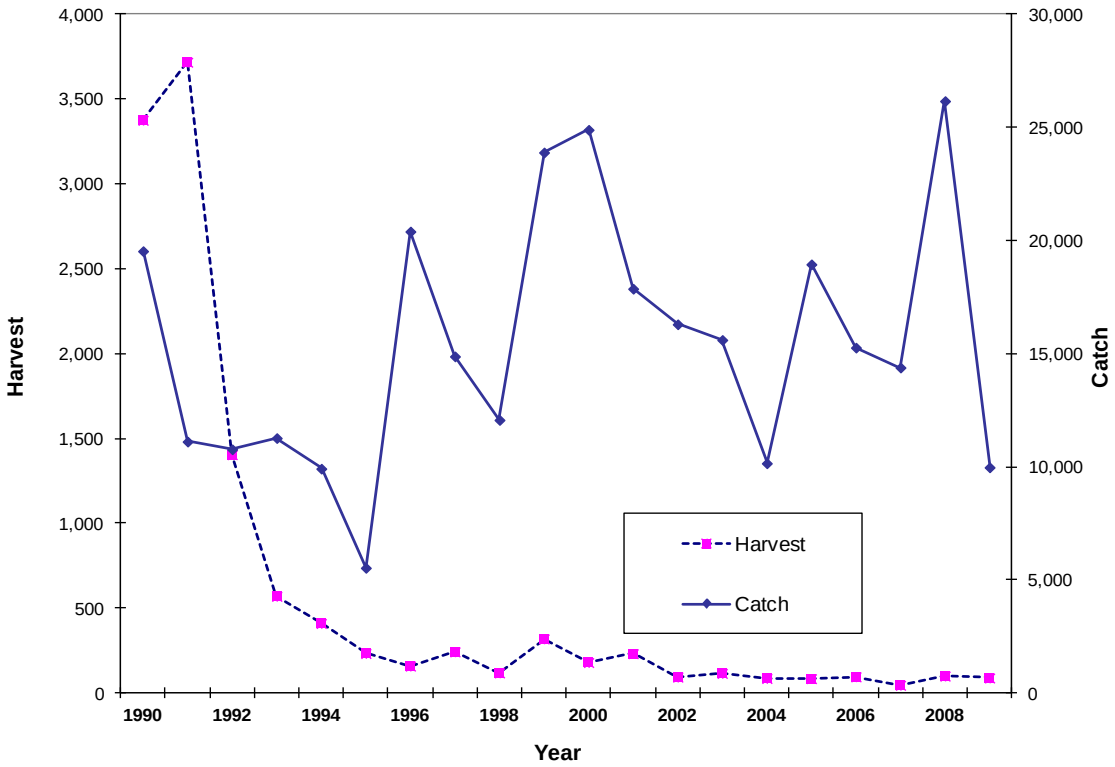

Figure 3.–Freshwater sport harvests and total catches of steelhead in Southeast Alaska from the Statewide Harvest Survey, 1990–2009.

The 2009 survey was "simplified" to minimize missing data that has occurred in previous surveys. The primary change implemented in 2009 was eliminating questions on the survey form asking about angler effort (days or hours fished), and questions asking anglers to rate their angling experience and attitudes about regulations. The simplified form also only asked questions related to trout and steelhead, i.e., no questions were asked about Dolly Varden catch or harvest.

The range of cutthroat trout in Alaska extends from Southeast Alaska through Prince William Sound in South Central Alaska. Similar issues and potential threats face cutthroat trout throughout this range. Discussions with fisheries managers in South Central Alaska resulted in the inclusion of 10 USFS recreational cabins on the Chugach USFS National Forest in Prince William Sound in our survey (summer strata only). This limited pilot study was designed to provide the location and magnitude of trout catch and harvest by anglers utilizing these 10 USFS cabins. Results from the Chugach survey are presented in Appendix C.

OBJECTIVES

The research objective for this project was to:

1. Estimate angler catch and harvest of trout (cutthroat and rainbow combined) and steelhead at each cabin for parties registered to use USFS cabins located on trout and steelhead systems in Southeast Alaska during 2009. If a system has more than one cabin, estimates by system will be generated by summing the individual cabin estimates within that system.

METHODS

A creel survey was mailed to registered users of 79 USFS recreational cabins in 2009. Returned responses were used to estimate angler effort and trout and steelhead catch and harvest from anglers using these recreational cabins (Appendices B1–B5). There are 136 USFS cabins in Southeast Alaska that provide fishing opportunities ranging from none to both marine and freshwater. Sport fish area management biologists and trout research staff selected 79 cabins for the survey that are located on or near important streams and lakes that hold steelhead, cutthroat and rainbow trout. USFS cabins in the Yakutat area were not selected for the survey because the number of anglers who reserve cabins and fish in the Yakutat area is insignificant compared to total angler use in the area. The cabins chosen included 36 cabins on steelhead systems. It was not an objective of this study to estimate catch or harvest of trout or steelhead by anglers that did not reserve a USFS recreational cabin. Those anglers might include users with day access (e.g., boat, hiking, or float plane), users with other lodging, or those who gained access through job-related activities (e.g., employees of logging companies, ADF&G, or the USFS).

USFS personnel compiled mailing addresses of party "heads" that registered to use USFS cabins in 2009. The party heads were subsequently mailed a questionnaire and cover letter (Appendices B1–B3). To protect the privacy of cabin users and comply with the Federal Privacy Act, the names and addresses of people who reserved USFS cabins were not provided to ADF&G, and the USFS conducted and handled all mailings. After each mailing, ADF&G was sent an electronic list of codes representing parties who made a reservation and were sent a survey. Anglers completing the survey returned their forms (identified with ID codes in place of names and addresses) to the Douglas ADF&G office. Coded ID numbers of those individuals not

responding were then provided the USFS so they could send reminders to the nonrespondents (Appendices B4 and B5).

The survey was stratified by season: spring (January 1 to May 31), summer (June 1 to September 31), and fall (October 1 to December 31), because users in different seasons tend to have different objectives. For example, in past surveys the total and average effort fished for trout in the summer stratum was higher than in the spring or fall. 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 questionnaires nearer the time of the visit allowed party heads to more accurately recall their visits.

The USFS was requested to prepare reservation lists on May 31, September 30, and December 31, 2009; initial mailings were scheduled for June 7 and October 11, 2009, and January 10, 2010. However, initial actual mailings were sent on June 12 and October 14, 2009, and January 7, 2010. If no response was received three weeks after the initial mailing, a reminder letter was sent to all nonrespondents (Appendix B4). If, after three additional weeks, a response was still not received, a second reminder was sent (Appendix B5).

The questionnaire was simply designed to estimate the number of trout and steelhead that were harvested and released. The number of people in the party and the number of days reserved at the cabin were generated from the original party's registration information. Data from responding parties were compiled into electronic spreadsheets for processing. Comments found on the forms were parsed for information about angler experiences, and catch and harvest data germane to the survey questions. For example, a few anglers failed to specify their catch or harvest in the provided spaces on the survey form, but did provide comments like "we only fished for salmon and caught no trout" that let us unambiguously impute unbiased responses to survey questions.

All returned forms were visually checked for obvious errors, such as omissions in any field. The data were entered into a data file; during data entry a variable (data field) denoting that a particular record required further attention was used to facilitate final editing of the data. Data was primarily analyzed using a SAS® program (SAS Institute 9.2 Cary, NC, USA) developed specifically for this project. The guidelines below were used during data entry to provide consistency:

1. If a response to the question regarding number of fish caught or released was "> (some number)," data entered was (some number) +1.
2. If response to the question regarding the number of fish caught or released was a range (e.g., 20–30), the midpoint value was entered. If the midpoint was not a whole number (e.g., midpoint of 15–20 fish = 17.5 fish), the value of 17.5 was entered.
3. If the response to the question regarding number of fish caught or released was "none" or "zero," the value of zero was entered rather than leaving the entry blank.
4. If the response to the question regarding number of fish caught or released was ambiguous (e.g., some, many, or lots) or blank, the entry was left blank.
5. All comments were read and when possible, missing responses were replaced with inferred or stated values. For example, if the respondent did not answer the question that asked whether they fished, but stated in the comment section that three trout were caught, it was known that the party did indeed fish. When in doubt, questionnaires were flagged for further review by the project biologists and/or biometricians.
6. If a respondent stated that somebody from their group fished, but they left the harvest/released question blank, and then they commented that they "caught three trout," it wasn't known whether these fish were harvested or released, and the harvest/released question was left blank.

DATA ANALYSIS

In each temporal stratum, the total harvest estimated from responding parties H_r at each cabin was the sum over mailings m = 1…3:

$$\hat{H}_r = \sum_{m=1}^{3} H_{r,m} . \tag{1}$$

The total harvest H at the cabin was calculated as:

$$\hat{H} = \left(\frac{N}{N_r} \right) \hat{H}_r \tag{2}$$

$$\hat{\text{var}}[\hat{H}] = (1 - \frac{N_r}{N}) N^2 \frac{\sum_{i=1}^{N_r} (\hat{H}_r - \overline{H}_r)^2}{N_r (N_r - 1)}, \tag{3}$$

where N_r = number of responding parties, and N = number of parties on the USFS reservation list.

The total number of fish caught and released R at each cabin was estimated as above after substituting the appropriate variable for H. For systems with only one cabin the yearly estimates for each system was the sum of the seasonal estimates. For systems with more than one cabin the yearly estimates were the sum of seasonal estimates for all cabins in that system. The SE for harvest and catch was the square root of the total variance from all cabins in a system.

Occasionally, catch or harvest data were not recorded for respondents who reported fishing. The missing data were imputed using a computer processing program that implemented a regression-based multiple imputation technique. Predictor variables for the imputation included party size and length of stay. The procedure did not attempt to estimate missing values, but to simulate them and adjust the variance based on the uncertainty of the missing values.

A total of 500 completed (fully imputed) data sets and an equal number of estimates of H (or R) were computed. Let each of the D = 500 complete data estimates and variances (e.g., H and var(H) in eq.(2) and (3)) be $\hat{\Theta}_d$ and W_d, d = 1... D. Combined estimates were computed using the formula for multiple-imputed data sets (Little and Rubin 2002). The final point estimate (of H or R) is:

$$\overline{\Theta}_D = \frac{1}{D} \sum_{d=1}^{D} \hat{\Theta}_d \tag{4}$$

and variance $T_D = \text{var}(\overline{\Theta}_D)$ is:

$$\overline{W}_D = \frac{1}{D} \sum_{d=1}^{D} W_d \tag{5}$$

$$B_D = \frac{1}{D-1}\sum_{d=1}^{D}(\hat{\Theta}_d - \overline{\Theta}_D)^2 \tag{6}$$

$$T_D = \overline{W}_D + (\frac{D+1}{D})\ B_D, \tag{7}$$

where $\overline{W}_D$ is the average within-imputation variance component, and B_D is a between-imputation component (Little and Rubin 2002, p. 85–86).

The total number of fully-imputed data sets generated in this analysis was set to 500 as described above. The original work of Rubin (1987) on the multiple imputation method indicates that a total of five imputation data sets is generally adequate for reliable estimates. However, due to the distributional characteristics of the underlying parameters, along with the small sample sizes for this study, it was determined that substantially more imputed data sets were needed to provide reliable estimates of the variances. Guidelines suggested by Graham et al. (2007) and further expanded upon by Enders (2010) indicate that increasing the number of completed-data imputation data sets is often necessary to reliably apply the multiple imputation method.

RESULTS

USE AND PARTICIPATION

A total of 1,283 parties reserved 3,444 nights among the 79 USFS cabins in Southeast Alaska in 2009, and party heads reported that 4,508 people would be using these reservations. Overall 1,013 party heads responded to our survey (Table 1). Excluding 62 undeliverable surveys, the overall response was 83%. Approximately 83% (840) of the 1,013 parties responding to the survey reported they used their cabin reservation. Of the 840 parties that used their reservations, 503 (60%) of the party heads reported that someone in their party fished. Angler surveys were returned from 61 systems where reservations had been made during 2009; no reservations were made at four of the 65 systems surveyed (Anan, Bakewell, Essowah, and Rainbow lakes).

The average size of the parties the reservations were made for was 3.5 (SD = 1.6) people (Table 1) and ranged from 1 to 8. The average number of nights the parties stayed at a cabin was 2.7 (SD = 2.0), and ranged from 1 to 10 nights (maximum allowed). Users from 38 different U.S. states and 4 foreign countries reserved the cabins included in the survey. Approximately 72% (926 of 1,283 total parties) gave an Alaska address when the reservation was made and were assumed to be Alaska residents. Other parties reserving cabins in Southeast Alaska during 2009 were from Germany, Canada, Italy, and Czech Republic.

ANGLER HARVEST AND CATCH

The total number of trout released by cabin users was an estimated 12,383 trout (SE = 789) and the total number of steelhead released was 441 (SE = 57; Table 2). These anglers harvested 1,176 trout (SE = 87) for a retention rate of nearly 9%; 25 (SE = 19) steelhead were also harvested for a retention rate of approximately 5%.

The system with the most harvest of trout was Virginia Lake near Wrangell where an estimated 136 (SE = 5) trout were harvested and another 737 (SE = 30) were released. Steelhead harvest was reported, and thus estimated, from only three systems (Heckman, Karta, and Windfall) but steelhead were caught and released in 17 different systems (Table 2).

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 in 2009.

Survey strata	Type of response	No. of parties	No. who used reservation	Parties who fished	Mean party size	Alaska resident	Other U.S. states	Foreign country
Spring (257 parties)	Responded 1st mailing	122	95	51	3.6	96	26	0
	Responded 2nd mailing	43	29	13	3.3	39	4	0
	Responded 3rd mailing	38	28	11	3.5	32	4	2
	Total responding	203	152	75	3.5	167	34	2
	Undeliverable	15				11	4	0
	No response	39			4.2	32	7	0
Summer (802 parties)	Responded 1st mailing	350	303	215	3.6	233	117	0
	Responded 2nd mailing	133	116	78	3.4	74	59	0
	Responded 3rd mailing	151	119	86	3.3	86	63	2
	Total responding	634	538	379	3.5	393	239	2
	Undeliverable	41				27	10	4
	No response	127			3.5	85	40	2
Fall (224 parties)	Responded 1st mailing	118	101	32	3.3	109	9	0
	Responded 2nd mailing	39	35	12	3.3	37	2	0
	Responded 3rd mailing	19	14	5	4.0	19	0	0
	Total responding	176	150	49	3.5	165	11	0
	Undeliverable	6				5	1	0
	No response	42			3.6	39	3	0
All combined (1,283 parties)	Responded 1st mailing	590	499	298	3.6	438	152	0
	Responded 2nd mailing	215	180	103	3.5	150	65	0
	Responded 3rd mailing	208	161	102	3.5	137	67	4
	Total responding	1,013	840	503	3.5	725	284	4
	Undeliverable	62				45	15	4
	No response	208				156	50	2

Table 2.–Number of registered and responding parties, estimated numbers of trout (rainbow and cutthroat trout) and steelhead kept and released by system at USFS recreational cabins in Southeast Alaska, 2009

System[a]	Parties, number registered	Number responded	Total number			Trout (cutthroat and rainbow)				Steelhead			
			who fished	nights reserved	in party	Harvest	SE harvest	Released	SE released	Harvest	SE harvest	Released	SE released
Admiralty Cove	47	41	14	116	159	1	1	32	13	0	0	9	4
Anan Creek	30	24	4	69	97	0	0	21	19	0	0	0	0
Anan Lake	0	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Avoss Lake	2	2	1	8	5	0	0	0	0	–[b]	–[b]	–[b]	–[b]
Bakewell Lake	0	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Baranof Lake	5	5	2	8	12	0	0	8	3	–[b]	–[b]	–[b]	–[b]
Black Bear Lake	8	6	3	19	25	24	8	107	35	–[b]	–[b]	–[b]	–[b]
Castle River, 2	51	39	23	177	216	76	13	534	81	0	0	2	1
Checats Lake	3	2	2	9	8	8	4	53	4	–[b]	–[b]	–[b]	–[b]
Control Lake	17	11	6	28	94	9	3	65	30	–[b]	–[b]	–[b]	–[b]
Davidof Lake	1	1	1	6	3	1	0	4	0	–[b]	–[b]	–[b]	–[b]
De Boer Lake	2	2	0	8	3	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Distin Lake, 2	10	7	2	32	28	0	0	5	4	–[b]	–[b]	–[b]	–[b]
Duncan Salt Chuck	14	12	6	42	50	25	0	276	24	0	0	0	0
Eagle Lake	4	4	1	12	9	3	0	40	0	–[b]	–[b]	–[b]	–[b]
Ella Lake,2	6	5	3	20	26	35	11	43	9	–[b]	–[b]	–[b]	–[b]
Essowah Lake	0	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Fish Creek	53	41	30	136	191	12	3	245	80	0	0	23	10
Florence Lake	7	5	3	30	30	0	0	41	15	–[b]	–[b]	–[b]	–[b]
Goulding Lake	8	4	1	24	26	0	0	5	0	–[b]	–[b]	–[b]	–[b]
Harding River	7	3	3	31	17	0	0	0	0	0	0	23	9
Harvey Lake	9	7	4	15	34	0	0	6	0	–[b]	–[b]	–[b]	–[b]
Hasselborg Lake, 3	38	37	25	133	127	60	62	1,892	306	–[b]	–[b]	–[b]	–[b]
Heckman Lake, 2	28	19	16	99	1158	95	36	620	134	9	6	63	33
Honker Lake	3	2	0	10	9	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Hugh Smith Lake	3	2	2	9	12	6	0	30	0	–[b]	–[b]	–[b]	–[b]
Humpback Lake	5	5	4	20	16	28	8	363	59	–[b]	–[b]	–[b]	–[b]

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Table 2.–Page 2 of 3.

System[a]	Parties, Number registered	Number responded	Total number who fished	Total number nights reserved	Total number in party	Trout (cutthroat and rainbow) Harvest	Trout (cutthroat and rainbow) SE harvest	Trout (cutthroat and rainbow) Released	Trout (cutthroat and rainbow) SE released	Steelhead Harvest	Steelhead SE harvest	Steelhead Released	Steelhead SE released
Jim's Lake	3	2	1	13	9	0	0	150	0	–[b]	–[b]	–[b]	–[b]
Jordan Lake	41	29	20	114	126	42	10	629	457	0	0	78	20
Kadake Creek	8	8	6	39	32	1	0	75	0	0	0	63	0
Kah Sheets Creek	17	15	6	36	53	0	0	32	11	0	0	0	0
Kah Sheets Lake	20	16	12	63	70	33	12	89	10	0	0	5	2
Karta, 3	56	48	32	271	182	131	17	753	91	11	6	64	12
Kathleen Lake	11	9	3	45	37	0	0	32	4	–[b]	–[b]	–[b]	–[b]
Kegan Creek, 2	12	9	4	35	47	5	3	34	18	0	0	0	0
Kook Lake	5	3	2	32	19	6	0	60	0	–[b]	–[b]	–[b]	–[b]
Lake Alexander	10	8	1	37	24	0	0	32	0	–[b]	–[b]	–[b]	–[b]
Lake Eva	19	16	14	74	59	38	12	408	35	0	0	3	0
Manzanita Lake, 2	11	8	5	31	35	17	8	211	59	–[b]	–[b]	–[b]	–[b]
Marten Lake	2	2	1	4	3	8	0	8	0	–[b]	–[b]	–[b]	–[b]
McDonald Lake	16	13	9	78	58	18	6	332	102	0	0	21	0
Orchard Lake	4	3	3	7	7	17	4	123	4	–[b]	–[b]	–[b]	–[b]
Patching Lake	8	6	5	28	21	41	11	223	44	–[b]	–[b]	–[b]	–[b]
Petersburg Lake	24	18	9	81	71	39	13	149	58	0	0	71	22
Peterson Lake	120	82	18	148	447	12	7	182	89	–[b]	–[b]	–[b]	–[b]
Plotnikof Lake	3	3	2	21	10	0	0	6	3	–[b]	–[b]	–[b]	–[b]
Rainbow Lake	0	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]	–[b]
Red Bay Lake	8	8	5	35	35	11	0	52	17	0	0	2	0
Reflection Lake	8	8	6	35	22	25	0	395	0	0	0	0	0
Salmon Bay Lake	11	9	6	51	39	30	5	233	39	0	0	0	0
Salmon Lake – Sitka	53	39	15	94	184	30	7	124	26	0	0	1	1
Sarkar Lake	27	23	14	68	92	6	2	217	79	–[b]	–[b]	–[b]	–[b]
Shipley Bay	5	4	4	30	18	13	0	92	9	–[b]	–[b]	–[b]	–[b]

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Table 2.–Page 3 of 3.

System[a]	Parties, Number registered	Number responded	Total number who fished	Total number nights reserved	Total number in party	Trout (cutthroat and rainbow) Harvest	Trout (cutthroat and rainbow) SE harvest	Trout (cutthroat and rainbow) Released	Trout (cutthroat and rainbow) SE released	Steelhead Harvest	Steelhead SE harvest	Steelhead Released	Steelhead SE released
Sitkoh Lake, 2	9	9	5	24	28	2	0	15	0	0	0	0	0
Staney Creek	39	31	10	133	113	6	5	73	413	0	0	3	29
Suloia Lake	5	4	3	10	20	17	1	33	4	–[b]	–[b]	–[b]	–[b]
Swan Lake	17	12	11	78	51	19	3	148	45	–[b]	–[b]	–[b]	–[b]
Sweetwater Lake	33	23	13	79	124	13	9	151	67	0	0	2	2
Turner Lake, 2	28	25	17	72	109	1	0	250	58	–[b]	–[b]	–[b]	–[b]
Twin Lakes	34	26	8	81	134	21	10	133	56	–[b]	–[b]	–[b]	–[b]
Virginia Lake	35	30	21	110	118	136	21	737	137	–[b]	–[b]	–[b]	–[b]
Wilson Lake, 2	19	16	14	40	62	12	3	1,107	106	–[b]	–[b]	–[b]	–[b]
Windfall Lake	171	136	30	218	638	26	7	377	147	5	3	8	5
Winstanley Lake	5	4	2	16	12	14	7	180	14	–[b]	–[b]	–[b]	–[b]
Young Lake, 2	25	22	10	52	87	5	5	151	27	–[b]	–[b]	–[b]	–[b]
Total[c]	1,283	1,013	503	3,444	4,508	1,176	87	12,383	789	25	19	441	57

[a] If more than one cabin occurs at a given system, the number follows the site name.

[b] No data, or species not present in the system.

[c] Totals may vary slightly due to rounding error.

DISCUSSION

The overall response rate of 83% to this survey was an increase from the approximately 77–78% observed during the 1992, 1999, 2002, and 2006 surveys (Jones 1993; Jones and Kondzela 2001; Harding et al. 2005, 2009). Angler response dropped sharply during the consecutive surveys sent in 1993 (65%, Jones 1994) and 1994 (39%, Jones 1995), but rebounded once the survey frequency dropped to once every three years. The 2009 survey was "simplified" in an effort to decrease the amount of incomplete data on returned surveys and to increase the response rate. Both goals were met as the number of incomplete data forms was reduced significantly and the response rate increased. However, by simplifying the 2009 survey the fishing effort component was eliminated, as was the general question of "trout management" (Harding et al. 2009) that provided insight in to angler's preferences and management priorities.

Previous recreational cabin surveys (Jones 1993–1995; Jones and Kondzela 2001; Harding et al. 2005, 2009) have estimated angler effort and subsequently CPUE for trout and steelhead for each system. Because no specific angler harvest questions were asked in 2009, the "standard" effort for comparison purposes was redefined as the number of reservations made by party heads. Tables 3 and 4 were developed to provide consistency of effort (number of reservations) and total catch estimates (released + harvest) across surveys for each system and this should allow resource managers to track trends within a specific system, as well as region wide. However, future surveys will need to monitor the percentage of parties that fished to establish that the number of reservations provide a viable effort comparison, i.e., the percentage of parties that fish does not significantly shift.

The estimated total freshwater catch of trout (cutthroat and rainbow trout combined) from the 2009 SWHS for Southeast Alaska was 41,640 (Jennings et al. 2011). The estimated total trout catch from the 2009 USFS cabin survey was 13,558. This suggests that the USFS cabin users surveyed during 2009 generated an appreciable portion (about 30%) of the total cutthroat and rainbow trout catch in the region. Results from previous USFS cabin surveys (1999, 2002, and 2006) indicated that cabin users regularly accounted for a large portion of the trout catch in Southeast Alaska (Jones and Kondzela 2001; Harding et al. 2005, 2009). Similar comparisons of steelhead catch between the SWHS and the cabin survey do not contribute anything meaningful because the cabin survey does not survey any Yakutat systems where the majority of steelhead catch in Southeast Alaska occurs, i.e., Situk River. Between 60% and 85% of the total SHWS estimates of annual steelhead catch in Southeast Alaska occurred in the Yakutat area (Situk River) during 2000 and 2009 (Jennings et al. 2011).

The total catch of trout during all previous recreational cabin surveys has averaged 27,796 (range 21,219–42,946), but the total 2009 survey catch estimate was approximately half of this average. The overall trend in total trout catch since 1992 has been relatively stable with some annual fluctuations, but there is no obvious reason for the significant decrease of over 10,000 trout caught between 2006 and 2009 (Table 3). The percentage of anglers who used their reservation and fished during 2006 and 2009 was constant at 60%, while the percent of cabin users that fished and were from Alaska increased only slightly between 2006 (68%) and 2009 (72%). The estimated total steelhead catch in 2009 was approximately 60% below the 2006 estimate of 1,149 and the average catch of 1,141 estimated since 1999 (range 724–1,549).

Table 3.–Number of registered parties, estimated number of total catch (released + harvest) for trout (rainbow and cutthroat trout) by system compiled from previous surveys at USFS recreational cabins in Southeast Alaska between 1992 and 2009.

	Registered parties[b]							Trout catch						
System[a]	1992	1993	1994	1999	2002	2006	2009	1992	1993	1994	1999	2002	2006	2009
Admiralty Cove	28	67	59	55	54	51	47	87	560	44	157	91	34	33
Anan Creek	15	15	25	22	20	24	30	15	107	368	10	58	13	21
Anan Lake	NS	NS	NS	NS	NS	0	0	–[c]	–[c]	–[c]	–[c]	–[c]	–[c]	–[c]
Avoss Lake	NS	NS	NS	NS	NS	5	2	–[c]	–[c]	–[c]	–[c]	–[c]	27	0
Bakewell Lake	NS	17	22	8	10	6	0	–[c]	587	801	456	398	111	–
Baranof Lake	22	16	16	7	9	11	5	1,800	500	997	104	63	77	8
Black Bear Lake	NS	NS	NS	3	13	11	8	–	–	–	71	128	16	131
Castle River, 2	48	29	43	36	34	32	51	663	1,346	108	1,040	413	625	610
Checats Lake	NS	NS	NS	4	5	2	3	–[c]	–[c]	–[c]	156	192	48	60
Control Lake	NS	NS	25	24	30	33	17	–[c]	–[c]	430	378	407	106	75
Davidof lake	NS	NS	NS	2	2	3	1	–[c]	–[c]	–[c]	7	11	31	5
De Boer Lake	NS	NS	NS	3	5	2	2	–[c]	–[c]	–[c]	0	3	3	0
Distin Lake, 2	16	29	29	11	6	5	10	270	154	674	94	17	144	5
Duncan Salt Chuck	NS	NS	NS	18	12	21	14	–[c]	–[c]	–[c]	33	320	70	301
Eagle Lake	0	5	9	7	4	1	4	–[c]	9	14	342	33	0	43
Ella Lake	29	86	35	13	7	6	6	803	2,925	913	449	104	290	78
Essowah Lake	0	9	3	4	4	2	0	–[c]	7	30	10	15	19	–[c]
Fish Creek	45	74	60	51	55	54	53	493	521	520	524	730	269	257
Florence Lake	18	27	27	18	18	10	7	1,019	2,187	1,465	405	481	106	41
Goulding Lake	5	9	11	6	9	7	8	99	119	425	287	169	48	5
Harding River	4	9	14	16	6	9	7	6	34	43	0	7	2	0
Harvey Lake	NS	NS	NS	NS	NS	9	9	–[c]	–[c]	–[c]	–[c]	–[c]	16	6
Hasselborg Lake, 3	51	87	69	26	31	27	38	1,955	2,997	1,897	1,595	2,584	3,092	1,951
Heckman Lake, 2	NS	33	31	21	3	35	28	–[c]	2,473	827	434	11	571	715
Honker Lake	NS	NS	14	3	8	6	3	–[c]	–[c]	353	147	89	239	0
Hugh Smith Lake	11	11	9	3	3	6	3	154	8	86	48	74	158	36
Humpback Lake	15	33	21	7	7	9	5	2,323	2,828	1,037	776	1,812	2,018	390
Jim's Lake	23	29	33	20	11	4	3	1,014	858	629	373	293	45	150
Jordan Lake	26	36	45	26	31	31	41	1,476	871	1,077	691	600	285	671
Kadake Creek	7	7	24	7	9	7	8	462	106	311	32	140	38	76
Kah Sheets Creek	18	NS	NS	23	0	24	17	142	–[c]	–[c]	92	0	50	32

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Table 3.–Page 2 of 3.

System[a]	Registered parties[b]							Trout catch						
	1992	1993	1994	1999	2002	2006	2009	1992	1993	1994	1999	2002	2006	2009
Kah Sheets Lake	NS	44	55	20	33	23	20	– [c]	792	239	114	215	109	122
Karta, 3	59	112	75	46	75	75	56	1,634	3,452	919	1,313	1,951	1,576	884
Kathleen Lake	NS	15	17	10	7	9	11	– [c]	1	0	8	0	0	32
Kegan Creek, 2	20	48	33	26	34	31	12	307	1,471	1,133	228	422	73	38
Kook Lake	10	14	14	8	8	3	5	606	184	497	506	102	0	66
Lake Alexander	NS	31	25	9	4	4	10	– [c]	550	1,068	122	0	0	32
Lake Eva	51	38	39	20	23	17	19	1,141	615	697	1,616	726	415	446
Manzanita Lk, 2	NS	61	37	15	20	20	11	– [c]	1,435	1,182	2,392	694	649	229
Marten Lake	NS	NS	NS	5	2	2	2	– [c]	– [c]	– [c]	55	315	243	16
McDonald Lake	21	33	28	16		23	16	398	653	1,729	831	764	558	350
Orchard Lake	17	18	13	6	6	10	4	665	1,274	418	198	135	560	139
Patching Lake	10	25	18	7	17	9	8	287	1,639	542	76	398	629	264
Petersburg Lake	22	21	NS	17	3	27	24	271	29	– [c]	153	160	322	188
Peterson Lake	NS	NS	135	110	102	106	120	– [c]	– [c]	498	128	67	49	194
Plotnikof Lake	NS	NS	NS	6	7	7	3	– [c]	– [c]	– [c]	91	503	70	6
Rainbow Lake	NS	5	4	3	3	0	0	– [c]	79	85	0	29	– [c]	– [c]
Red Bay Lake	3	18	15	9	24	35	8	3	32	0	40	252	199	63
Reflection Lake	15	20	26	12	7	17	8	403	165	253	249	832	1,132	420
Salmon Bay Lake	15	29	9	15	10	10	11	290	780	478	728	333	73	263
Salmon Lake - Sitka	NS	42	49	30	41	48	53	– [c]	500	931	327	102	183	154
Sarkar Lake	12	51	45	26	26	30	27	85	567	490	263	210	252	223
Shipley Bay	NS	NS	NS	4	7	4	5	– [c]	– [c]	– [c]	132	0	0	105
Sitkoh Lake, 2	16	35	35	22	18	29	9	721	439	517	821	234	690	17
Staney Creek	46	76	57	34	30	53	39	72	683	6	80	37	83	79
Suloia Lake	NS	NS	NS	0	1	7	5	– [c]	– [c]	– [c]	0	0	46	49

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Table 3.–Page 3 of 3.

System[a]	Registered parties[b]							Trout catch						
	1992	1993	1994	1999	2002	2006	2009	1992	1993	1994	1999	2002	2006	2009
Swan Lake	NS	NS	NS	NS	NS	17	17	–[c]	–[c]	–[c]	–[c]	–[c]	330	167
Sweetwater Lake	NS	74	56	12	31	5	33	–	1,002	330	78	92	10	164
Turner Lake, 2	54	77	70	40	50	50	28	312	974	948	797	1,152	660	252
Twin Lakes	NS	NS	NS	14	10	15	34	–[c]	–[c]	–[c]	43	0	29	154
Virginia Lake	NS	19	25	20	24	22	35	–	1,201	524	1,263	919	522	873
Wilson Lake, 2	9	42	24	17	18	22	19	1,243	4,489	2,306	4,299	1,937	3,556	1,119
Windfall Lake	NS	NS	NS	158	155	186	171	–[c]	–[c]	–[c]	163	297	274	403
Winstanley Lake	NS	NS	14	8	7	3	5	–[c]	–[c]	356	118	153	83	194
Young Lake, 2	NS	68	63	37	37	38	25	–[c]	741	566	864	329	1,517	156
Grand total[c]	760	1,644	1,605	1,226	1,261	1,408	1,221	21,219	42,946	29,761	26,807	22,601	23,440	13,558

[a] If more than 1 cabin occurs at a given system, the number follows the site name.

[b] NS = not surveyed.

[c] No data.

[d] Totals may vary slightly due to rounding error.

Table 4.–Number of registered parties, estimated number of total catch (released + harvest) of steelhead by system compiled from previous surveys at USFS recreational cabins in Southeast Alaska between 1992 and 2009.

	Registered parties[b]							Steelhead catch						
System[a]	1992	1993	1994	1999	2002	2006	2009	1992	1993	1994	1999	2002	2006	2009
Admiralty Cove	28	67	59	55	54	51	47	0	5	55	5	0	1	9
Anan Creek	15	15	25	22	20	24	30	35	10	0	3	6	9	0
Castle River, 2	48	29	43	36	34	32	51	4	2	1,667	5	0	10	2
Ella Lake	29	86	35	13	7	6	6	0	0	2	0	0	0	0
Control Lake	NS	NS	25	24	30	33	17	–[c]	–[c]	0	14	16	0	0
Fish Creek	45	74	60	51	55	54	53	86	55	2,182	160	107	10	23
Florence Lake	18	27	27	18	18	10	7	0	3	0	0	0	0	0
Harding River	4	9	14	16	6	9	7	0	0	2	0	5	0	23
Hasselborg Lake, 3	51	87	69	26	31	27	38	0	0	0	0	0	80	0
Heckman Lake	NS	33	31	21	3	35	28	–[c]	20	13	20	3	5	71
Honker Lake	NS	NS	14	3	8	6	3	–[c]	–[c]	0	0	8	0	0
Hugh Smith Lake	11	11	9	3	3	6	3	9	0	267	0	0	0	0
Humpback Lake	15	33	21	7	7	9	5	–[c]	0	0	0	62	0	0
Jordan Lake	26	36	45	26	31	31	41	149	33	70	43	69	83	78
Kadake Creek	7	7	24	7	9	7	8	49	0	1,122	52	65	158	63
Kah Sheets Creek	18	NS	NS	23	0	24	17	11	–[c]	–[c]	12	0	11	0
Kah Sheets Lake	NS	44	55	20	33	23	20	–[c]	5	319	27	18	23	5
Karta, 3	59	112	75	46	75	75	56	266	327	1,429	200	944	468	75
Kegan Creek, 2	20	48	33	26	34	31	12	0	8	284	0	22	3	0
Lake Eva	51	38	39	20	23	17	19	67	24	19	0	9	8	3
Manzanita Lake, 2	NS	61	37	15	20	20	11	–[c]	0	2	2	15	16	0
McDonald Lake	20	33	28	16	21	23	16	87	216	504	7	16	98	21
Patching Lake	10	25	18	7	17	9	8	0	0	2	0	0	0	0
Petersburg Lake	22	21		17	3	27	24	76	0	0	23	26	111	71
Peterson Lake	NS	NS	18	110	102	106	120	–[c]	–[c]	4	0	0	0	0
Plotnikof Lake	NS	NS	NS	6	7	7	3	–[c]	–[c]	–[c]	2	0	0	0
Rainbow Lake	NS	5	4	3	3	0	0	–[c]	0	0	0	2	–[c]	–[c]
Red Bay Lake	3	18	15	9	24	35	8	0	0	0	0	62	8	2
Reflection Lake	15	20	26	12	7	17	8	0	25	0	0	0	12	0
Salmon Bay Lake	15	29	9	15	10	10	11	0	38	5	44	0	0	0

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Table 4.–Page 2 of 2.

System[a]	Registered parties[b]							Steelhead catch						
	1992	1993	1994	1999	2002	2006	2009	1992	1993	1994	1999	2002	2006	2009
Salmon Lake - Sitka	NS	42	49	30	41	48	53	– [c]	0	0	0	0	12	1
Sarkar Lake	12	51	45	26	26	30	27	0	0	0	3	2	0	0
Shipley Bay	NS	NS	NS	4	7	4	5	– [c]	– [c]	– [c]	2	0	0	0
Sitkoh Lake, 2	16	35	35	22	18	29	9	15	5	217	80	22	1	0
Staney Creek	46	76	57	34	30	53	39	13	43	69	0	2	6	3
Sweetwater Lake	NS	74	56	12	31	5	113	– [c]	0	72	0	0	10	2
Turner Lake, 2	54	77	70	40	50	50	28	0	0	2	0	0	3	0
Wilson Lake, 2	9	42	24	17	18	22	109	0	0	5	0	2	0	0
Windfall Lake	NS	NS	NS	158	155	186	134	– [c]	– [c]	– [c]	3	0	1	13
Young Lake, 2	NS	68	63	37	37	38	62	– [c]	0	0	17	65	2	0
Grand total[c]	667	1,433	1,257	1,053	1,108	1,229	1,256	867[e]	819[f]	8,313[g]	724	1,549	1,149	465

[a] If more than one cabin occurs at a given system, the number follows the site name.

[b] NS = not surveyed.

[c] No data

[d] Totals may vary slightly due to rounding error.

[e] Total does not include 502 steelhead caught on the Situk River.

[f] Total does not include 283 and 3 steelhead caught on the Situk and Italio rivers, respectively.

[g] Total does not include 239, 66, and 5 steelhead caught on the Situk, Italio, and Stikine rivers, respectively.

Estimates of harvest and release of trout and steelhead in individual systems were highly variable throughout Southeast Alaska, and some sites were more popular than others (Table 2). Peterson and Windfall lake cabins had the greatest number of reservations (23% of all reservations), yet produced modest trout catches and harvests (5% and 3% of the survey total). The systems with the highest estimated total trout catch in 2009 were Hasselborg, Wilson, Virginia, and Karta. These same four systems were also among the highest in 2006, but 2 other systems with estimated catches >1,500 in 2006 dropped significantly in 2009 (Humpback from 2,018 to 390; and Young from 1,517 to 156). The number of cabin reservations during 2009 was approximately 10% lower than in 2006, but well within the range of past surveys. It is unknown why cabin reservations have trended slightly downward, but higher air charter costs due to increased fuel and insurance costs, along with a general economic downtrend and fewer visitors to Alaska (McDowell Group 2010), may be contributing factors.

There were four lakes in 2009 that apparently had no reservations made, and two of these lakes (Anan and Rainbow) also had no reservations made in 2006. The methods used in the 2009, and by all past surveys, does not provide a feedback mechanism to determine if there really were reservations made, or if reservations at these cabins were somehow not included in the survey. A list is provided to assisting USFS personnel as to which cabins are to be surveyed (Appendix A) and the USFS submits this request to the private contractor of the cabin reservation website. The first mailout typically has <300 reservations (Table 1), and obviously many cabins have no reservations made until after June 1. Thus, it may be during the second mailing in October when the majority of surveys are sent that a missed cabin is noticed. Future surveys should develop some type of a cross checking system using a list of cabins supplied by the contractor where no reservations are made. At the beginning of future surveys a review of cabins that are available for public rental would also be helpful as the status of cabins may change over time.

The USFS continued to physically conduct the mailings, and the completed forms were returned directly to the Douglas ADF&G office (per agreement reached prior to 2006 survey; see Methods section). The process between ADF&G and the USFS was smooth during this survey and many of the problems and issues experienced during the 2006 survey were eliminated. This arrangement worked well and the author feels there was no compromise in the data integrity or statistical design.

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APPENDIX A.
SUPPLEMENTAL SURVEY DATA FOR 2009

Appendix A1.–Surveyed USFS recreational cabins in Southeast Alaska by ranger district, system, cabin name, presence of steelhead and trout, type of survey form sent, and 2009 ADF&G trout regulations.

Ranger district	System	Cabin name	Steelhead	Trout	Trout regulations[a]	Survey form
Admiralty Island	Admiralty Creek	Admiralty Cove	Yes	Yes	11"	Comb.
Admiralty Island	Distin Lake	Distin Shelter		Yes	25"	Trout
Admiralty Island	Distin Lake	Sportsmen		Yes	25"	Trout
Admiralty Island	Florence Lake	East Florence		Yes	Bait lake	Trout
Admiralty Island	Hasselborg Lake	Big Shaheen		Yes	25"	Trout
Admiralty Island	Hasselborg Lake	Hasselborg Creek		Yes	11"	Trout
Admiralty Island	Hasselborg Lake	Little Shaheen		Yes	25"	Trout
Admiralty Island	Jim's Lake	Jim's Lake		Yes	25"	Trout
Admiralty Island	Lake Alexander	Lake Alexander		Yes	14"	Trout
Admiralty Island	Lake Kathleen	Lake Kathleen		Yes	11"	Trout
Admiralty Island	Young Lake	North Young Lake[b]		Yes	14"	Trout
Admiralty Island	Young Lake	South Young Lake[c]		Yes	14"	Trout
Juneau	Peterson Lake	Peterson Lake		Yes	14"	Trout
Juneau	Turner Lake	East Turner Lake		Yes	C&R	Trout
Juneau	Turner Lake	West Turner Lake		Yes	C&R	Trout
Juneau	Windfall Lake	Windfall Lake		Yes	14"	Comb.
Ketchikan	Fish Creek	Fish Creek	Yes	Yes	11"	Comb.
Ketchikan	Heckman Lake	Heckman Lake	Yes	Yes	14"	Comb.
Ketchikan	Heckman Lake	SE Heckman Lake[b]	Yes	Yes	14"	Comb.
Ketchikan	Jordan Lake	Jordan Lake	Yes	Yes	14"	Comb.
Ketchikan	McDonald Lake	McDonald Lake	Yes	Yes	14"	Comb.
Ketchikan	Orchard Lake	Plenty Cutthroat		Yes	25"	Trout
Ketchikan	Patching Lake	Patching Lake		Yes	25"	Trout
Ketchikan	Rainbow Lake	Rainbow Lake		Yes	11"	Trout
Ketchikan	Reflection Lake	Reflection Lake	Yes	Yes	25"	Comb.
Misty Fiords	Bakewell Lake	Bakewell		Yes	14"	Trout
Misty Fiords	Ella Lake	Ella Narrows		Yes	25"	Trout
Misty Fiords	Ella Lake	Red Alders		Yes	25"	Trout
Misty Fiords	Hugh Smith Lake	Hugh Smith Lake		Yes	11"	Trout
Misty Fiords	Humpback Lake	Humpback Lake		Yes	25"	Trout
Misty Fiords	Manzanita Lake	Beaver Camp		Yes	25"	Trout
Misty Fiords	Manzanita Lake	Manzanita Lake		Yes	25"	Trout
Misty Fiords	Upper Checats Lake	Checats		Yes	11"	Trout
Misty Fiords	Wilson Lake	Wilson Narrows		Yes	25"	Trout
Misty Fiords	Wilson Lake	Wilson View		Yes	25"	Trout
Misty Fiords	Winstanley Lake	Winstanley Lake		Yes	11"	Trout
Petersburg	Castle River	Castle Flats	Yes	Yes	11"	Comb.
Petersburg	Castle River	Castle River	Yes	Yes	11"	Comb.
Petersburg	De Boer Lake	De Boer Lake		Yes	11"	Trout
Petersburg	Duncan Salt Chuck	Salt Chuck East	Yes	Yes	11"	Comb.
Petersburg	Harvey Lake	Harvey Lake[b]		Yes	11”	Trout
Petersburg	Kadake Creek	Kadake Bay	Yes	Yes	11"	Comb
Petersburg	Kah Sheets Creek	Kah Sheets Bay	Yes	Yes	11"	Comb
Petersburg	Kah Sheets Lake	Kah Sheets Lake	Yes	Yes	14"	Comb

-continued-

Ranger district	System	Cabin name	Steelhead	Trout	Trout regulations[a]	Survey form
Petersburg	Petersburg Lake	Petersburg Lake	Yes	Yes	14"	Comb
Petersburg	Swan Lake	Swan Lake[b]		Yes	11”	Trout
Prince of Wales	Control Lake	Control Lake		Yes	11"	Trout
Prince of Wales	Honker Lake	Honker Lake		Yes	11"	Trout
Prince of Wales	Karta	Karta Lake	Yes	Yes	14"	Comb
Prince of Wales	Karta	Karta River	Yes	Yes	14"	Comb
Prince of Wales	Karta	Salmon Lake		Yes	14"	Trout
Prince of Wales	Red Bay Lake	Red Bay Lake	Yes	Yes	14"	Comb
Prince of Wales	Salmon Bay Lake	Salmon Bay Lake	Yes	Yes	14"	Comb
Prince of Wales	Sarkar Lake	Sarkar Lake		Yes	14"	Trout
Prince of Wales	Shipley Lake	Shipley Bay		Yes	11"	Trout
Prince of Wales	Staney Creek	Staney Creek	Yes	Yes	14"	Comb
Prince of Wales	Sweetwater Lake	Sweetwater Lake[c]		Yes	11"	Comb
Prince of Wales	Black Bear	Black Bear Lake		Yes	11"	Trout
Prince of Wales	Essowah Lake	Essowah Lake		Yes	11"	Trout
Prince of Wales	Kegan Creek	Kegan Cove	Yes	Yes	14"	Comb
Prince of Wales	Kegan Creek	Kegan Creek	Yes	Yes	14"	Comb
Sitka	Avoss Lake	Avoss Lake		Yes	11"	Trout
Sitka	Baranof Lake	Baranof Lake		Yes	14"	Trout
Sitka	Davidof Lake	Davidof Lake		Yes	11"	Trout
Sitka	Goulding Lake	Goulding Lake		Yes	14"	Trout
Sitka	Kook Lake	Kook Lake		Yes	14"	Trout
Sitka	Lake Eva	Lake Eva	Yes	Yes	14"	Comb
Sitka	Plotnikof Lake	Plotnikof Lake[c]		Yes	11"	Trout
Sitka	Salmon Lake	Salmon Lake	Yes	Yes	14"	Comb
Sitka	Sitkoh Lake	Sitkoh Lake East	Yes	Yes	14"	Comb
Sitka	Sitkoh Lake	Sitkoh Lake West	Yes	Yes	14"	Comb
Sitka	Suloia Lake	Suloia Lake		Yes	11"	Trout
Wrangell	Anan Creek	Anan Bay	Yes	Yes	11"	Comb
Wrangell	Anan Lake	Anan Lake[b]	Yes	Yes	14"	Comb
Wrangell	Eagle Lake	Eagle Lake		Yes	25"	Trout
Wrangell	Harding River	Harding River	Yes	Yes	11"	Comb
Wrangell	Marten Lake	Marten Lake		Yes	11"	Trout
Wrangell	Twin Lakes	Twin Lakes		Yes	11"	Trout
Wrangell	Virginia Lake	Virginia Lake		Yes	14"	Trout
Total number of cabins			28[d]	79		

[a] 11” = 11 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, bag limit of 2/day for 11” and 14” minimum size limit; 1/day for 25” minimum size limit. Current regionwide regulations for steelhead include a daily bag limit of 1 fish, 36 inches or more in total length, and an annual limit of 2 fish

[b] Cabins not surveyed prior to the 2006 survey.

[c] Steelhead angling opportunities accessible from cabin. At Plotnikof Lake, one can take a four-mile boat ride to the outlet stream, then hike a four- to five-mile trail to the stream below the barrier falls that has steelhead. At Young Lake, one can hike approximately one mile down the outlet stream and access the creek below the barrier falls to fish for steelhead.

[d] Does not include two locations where steelhead opportunities are accessible from cabin (per footnote c).

APPENDIX B.
QUESTIONNAIRE AND REMINDER LETTERS

File Code:
Date:

(name)
(address)

Dear (first name) (last name):

The US Forest Service (USFS) is assisting the Alaska Department of Fish and Game (ADF&G) with surveying anglers about their fishing experience while using USFS public recreation cabins in Southeast Alaska during 2009. Because you reserved the (Cabin) on (Date) we are asking for your participation with this survey. Information about your group's fishing experience while using the USFS cabin is important to this study. Your responses and comments are valuable even if you did not stay at the cabin or fish while you were there.

Please complete and return the enclosed survey form directly to ADF&G in the postage-paid, addressed envelope provided with this letter. The U.S. Forest Service respects your privacy and has not shared any personal information with ADF&G or any other group or individual. Your responses to this survey will also remain strictly confidential; only the summary of information from all respondents will ever be published. ADF&G intends to publish a summary of information resulting from the 2009 survey on its web site sometime in April 2010. To view the results of the most recent survey (2006), please visit the ADF&G web site at http://www.sf.adfg.state.ak.us/Region1/trout/cabin.cfm.

Information about sport fishing at the USFS public recreation cabins is important to the management of the fisheries resources. Your information and that of other anglers will help the Alaska Department of Fish and Game and the US Forest Service work together to sustain your opportunities to enjoy Alaska's recreational fishing. Thank you for participating in our survey.

If you have any questions or privacy concerns related to the procedures that were followed in conducting this survey, please contact me at (907) 790-7479.

Sincerely,

Pete Schneider, Fisheries Biologist

Tongass National Forest

Enclosure

1. Did you or anyone from your group use the <merge cabin name> that you reserved for <merge date>?

   ☐ NO ⋯▸ Your survey is complete; please return this form in the enclosed envelope.

   ☐ YES ⋯▸ Please continue the survey.

2. Did anyone from your group fish during your stay?

   ☐ NO ⋯▸ Please skip to question 3.

   ☐ YES ⋯▸ Please answer the questions below.

   Cutthroat or rainbow trout

   Approximately how many *cutthroat or rainbow trout* did your group keep to eat or bring home? _____

   Approximately how many *cutthroat or rainbow trout* did your group release or return back into the water? _____

   Steelhead

   Approximately how many *steelhead* did your group keep to eat or bring home? _____

   Approximately how many *steelhead* did your group release or return back into the water? _____

3. Please provide any comments about your experience at <merge cabin name> (e.g., Windfall Lake):

Please return this form in the enclosed envelope. Thank you for your help.

1. Did you or anyone from your group use the <merge cabin name> that you reserved for <merge date>?

   ☐ NO ⋯▸ Your survey is complete; please return this form in the enclosed envelope.

   ☐ YES ⋯▸ Please continue the survey.

2. Did anyone from your group fish during your stay?

   ☐ NO ⋯▸ Please skip to question 3.

   ☐ YES ⋯▸ Please answer the questions below.

   Approximately how many *cutthroat or rainbow trout* did your group keep to eat or bring home? _____

   Approximately how many *cutthroat or rainbow trout* did your group release or return back into the water? _____

3. Please provide any comments about your experience at <merge cabin name>:

Please return this form in the enclosed envelope. Thank you for your help.

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

File Code:
Date:

(name)
(address)

Dear (first name) (last name):

Some time has passed since I first requested information about your fishing activities at (Cabin beginning on (Date). I still have not received your reply. 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 and return the enclosed survey form directly to ADF&G in the postage-paid, addressed envelope provided with this letter.

The U.S. Forest Service respects your privacy and has not shared any personal information with ADF&G or any other group or individual. Your responses to this survey will also remain strictly confidential; only the summary of information from all respondents will ever be published. ADF&G intends to publish a summary of information resulting from the 2009 survey on its web site sometime in April 2010. To view the results of the most recent survey (2006), please visit the ADF&G web site at http://www.sf.adfg.state.ak.us/Region1/trout/cabin.cfm.

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 your questionnaire, please disregard this letter and accept my sincere thanks.

If you have any questions or privacy concerns related to the procedures that were followed in conducting this survey, please contact me at (907) 790-7479.

Sincerely,

Pete Schneider, Fisheries Biologist
Juneau Ranger District, Tongass National Forest

Enclosure

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

File Code:
Date:

(name)
(address)

Dear (first name) (last name):

I have not yet received a completed cabin survey questionnaire regarding your use of (Cabin) beginning on (Date). 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.

The U.S. Forest Service respects your privacy and has not shared any personal information with ADF&G or any other group or individual. Your responses to this survey will also remain strictly confidential; only the summary of information from all respondents will ever be published. ADF&G intends to publish a summary of information resulting from the 2009 survey on its web site sometime in April 2010. To view the results of the most recent survey (2006), please visit the ADF&G web site at http://www.sf.adfg.state.ak.us/Region1/trout/cabin.cfm.

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.

If you have any questions or privacy concerns related to the procedures that were followed in conducting this survey, please contact me at (907) 790-7479.

Sincerely,

Pete Schneider, Fisheries Biologist
Tongass National Forest

Enclosure

APPENDIX C.
CHUCAGH USFS RECREATIONAL CABIN DATA AND ANALYSIS

A total of 162 parties reserved Prince William Sound USFS cabins during 2009, of which 136 party heads responded to our survey (Appendix Table 1). Excluding four undeliverable surveys, the overall response was 86%. Approximately 71% (96) of the 136 parties responding to the survey reported they used their cabin reservation. Of the 96 parties that used their reservations, 48 (50%) of the party heads report that someone in their party fished.

The average size of the parties that was given to USFS when their reservations were made was 3.7 (SD = 1.6) members (range) (Appendix Table 2). The average number of nights parties stayed at a cabin was 2.7 (SD = 1.8) and ranged from 1 to 8 nights.

Users from 16 different US states and 2 foreign countries (Germany and Holland) reserved the cabins included in our Prince William Sound survey. Approximately 75% (120 of 158 total parties) gave an Alaska address when the reservation was made and were assumed to be Alaska residents.

Appendix C. Table 1.–Number of parties responding to the cabin survey, number not responding, and numbers fishing, by mailing and survey stratum in 2009 (only summer strata conducted).

Survey strata	Type of response	No. of parties	No. who used reservation	Parties who fished	Mean party size	Alaska resident	Other U.S. states	Foreign country
Summer (162 parties)	Responded 1st mailing	86	66	34	3.7	69	17	0
	Responded 2nd mailing	22	13	7	3.6	11	11	0
	Responded 3rd mailing	28	17	7	4.4	23	4	1
	Total responding	136	96	48	3.9	103	32	1
	Undeliverable	4					2	0
	No response	22			3.2	17	4	1

Appendix C. Table 2.–Number of registered and responding parties, estimated numbers of trout (rainbow and cutthroat) and steelhead kept and released by system at USFS recreational cabins surveyed in South Central Alaska, 2009.

			Number			Trout (cutthroat and rainbow)				Steelhead			
System	Number registered	Number responded	who fished	nights reserved	in parties	Harvest	SE harvest	Released	SE released	Harvest	SE harvest	Released	SE released
Beach River	3	2	0	5	8	0	0	0	0	0	0	0	0
Double Bay	6	5	3	14	20	0	0	7	3	0	0	0	0
Green Island	29	28	14	114	132	50	22	42	15	0	0	0	0
Hook Point	17	11	1	37	48	0	0	30	26	0	0	0	0
Log Jam Bay	7	6	1	12	17	11	9	42	35	0	0	0	0
McKinley Lake	43	36	12	76	143	8	7	30	12	21	19	0	0
Nellie Martin River	6	4	3	24	25	0	0	0	0	0	0	0	0
San Juan Bay	4	4	0	16	13	0	0	0	0	0	0	0	0
Shelter Bay	14	10	4	45	63	0	0	28	8	0	0	0	0
Shrode Lake	33	30	10	82	136	0	0	1	0	0	0	0	0
Total	162	136	48	425	605	68	25	181	49	21	9	0	0

APPENDIX D.
COMPUTER FILES

Appendix D1.–Computer data files containing data for use in preparing this report.

File Name	Description
Cabin_Data_Input.SAS	Graphs, figures and tables in this report
Cabin_Data_SAS.XLS	Input of data for SAS program
Summary_2009.xls	Output from SAS programs Cabin_Data_Input.sas