

Fishery Data Series No. 11-61

**Harvest Estimates for Selected Marine Sport Fisheries
in Southeast Alaska During 2003**

by

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and

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December 2011

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



Symbols and Abbreviations

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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H_A
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	e
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, χ^2 , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient	
milliliter	mL	west	W	(multiple)	R
millimeter	mm	copyright	©	correlation coefficient (simple)	r
		corporate suffixes:		covariance	cov
Weights and measures (English)		Company	Co.	degree (angular)	°
cubic feet per second	ft ³ /s	Corporation	Corp.	degrees of freedom	df
foot	ft	Incorporated	Inc.	expected value	E
gallon	gal	Limited	Ltd.	greater than	>
inch	in	District of Columbia	D.C.	greater than or equal to	≥
mile	mi	et alii (and others)	et al.	harvest per unit effort	HPUE
nautical mile	nmi	et cetera (and so forth)	etc.	less than	<
ounce	oz	exempli gratia	e.g.	less than or equal to	≤
pound	lb	(for example)		logarithm (natural)	ln
quart	qt	Federal Information Code	FIC	logarithm (base 10)	log
yard	yd	id est (that is)	i.e.	logarithm (specify base)	log ₂ , etc.
		latitude or longitude	lat. or long.	minute (angular)	'
Time and temperature		monetary symbols (U.S.)	\$, ¢	not significant	NS
day	d	months (tables and figures): first three letters	Jan, ..., Dec	null hypothesis	H_0
degrees Celsius	°C	registered trademark	®	percent	%
degrees Fahrenheit	°F	trademark	™	probability	P
degrees kelvin	K	United States (adjective)	U.S.	probability of a type I error (rejection of the null hypothesis when true)	α
hour	h	United States of America (noun)	USA	probability of a type II error (acceptance of the null hypothesis when false)	β
minute	min	U.S.C.	United States Code	second (angular)	"
second	s	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard deviation	SD
Physics and chemistry				standard error	SE
all atomic symbols				variance	
alternating current	AC			population sample	Var
ampere	A			sample	var
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				

FISHERY DATA SERIES NO. 11-61

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IN SOUTHEAST ALASKA DURING 2003**

by

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ABSTRACT

Creel surveys of the Juneau, Ketchikan, and Sitka marine sport fisheries for Chinook salmon *Oncorhynchus tshawytscha* were conducted during 2003. The estimated harvest of Chinook salmon was 37,344 in the combined Ketchikan, Sitka, and Juneau boat sport fisheries. Harvests of Chinook salmon were 84% above the 10-year average (1993–2002) in the Ketchikan fishery, 12% below average in the Juneau fishery, and 31% above average in the Sitka fishery. Hatcheries in Alaska provided 28% of the Chinook salmon harvested, and hatcheries in British Columbia, Washington, and Oregon provided about 17% of the Chinook harvested. Alaska hatcheries provided 51% of the Chinook salmon harvested in Ketchikan, 55% in Juneau, and 14% in Sitka. Non-Alaskan hatcheries accounted for 25% of the Chinook salmon harvested in Sitka, <1% in Juneau, and 5% in Ketchikan. Coded wire tag sampling in the Petersburg, Wrangell, Craig/Klawock, Gustavus, and Elfin Cove fisheries revealed that Chinook salmon from Alaska hatcheries contributed about 20%, 13%, 3%, 26%, and 26% of the harvest, respectively.

An estimated 130,940 coho salmon *Oncorhynchus kisutch*, 42,014 pink salmon *Oncorhynchus gorbuscha*, 54,364 Pacific halibut *Hippoglossus stenolepis*, and 25,986 rockfish *Sebastes* species, were also harvested in the combined Ketchikan, Juneau, and Sitka marine boat fisheries. Hatcheries provided 40%, 12% and 25% of the coho salmon harvested in Ketchikan, Juneau, and Sitka, respectively. Pacific halibut harvest of 9,753 in Juneau was 19% above the 10-year average, whereas the Ketchikan harvest of 7,138 halibut fell 23% below the average. Sitka harvest of 37,473 Pacific halibut was the highest recorded and 174% higher than the 10-year average. Shellfish effort was above average in the Juneau and Ketchikan fisheries. Dungeness crab *Cancer magister* harvest was above average in Juneau, but slightly below average in Ketchikan.

Key words: Creel survey, angler effort and harvest, harvest per unit effort, age composition, length-at-age, round weight, boat sport fishery, hatchery, enhancement, coded wire tag, Chinook salmon, *Oncorhynchus tshawytscha*, coho salmon, *Oncorhynchus kisutch*, salmon, *Oncorhynchus*, Pacific halibut, *Hippoglossus stenolepis*, Dolly Varden, *Salvelinus malma*, lingcod, *Ophiodon elongatus*, rockfish, *Sebastes*, Dungeness crab, *Cancer magister*, Tanner crab, *Chionoecetes*, king crab, *Paralithodes*, shrimp, *Pandalus*, Juneau, Ketchikan, Sitka, Petersburg, Wrangell, Craig, Klawock, Yakutat, Gustavus, Elfin Cove, Southeast Alaska.

INTRODUCTION

The waters of Southeast Alaska support commercial, sport, personal use, and subsistence fisheries for a variety of salmonid, bottomfish, and shellfish species. In terms of effort, the largest sport fishery in Southeast Alaska is the Juneau marine boat fishery, but other important marine boat sport fisheries occur around Ketchikan, Sitka, Petersburg, Wrangell, Craig/Klawock, Yakutat, Gustavus Elfin Cove and Haines (Figure 1).

Data on sport harvests of important fish species in Southeast Alaska have been collected both by mail surveys and by various onsite creel surveys. The Statewide Harvest Survey (SWHS) is a mail survey which has provided annual estimates of sport effort and harvest by area since 1977 (Jennings et al. 2006). This statewide survey has been an economical means of comprehensively monitoring often remote sport fisheries, and the estimates are the official regional and statewide sport harvest numbers used for postseason management and decision making. The SWHS estimates cannot be used directly for inseason management because estimates for a given year are not available until the following summer.

Estimates from onsite creel surveys can be used for inseason management and can also be used to gather a variety of other biological and fishery performance data. Creel surveys, however, are relatively expensive and usually less comprehensive than the SWHS. For instance, it is virtually impossible to survey all access points into the sport fishery for Chinook salmon *Oncorhynchus tshawytscha* in Southeast Alaska, which remains open year-round in nearly all marine waters. In fisheries where comparisons of harvest estimates from the SWHS and onsite creel surveys are possible, the two surveys have shown very similar results (Mills and Howe 1992).

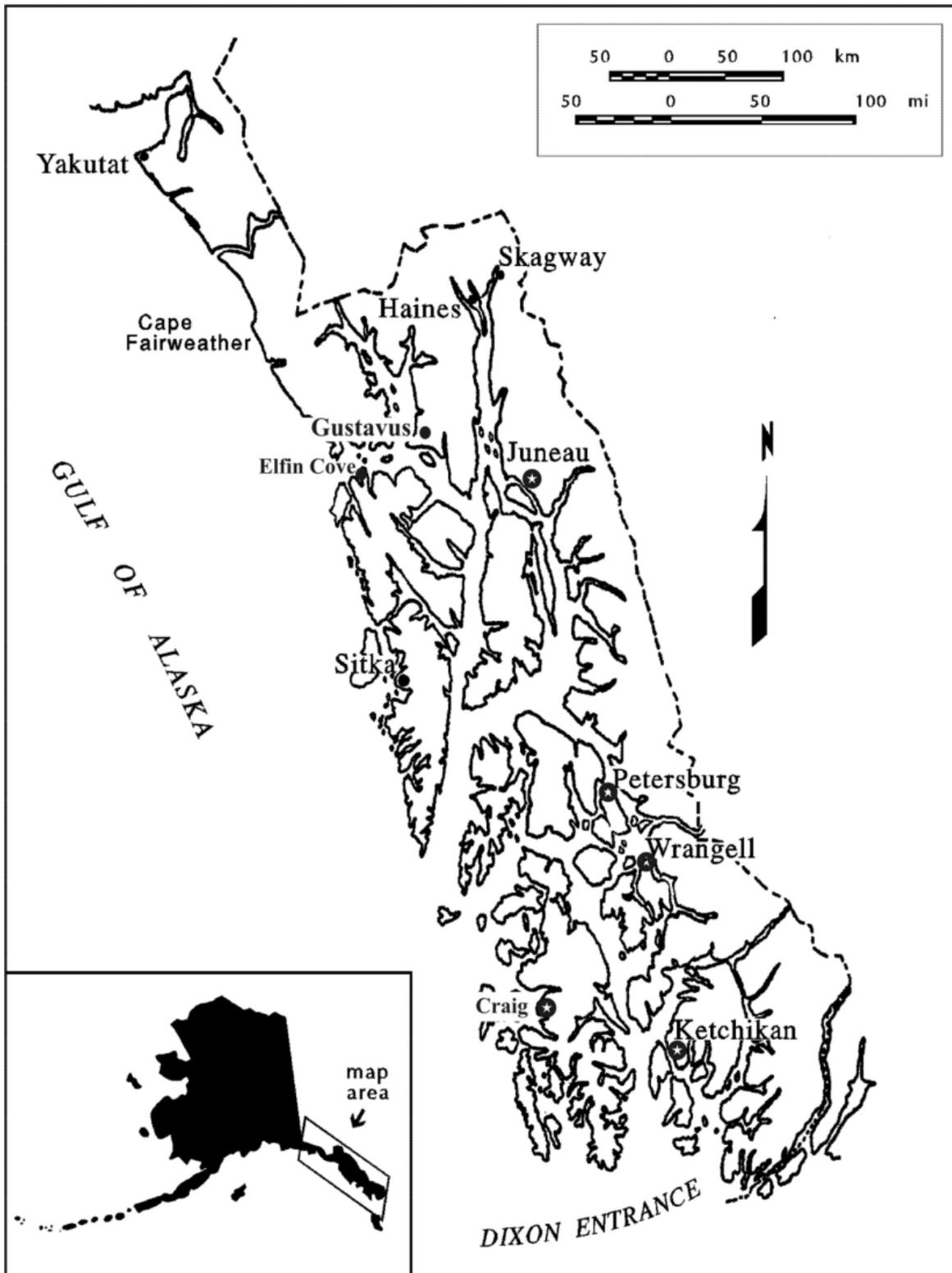


Figure 1.—Location of Yakutat, Gustavus, Elfin Cove, Juneau, Sitka, Petersburg, Wrangell, Ketchikan, Craig, and Klawock in Southeast Alaska.

Expansion of the onsite creel survey program in Southeast Alaska was necessary beginning in 1992, when the Alaska Board of Fisheries (BOF) allocated the Pacific Salmon Treaty catch quota for Chinook salmon in Southeast Alaska between the sport and commercial fisheries. The BOF also passed a Chinook salmon management plan for the sport fishery in Southeast Alaska, which required inseason monitoring of the sport fishery to ensure the allocation was not exceeded.

Creel surveys or catch sample programs were needed in the Ketchikan, Craig, Petersburg, Wrangell, Sitka, Glacier Bay, and Juneau boat fisheries during the major portion of the fishery for Chinook salmon in order to monitor the entire Southeast Alaska Chinook salmon fishery with adequate precision to ensure compliance with the sport fishery allocation. In 2001, 96% of the total sport harvest of Chinook salmon of Southeast Alaska occurred in the SWHS areas represented by these fisheries (Jennings et al. 2004). Sport harvests in other SWHS areas (Haines/Skagway and Yakutat) were determined to be too small or too dispersed to be effectively monitored with onsite programs, although a spring Chinook salmon survey is ongoing in Haines (Ericksen 2004).

Estimates of the number of Alaska hatchery Chinook salmon taken were also necessary because most of this harvest does not count toward the sport fishery allocation. Sampling of sport-harvested Chinook salmon for coded wire tags (CWTs) by creel samplers was required to provide this information, as a portion of all hatchery releases of Chinook salmon in Southeast Alaska are coded wire tagged. Several terminal sport fisheries for Alaska hatchery fish in the Petersburg and Juneau areas were not monitored with creel surveys, as these harvests do not count toward the sport allocation, and postseason estimates from the SWHS are adequate to document harvests within these fisheries.

Inseason estimates of the harvest of Chinook salmon for all of Southeast Alaska were obtained by combining information from past SWHS and onsite creel surveys. This report presents information only from the onsite creel surveys conducted in 2003.

Creel survey information from the marine boat sport fisheries is used for a variety of other management and reporting purposes. Coho salmon *O. kisutch* harvests by the marine boat sport fisheries are also of special interest, as coho salmon management has continued to be a high priority within the region. Harvest per unit effort (HPUE) data for coho salmon in marine boat recreational fisheries, along with HPUE data from commercial troll and net fisheries, are used to monitor the relative abundance and migratory patterns of coho salmon, see Shaul (1998). Analyses of CWT data from coho salmon harvested in these sport fisheries are used for determinations of stock composition (e.g., McPherson et al. 1998).

Creel survey statistics and estimated average weights of sport caught Pacific halibut *Hippoglossus stenolepis* in Southeast Alaska are reported to the International Pacific Halibut Commission (IPHC) on an annual basis, as in White and Jaenicke¹. This information has also been provided to the North Pacific Fisheries Management Council during their consideration of proposed Individual Fishing Quotas (IFQs) for sport charter fisheries.

The lingcod *Ophiodon elongatus* sport fisheries in Southeast Alaska are managed under Guideline Harvest Levels (GHL; based on total weight harvested) established by the Alaska

¹ White, B. and M. J. Jaenicke (*Unpublished*). Summary data from the sport fishery for Pacific halibut in the IPHC Area 2C portion of Southeast Alaska, 2003. Juneau., Located at: Alaska Department of Fish and Game, Division of Sport Fish.

Board of Fisheries in 1999. The Division of Sport Fish relies on the lingcod biomass harvest estimates from the creel survey program to determine whether current lingcod regulations are adequate to manage the lingcod fisheries for the GHGs.

The rockfish sport fisheries in Southeast Alaska currently do not have any established quotas, although data is collected on the species composition of the harvest via the onsite creel surveys to monitor this important sport fishery.

The personal use or sport harvest of shellfish is a very important activity for both residents of Southeast Alaska and visitors to the region. Shellfish harvest information was gathered so that the Alaska Department of Fish and Game (ADF&G), in conjunction with the BOF, will have the information necessary to effectively manage these fisheries. Data on the personal use and sport harvest of shellfish in Southeast Alaska have been gathered during onsite creel surveys since 1988.

This report presents the findings of creel surveys of marine boat sport fisheries conducted in 2003 by the ADF&G, Division of Sport Fish in the Ketchikan, Juneau, and Sitka areas. Also covered are the results from CWT sampling programs conducted at Petersburg, Wrangell, Craig, and Gustavus, and Elfin Cove. In 2003, additional CWT sampling in the nearby town of Klawock was used to supplement the Craig sampling program. Results from creel surveys in the Haines area and other sport fisheries in Southeast Alaska are presented in other ADF&G Fishery Data Series reports (e.g., White 2004, Ericksen 2004).

REGULATIONS

Beginning April 28, filleting, mutilating, or heading sport caught Chinook salmon, coho salmon, and lingcod was prohibited by emergency order (EO) at ports sampled by the creel program until marine sport boats reached the dock (EO #1-06-03). This regulation was enacted to increase the number of salmon that could be sampled for CWTs and lingcod that could be sampled for length and sex information.

The bag (and possession) limit in marine waters for Alaska residents remained at 2 Chinook salmon $\geq 28"$. The bag and possession limit for nonresidents was 1 Chinook salmon $\geq 28"$ with the annual limit of 3 Chinook salmon $\geq 28"$. These regulations are determined by the estimated Chinook abundance for the region. Charter vessel operators and crew members were also prohibited from retaining Chinook salmon while clients were on board.

The following marine terminal areas (i.e., areas near hatcheries or hatchery release sites) were regulated by emergency orders to harvest surplus hatchery-produced Chinook salmon in 2003:

- EO #1-09-03 increased the Chinook salmon bag and possession limit to 4 fish $\geq 28"$ and 8 fish $< 28"$ in Wrangell Narrows terminal area near Petersburg from 1 June through 31 July 2003.
- EO #1-13-03 increased the Chinook salmon bag and possession limit to 4 fish of any size in terminal areas near Juneau from 11 June through 31 August 2003.
- EO #1-15-03 increased the Chinook salmon bag and possession limit to 12 fish of any size in two terminal areas near Ketchikan from 14 June through 31 July 2003.

- EO #1-12-03 established the Chinook salmon bag and possession limit to 2 fish of any size for all anglers with no annual limit in the terminal areas near Skagway from 10 June through 31 July 2003.
- EO #1-20-03 increased the Chinook bag and possession limit to 4 fish, of which no more than 2 could be $\geq 28''$, at the Silver Bay, near Sitka, and Hidden Falls terminal areas from 4 July through 31 July 2003.

Nonresident annual limits for Chinook salmon $\geq 28''$ did not apply to fish caught in the Wrangell Narrows, Juneau, and Ketchikan terminal areas. Bag limits for salmon species other than Chinook salmon were six fish per day, 12 in possession, for fish 16" or more in length.

The Pacific halibut bag limit was 2 fish per day, 4 in possession. The season for lingcod opened on 16 May. The bag limit for lingcod was two per day, four in possession until EO #1-02-03 closed Northern Southeast Alaska and Prince of Wales Island to the harvest of lingcod from 16 June through 15 August, 2003. It also decreased the bag and possession limit for lingcod to 1 per day and 2 in possession in these areas from 16 May to 15 June and 16 August through 30 November. This EO also set minimum and maximum size limits in these areas to 30 inches and 40 inches, respectively. Guided and nonresident anglers were also required to land lingcod by hand or net (gaffing not permitted) to minimize mortality of released fish. EO #1-04-03 reduced the bag and possession limit in the Yakutat/Icy Bay areas to 1 per day, 2 in possession from 16 May through 30 November, 2003 and set the minimum and maximum sizes to 32 inches and 42 inches, respectively, for guided and nonresident anglers. Resident anglers did not have a size restriction. Guided and nonresident anglers were also required to land lingcod by hand or net. EO #1-07-02 set the bag and possession limits for Southern Southeast Alaska at 1 lingcod per day and 2 in possession from 16 May through 30 November. Anglers were limited to 5 pelagic rockfish *Sebastes* species per day, 10 in possession, and 5 non-pelagic rockfish, 10 in possession. Only 2 of the non-pelagic rockfish per day (4 in possession) could be yelloweye rockfish *S. ruberrimus*. Areas adjacent to Ketchikan and Sitka were further restricted to a non-pelagic rockfish bag and possession limit of 3 fish per day, only 1 of which could be a yelloweye rockfish.

Sport, personal use, and subsistence regulations for the harvest of crab in Southeast Alaska have been summarized by Suchanek and Bingham (1989–1992). Personal use harvests of red and blue king crab *Paralithodes* in the commercial fishery subdistrict 11-A near Juneau opened on July 1. The daily bag and possession limit was 2 male crab with a 7" minimum carapace and a harvest permit was required which included an annual limit of 20 red king crab per household. A bag and possession limit of 6 male king crab was in effect elsewhere in Southeast Alaska with local exceptions of 3 male king crab in commercial subdistricts 12-B and 15-C near Juneau.

OBJECTIVES

The primary goals of the 2003 Southeast Alaska marine boat sport fishery surveys were to obtain: (1) inseason and postseason estimates of the regionwide harvest of Chinook salmon; (2) an estimate of the regionwide harvest of Chinook salmon of Alaska hatchery origin; (3) postseason estimates of the harvest of coho salmon in Juneau, Ketchikan and Sitka; (4) estimates of the coho salmon harvests of Alaskan hatchery origin in Juneau, Ketchikan and Sitka; (5) an estimate of an average weight by angler class and port for halibut and lingcod; (6) estimate sport effort and harvest of pink salmon *Oncorhynchus gorbuscha*, lingcod, rockfish

(all species combined) in Juneau, Sitka, and Ketchikan and (7) estimate shellfish effort and harvest in Juneau and Ketchikan.

To help measure program performance and achieve project goals, the following objectives were identified:

1. Estimate the total sport harvest of Chinook salmon landed in the Ketchikan, Sitka and Juneau marine boat sport fisheries from 28 April to 28 September 2003 such that each individual estimate for the entire season was within $\pm 20\%$ of the true value 90% of the time. Additionally, three inseason projections of the total sport harvest of Chinook salmon in all of Southeast Alaska were made: a) prior to the commercial troll opening in early July; b) prior to the troll opening in August; and c) at the end of the marine sport fishery survey period in mid October.
2. Estimate the contribution of Alaska hatchery Chinook salmon by coded wire tag lot to the above sport fisheries such that the contribution estimate in relative terms² for each individual fishery was within ± 15 percentage points of the true value 90% of the time.
3. Estimate the total sport harvest of coho salmon landed in the Ketchikan, Sitka, and Juneau marine boat sport fisheries from 28 April to 28 September 2003 such that each individual estimate for the entire season was within $\pm 20\%$ of the true value 90% of the time.
4. Estimate the contribution of Alaska hatchery coho salmon by coded wire tag lot to the above sport fisheries such that the contribution estimate in relative terms for each individual fishery was within ± 15 percentage points of the true value 90% of the time.
5. Estimate the relative contribution of Alaska hatchery Chinook salmon by coded wire tag lot to the following marine boat sport fisheries during the noted time periods:
 - a. Craig/Klawock from 5 May to 14 September;
 - b. Petersburg from 5 May to 14 September;
 - c. Wrangell from 28 April to 14 September; and
 - d. Gustavus from 5 May to 14 Septembersuch that the total relative contribution estimate was within ± 15 percentage points of the true values 90% of the time.
6. Estimate the relative contribution of Alaska hatchery coho salmon by coded wire tag lot to the Craig/Klawock marine boat sport fishery from 5 May to 14 September and the Gustavus marine boat sport fishery from 5 May to 14 September such that the total relative contribution estimate was within ± 15 percentage points of the true values 90% of the time.
7. Estimate the age composition of the marine boat spring Chinook salmon harvest from 28 April to 1 July in Ketchikan and Juneau such that the estimates were within ± 5 percentage points of the true value 90% of the time.
8. Estimate the weighted mean net weight of Pacific halibut harvested in Sitka, Juneau, Ketchikan, Craig/Klawock and Gustavus such that, with 90% confidence, the estimate is

² Contributions in relative terms, equals the contribution estimate divided by the total harvest.

within $\pm 10\%$ of the true value; where the weights are the proportions of halibut harvested by user group (private vs. charter) as estimated by the statewide harvest survey.

9. Estimate the average round weight of lingcod harvested in Craig/Klawock, Sitka, and Ketchikan, such that, with 90% confidence, the overall mean of fish taken by chartered anglers is within ± 5 of the true value and the overall mean of fish taken by non-chartered anglers is within $\pm 10\%$ of the true value.
10. Estimate the sport harvest of pink salmon, Pacific halibut, lingcod, and rockfish (all species combined) in Juneau, Sitka, and Ketchikan such that the estimates for each were within $\pm 20\%$ of the true value 90% of the time.
11. Estimate sport angler effort for both salmon and bottomfish to within $\pm 25\%$ of the true value 90% of the time in Ketchikan, Juneau, and Sitka.
12. Estimate the shellfish effort and harvest of Dungeness crab *Cancer magister* (in both Juneau and Ketchikan), shrimp (in both Juneau and Ketchikan), and king crab (Juneau only) such that the estimates were within $\pm 25\%$ of the true value 90% of the time.

TASKS

In addition to meeting the primary objectives for monitoring the Chinook and coho salmon fisheries (discussed above), there were a number of tasks that addressed secondary data needs identified by research or management staff. To fulfill these data needs, additional tasks in 2003 included:

1. Collect baseline age and maturity data from Chinook salmon harvested during 28 April through 1 July in Ketchikan, Petersburg, Wrangell, and Gustavus;
2. Collect age information from Chinook salmon in Juneau and Ketchikan from 2 July through 28 September;
3. Collect length data from Pacific halibut harvested in Petersburg from 5 May to 14 September and in Wrangell from 28 April to 14 September and from lingcod in Gustavus from 5 May to 14 September ;
4. Collect Dolly Varden *Salvelinus malma* harvest information from anglers in Juneau;
5. Compute HPUE's for coho salmon from both catch sample and creel survey data for informational use by the public and fishery managers;
6. Collect the number of fish released (by species) to estimate total catch; and
7. Sample sport harvests of Chinook salmon at False Outer Point (a.k.a. "Picnic Cove"— a Juneau roadside fishery) for coded wire tags from mid-April through the end of May to increase recoveries of tagged Taku River Chinook salmon.

METHODS

Procedures for obtaining estimates associated with each of the study objectives were similar for each of the surveyed locations. The following sections detail procedures that were common to multiple survey sites. Site-specific differences in procedures are outlined in later sections of this report.

ONSITE CREEL SURVEY ANGLER EFFORT, CATCH, AND HARVEST ESTIMATES

Direct expansion creel surveys were conducted in the Ketchikan, Sitka, and Juneau marine boat sport fisheries. The harvest of Chinook salmon by sport anglers was estimated from information collected via stratified random multistage sample surveys. Strata were defined according to unique combinations of biweekly periods, type of day (e.g., weekday versus weekend-holiday), time of day (early versus late) and, in some instances, derby versus non-derby periods.

Two general sampling designs were used within each stratum. For the Ketchikan and Juneau surveys, a three-stage sample survey was conducted. Within any stratum for these two surveys, days to sample represented the first sampling stage and were selected at random without replacement (WOR). The various access locations at which marine boat sport anglers land their harvested fish represented the second sampling stage. As such, within any selected day within each stratum, at least 2 harbors were selected at random WOR for surveying. During each sampled day, a creel technician attempted to interview all exiting boat-parties³ at each of the selected access locations during the sampled days within each stratum. If all boat-parties could not be interviewed, any missed boat-parties were counted. Boat-parties represented the third sampling stage in these three-stage surveys.

A four-stage sample survey was conducted at Sitka. For this survey, access locations to sample represented the first sampling stage, with days within each stratum at each sampled location representing the second stage sampling units. Periods within the sampling day represented the third sampling stage. For some strata, only 1 sampling period existed; for these strata at any sampled day-location combination, the entire period was sampled. Minimally, 2 periods were sampled for each day-location combination for strata with more than 1 period per sampling day. Finally, boat-parties to interview represented the fourth sampling stage units in this survey.

The sampling designs for the surveys conducted in Juneau, Ketchikan, and Sitka were essentially equivalent to the surveys conducted in previous years at these locations (see Hubartt et al. 1993–2002; Hubartt and Jaenicke 2004). Beginning in 1995, the “type of day” stratum and the definition of sampling day were modified in Sitka so that unbiased estimates of angler effort, catch, and harvest could be obtained in the most efficient manner possible.

Data collected from each interviewed boat-party included number of rods fished, hours fished, trip type (charter or non-charter), number of days fished in trip, location fished, target (e.g., salmon, bottomfish, halibut, lingcod, rockfish, crab or shrimp), and number of fish kept and/or released by species. Crab effort (boat-days fished and number of pots or rings fished) and harvest were recorded in Juneau and Ketchikan. In Ketchikan and Juneau the numbers of shrimp harvested were also recorded in multiples of 10. All data recording procedures were detailed in site-specific creel technician manuals, and computer data files and analysis programs are listed in Appendix B1.

Estimates of harvested Chinook salmon at each of the three surveyed marine boat sport fisheries were calculated according to standard direct expansion equations for stratified multistage sampling designs (Hubartt et al. 2000; Bernard et al. 1998). Mean harvest of boat-parties interviewed during a sample was expanded by the number of boat-parties counted exiting the

³ A boat-party is defined as all sport anglers from one boat exiting a fishery at an access location.

fishery during each sample to obtain estimates for each sample. Means across sample periods were similarly expanded by the number of periods within a sampling day to obtain the estimates at a sampled access location for the four-stage surveys. Means across days within a sampled location were then expanded by the number of possible days, to obtain the location estimate of catch, effort, or harvest for the four-stage surveys. Finally, across-location means were expanded by the number of access locations in a stratum to obtain the stratum estimates. Across-stratum estimates of harvest were obtained by summation across strata. Estimates were obtained similarly for the three-stage designs, with appropriate reordering of calculations.

Estimates of harvest of other species by surveyed boat anglers were calculated similarly. Additionally, estimates of the total catch (caught and released as well as caught and kept) of all species of interest were calculated in a similar manner.

The assumptions necessary for estimates of angler effort, catch, and harvest from these surveys to be unbiased were:

1. Anglers accurately reported their hours of fishing effort and the number by species of fish harvested and released.
2. No significant number of boat-parties returned between evening civil twilight (i.e., one-half hour after sunset) and the beginning of early-day surveys, or at access locations other than those surveyed (this assumption was violated in Ketchikan from 1997 through 2003 because major access locations, either Clover Pass or Salmon Falls, refused access to staff). Clover Pass has allowed the survey every year since 2001, but Salmon Falls denied access in 2001, part of 2002 and in 2003.
3. Anglers accurately reported the number of rods fished during the period fished so that effort (rod-hours) and HPUE could be calculated correctly (this assumes that if a boat returned with 3 anglers and 2 of them fished for 3 hours and 1 fished for 2 hours, both combinations of rods and hours were recorded as 2 rods for 3 hours and 1 rod for 2 hours, not as 3 rods for 3 hours).

HATCHERY AND TAGGED WILD STOCK CONTRIBUTION ESTIMATES

Survey technicians attempted to inspect each harvested Chinook and coho salmon for a missing adipose fin indicating the probable presence of an internal CWT in both creel and catch sampling ports. Catches of Chinook salmon and coho salmon checked for clipped adipose fins were recorded as “sampled,” while catches not checked were recorded as “not sampled”. Numbers of Chinook and coho salmon inspected for a clipped adipose fin were recorded, and heads from salmon with clipped adipose fins were collected and identified with a uniquely numbered cinch strap. These heads were forwarded to the ADF&G Division of Commercial Fisheries (CF) Mark Tag and Age Laboratory in Juneau for eventual dissection, tag removal, and decoding.

Information from the sampling programs as well as the coastwide CWT database was used to estimate the contributions of both Alaskan and non-Alaskan hatchery Chinook salmon according to procedures described by Bernard and Clark (1996). Because not all hatchery releases from Oregon, Washington, and Idaho are tagged, the estimates of non-Alaskan contributions should be considered as minimal estimates. In addition, contributions of wild tagged stocks can be also estimated after obtaining the marked fraction (θ). The estimate of the marked fraction is best when all the fish have returned. To find wild stock contributions for each tagged system, see the report for that system. The contribution of Chinook and coho salmon with a particular tag code

to the marine fisheries surveyed was estimated using procedures outlined in Hubartt et al. (2000), which essentially followed the approach proposed by Bernard and Clark (1996). One of the following conditions must be met for unbiased estimates of contributions of CWT stocks to the harvest: relative contributions of different stocks of salmon associated with a CWT release lot to the harvest did not vary appreciably within a biweekly period, or fish were sampled proportionally throughout the biweekly period. Since both conditions were met, estimates of CWT contributions should be unbiased.

RELATIVE CONTRIBUTION ESTIMATES

Technicians sampled for clipped adipose fins on Chinook and coho salmon taken by boat parties returning to Wrangell harbors from 28 April through 14 September, Petersburg harbors from 5 May through 14 September, Craig and Klawock harbors from 5 May through 14 September, and Gustavus from 5 May through 14 September. Sampling effort was continued in Klawock in 2003 to increase sampling rates for the rapidly growing fishery near Craig on the west coast of Prince of Wales Island. Some additional sampling for adipose-clipped fish was also conducted in Ketchikan from 24 May to 28 September, in Sitka from 19 May to 29 August, and in Juneau from 28 April through 14 September. Specific equations for estimating the relative contributions of hatchery stocks in Wrangell, Petersburg, and Craig/Klawock are detailed in Hubartt et al. (2000).

ESTIMATES OF CHINOOK SALMON AGE COMPOSITION AND MEAN LENGTH-AT-AGE

As time permitted, harvested Chinook salmon were sampled for scales for age determination in Juneau, Ketchikan, Petersburg, and Wrangell. Scales were not taken in Sitka or Craig/Klawock because analysis of scale and CWT data from prior years had shown that Chinook salmon landed in these fisheries were from a great variety of stocks of primarily non-Alaskan origin (Hubartt et al. 2001). Chinook salmon landed in the four fisheries sampled are believed to be primarily from local Chinook stocks (especially those caught in spring fisheries).

Five scales were taken from the preferred area (Welander 1940; INPFC 1958) of each Chinook salmon sampled. Scales were then mounted on gum cards, and impressions were made in cellulose acetate (Clutter and Whitesel 1956). The ages were determined by reading the scales using procedures from Olsen (1995). Lengths in millimeters (tip of snout to fork of tail) of these Chinook salmon were also recorded.

For the estimation of age composition, all data collected through 1 July (i.e., spring data) from harvested Chinook salmon within each of these fisheries were treated as 1 sample (i.e., ignoring internal stratification and sampling stages). Data from 2 July through 28 September (i.e., summer data) in Juneau and Ketchikan (Ketchikan split earlier in June because of intensive sampling of the derby Chinook), as well as data from the 3-day Juneau Golden North Salmon Derby, were treated as additional samples. Age composition estimates were calculated from the sample data using the procedures outlined in Cochran (1977). Estimates of mean length by age group of Chinook salmon sampled from the harvest were calculated following procedures outlined by Sokal and Rohlf (1981). All aged Chinook salmon from samples detailed above were pooled in an unweighted fashion to obtain length-at-age statistics.

The following assumptions were necessary for unbiased estimates of length-at-age and age composition: length-at-age and age composition did not vary substantially within the sampling

season or sampling was proportional to harvest throughout the season, and measured fish were representative of the entire harvest.

ESTIMATES OF MATURITY COMPOSITION OF CHINOOK SALMON

Samplers evaluated the maturity status of each Chinook salmon reported harvested in the Juneau fishery through 1 July. There were 3 maturity classes: 1) mature; 2) immature; and 3) unknown. Fish not evaluated for maturity were noted as such in the data and treated the same as the unknowns.

The biweekly harvest of mature Chinook salmon was subsequently estimated by:

$$\hat{C} = \hat{H}\hat{p} \quad (1)$$

with variance estimated as per Goodman (1960):

$$\hat{v}[\hat{C}] = \hat{H}^2\hat{v}[\hat{p}] + \hat{p}^2\hat{v}[\hat{H}] - \hat{v}[\hat{H}]\hat{V}[\hat{p}] \quad (2)$$

where \hat{p} is the estimated proportion of fish in a given biweek with determined maturity status of mature (unknown or unevaluated fish ignored), and \hat{H} is the estimated biweekly harvest of Chinook salmon from the creel survey.

For each biweekly estimate of Chinook harvest in Juneau, the hatchery contribution was also computed using methods described in Bernard and Clark (1996). Because maturity status of tagged Chinook was also noted on the CWT recovery form, the mature proportion of the CWT recoveries was applied to the total hatchery contribution as above.

Maturity of Chinook salmon taken through 1 July was also evaluated in the Ketchikan, Wrangell, and Petersburg fisheries. These maturity data were analyzed using the same methods used to summarize age composition.

AVERAGE WEIGHT OF PACIFIC HALIBUT AND LINGCOD

Pacific halibut landed by boat parties within all surveyed fisheries were sampled for length in order to estimate the average net weight.

Optimum relative sampling distributions were calculated for charter and non-charter groups using the optimum allocation formula for stratified sampling (Thompson 1992). Mean net weights and standard deviations were computed for each group within each port from 2001 biological sampling data. Stratum weights were based on group specific harvests reported in the 2000 SWHS. Because the ports of Petersburg and Wrangell are in the same SWHS area, mean weight was estimated for these two fisheries combined. A template was designed incorporating the mean net weights, standard deviations, and harvests (for optimum sample proportions) for each port and user group. The overall minimum sample size for each port (combined user groups) was determined by solving (using EXCEL^{®4} Goal Seek) for a relative precision of $\pm 10\%$ for non-chartered anglers and $\pm 5\%$ for chartered anglers at the 90 percent level of confidence. The final result was a minimum target sample size for each user group within each port.

⁴ Product names used in this report are included for scientific completeness, but do not constitute a product endorsement.

In order to collect at least the minimum sample sizes within each group and port, a systematic sampling protocol was employed. Days were sub-sampled and the number of days to sample over the season was based on the sampling rate tabulated from 2001 interview data.

Sub-sampling occurred every 3rd day in Juneau, Ketchikan, Petersburg/Wrangell and Gustavus; every 2nd day in Sitka and Craig; and every 5th day in Yakutat. The starting day in which to start sampling was randomly selected (e.g., number between 1 and 3 for Juneau, 1 and 2 for Sitka, etc.) for the first week, and continued according to the systematic schedule for each port noted above. If the next selected sample day happened to fall on 1) a non-work day, 2) a day that was only being catch sampled (Juneau, Sitka, and Ketchikan), or 3) a designated derby sampling day⁵, the closest “standard day” worked was selected for sampling (with a “coin flip” used to resolve ties). In those instances noted above, only the day to conduct sampling was adjusted forward—counts to the next subsample day were not. In ports where there were both creel and catch sampling programs (Juneau, Sitka, and Ketchikan) only creel samplers reprioritized their sampling goals on the designated days. Catch samplers maintained their assigned priorities for salmon. Data collected on designated sampling days were denoted on the mark-sense form to maintain them as a separate sample (not part of the regular biological sampling program).

There was variation in the number of charter and non-charter harvested halibut samplers might encounter during interviews on designated days. Therefore, the sampling rate used was one which would exceed the minimum sample size goals. This meant over-sampling one of the user groups.

All lengths collected were measured in millimeters (mm) using total length (TL). Differences in length distributions between the “halibut sampling days” and the other sampling days were analyzed postseason to determine if they were significant for purposes of pooling data. Inseason monitoring of port and class-specific halibut samples was maintained in order to ensure minimum sample size goals were met. Procedures outlined by Clark (1992) were then used to convert the Pacific halibut length measurements to estimates of round and net weights (also see Hubartt et al. 2000).

Lingcod length measurements were taken concurrently with halibut samples in Ketchikan, Craig/Klawock, and Sitka. Mean round weight of lingcod was estimated as the mean of the predicted weights of all n sampled fish in the form as follows Nielsen and Schoch (1980):

$$\bar{w} = \sum_{i=1}^n aL_i^b \quad (3)$$

where L_i = the observed length of the i th fish in centimeters, $a = 7.9 \times 10^{-6}$ for round weight in kilograms and $b = 3.07$. The constants a and b are those used by ADF&G, Division of Commercial Fisheries (D. Carlile, ADF&G, Juneau, personal communication). Weights in kilograms were then converted to pounds by multiplying by 2.2046. Variances of the mean predicted weights were estimated using standard procedures but should be considered minimum estimates because variation inherent in the length-weight relationship is not incorporated.

⁵ The derbies conducted at each location are directed at salmon and during these derbies the vast majority of harvest was of salmon with few other species observed. The primary survey/sampling duties of the technicians on derby days included collection of information related to the salmon harvest. It was expected that the resultant sampling rate would not be truly proportional because these derby day samples were purposely avoided.

The following assumptions were necessary for unbiased estimates of average weights of Pacific halibut and lingcod: average weight did not vary substantially within the sampling season or sampling was proportional to harvest throughout the season, and measured fish were representative of the entire harvest.

WEEKLY ESTIMATES OF COHO SALMON HARVEST PER UNIT EFFORT

Data collected during creel surveys of the Ketchikan, Juneau and Sitka marine boat sport fisheries were used to calculate mean weekly coho salmon HPUE of boat anglers in harvest per angler-hour. Harvest instead of total catch was used, because relatively few coho salmon were released, and those salmon released may not have been correctly identified to species. Estimates obtained by these procedures were indicative of the abundance of coho salmon (L. D. Shaul, ADF&G, Douglas, personal communication). Mean HPUE from these fisheries was considered to be an index of abundance under the traditional linear model:

$$\text{HPUE}_k = qN + \varepsilon_k \quad (4)$$

where HPUE_k is the harvest per unit of effort during the k^{th} angler-trip, N is the abundance of fish, q is the catchability coefficient, and ε is a random error with mean equal to 0 and variance equal to σ^2 . In this case, each angler-trip was considered a separate, replicated sample in a test fishery.

All boat-parties interviewed within each week surveyed at each location were treated as equally weighted test samples (i.e., ignoring strata and sampling stages). HPUE in terms of coho salmon harvested per angler-hour of salmon fishing effort was estimated for each week.

RESULTS

Detailed tables presenting total estimates of finfish effort, harvest, and catch for all species monitored in the Juneau, Sitka, and Ketchikan areas, as well as shellfish effort and harvest in Juneau and Ketchikan, can be found in Appendices A1 through A3. Appendices A4 through A6 present biweekly estimates and variances for effort, harvest, and catch for all species monitored for these three fisheries. Summary data from catch sampling programs are presented in Appendices A7 (Petersburg), A8 (Wrangell), A9 (Craig/Klawock), and A10 (Gustavus).

ANGLER EFFORT

An estimated 653,558 (SE = 37,037) angler-hours of effort were expended in the Ketchikan, Sitka, and Juneau marine boat sport fisheries during the time periods sampled (Table 1). Total effort expended in Ketchikan and Sitka was 88% and 89%, respectively, of that expended in Juneau. Eighty-one percent of the total angler-hours of effort were targeted on salmon in Ketchikan, 74% in Juneau, and 66% in Sitka. Bottomfish (primarily Pacific halibut) were the other major target of anglers. Major salmon derbies in Ketchikan, Juneau, and Sitka increased the amount of effort targeted on salmon as 12%, 13%, and 7% of the total salmon fishing effort, respectively, occurred during these short time periods.

Table 1.—Summary of estimated total and derby angler effort by target for the Ketchikan, Sitka, and Juneau marine boat sport fisheries during 2003.

	TOTAL EFFORT BY TARGET AND TIME PERIOD			
	Ketchikan	Juneau	Sitka	Total
	4/28-9/28	4/28-9/28	4/28-9/28	
Boat-hours	74,300	96,102	65,807	236,209
SE	4,096	4,663	3,341	12,100
Salmon-hours	168,204	175,324	138,631	482,159
SE	12,806	9,308	7,538	29,652
Bottomfish-hours ^a	40,204	60,094	69,713	170,011
SE	2,647	5,257	6,042	13,946
Angler-hours ^b	208,430	235,698	209,430	653,558
SE	13,625	11,836	11,576	37,037
% salmon-hours ^c	81	74	66	74

	DERBY EFFORT BY TARGET AND TIME PERIOD			
	Ketchikan	Juneau	Sitka	Total
	5/24-26, 5/31-6/01,6/07-08	8/22-24	5/24-26,5/31-6/01	
Boat-hours	8,707	8,832	4,239	21,778
SE	964	1,424	170	2,558
Salmon-hours	20,440	22,536	9,625	52,601
SE	2,535	3,860	1,221	7,616
Bottomfish-hours	1,184	614	1,603	3,401
SE	186	193	347	726
Angler-hours	21,624	23,150	11,251	56,025
SE	2,575	3,932	1,339	7,846
% of total salmon fishery ^d	12	13	7	11

^a Includes hours fished for Pacific halibut, rockfish, and other bottomfish.

^b Includes all targeted and non-targeted effort.

^c (salmon-hours/total angler-hours) x 100.

^d (derby salmon-hours/total salmon-hours) x 100.

CHINOOK SALMON FISHERIES

An estimated 37,344 (SE = 1,747) Chinook salmon (large and small combined) were harvested in the Ketchikan, Sitka, and Juneau marine boat sport fisheries (Table 2). Relative precisions of the estimated Chinook salmon harvests were within our goal of $\pm 20\%$ of the true value 90% of the time at all locations. About 65% (24,124) of the monitored harvest of Chinook salmon was taken in the Sitka fishery. The Juneau fishery accounted for an additional 15% of the harvest, and 21%

was taken in the Ketchikan fishery. Most of the Chinook salmon harvested were at least 28" in length, but an estimated 766 small (<28") Chinook salmon were also harvested, demonstrating a modest response to emergency openings in hatchery terminal areas.

Harvest of Chinook salmon during the Ketchikan King Salmon Derby constituted 10% of the total Chinook salmon harvest in the Ketchikan marine fishery, 10% of the Chinook salmon harvest in the Juneau fishery was taken during the Juneau Golden North Salmon Derby, and about 5% of the total Sitka Chinook harvest was taken during the Sitka Salmon Derby (Table 2). Anglers entered a total of 1,638 Chinook salmon in the Ketchikan, Juneau and Sitka derbies from a harvest of 2,597 fish during the derby time periods. In the Petersburg Salmon Derby held from 23 May - 26 May, 287 Chinook salmon were entered.

Table 2.—Summary of estimated harvests of Chinook salmon in the Ketchikan, Sitka, and Juneau marine boat sport fisheries surveyed during 2003.

TOTAL CHINOOK SALMON HARVESTS						
Sport fishery	Time period	Harvest of Chinook ≥28"	Harvest of Chinook <28"	Combined	SE	Relative precision (α = 0.10)
Ketchikan	4/28-9/28	7,162	544	7,706	940	20%
Juneau	4/28-9/28	5,292	222	5,514	541	16%
Sitka	4/28-9/28	24,124	0	24,124	1,369	9%
Total		36,578	766	37,344	1,747	8%

DERBY CHINOOK SALMON HARVESTS									
Major salmon derbies	Time period	Chinook ≥28"		Chinook <28"		All sizes combined			
		Entered	Total ^a	Entered	Total ^a	Number	SE	% ^b	
Ketchikan King Salmon Derby	5/24-26, 5/31-6/01, 6/07-08	627	809	0	0	809	45	10%	
Juneau Golden North Salmon Derby	8/22-8/24	443	537	4	4	541	31	10%	
Sitka Salmon Derby	5/24-26, 5/31-6/01	564	1,247	0	0	1,247	89	5%	
Petersburg Salmon Derby ^c	5/23-5/26	287	289	0	0	289	0	0	

^a Includes entered and take-home harvests.

^b (total derby harvest/total area harvest) x 100.

^c Number taken home was not estimated, but 2 non-derby Chinook were sampled at the derby station.

About 27% (10,229) of the estimated harvest of Chinook salmon in the Ketchikan, Juneau, and Sitka boat fisheries were sampled for coded wire tags (Appendix A11). Based on this sampling, we estimated 28% of the Chinook salmon harvested in the combined Ketchikan, Sitka, and Juneau marine boat fisheries were of Alaska hatchery origin (Table 3). Relative precision of Alaska hatchery contribution estimates ranged from ±3 to ±14 percentage points of the true value 90% of the time. Substantial numbers of hatchery fish also originated in British Columbia, Washington, and Oregon. In aggregate, 45% of the Chinook salmon harvested in these three fisheries originated in hatcheries.

Table 3.—Contributions of hatchery Chinook salmon to the Ketchikan, Sitka, and Juneau marine boat sport fisheries of Southeast Alaska, 2003.

Region or hatchery	Marine boat sport fishery			Total
	Juneau	Ketchikan	Sitka	
British Columbia	8	138	4,703	4,849
Oregon		97	535	632
Washington	3	149	914	1,066
Non-Alaskan total	11	384	6,152	6,547
SE	492	141	837	81
Alaska				
Crystal Lake	95	90	47	232
Crystal Lake/Neets Bay		570	104	674
Crystal Lake/Earl West Cove			50	50
Deer Mountain		318		
Hidden Falls	284		182	466
Little Port Walter	23		23	46
Macaulay	2,538	4		2,542
Medvejie	30	41	2,424	2,495
Neets Bay	35	363	42	440
Sheldon Jackson				
Tamgas Creek	15	544	220	779
Whitman Lake	7	2,029	197	2,233
Alaskan total	3,027	3,959	3,289	10,275
SE	386	640	445	1,006
Relative precision (%) ^a	12	14	3	4
Total all areas	3,038	4,343	9,441	16,822
SE	626	696	1,006	1,319
Relative precision (%) ^a	19	15	7	6
Chinook salmon harvest	5,514	7,706	24,124	37,344
SE	541	940	1,369	1,747
% Alaska hatchery	55	51	14	28
% Total hatchery	55	56	39	45

^a((SE x 1.645) / total harvest) x 100, $\alpha = 0.10$.

Only 14% of the Chinook salmon harvest in Sitka came from Alaska hatcheries, while the overall hatchery contribution was 39%. Seventy-four percent of the Alaska hatchery Chinook salmon harvested in Sitka were produced at the Medvejie hatchery. In Ketchikan, 51% of the Chinook salmon harvested were from Alaska hatcheries with another 5% from non-Alaskan hatcheries. About 51% of the Alaska hatchery Chinook salmon taken in Ketchikan originated from the Whitman Lake hatchery. Fifty-five percent of the Chinook salmon harvest in the

Juneau boat fishery was of Alaska hatchery origin, with 84% from Macaulay hatchery. Detailed hatchery contribution estimates by tag code are listed in appendices for the Ketchikan (Appendix A12), Juneau (Appendix A13), and Sitka fisheries (Appendix A14). In addition the following wild stock recoveries occurred: seven tagged Chinook salmon from the Unuk River wild stock were recovered in Ketchikan; 5 tagged Chinook salmon from the Chilkat River wild stock, and 1 tagged Chinook salmon from the Taku River wild stock were recovered in Juneau; and 3 Unuk River, 1 Stikine River, and 1 Washington Chinook salmon wild stock tags were recovered in Sitka (Appendices A12, A13, and A14).

Of the 581 Chinook salmon examined for clipped adipose fins in Petersburg, 13 tagged fish were recovered for a relative contribution of 32%: 5 from British Columbia and 8 from Alaska hatcheries. (Appendix A15). In Wrangell 387 Chinook salmon were sampled for a relative contribution of 13% hatchery origin. The relative contribution from Alaskan hatcheries was 12%, of which 60% originated from Crystal Lake/Earl West Cove (Appendix A16). Overall, 37% of the 1,152 Chinook salmon sampled in Craig/Klawock came from hatcheries, but only 3% of those were from Alaska (Appendix A17). In the Gustavus fishery, a sample of 168 Chinook salmon indicates a relative contribution of 50% overall, and 26% from Alaskan hatcheries (Appendix A18). A sample of 179 Chinook salmon from Elfin Cove gives an overall relative contribution of 38% with 26% from Alaskan hatcheries (Appendix A19).

In total, 1,138 Chinook salmon were successfully aged from the Ketchikan, Juneau, Petersburg, Wrangell, and Gustavus fisheries (Table 4; Appendix A20). The age composition of Chinook salmon sampled at the various ports was postseason stratified into spring (28 April-1 July) and summer (2 July-28 September). Chinook salmon were sampled for scales proportionally to the harvest in Juneau, Petersburg, and Wrangell, and thus no change to this spring and summer stratification was necessary. However, in Ketchikan, proportionally more Chinook scales were sampled before and during the derby period, i.e., from 28 April-22 June, than during the remainder of the season, i.e., from 23 June-28 September. Therefore, a modified temporal stratification of spring and summer was used for Ketchikan age composition analysis.

Only 7% of the sampled Chinook salmon lacked a freshwater annulus (age-0.), which usually indicates non-Alaskan origin (Van Alen 1988), although a few systems in the Ketchikan and Yakutat areas produce age-0. Chinook salmon (Table 4). Saltwater ages varied considerably: 44% of the Chinook salmon sampled during the Juneau Golden North Salmon Derby were age-.3 or less, whereas 71% of Chinook salmon sampled in the Petersburg fishery were age-.3 or less. Mean length-at-age of sampled Chinook salmon varied only slightly among the fisheries surveyed (Appendix A21).

Over 90% of the Chinook salmon taken in spring fisheries and sampled for biological data (i.e., age, sex and length) in Juneau, Ketchikan, Petersburg, and Wrangell were classified as mature (Table 5). Maturity percentages ranged from a high of 94% mature in the Ketchikan fishery to a low of 77% mature in the Petersburg fishery. The estimated harvest of large mature Chinook salmon in the Juneau fishery from 28 April through 22 June totaled 2,894 fish (Appendix A11).

Table 4.–Summary of the age composition of Chinook salmon sampled in selected marine sport fisheries in Southeast Alaska during 2003.

		FRESHWATER AGE COMPOSITION				Total sampled
Sport fishery	Period	Age 0.		Age 1. or more		
		No. observed	Percent	# observed	Percent	
Ketchikan	4/28-6/22 ^a	3	2	182	98	185
	6/23-9/28	15	16	76	84	91
Juneau	4/28-7/01	5	2	264	98	269
	7/02-9/28	0	0	45	100	45
Juneau derby	8/22-8/24	0	0	63	100	63
Petersburg	5/05-9/14	2	4	50	96	52
Wrangell	4/28-9/14	1	1	186	99	187
Gustavus	5/05-9/14	19	15	105	85	124
Elfin Cove	6/01-9/01	29	24	93	76	122
Total		74	7	1,064	93	1,138

		SALTWATER AGE COMPOSITION				Total sampled
Sport fishery	Period	Age .3 or less		Age .4 or more		
		No. observed	Percent	# observed	Percent	
Ketchikan	4/28-6/22 ^a	163	88	22	12	185
	6/23-9/28	86	95	5	5	91
Juneau	4/28-7/01	157	58	112	42	269
	7/02-9/28	42	93	3	7	45
Juneau derby	8/22-8/24	28	44	35	56	63
Petersburg	5/05-9/14	37	71	15	29	52
Wrangell	4/28-9/14	140	75	47	25	187
Gustavus	5/05-9/14	87	70	37	30	124
Elfin Cove	6/01-9/01	91	75	31	25	122
Total		831	73	307	27	1,138

^a Ketchikan seasonal strata modified to 4/28-6/22 and 6/23-9/28 because of Ketchikan derby fish being sampled disproportionately high during late May to mid-June 2003.

Table 5.–Summary of estimated maturity of Chinook salmon in the spring (through 1 July) Ketchikan, Juneau, Petersburg, and Wrangell marine boat sport fisheries, 2003.

Sport fishery	Statistic	Males		Females		Total ^a	
		Mature	Immature	Mature	Immature	Mature	Immature
Ketchikan	Sample size	85	6	114	8	217	15
	Percent	93	7	93	7	94	6
Juneau	Sample size	111	4	93	11	271	23
	Percent	97	3	89	11	92	8
Petersburg	Sample size	19	7	31	8	50	15
	Percent	73	27	79	21	77	23
Wrangell	Sample size	68	6	70	12	182	23
	Percent	92	8	85	15	89	11
Total	Sample size	283	23	308	39	720	76
	Percent	92	8	89	11	90	10

^aTotal includes unsexed fish.

COHO SALMON FISHERIES

Harvests of coho salmon in the Ketchikan, Sitka, and Juneau fisheries totaled an estimated 130,940 fish (SE = 8,094) (Table 6). The only monitored derby in which coho salmon were heavily targeted was the Juneau Golden North Salmon Derby, where an estimated 4,865 coho salmon (SE = 207) were harvested during this event (Appendix A2).

Harvests of hatchery coho salmon were estimated from an overall sample of 38,826, 30% of the coho salmon harvest (Appendix A22). Estimates of hatchery coho contributions by tag code and time period are presented in Appendix A23 for the Ketchikan fishery, Appendix A24 for the Juneau fishery, and Appendix A25 for the Sitka fishery.

Table 6.—Summary of estimated catch and harvest of coho salmon in the Ketchikan, Sitka, and Juneau marine boat sport fisheries, 2003.

Sport fishery	Total harvest		Total catch		% retained
	Estimate	SE	Estimate	SE	
Ketchikan	38,499	4,058	39,817	4,140	97%
Juneau	18,682	1,768	19,208	1,788	97%
Sitka	73,759	6,777	76,477	6,953	96%
Total	130,940	8,094	135,503	8,093	97%

Sixty-two (SE = 18) and 154 (SE = 44) hatchery coho salmon taken in Ketchikan and Sitka respectively, originated in British Columbia hatcheries, but most of the 130,940 (SE = 8,094) hatchery coho salmon taken in the combined Ketchikan, Sitka, and Juneau fisheries were from Alaska (Table 7). Hatchery contributions were 12%, 25%, and 40% of the total harvest in Juneau, Sitka, and Ketchikan, respectively. The Neets Bay hatchery contributed the most coho salmon to the Ketchikan fishery, while Macaulay contributed the most coho salmon to the Juneau fishery. Fifteen different Alaskan hatcheries contributed more than 18,000 coho salmon to the Sitka fishery, and Neets Bay hatchery was the largest contributor.

The tagged coho salmon in both Petersburg and Wrangell all originated from Alaskan hatcheries (Appendix A26 and A27). Sixty-three percent of the 313 coho salmon sampled in Petersburg and 33% of the 337 coho salmon sampled in Wrangell were hatchery contributions. Of the 9,069 coho salmon examined for clipped adipose fins from the Craig/Klawock fishery, 15% were from Alaska hatcheries, and Klawock hatchery contributed 11% (Appendix A28). Of the 2,264 coho salmon examined at Gustavus, 12% were from Alaska hatcheries (Appendix A29), and 21% of the 928 coho salmon examined at Elfin Cove were from Alaskan hatcheries (Appendix A30).

Additionally, some recoveries of coho salmon from wild-tagged indicator stocks were obtained in the Ketchikan, Juneau, Sitka, Petersburg, Wrangell, Craig/Klawock, Gustavus, and Elfin Cove fisheries (Appendices A23, A24, A25, A28, A29, and A30).

The weekly harvest per unit of effort (HPUE) for coho salmon in the Ketchikan, Juneau, Sitka, and Craig/Klawock fisheries reached highs of 0.797 (SE = 0.498), 0.443 (SE = 0.881), 1.038 (SE = 1.265), and 1.039 (SE = 0.673) coho salmon per angler-hour, respectively (Table 8). The peak in HPUE for coho salmon occurred in mid-September in Ketchikan, in early September in Juneau, in mid-July and in mid-September in Sitka, and in mid-August in Craig/Klawock. Usually, Sitka and Craig/Klawock anglers experienced higher weekly HPUEs for coho salmon than did Ketchikan and Juneau anglers.

Table 7.—Contributions of hatchery coho salmon to the Ketchikan, Sitka, and Juneau marine boat sport fisheries of Southeast Alaska, 2003.

Region or hatchery	Marine boat sport fishery			Total
	Juneau	Ketchikan	Sitka	
British Columbia	1	62	154	217
Non-Alaskan total	1	62	154	217
SE	0	18	44	48
Alaska				
Burnett Inlet	0	1,401	586	1,987
Crystal Lake	0	0	44	44
Deer Mountain	0	586	17	603
Gunnuk Creek	0	0	11	11
Hidden Falls	23	0	838	861
Klawock River	0	55	237	292
Macaulay	2,140	0	163	2,303
Medvejie	0	0	1,723	1,723
Medvejie CIF	0	0	779	779
Nakat Inlet	0	183	768	951
Neets Bay	0	10,495	9,098	19,593
Port Armstrong	0	0	902	902
Sheldon Jackson	0	0	23	23
Tamgas Creek	0	1,617	1,299	2,916
Whitman Lake	0	967	1,957	2,924
Alaskan total	2,163	15,304	18,445	35,912
SE	412	2,583	2,348	3,515
Relative precision ^a	4	11	5	4
Total all areas	2,164	15,366	18,599	36,129
SE	412	2,584	2,357	3,522
Relative precision ^a	4	11	5	
Coho salmon harvest	18,682	38,499	73,759	130,940
SE	1,768	4,058	6,777	8,094
% Alaska hatchery	12	40	25	27
% total hatchery	12	40	25	28

^a $((SE \times 1.645) / \text{total harvest}) \times 100, \alpha = 0.10.$

Table 8.—Mean harvest per unit effort (HPUE) for coho salmon (harvest per angler-hour of effort) by weekly period in the Ketchikan, Juneau, Sitka and Craig/Klawock marine boat sport fisheries during 2003.

Weekly period	Mean harvest of coho salmon per angler-hour of effort							
	Ketchikan		Juneau		Sitka		Craig/Klawock	
	HPUE	SE	HPUE	SE	HPUE	SE	HPUE	SE
5/26-6/01	0.000	0.004	0.000	0.003	0.000	0.000	0.000	0.000
6/02-6/08	0.004	0.029	0.001	0.009	0.000	0.000	0.000	0.000
6/09-6/15	0.012	0.036	0.001	0.007	0.006	0.033	0.015	0.049
6/16-6/22	0.027	0.090	0.002	0.016	0.039	0.088	0.071	0.141
6/23-6/29	0.061	0.171	0.006	0.030	0.182	0.319	0.158	0.234
6/30-7/06	0.171	0.254	0.016	0.068	0.229	0.401	0.201	0.255
7/07-7/13	0.199	0.452	0.037	0.127	0.133	0.246	0.586	0.543
7/14-7/20	0.369	0.606	0.131	0.213	1.038	1.265	0.596	0.552
7/21-7/27	0.307	0.405	0.202	0.219	0.589	0.790	0.717	0.611
7/28-8/03	0.270	0.320	0.148	0.206	0.762	0.713	0.650	0.443
8/04-8/10	0.371	0.442	0.181	0.235	0.813	0.650	1.039	0.673
8/11-8/17	0.258	0.300	0.236	0.271	0.571	0.572	0.946	0.461
8/18-8/24	0.276	0.290	0.358	0.357	0.816	0.671	0.885	0.605
8/25-8/31	0.249	0.258	0.281	0.320	0.666	0.459	0.957	0.632
9/01-9/07	0.349	0.315	0.443	0.881	0.801	0.626	0.870	0.790
9/08-9/14	0.797	0.498	0.398	0.385	0.961	1.028	0.000	0.000
9/15-9/21	0.669	0.458	0.363	0.375	0.468	0.527	na ^a	na ^a
9/22-9/28	0.579	0.422	0.209	0.337	na ^a	na ^a	na ^a	na ^a
All periods	0.276	0.410	0.099	0.250	0.585	0.893	0.499	0.577

^a Estimates were not obtained due to shorter sampling season in Sitka and Craig/Klawock.

BOTTOMFISH FISHERIES

Most bottomfish effort in Southeast Alaska targets Pacific halibut, and an estimated 54,364 (SE = 3,202) Pacific halibut were harvested in Ketchikan, Sitka, and Juneau (Table 9). The estimated harvest of 37,473 Pacific halibut in Sitka was greater than double the combined Ketchikan and Juneau harvest. Pacific halibut were sampled for length proportionally to estimated harvest during the course of the season at the ports of Ketchikan, Juneau, Sitka, Craig/Klawock, Petersburg, Wrangell, Gustavus and Yakutat and there was no need for seasonal stratification of the length data (Table 10). The estimated average net weight (headed and eviscerated) of harvested Pacific halibut for charters ranged from 10.9 pounds in Craig/Klawock to 39.3 pounds in the Yakutat and 10.9 pounds in Craig/Klawock to 25.9 pounds in Gustavus for private anglers. Overall, average net weights in all the sampled ports were estimated to within $\pm 10\%$ of the true value 90% of the time. Despite exceeding our target sample sizes in most ports and classes, some class specific estimates fell short of our objectives (relative precision = 12% for charter in Juneau, 12% for non-charter in Sitka, 14% for charter and 11% for non-charter in Ketchikan and 23% and 38% for the charter, non-charter respectively in Yakutat. The class specific estimates were within our range in Gustavus, Petersburg and Craig/Klawock areas.

Table 9.—Summary of estimated catch and harvest of Pacific halibut, rockfish, and lingcod in the Ketchikan, Sitka, and Juneau marine boat sport fisheries, 2003.

	Sport fishery	Total catch	SE	Harvest	SE	% retained
Pacific halibut	Ketchikan	9,950	1,032	7,138	691	72%
	Juneau	12,235	1,202	9,753	985	80%
	Sitka	47,017	3,753	37,473	2,967	80%
	Total	69,202	4,074	54,364	3,202	79%
Rockfish	Ketchikan	11,545	1,167	7,126	735	62%
	Juneau	1,717	346	1,186	301	69%
	Sitka	35,796	2,368	17,674	1,463	49%
	Total	49,058	2,663	25,986	1,665	53%
Lingcod	Ketchikan	945	179	415	99	44%
	Juneau	200	95	42	24	21%
	Sitka	10,014	835	2,750	357	27%
	Total	11,159	859	3,207	371	29%

Table 10.—Sample size, mean length (cm) and average net weight (lb) by user group of Pacific halibut harvested in Southeast Alaska marine boat sport fisheries during 2003.

Sport fishery	Class	Sample size	Mean length (cm)	SE	Average net weight (lb)	SE	Relative precision ^a
Ketchikan	Charter	169	89.6	1.3	17.1	1.5	14%
	Non-charter	264	85.3	1.1	14.9	1.0	11%
Juneau	Charter	111	90.8	1.9	18.1	1.3	12%
	Non-charter	596	90.4	0.9	19.1	0.9	8%
Sitka	Charter	1,193	93.4	0.6	20.3	0.6	5%
	Non-charter	189	83.5	1.4	14.0	1.0	12%
Petersburg/Wrangell	Charter	674	102.6	0.7	25.8	0.7	4%
	Non-charter	554	93.0	0.9	20.3	0.9	7%
Craig/Klawock	Charter	635	78.1	0.6	10.9	0.5	8%
	Non-charter	385	78.9	0.7	10.9	0.5	8%
Gustavus	Charter	2,052	114.6	0.5	37.3	0.6	3%
	Non-charter	320	102.0	1.2	25.9	1.1	7%
Yakutat	Charter	406	111.7	1.3	39.3	5.5	23%
	Non-charter	20	92.5	5.1	20.1	4.6	38%

^a Relative precision ($\alpha = 0.10$) = $(SE \times 1.645 / \text{estimate}) \times 100$. Those estimates where goals of $\pm 5\%$ for charter and $\pm 10\%$ for non-charter were achieved are in **BOLD**.

Although rockfish are not a primary target of most Southeast Alaska sport anglers, an estimated 49,058 (SE = 2,663) rockfish were caught in the combined Ketchikan, Sitka, and Juneau fisheries (Table 9). Only 53% (25,986, SE = 1,665) of the rockfish caught were retained.

Major species composition of the rockfish harvest was estimated for the Ketchikan and Sitka fisheries (Table 11). Yelloweye rockfish comprised nearly 55% of the harvest in Sitka but only 24% of the harvest in Ketchikan. Quillback rockfish *S. maliger* (46%) were the most frequently taken species in Ketchikan, but composed only about 3% of the rockfish harvest in Sitka. Black rockfish *S. melanops* were the second most commonly harvested species in Sitka at 28%. Other rockfish species in the sport harvest included copper *S. caurinus*, dusky *S. ciliatus*, and silvertrey *S. brevispinis*, along with a variety of other unidentified species.

Table 11.—Rockfish species composition in the Ketchikan and Sitka marine boat sport fisheries during 2003. An estimated 1186 rockfish harvested in the Juneau marine boat sport fishery were not identified by individual species.

Rockfish species	Ketchikan		Sitka	
	Harvest ^a	%	Harvest ^a	%
Quillback	3273	45.9	570	3.2
Dusky	201	2.8	152	0.9
Copper	675	9.5	295	1.7
Black	336	4.7	4,937	27.9
Yelloweye	1696	23.8	9,656	54.6
Silvertrey	444	6.2	130	0.7
Other nonpelagic	96	1.3	651	3.7
Other pelagic	407	5.7	1,278	7.2
Total ^b	7,126		17,674	

^a The unidentified rockfish harvest was allocated to species by expanding the appropriate percentage of harvest in the identified harvest to the total harvest.

^b The rockfish total does not equal the sum of the column because of rounding.

An estimated 2,750 (SE = 357) lingcod were harvested in Sitka, 415 (SE = 99) in Ketchikan, and 42 (SE = 24) in Juneau (Table 9). Length measurements were adequate to obtain precision goals of $\pm 10\%$ for round weight in non-charter and $\pm 5\%$ in charter harvest in the Sitka fishery. The Yakutat charter fishery also achieved the set goal. Ketchikan and Craig/Klawock fell short in all categories (Table 12). In all areas sampled, average total length and round weight of females were greater than males.

Table 12.—Sample size, mean total length (cm) and average round weight (lb) by sex and user group of lingcod harvested in sampled sport fisheries of Southeast Alaska during 2003.

Sport fishery	Sex	Sample		Mean TL		Avg. round		Relative precision ^a
		size	%	(cm)	SE	wt (lb)	SE	
Craig/Klawock	Males	18	41	82.0	1.5	13.3	0.7	9%
	Females	26	59	91.0	1.9	18.6	1.1	10%
	Non-charter	14	27	85.1	3.3	15.5	1.9	20%
	Charter	38	73	87.7	1.2	16.4	0.7	7%
Sitka	Males	265	50	87.9	0.4	16.4	0.2	2%
	Females	262	50	93.2	0.5	19.8	0.3	3%
	Non-charter	47	8	91.2	1.8	19.2	1.2	10%
	Charter	512	92	90.6	0.3	18.0	0.2	2%
Ketchikan	Males	17	41	75.4	2.2	10.5	1.0	15%
	Females	24	59	79.5	1.9	12.4	1.0	14%
	Non-charter	26	62	76.4	1.8	11.0	1.0	14%
	Charter	16	38	12.5	1.0	12.5	1.0	13%
Yakutat	Males	32	33	92.1	2.0	19.4	1.2	10%
	Females	65	67	99.5	1.2	24.1	0.8	5%
	Non-charter	12	12	88.0	4.3	17.5	2.5	23%
	Charter	91	88	98.5	0.9	23.4	0.6	4%

^a Relative precision (alpha of 0.10) = (SE x 1.645/estimate) x 100. A precision of ±10% at 0.10 alpha level was the sampling goal in Craig/Klawock and Sitka for average weight by sex. Those estimates where goals of ±5% for charter and ±10% for non-charter and sexes were achieved are in **BOLD**.

OTHER SALMONID FISHERIES

Although not usually primary targets, other salmonids such as pink, chum, and sockeye salmon, and Dolly Varden were harvested in Ketchikan, Sitka and Juneau (Table 13). Pink salmon were abundant in Ketchikan, as the estimated harvest totaled 34,454 (SE = 6,369). Only 5,626 (SE = 689) pink salmon were harvested in Sitka, and 1,934 (SE = 242) in Juneau. Retention rates for pink salmon were 44% in Juneau, 37% in Sitka, and 80% in Ketchikan. Harvests of both chum and sockeye salmon were much less, totaling 7,580 (SE = 568) chum salmon and 655 (SE = 147) sockeye salmon for the three fisheries combined. Juneau anglers took most (76%) of the 445 (SE = 107) Dolly Varden harvested.

SHELLFISH FISHERIES

Shellfish effort and harvests of Dungeness, Tanner and king crab, and shrimp were estimated for Ketchikan and Juneau (Table 14). Shellfish effort in boat-days for the Juneau fishery was 7,369 boat-days, which is more than 4 times that estimated for the Ketchikan fishery (1,714 boat-days). A popular red king crab personal use fishery in the Juneau area is the main reason for the high effort. Both the harvest and effort nearly doubled from 2002 to 2003 for the Juneau king crab

fishery. Substantial numbers of Dungeness (11,630), Tanner (742) and king crab (10,332) were harvested in the Juneau fishery, but as is usual, no king crab or Tanner crab were taken in the Ketchikan area. The number of shrimp harvest was estimated at 158,520 in Ketchikan and 92,130 in Juneau.

Table 13.–Summary of estimated total catch and harvest of pink salmon, chum salmon, sockeye salmon, and Dolly Varden in the Ketchikan, Sitka, and Juneau marine boat sport fisheries surveyed during 2003.

	Sport fishery	Total catch	SE	Harvest	SE	% Retained
Pink salmon	Ketchikan	43,062	6,746	34,454	6,369	80%
	Juneau	4,360	480	1,934	242	44%
	Sitka	15,308	2,057	5,626	689	37%
	Total	62,730	7,069	42,014	6,411	67%
Chum salmon	Ketchikan	3,227	443	2,903	380	90%
	Juneau	4,346	634	2,616	303	60%
	Sitka	2,479	374	2,061	295	83%
	Total	10,052	859	7,580	568	75%
Sockeye salmon	Ketchikan	77	32	77	32	100%
	Juneau	78	43	78	43	100%
	Sitka	555	166	500	137	90%
	Total	710	175	655	147	92%
Dolly Varden	Ketchikan	0	0	0	0	0%
	Juneau	1,152	256	337	80	29%
	Sitka	243	150	108	71	44%
	Total	1,395	297	445	107	32%

Table 14.–Estimated effort for and harvest of Dungeness crab, king crab, Tanner crab and shrimp in the Ketchikan and Juneau marine boat sport fisheries during 2003.

Sport fishery	Time period	Effort		Dungeness		Tanner		King		Shrimp	
		Boat-days	SE	Harvest	SE	Harvest	SE	Harvest	SE	Harvest	SE
Ketchikan	4/28-9/28	1,714	175	6,055	1,219	0	-	0	-	158,520	11,298
Juneau	4/28-9/28	7,369	461	11,630	1,191	742	296	10,332	990	92,130	8,518
Total		9,083	493	17,685	1,704	742	296	10,332	990	250,650	14,149

DISCUSSION

Onsite creel surveys provide data necessary for inseason management, and they also can provide detailed fishery performance and biological information difficult to obtain with mail surveys.

For inseason management, the usefulness of onsite surveys lies in their consistency of method and coverage, so that inseason estimates can be compared with historical SWHS and onsite creel estimates. Because the Clover Pass access location was not sampled in the Ketchikan fishery from 1997 through 2000 and the Salmon Falls access location was not sampled during 2001, only part of 2002, and has continued to deny access to our technicians since August 11, 2002, it is known that estimates were biased low in comparison to previous surveys. The probable bias could have ranged up to 40%, but was more likely in the range of 20%. Therefore, in comparisons with past Ketchikan creel surveys, estimates may be biased low in 1997–2003.

Effort, harvest and total catch estimates from the three creel surveys reported here should not be considered to encompass all of these fisheries. Overall statistics are best estimated by the SWHS Walker et al. 2003. Estimates for Chinook salmon in the Juneau, Sitka, and Ketchikan fisheries are incomplete because there were no surveys of harvests occurring: (1) outside of the survey periods; (2) at all private moorages on the road system or remote moorages, docks, or lodges inaccessible from the road system; (3) during the night period from the end of civil twilight to the beginning of surveys at about 0800; and (4) by boat parties that were not sampled because they were not observed by creel samplers. As previously discussed, omission of the Salmon Falls access location in Ketchikan during 2001 had an impact.

Onsite creel surveys of the Juneau marine boat sport fishery have been conducted every year since 1960 (Schmidt et al. 1973; Schmidt and Robards 1975; Schmidt 1974; Mattson 1975; Robards 1976-1978; Marriott et al. 1979; Schwan 1980-1982; Neimark and Schwan 1983; Neimark 1984, 1985; Mecum and Suchanek 1986, 1987; Bingham et al. 1988; Suchanek and Bingham 1989-1992; Hubartt et al. 1993-1999, 2001-2002; Hubartt and Jaenicke 2004). These reports also present results from other surveys conducted more sporadically. The Ketchikan fishery has been monitored for the entire spring and summer season since 1984, except for a 1-year hiatus in 1985. The Sitka fishery was not surveyed in 1990, 1991, or prior to 1986, but was surveyed in the spring in 1986 and 1989, and for most of the season (April or May through August or September) in 1987–1988 and 1992–2003. The Petersburg and Wrangell fisheries were not surveyed in 1990 or 1991, but were consistently surveyed in the spring from 1983–1989 and during 1992–1994; Petersburg was also surveyed in 1995. Additional catch sampling results are presented in these reports for Wrangell from 1995–2003, Petersburg from 1996–2003, and Craig from 1993–2003. Catch sample results for Yakutat from 1998 and 1999 are presented in Johnson (2001).

The Juneau and Ketchikan marine boat fisheries have been consistently surveyed from approximately mid-April or early May through late September or, occasionally, early October. Among-year comparisons of angler effort and harvest for a given fishery are confounded by some variation in the time periods surveyed from year to year. Effort and harvest at either the beginning or the end of the survey season is small, in comparison to effort during the middle of the season. Among-year comparisons are generally valid, but the variations in survey periods should be noted. Variances for the harvest estimates have been generated since 1987, but detailed statistical comparisons have not been done with prior years as only general trends have been primarily examined. In the following discussion, it should be noted that in some instances it might not be possible to show a statistically significant difference between years.

ANGLER EFFORT

Fishing effort in the Juneau and Ketchikan marine fisheries has been generally declining over the past decade while effort in the Sitka fishery has been generally increasing (Figure 2). Total effort in the Juneau fishery during 2003 was 1% lower than in 2002, and 24% lower than the 1993–2002 average of 310,896 angler-hours (Table 15). In Ketchikan, total 2003 effort was down 10% from 2002, and 7% lower than the 1993–2002 average of 223,204 angler-hours. Effort in the Sitka fishery also decreased slightly from 2002, as total effort during 2003 was 1% lower than in 2002, but 8% higher than the 1993–2002 average of 194,226 angler-hours (Table 15).

In 2003, 74% of the effort in the Juneau fishery targeted salmon, which was slightly below the average of 79% (1993–2002), while 81% of the effort in the Ketchikan fishery targeted salmon, which is above the average of 76%. In the Sitka fishery the bottomfish effort increased to 33%, which was greater than the average of 28%; and the salmon fishery effort decreased to 67%, whereas the average from 1993 to 2002 was 72%. The percentage of bottom fish effort increased slightly in Juneau from the 21% average (1993–2002) to 26% in 2003, and Ketchikan decreased from the average of 24% to 19%. Total angler-hours in Ketchikan were below the average at 93% of the 1993–2002 average (Table 15).

CHINOOK SALMON FISHERIES

Total harvest of Chinook salmon in the Juneau marine boat fishery has shown little trend since 1983 although 1998 to 2003 harvests were some of the lowest for the period (Figure 3). The 2003 Juneau harvest of 5,514 Chinook salmon was 88% of average, and the Juneau Golden North Derby harvest of 541 Chinook was 124% of the average from 1993 to 2002 (Table 16). The Ketchikan Chinook harvest hit a low in 1998 and has gradually increased. In 2003, the Ketchikan harvest of 7,706 was 84% above the 1993–2002 average of 4,181 (Table 16). Chinook harvests in the Sitka fishery generally increased from 1993 to 1997, but declined somewhat from 1998 through 2000 maintaining over 66% of the previous peak in 1997. The 2003 Sitka harvest of 24,124 increased to 31% above the 1993–2002 average (Table 16).

Harvests of Alaska hatchery Chinook salmon are of value because these fish do not count toward the U.S./Canada Pacific Salmon Treaty catch quota while non-Alaskan hatchery fish do. Hatchery contributions of Chinook salmon to the Juneau and Ketchikan fisheries increased steadily during the mid-1980s, and continued to increase except for a few years in the mid 1990s (Figure 4). In 2003, 55% of the Chinook salmon harvest in Juneau originated in Alaska hatcheries, compared to the 1993–2002 average of 40% (Table 17). An estimated 51% of the 2003 Chinook salmon harvest in Ketchikan originated in Alaskan hatcheries, a percentage slightly higher than the average (1993–2002) of 46%. The total hatchery contribution in Ketchikan of 56% was down from 2002 (70%) and also less than the 1992–2002 average of 58% (Table 17). In Sitka, a much higher proportion of Chinook salmon originates in non-Alaska hatcheries than in Ketchikan or Juneau (Table 17 and Figure 4). In 2003, the total hatchery percentage of 39% in Sitka was below the 10-year average of 41%, and the Alaska hatchery percentage of 14% was equal to the 1993–2002 average of 14% (Table 17).

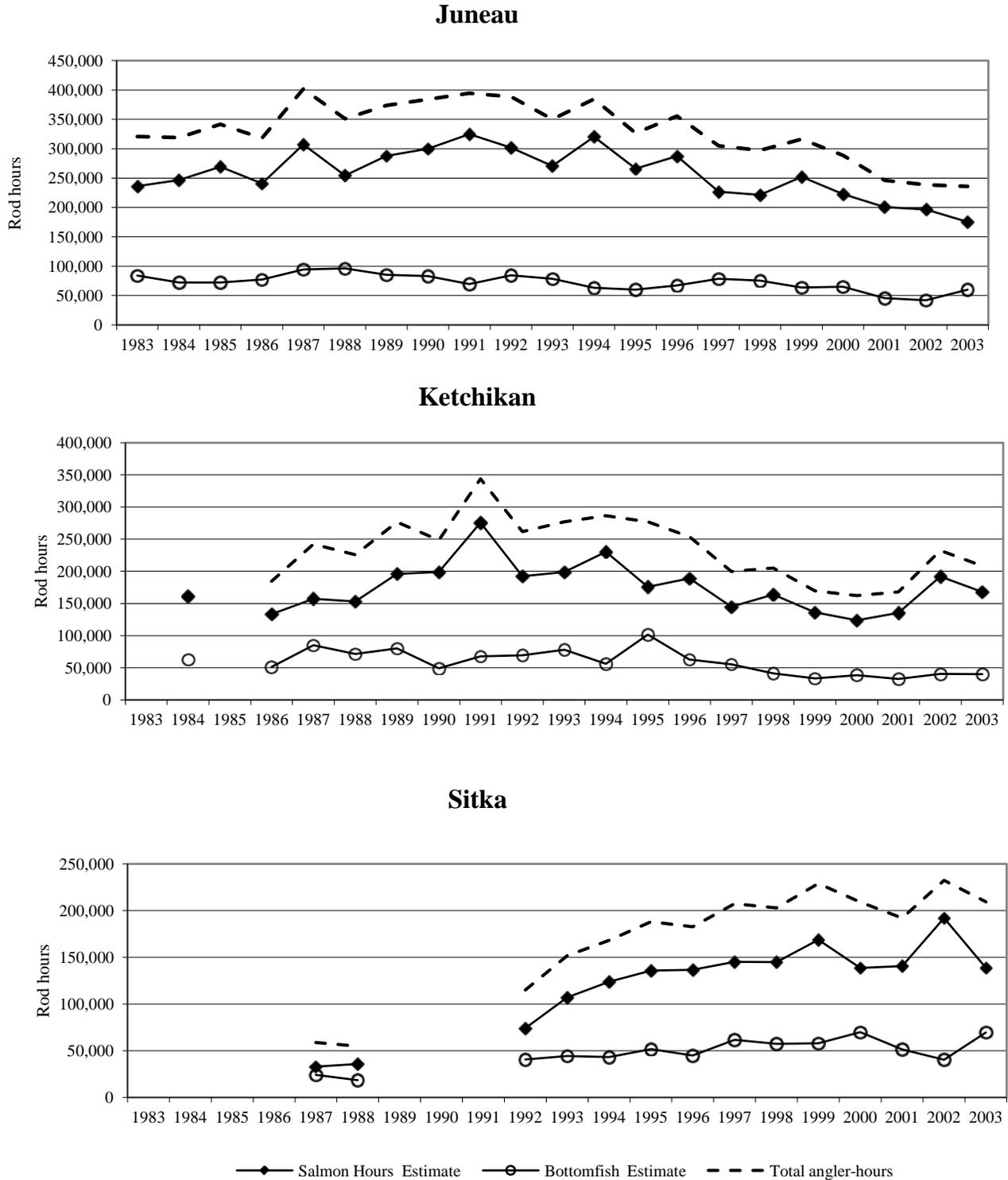


Figure 2.—Estimated effort in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1983-2003.

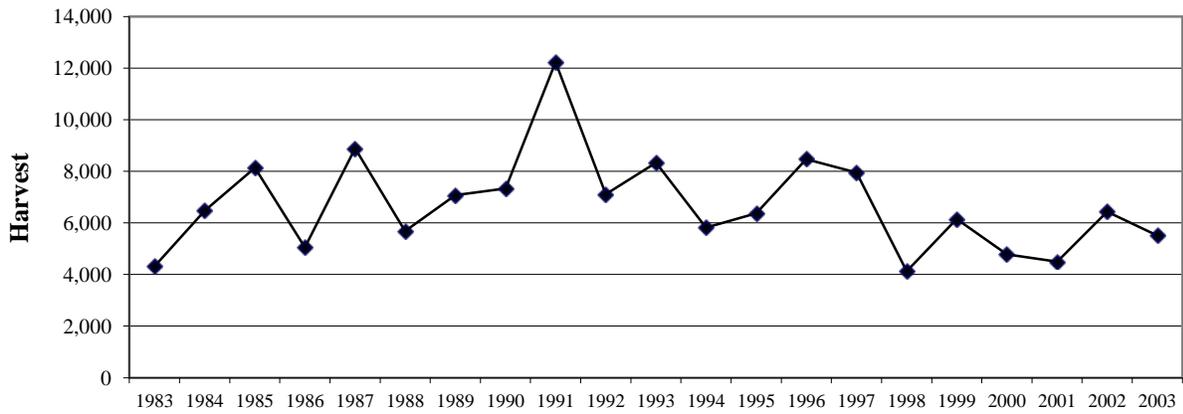
Table 15.–Estimated angler effort (hours) in the Juneau, Ketchikan and Sitka marine boat sport fisheries as determined by onsite creel surveys for comparable sample periods, 1993–2003.

Year	Survey dates	Salmon hours			Bottomfish-hours			Total angler-hours	
		Estimate	SE	Percent total hrs	Estimate	SE	Percent total hrs	Estimate	SE
Juneau									
1993	4/26-9/26	270,838	18,192	77	78,820	6,800	23	349,965	22,012
1994	4/25-9/25	320,385	25,095	83	63,398	6,628	16	384,528	30,522
1995	4/24-9/24	265,923	12,390	81	60,158	3,734	18	326,807	14,543
1996	4/22-9/22	287,481	17,486	81	67,555	5,328	19	355,381	20,480
1997	4/28-9/28	226,921	10,411	74	78,435	6,416	26	305,097	14,316
1998	4/27-9/27	221,598	14,565	75	75,288	5,552	25	297,229	17,461
1999	4/26-9/26	252,169	13,924	80	63,578	5,146	20	316,442	17,261
2000	4/24-9/24	222,710	14,562	77	65,190	4,709	23	288,525	17,066
2001 ^a	4/23-9/23	199,508	12,198	81	45,496	4,259	18	246,244	13,942
2002	4/29-9/29	196,573	13,810	82	42,072	3,980	18	238,746	15,422
2003	4/28-9/28	175,324	9,308	74	60,094	5,257	26	235,698	11,836
Average 1993-2002		246,411		79	63,999		21	310,896	
2003 - % of 10 yr average ^b		71			94			76	
Ketchikan									
1993	4/26-9/26	198,960	15,119	72	78,002	6,285	28	276,969	18,207
1994	4/25-9/25	230,372	17,494	80	56,092	4,807	20	286,464	19,920
1995	4/24-9/24	175,765	12,709	63	101,381	7,037	37	277,146	15,817
1996	5/6-10/6	188,947	12,080	74	62,673	4,548	25	253,977	14,400
1997	4/28-9/28	144,735	9,805	72	55,242	4,141	28	199,977	11,631
1998	4/27-9/27	163,855	11,459	80	41,194	3,456	20	205,063	12,871
1999	4/26-9/26	136,284	10,769	80	33,359	2,865	20	169,664	11,469
2000	4/24-9/24	124,005	10,978	76	38,340	3,162	24	162,344	11,927
2001	5/07-9/23	135,567	10,575	81	32,555	2,660	19	168,123	11,645
2002	4/29-9/29	192,010	12,697	83	40,306	3,088	17	232,316	13,513
2003	4/28-9/28	168,204	12,806	81	40,204	2,647	19	208,430	13,625
Average 1993-2002		169,050		76	53,914		24	223,204	
2003 - % of 10 yr average ^b		99			75			93	
Sitka									
1993	4/26-9/26	107,184	5,940	71	44,480	2,573	29	151,829	7,490
1994	4/25-9/25	123,971	5,375	74	43,363	2,775	26	168,146	7,414
1995	4/24-9/24	135,866	5,647	72	51,710	3,592	28	188,000	7,884
1996	4/22-9/22	136,585	6,854	75	45,075	2,989	25	182,513	8,502
1997	4/28-9/28	145,114	7,506	70	61,711	4,573	30	207,288	10,670
1998	4/27-9/27	144,850	6,895	71	57,378	4,077	28	202,818	9,760
1999	4/26-9/26	168,793	8,515	74	57,899	4,514	25	229,012	11,934
2000	4/24-9/24	138,705	7,245	66	69,918	5,117	33	209,027	10,982
2001	4/23-9/23	140,571	7,754	73	51,429	4,507	27	192,150	10,834
2002	4/29-9/29	145,123	7,952	69	66,305	5,512	31	211,472	11,660
2003	4/28-9/28	138,631	7,538	67	69,713	6,042	33	209,430	11,576
Average 1993-2002		138,676		72	54,927		28	194,226	
2003 - % of 10 yr average ^b		100			127			108	

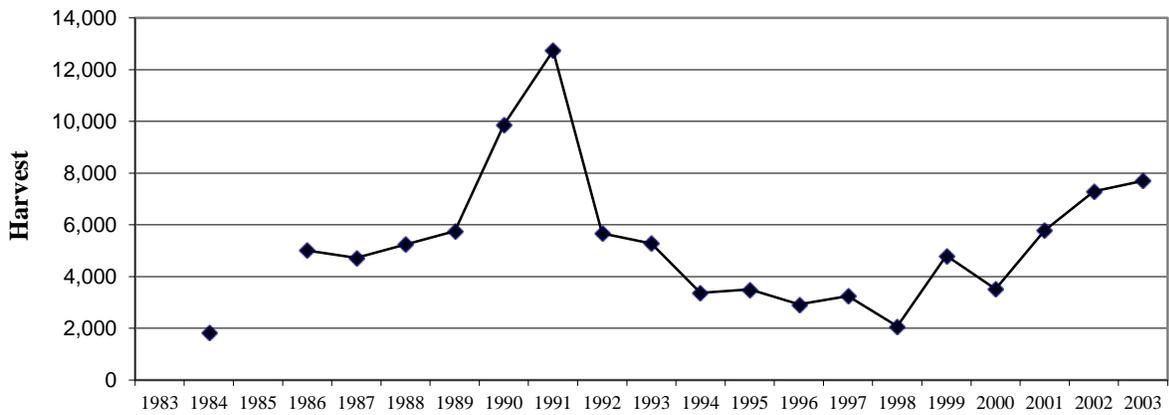
^a 2001 Juneau salmon-hours are incorrect in the 2002 report, Table 15. This table has been corrected.

^b Based on a 10-year average. The targeted average of percent equals the average of the annual percentages, not total annual hours.

Juneau



Ketchikan



Sitka

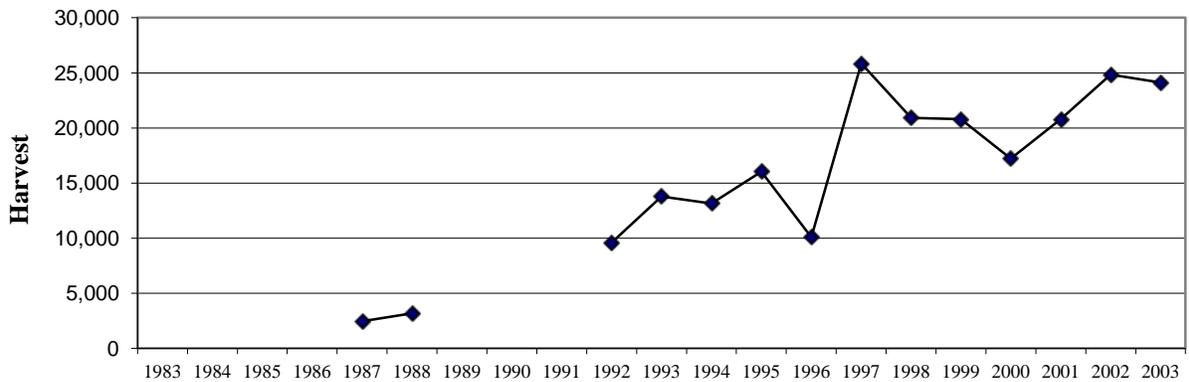


Figure 3.—Estimated harvest of Chinook salmon in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys from 1983–2003.

Table 16.—Estimated harvest of Chinook salmon in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys for comparable sample periods, 1993–2003.

Year	Juneau ^a			Ketchikan		Sitka	
	Harvest	SE	Golden North Salmon Derby ^b	Harvest	SE	Harvest	SE
1993	8,337	797	243	5,277	477	13,779	1,058
1994	5,819	403	678	3,374	354	13,139	762
1995	6,371	372	399	3,499	356	16,048	997
1996	8,464	517	784	2,931	274	10,078	755
1997	7,952	609	472	3,245	301	25,850	1,631
1998	4,128	299	409	2,072	182	20,914	1,408
1999	6,150	423	506	4,814	518	20,804	1,443
2000	4,785	401	299	3,521	413	17,230	1,089
2001	4,498	348	272	5,784	649	20,794	1,269
2002 ^c	6,430	531	292	7,295	571	24,834	1,636
2003	5,514	541	541	7,706	940	24,124	1,369
Avg 1993-2002	6,293		435	4,181		18,347	
2003 - % of 10 yr average	88		124	184		131	

^a Includes Juneau Golden North Salmon Derby harvest.

^b The derby is a census with a variance of 0.

^c This table is corrected from the 2002 report, which has an error in number of Juneau's derby Chinook. This equals the total; both entered and not entered.

Table 17. Estimated contributions of hatchery-produced Chinook salmon to Juneau, Ketchikan and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1993–2003.

Year	Juneau				Ketchikan				Sitka			
	Total	% of harvest	Alaska	% of harvest	Total	% of harvest ^a	Alaska	% of harvest ^a	Total	% of harvest	Alaska	% of harvest
1993	1,511	18	1,446	17	3,425	65	2,234	42	7,351	53	1,468	11
1994	2,127	37	1,895	33	2,393	71	1,378	41	6,210	47	1,642	12
1995	2,933	46	2,873	45	888	25	723	22	9,052	56	5,702	36
1996	2,430	29	2,360	28	1,576	54	1,131	39	2,966	29	1,730	17
1997 ^b	2,055	26	1,730	22	1,098	35	1,059	34	14,131	55	2,755	11
1998 ^b	1,607	39	1,509	37	1,647	79	1,014	49	10,302	49	875	4
1999 ^b	2,399	39	2,398	39	2,703	56	2,306	48	8,377	40	2,532	12
2000 ^b	2,805	59	2,768	58	1,848	52	1,783	51	5,149	30	1,557	9
2001 ^b	2,549	57	2,543	57	4,311	75	4,216	73	4,717	23	3,063	15
2002	3,959	62	3,839	60	5,125	70	4,650	64	7,445	30	2,377	10
2003	3,038	55	3,027	55	4,343	56	3,959	51	9,441	39	3,289	14
Average 1993-2002 ^b	2,438	41	2,336	40	2,501	58	2,049	46	7,570	41	2,370	14

^a Ketchikan estimates of total hatchery harvests are biased low because major access sites (Clover Pass or Salmon Falls) were not sampled.

^b The 10-year average for % of harvest equals the average of the annual percentages.

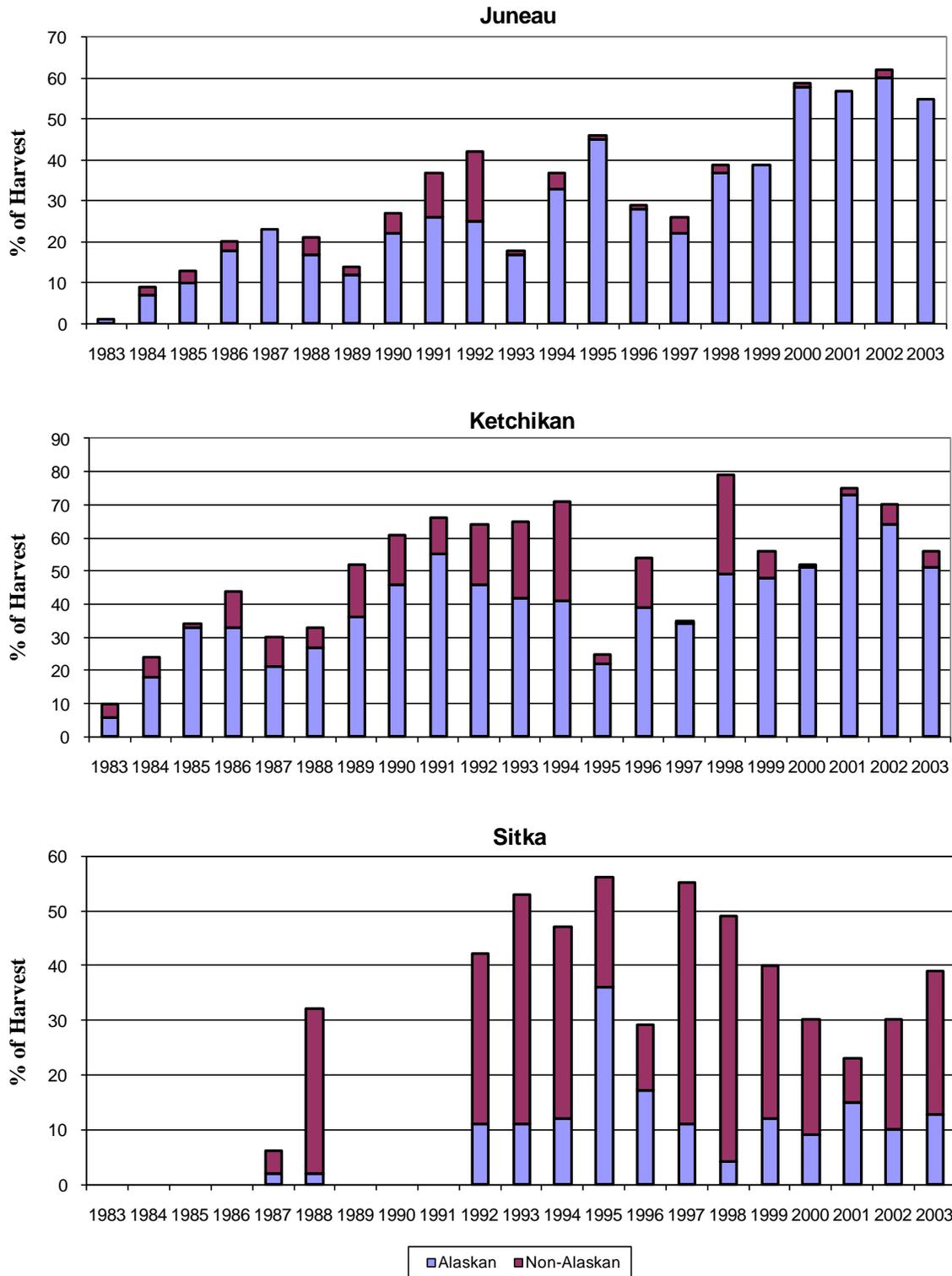


Figure 4.—Percent of harvest from estimated contributions of hatchery-produced Chinook salmon to Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys 1983-2003.

COHO SALMON FISHERIES

The coho harvest in Southeast Alaska during 2003 was above average in Ketchikan and Sitka, and slightly below average in Juneau (Table 18). The 2003 harvest of 38,499 coho salmon in the Ketchikan area was 49% above the 1993–2002 average of 25,910, and the Sitka area harvest of 73,759 coho salmon was 90% above the average of 38,793. Juneau area harvest of 18,682 coho salmon was 16% below the 10-year average of 22,121. The Juneau Golden North Salmon derby harvest of 4,865 coho salmon was 20% above the 10-year average of 4,043.

Table 18.—Estimated harvest of coho salmon in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys for comparable sample periods, 1993–2003.

Year	Juneau ^a			Ketchikan		Sitka	
	Harvest	SE	Golden North Salmon Derby	Harvest	SE	Harvest	SE
1993	15,921	1,478	2,031	18,703	2,731	14,166	1,064
1994	62,218	7,363	8,358	44,673	5,297	23,080	2,384
1995	15,172	1,241	2,914	19,165	2,467	12,015	1,314
1996	18,816	1,649	4,505	42,220	4,532	28,981	2,172
1997	12,477	1,066	1,919	14,204	1,901	30,789	3,849
1998	15,730	1,905	4,327	24,059	2,778	42,524	3,972
1999	26,604	2,654	4,324	20,719	2,335	73,757	7,441
2000	11,960	2,064	1,856	14,778	2,315	38,247	4,062
2001 ^b	16,036	1,289	3,551	26,693	2,531	78,218	7,886
2002 ^b	26,273	3,239	6,642	33,889	3,023	46,150	5,257
2003	18,682	1,768	4,865	38,499	4,058	73,759	6,777
Average 1993–2002	22,121		4,043	25,910		38,793	
2003 - % of 10 yr avg	84		120	149		190	

^a Includes Juneau Golden North Salmon Derby harvest. The derby is a census with a variance of zero.

^b The 2001 and 2002 reports were not consistent with the previous reports on the number of coho salmon used for the derby counts. This table is corrected using total coho salmon, both derby entered and derby not entered, which is also consistent with Table 16 for number of derby Chinook.

Harvests of coho salmon in the Juneau, Ketchikan and Sitka areas have been supplemented by hatchery fish with the contributions in each area fluctuating from year to year (Table 19). Hatchery coho salmon comprised 12% of the 2003 harvest in Juneau, which is 4% lower than the 1993–2002 average of 16%. The Ketchikan fishery has been much more dependent upon hatchery coho salmon than has the Juneau fishery. In 2003, the estimated coho hatchery harvest of 15,366 in Ketchikan represented 40% of the 2003 harvest, which is an increase over the 1993–2002 average of 38% (Table 19). The contribution of 18,638 hatchery-produced coho salmon to the Sitka fishery represented 25% of the 2003 harvest, higher than the 10-year average hatchery contribution of 19%.

BOTTOMFISH FISHERIES

The 2003 harvest of 9,753 Pacific halibut in the Juneau fishery was 19% above the 1993–2002 average of 8,218 (Table 20). The Ketchikan halibut harvest of 7,138 was only 77% of the 1993–2002 average of 9,219. The numbers of Pacific halibut released in the Juneau fisheries were 17%

below the 1992–2003 average, whereas the released halibut in Ketchikan was only 3% below the 10-year average. The retention rate of 72% for Pacific halibut in Ketchikan was below the 1993–2002 average of 78%, and the retention rate in Juneau of 80% was above the 10-year average of 74%. The Sitka harvest of 37,473 Pacific halibut in 2003 was the highest recorded and was 74% above the 10-year average harvest of 21,491 (Table 20). The Sitka retention rate of 80% in 2003 was above the average of 71%. The creel survey estimates of Pacific halibut harvest in Sitka have increased from a consistent level of about 12,000 to 13,200 fish during 1993–1996 (Table 20) to harvest levels ranging from around 19,600 to 37,400 fish during 1997–2003. The bottomfish effort in Sitka increased only slightly during 1997–2002, and effort in 2003 was above the 10-year average by 27% (Table 15). The increase in Pacific halibut harvest in Sitka since 1997 coincides with an increased percentage of charter bottomfish effort and corresponding higher HPUE of the charter fishery, per White and Jaenicke.⁶ A nonresident annual bag limit for Chinook salmon in Southeast Alaska was first implemented in 1997. This regulation may have shifted more emphasis towards bottomfish fishing, especially in the outer coast port of Sitka. In this area excellent Chinook HPUEs result in charter clients relatively quickly obtaining their Chinook salmon annual limits, at which point bottomfish are targeted. The latter would be particularly true during May and June when other salmon species are not yet available in number.

Rockfish harvest in the 2003 Ketchikan fishery (7,126) was 25% above the 1993–2002 average of 5,696 (Table 21). Retention of rockfish at 62% was above the 1993–2002 average of 40%.

Table 19.—Estimated contributions of hatchery-produced coho salmon to Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1993–2003.

Year	Juneau		Ketchikan		Sitka	
	Total	% of harvest	Total	% of harvest ^a	Total	% of harvest
1993	1,577	10	4,325	23	1,650	12
1994	8,260	13	14,491	32	4,773	21
1995	1,010	7	7,327	38	2,270	19
1996	3,276	17	16,841	40	5,224	18
1997 ^a	2,162	17	5,822	41	4,798	16
1998 ^a	3,597	23	12,455	52	8,906	21
1999 ^a	5,306	20	6,843	33	19,772	27
2000 ^a	2,398	20	7,948	54	7,421	19
2001 ^a	2,694	17	7,715	29	12,827	16
2002 ^a	4,808	18	11,780	35	9,347	20
2003	2,166	12	15,366	40	18,638	25
10 yr average 1993-2002 ^b	3,509	16	9,555	38	7,699	19

^a Ketchikan estimates of total hatchery harvests are biased low because a major access site (Salmon Falls) was not sampled for all or part of the season.

⁶ White, B. and M. J. Jaenicke (*Unpublished*). Summary data from the sport fishery for Pacific halibut in the IPHC Area 2C portion of Southeast Alaska, 2003. Juneau., Located at: Alaska Department of Fish and Game, Division of Sport Fish.

Table 20.—Estimated harvest and catch of Pacific halibut in the Juneau, Ketchikan, and Sitka marine boat sport fisheries, 1993–2003.

Juneau							
Year	Kept	SE	Released	SE	Total catch	SE	Percent retained ^a
1993	6,928	650	2,652	661	9,580	927	72
1994	8,843	877	4,047	1,007	12,890	1,335	69
1995	9,252	762	3,234	872	12,486	1,158	74
1996	11,158	1,053	3,183	1,049	14,341	1,486	78
1997	12,547	1,327	5,701	1,434	18,248	1,954	69
1998	8,200	802	2,198	695	10,398	1,061	79
1999	8,105	808	2,985	755	11,090	1,106	73
2000	6,169	532	1,706	366	7,875	646	78
2001	4,802	498	1,306	445	6,108	668	79
2002	6,172	625	2,920	886	9,092	1,085	68
2003	9,753	985	2,482	688	12,235	1,202	80
Average 1993-2002	8,218		2,993		11,211		74
2003 - % of 10 yr average	119		83		109		
Ketchikan							
Year	Kept	SE	Released	SE	Total catch	SE	Percent retained ^a
1993	12,783	1,057	4,443	1,103	17,226	1,528	74
1994	10,960	982	2,849	769	13,809	1,247	79
1995	19,675	1,669	7,089	1,352	26,764	2,148	74
1996	11,177	1,069	4,052	1,216	15,229	1,619	73
1997	7,983	806	3,566	1,084	11,549	1,351	69
1998	6,778	780	2,335	937	9,113	1,219	74
1999	5,126	525	961	355	6,087	634	84
2000	6,039	663	998	520	7,037	843	86
2001	4,664	478	1,013	349	5,677	592	82
2002	7,009	751	1,802	620	8,811	974	80
2003	7,138	691	2,812	766	9,950	1,032	72
Average 1993-2002	9,219		2,911		12,130		78
2003 - % of 10 yr average	77		97		82		
Sitka							
Year	Kept	SE	Released	SE	Total catch	SE	Percent retained ^a
1993	12,720	811	4,289	713	713	1,080	75
1994	13,185	1,133	5,233	1,326	1,326	1,744	72
1995	13,151	1,182	5,963	1,174	1,174	1,666	69
1996	12,015	943	5,859	1,203	1,203	1,528	67
1997	21,852	1,962	13,518	2,819	2,819	3,435	62
1998	19,640	1,713	9,704	2,002	2,002	2,635	67
1999	27,967	2,672	13,580	3,186	3,186	4,158	67
2000	31,110	2,535	14,100	2,808	2,808	3,783	69
2001	29,006	2,562	7,274	1,536	1,536	2,988	80
2002	34,260	3,043	7,972	2,342	2,342	3,840	81
2003	37,473	2,967	9,544	2,299	2,299	3,753	80
Average 1993-2002	21,491		8,749		30,240		71
2003 - % of 10 yr average	174		109		155		

^a The 10-year average of the percent retained equals the averages of the annual percentages.

Table 21.—Comparative effort and catch statistics for the Ketchikan rockfish sport fishery, 1993–2003.

Year	Angler effort, bottomfish				Total rockfish harvest and catch							HPUE ^a		CPUE ^a	
	Total angler hours	SE	Bottomfish-hours	SE	Harvest	SE	Released	SE	Total catch	SE	% harvest	Targeted ^b	Non-targeted ^c	Targeted ^d	Non-targeted ^e
1993	276,969	18,207	78,002	6,285	10,573	1,151	15,192	1,538	25,765	1,921	41	0.14	0.04	0.33	0.09
1994 ^f	286,464	19,920	56,092	4,807	5,604	564	8,283	999	13,887	1,147	40	0.10	0.02	0.25	0.05
1995	277,146	15,817	101,381	7,037	10,132	1,185	13,013	1,594	23,147	1,986	44	0.10	0.04	0.23	0.08
1996	253,977	14,400	62,673	4,548	5,492	576	7,401	870	12,893	1,043	43	0.09	0.02	0.21	0.05
1997 ^g	199,977	11,631	55,242	4,141	6,514	716	9,806	1,478	16,320	1,642	40	0.12	0.03	0.30	0.08
1998 ^g	205,063	12,871	41,194	3,456	3,864	352	6,964	781	10,828	856	36	0.09	0.02	0.26	0.05
1999 ^g	169,664 ^h	11,469	33,359	2,865	3,282	347	4,838	680	8,120	763	40	0.10	0.02	0.24	0.05
2000 ^g	162,344	11,927	38,340	3,162	4,784	550	6,172	908	10,956	1,062	44	0.12	0.03	0.29	0.07
2001 ^g	168,123	11,645	32,555	2,660	3,089	263	5,036	637	8,125	689	38	0.09	0.02	0.25	0.05
2002 ^g	232,316	13,513	40,306	3,088	3,627	399	5,773	850	9,400	939	39	0.09	0.02	0.23	0.04
2003	208,430	13,625	40,204	2,647	7,126	735	4,419	907	11,545	1,167	62	0.18	0.03	0.29	0.06
Average 1993-2002 ⁱ	223,204		53,914		5,696		8,248		13,944		40	0.10	0.03	0.26	0.06
2003 - % of 10 yr avg	93		75		125		54		83			173	115	112	98

^a Bottomfish effort may or may not be specifically targeting rockfish, therefore, resulting computations of HPUE and CPUE be biased.

^b Rockfish harvest per bottomfish-hour of effort.

^c Rockfish harvest per angler-hour of effort.

^d Rockfish total catch per bottomfish-hour of effort.

^e Rockfish total catch per angler-hour of effort.

^f The 2002 report had an error for the 1994 HPUE (targeted).

^g Ketchikan estimates are biased low because a major access site (Clover Pass or Salmon Falls) was not sampled.

^h Corrected from previous reports 2000–2002.

ⁱ The average percent of harvest equals the average of the annual percentages.

SHELLFISH FISHERIES

Shellfish harvests in the Juneau and Ketchikan areas have been estimated with creel surveys since 1988. Comparisons are made with a 10-year average from 1993–2002 (Table 22). Both the effort and the harvest of king crab and Dungeness crab increased in 2003 in the Juneau fisheries. In 2003, the estimated shellfish effort of 7,369 boat-days in the Juneau area was above the 10-year average from 1993–2002 by 39%, as was the 10,332 harvest of king crab (72%) and 11,630 Dungeness crab (29%). However, the Tanner crab harvest of 742 was only half of the 10-year average of 1,410. In Ketchikan, shellfish effort of 1,714 boat-days was 7% above the average of 1,597 boat-days, while the Dungeness crab harvest of 6,055 was 89% of the 10-year average of 6,798. Shrimp harvest in the Ketchikan area during 2003 (158,520 shrimp) was 75% above the 1993–2002 average and can be attributed in part to the increased shellfish effort in Ketchikan. In 2003, the first shrimp harvest in Juneau (92,130 shrimp) was recorded.

Table 22—Comparison of estimated shellfish effort and harvest for the Juneau and Ketchikan marine boat fisheries, 1993–2003.

Year	Effort (boat- days)	SE	Dungeness crab harvest	SE	Tanner crab harvest	SE	King crab harvest	SE	Shrimp harvest	SE
Juneau										
1993	6,013	443	11,980	1,538	1,557	303	8,963	1,313	-	-
1994	5,486	447	6,786	883	2,328	625	5,925	748	-	-
1995	5,161	278	10,460	880	2,161	426	4,598	477	-	-
1996	5,036	348	15,605	1,485	2,134	546	4,826	619	-	-
1997	5,382	378	12,440	1,200	1,348	221	4,839	540	-	-
1998	5,551	370	8,112	1,140	768	129	5,310	611	-	-
1999	5,130	320	5,599	793	1,773	862	7,339	679	-	-
2000	5,209	336	5,716	697	791	183	6,583	813	-	-
2001	5,466	330	6,093	1,119	738	170	6,212	548	-	-
2002	4,767	303	7,270	755	506	96	5,455	555	-	-
2003	7,369	461	11,630	1,191	742	296	10,332	990	92,130 ^a	8,518
Average 1993-2002	5,320		9,006		1,410		6,005		-	-
2003 - % of 10 yr average	139		129		53		172			
Ketchikan										
1993	1,973	262	8,897	1,419	-	-	-	-	37,060	3,294
1994	1,439	203	7,032	1,290	-	-	-	-	34,580	3,241
1995	2,590	297	14,258	2,035	-	-	-	-	164,390	13,058
1996	1,255	145	5,528	905	-	-	-	-	76,840	10,641
1997	1,566	267	6,224	831	-	-	-	-	51,150	3,507
1998	743	99	4,190	702	210	189	-	-	99,680	10,266
1999	1,211	182	4,959	660	-	-	-	-	57,920	7,716
2000	1,739	184	5,070	724	-	-	-	-	156,990	9,538
2001	1,704	356	4,002	1,137	-	-	-	-	99,190	5,600
2002	1,751	162	7,815	980	-	-	-	-	126,880	6,306
2003	1,714	175	6,055	1,219	-	-	-	-	158,520	11,298
Average 1993-2002	1,597		6,798		210		-		90,468	
2003 - % of 10 yr average	107		89						175	

^a Recording of Juneau shrimp effort and harvest began in 2003. No prior data are available.

^b The 2002 report has an error for the harvest of Dungeness crab in 2000, which has been corrected in this table.

CONCLUSIONS AND RECOMMENDATIONS

The primary goals of this project were to estimate harvest and Alaska hatchery contributions of Chinook salmon in selected sport fisheries of Southeast Alaska, with specified levels of precision. These goals were satisfied.

Many changes have occurred in Southeast Alaska marine boat sport fisheries over the past decade. While the monitored Juneau and Ketchikan sport fisheries have declined in the last few years, the Sitka fishery has grown substantially. In part because of its geographic location, sport harvests of Chinook salmon, coho salmon, and Pacific halibut in the Sitka fishery were again the largest in the region during 2003. It is expected that growth in the Sitka fishery will continue as tourism and associated nonresident effort increases in Southeast Alaska.

Wild stocks of fish have historically supported most sport fisheries in Southeast Alaska, but increasing enhancement efforts have led to increased harvests of hatchery Chinook and coho salmon. In 2003, the contributions of hatchery Chinook and coho salmon to the Ketchikan fishery were 56% and 40%, respectively. During 2003, about 28% of the Chinook salmon and 27% of the coho salmon taken in the combined Ketchikan, Sitka, and Juneau marine fisheries originated in Alaska hatcheries. Additional Chinook harvest of 17% originated in non-Alaskan hatcheries. These enhancement efforts are costly, and catch monitoring through the use of onsite survey programs is the primary means to evaluate and document the success of hatchery programs in producing fish for sport anglers.

Wild stock evaluation programs, using coded wire tagging of both Chinook and coho salmon, have been implemented in Southeast Alaska, and others are being planned. Tag recoveries from the sport fisheries are necessary to improve knowledge of wild stock contributions to the fisheries. It is recommended that onsite creel surveys and catch sampling programs of marine boat sport fisheries be continued in order to both evaluate the effectiveness of stocking programs and to provide information about wild stock composition.

In March of 1992, the BOF allocated the Southeast Alaska Chinook salmon quota, established under the U.S./Canada Pacific Salmon Treaty, between commercial and sport fisheries. The board also adopted a management plan for the Chinook sport fishery, which has since been revised several times, to help achieve its allocation. In 2003, sampling of all major boat sport fisheries, including those in Ketchikan, Juneau, and Sitka, was necessary in order to estimate the total Southeast Alaska sport harvest of Chinook salmon so that all Southeast Alaska fisheries could be better managed to achieve the Chinook quota. These sampling efforts, along with CWT sampling programs in Craig/Klawock, Petersburg, Wrangell, and Gustavus were also necessary to better document harvests of Alaska hatchery fish for catch reporting required by the Pacific Salmon Treaty. Continuation of this expanded program is recommended.

Data from marine boat surveys are also used for a variety of other purposes including preparation of public information documents and position statements on proposed regulation changes. It is recommended that collection of current data on sport fisheries for coho salmon, Pacific halibut, rockfish, and lingcod be continued in order to improve management of these species. It is also recommended that estimation of the shellfish harvest as a component of the marine harvest studies be continued to provide information for evaluating the performance of this fishery and for addressing potential regulatory changes via the BOF process.

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**APPENDIX A: CREEL SURVEY AND CATCH SAMPLING
STATISTICS**

Appendix A1.—Estimated effort, harvest, and total catches for the Ketchikan marine boat sport fishery, 28 April - 28 September 2003.

	Estimate	SE	Relative precision ^a
Finfish effort			
Boat-hours	74,300	4,096	9%
Salmon-hours	168,204	12,806	13%
Bottomfish-hours	40,204	2,647	11%
Angler-hours	208,430	13,625	11%
Boat-days	18,362	976	9%
Finfish harvests^b			
Total Chinook salmon ≥ 28"	7,162	927	21%
Derby take-home & entered	809	45	9%
Total Chinook salmon < 28"	544	156	47%
Coho salmon	38,499	4,058	17%
Pink salmon	34,454	6,369	30%
Chum salmon	2,903	380	22%
Sockeye salmon	77	32	68%
Pacific halibut	7,138	691	16%
Lingcod	415	99	39%
Total rockfish	7,126	735	17%
Quillback rockfish	1,158	160	23%
Dusky rockfish	71	27	62%
Copper rockfish	239	71	49%
Black rockfish	119	53	74%
Yelloweye rockfish	600	81	22%
Silvergrey rockfish	157	44	46%
Other pelagic rockfish	144	79	90%
Other non-pelagic rockfish	34	10	50%
Unidentified rockfish	4,606	703	25%
Finfish total catch^b			
Chinook salmon ≥ 28"	7,887	953	20%
Chinook salmon < 28"	9,573	1,206	21%
Coho salmon	39,817	4,140	17%
Pink salmon	43,062	6,746	26%
Chum salmon	3,227	443	23%
Sockeye salmon	77	32	68%
Pacific halibut	9,950	1,032	17%
Lingcod	945	179	31%
Total rockfish	11,545	1,167	17%
Shellfish effort and harvest^b			
Boat-days fished	1,714	175	17%
Pots or rings	4,951	552	18%
Crab boat-days fished	651	74	19%
Crab pots or rings	1,707	234	23%
Dungeness crab kept	6,055	1,219	33%
Shrimp kept	158,520	11,298	12%

^a Relative precision ($\alpha = 0.10$) = (SE x 1.645 estimate) x 100.

^b No steelhead trout, cutthroat trout, Dolly Varden, king crab or Tanner crab were caught or harvested.

Appendix A2.—Estimated effort, harvest, and total catches for the Juneau marine boat sport fishery, 28 April - 28 September 2003.

	Estimate	SE	Relative precision ^a
Finfish effort			
Boat-hours	96,102	4,663	8%
Salmon-hours	175,324	9,308	9%
Bottomfish-hours	60,094	5,257	14%
Angler-hours	235,698	11,836	8%
Boat-days	24,945	1,115	7%
Finfish harvests^b			
Total Chinook salmon ≥ 28"	5,292	539	17%
Derby take-home	94	31	54%
Derby entered	443	-	0%
Derby take-home & entered	537	31	9%
Total Chinook salmon < 28"	222	41	31%
Coho salmon	18,682	1,768	16%
Derby take-home	932	207	37%
Derby entered	3,933	-	0%
Derby take-home & entered	4,865	207	7%
Chum salmon	2,616	303	19%
Derby take-home	11	7	105%
Derby entered	22	-	0%
Derby take-home & entered	33	7	35%
Sockeye salmon	78	43	91%
Pink salmon	1,934	242	21%
Pacific halibut	9,753	985	17%
Total rockfish	1,186	301	42%
Lingcod	42	24	94%
Dolly Varden	337	80	39%
Finfish total catch^b			
Chinook salmon ≥ 28"	5,554	553	16%
Chinook salmon < 28"	3,757	388	17%
Coho salmon	19,208	1,788	15%
Chum salmon	4,346	634	24%
Sockeye salmon	78	43	91%
Pink salmon	4,360	480	18%
Pacific halibut	12,235	1,202	16%
Total rockfish	1,717	346	33%
Lingcod	200	95	78%
Dolly Varden	1,152	256	37%
Shellfish effort and harvest			
Boat-days fished	7,369	461	10%
Pots or rings	14,396	1,065	12%
Crab boat-days fished	6,508	420	11%
Crab pots or rings	10,927	757	11%
King crab boat-days fished	4,174	349	14%
King crab pots or rings	6,780	625	15%
King crab kept	10,332	990	16%
Dungeness crab kept	11,630	1,191	17%
Tanner crab kept	742	296	66%
Shrimp kept	92,130	8,518	15%

^a Relative precision ($\alpha = 0.10$) = (SE x 1.645 estimate) x 100.

^b No steelhead or cutthroat trout were caught or harvested.

Appendix A3.—Estimated effort, harvest, and total catches for the Sitka marine boat sport fishery, 28 April - 28 September 2003.

	Estimate	Standard error	Relative precision ^a
Finfish effort			
Boat-hours	65,807	3,341	8%
Salmon-hours	138,631	7,538	9%
Bottomfish-hours	69,713	6,042	14%
Angler-hours	209,430	11,576	9%
Boat-days	19,009	1,015	9%
Finfish harvests^b			
Total Chinook salmon ≥ 28"	24,124	1,369	9%
Derby take-home	683	89	21%
Derby entered	564	-	0%
Derby take-home & entered	1,247	89	12%
Total Chinook salmon < 28"	-	-	-
Coho salmon	73,759	6,777	15%
Chum salmon	2,061	295	24%
Sockeye salmon	500	137	45%
Pink salmon	5,626	689	20%
Pacific halibut	37,473	2,967	13%
Lingcod	2,750	357	21%
Total rockfish	17,674	1,463	14%
Quillback rockfish	416	105	41%
Dusky rockfish	111	45	66%
Copper rockfish	215	65	49%
Black rockfish	3,603	519	24%
Yelloweye rockfish	7,047	861	20%
Silvergrey rockfish	95	57	99%
Other pelagic rockfish	933	295	52%
Other non-pelagic rockfish	475	117	41%
Unidentified rockfish	4,774	624	21%
Dolly Varden	108	71	108%
Finfish total catch^b			
Chinook salmon ≥ 28"	29,717	1,787	10%
Chinook salmon < 28"	1,763	254	24%
Coho salmon	76,478	6,953	15%
Sockeye salmon	555	166	49%
Chum salmon	2,479	374	25%
Pink salmon	15,308	2,057	22%
Pacific halibut	47,017	3,753	13%
Lingcod	10,014	835	14%
Unidentified rockfish	22,386	1,955	14%
Total rockfish	35,796	2,368	11%
Dolly Varden	243	150	102%

^a Relative precision ($\alpha = 0.10$) = (SE x 1.645 estimate) x 100.

^b No steelhead trout or cutthroat trout were caught or harvested; shellfish effort, catch and harvest were not recorded.

Appendix A4.—Estimated effort, harvest and catch for the Ketchikan marine boat sport fishery by seasonal period, 28 April–28 September 2003.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours		Boat-days	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	1,183	303	1,297	553	1,260	465	2,557	725	355	85
12May-25May	1,428	403	2,408	830	888	285	3,296	902	396	114
Derby ^a	8,707	964	20,440	2,535	1,184	186	21,624	2,575	1,522	173
26May-08Jun	2,514	606	4,403	1,173	932	469	5,334	1,369	638	139
09Jun-22Jun	8,343	1,582	16,918	3,703	5,057	1,190	21,975	4,185	1,964	363
23Jun-06Jul	8,754	1,041	22,826	4,961	3,939	649	26,766	4,917	2,220	289
07Jul-20Jul	7,534	1,237	19,147	5,987	5,663	1,160	24,810	6,065	2,011	327
21Jul-03Aug	6,898	782	15,367	3,165	6,582	792	21,949	3,136	1,987	205
04Aug-17Aug	6,300	649	10,848	1,623	6,701	848	17,549	1,951	1,711	154
18Aug-31Aug	9,743	1,147	25,256	3,623	4,950	1,037	30,205	4,190	2,470	314
01Sep-14Sep	8,060	2,400	19,116	6,437	1,803	798	20,942	7,176	1,778	539
15Sep-28Sep	4,836	1,414	10,178	3,715	1,245	461	11,423	3,823	1,310	324
Total	74,300	4,096	168,204	12,806	40,204	2,647	208,430	13,625	18,362	976

Seasonal period	Chinook salmon ≥ 28"				Chinook salmon < 28"				Coho salmon			
	Catch		Harvest		Catch		Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	38	21	38	21	25	16	0	0	0	0	0	0
12May-25May	84	30	84	30	112	48	0	0	0	0	0	0
Derby ^a	818	44	809	45	1,106	254	0	0	43	22	43	22
26May-08Jun	235	74	235	74	386	175	0	0	10	10	10	10
09Jun-22Jun	1,928	509	1,722	450	1,566	613	139	80	451	215	433	203
23Jun-06Jul	2,847	733	2,503	756	1,896	669	143	47	3,415	856	2,990	747
07Jul-20Jul	1,144	256	1,115	248	749	228	205	121	5,192	1,411	5,043	1,352
21Jul-03Aug	545	188	413	113	545	264	31	27	5,209	1,389	5,107	1,388
04Aug-17Aug	69	28	69	28	473	166	0	0	4,039	782	3,821	731
18Aug-31Aug	88	37	83	35	1,866	577	0	0	6,247	1,274	6,122	1,313
01Sep-14Sep	53	25	53	25	603	201	3	3	8,610	2,334	8,417	2,278
15Sep-28Sep	38	17	38	17	246	99	23	19	6,601	2,182	6,513	2,160
Total	7,887	953	7,162	927	9,573	1,206	544	156	39,817	4,140	38,499	4,058

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Seasonal period	Pink salmon				Chum salmon				Sockeye salmon		Pacific Halibut			
	Catch		Harvest		Catch		Harvest		Catch and harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	0	0	0	0	0	0	38	36	38	36
12May-25May	0	0	0	0	8	5	8	5	0	0	72	37	68	35
Derby ^a	0	0	0	0	101	25	76	23	0	0	106	18	90	14
26May-08Jun	0	0	0	0	20	19	20	19	0	0	101	58	101	58
09Jun-22Jun	411	205	347	181	300	95	277	92	0	0	1,043	284	879	251
23Jun-06Jul	6,625	2,011	4,619	1,566	919	313	773	221	14	12	1,355	376	1,040	241
07Jul-20Jul	9,290	4,261	8,525	4,320	895	269	850	267	40	18	1,229	330	1,014	301
21Jul-03Aug	13,306	4,506	11,696	4,211	255	58	236	53	0	0	2,048	494	1,475	289
04Aug-17Aug	6,383	1,204	4,189	943	167	47	163	48	17	23	2,304	498	1,205	239
18Aug-31Aug	5,003	784	4,136	734	298	59	284	59	0	0	1,071	401	681	222
01Sep-14Sep	1,940	942	906	499	211	77	174	74	6	5	378	257	373	252
15Sep-28Sep	104	48	36	29	53	26	42	27	0	0	205	91	174	79
Total	43,062	6,746	34,454	6,369	3,227	443	2,903	380	77	32	9,950	1,032	7,138	691

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Seasonal period	Lingcod				Rockfish				Quillback rockfish		Copper rockfish		Yelloweye rockfish	
	Catch		Harvest		Catch		Harvest		Harvest		Harvest		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	252	106	252	106	76	39	0	0	25	24
12May-25May	24	14	16	9	288	103	116	42	44	23	4	3	20	
Derby ^a	92	63	19	10	959	254	278	37	144	20	21	11	52	17
26May-08Jun	0	0	0	0	174	74	46	28	20	20	0	0	0	0
09Jun-22Jun	141	74	26	18	1,204	302	574	125	206	94	92	58	108	42
23Jun-06Jul	233	110	67	43	1,145	311	527	155	92	41	18	16	37	26
07Jul-20Jul	154	55	91	51	1,334	396	1,031	318	68	34	0	0	65	25
21Jul-03Aug	39	17	20	11	1,427	264	869	198	118	56	41	18	51	29
04Aug-17Aug	184	78	106	65	871	138	645	95	210	68	0	0	141	32
18Aug-31Aug	42	18	39	18	2,537	687	1,795	452	88	41	0	0	44	13
01Sep-14Sep	30	15	25	12	906	593	594	348	23	15	0	0	3	3
15Sep-28Sep	6	6	6	6	448	117	399	98	69	38	63	31	54	23
Total	945	179	415	99	11,545	1,167	7,126	735	1,158	160	239	71	600	81

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Seasonal period	Silvergray rockfish		Other non-pelagic rockfish		Dusky rockfish		Black rockfish		Other pelagic rockfish		Unidentified rockfish			
	Harvest		Harvest		Harvest		Harvest		Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	38	25	0	0	0	0	0	0	0	0	113	63	113	63
12May-25May	4	3	4	3	0	0	8	7	0	0	204	84	32	16
Derby ^a	0	0	9	5	6	5	12	10	3	3	711	269	31	11
26May-08Jun	0	0	0	0	0	0	0	0	0	0	154	69	25	19
09Jun-22Jun	5	4	0	0	14	8	23	20	27	25	731	274	101	69
23Jun-06Jul	29	23	0	0	0	0	48	45	8	7	914	283	295	115
07Jul-20Jul	23	20	0	0	0	0	0	0	14	12	1,166	402	863	334
21Jul-03Aug	4	3	0	0	19	17	20	17	0	0	1,175	274	617	185
04Aug-17Aug	42	17	21	8	19	17	5	4	15	16	418	100	192	50
18Aug-31Aug	8	5	0	0	0	0	0	0	77	71	2,320	662	1578	443
01Sep-14Sep	0	0	0	0	3	3	3	3	0	0	873	584	561	339
15Sep-28Sep	4	4	0	0	10	7	0	0	0	0	247	132	198	115
Total	157	44	34	10	71	27	119	53	144	79	9,026	1,134	4,606	703

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Seasonal period	Shellfish				Crab				Dungeness crab				Shrimp	
	Boat-days		Pots or rings		Boat-days		Pots or rings		Catch		Harvest		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	190	96	386	187	24	12	48	24	272	212	160	107	16,610	3,283
12May-25May	128	39	268	87	40	13	72	26	608	279	248	113	9,800	1,920
Derby ^a	54	12	141	39	39	9	75	13	582	280	264	108	1,710	317
26May-08Jun	47	19	98	49	47	19	98	49	253	149	253	149	0	0
09Jun-22Jun	255	83	852	278	89	31	224	87	2,161	942	444	189	21,220	2,666
23Jun-06Jul	178	49	480	168	58	20	76	26	921	577	163	66	55,120	9,575
07Jul-20Jul	132	39	217	60	50	22	118	51	431	212	287	125	10,780	1,979
21Jul-03Aug	178	36	747	268	71	21	232	104	2,837	1,185	980	412	19,220	2,752
04Aug-17Aug	210	56	607	154	118	36	371	82	3,197	1,246	2,022	902	3,150	584
18Aug-31Aug	137	32	587	179	53	20	217	131	923	603	895	602	8,440	954
01Sep-14Sep	75	21	213	52	16	9	46	22	274	159	65	43	7,980	1,025
15Sep-28Sep	130	50	355	137	46	24	130	70	899	514	274	156	4,490	710
Total	1,714	175	4,951	552	651	73	1,707	234	13,358	2,258	6,055	1,219	158,520	11,298

^a Includes 627 large Chinook salmon entered in the derby.

Appendix A5.—Estimated effort, harvest and catch for the Juneau marine boat sport fishery by seasonal period, 28 April - 28 September 2003.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours		Boat -days	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	7,890	1,252	16,253	2,427	421	332	16,677	2,626	2,070	266
12May-25May	8,722	1,916	17,032	3,620	315	149	17,347	3,656	2,100	428
Derby ^a	13,199	1,763	28,568	3,851	2,946	1,128	31,648	4,609	3,185	368
26May-08Jun	10,767	1,491	19,714	3,326	8,405	2,117	28,143	4,402	2,832	383
09Jun-22Jun	7,417	949	11,359	1,974	7,496	1,491	18,919	2,348	2,216	244
23Jun-06Jul	9,732	1,447	11,049	1,641	14,490	2,801	25,559	3,829	2,690	385
07Jul-20Jul	7,278	921	9,206	1,319	10,109	1,960	19,315	2,823	2,110	252
21Jul-03Aug	11,899	1,786	18,170	2,589	10,668	2,555	28,860	4,147	3,394	508
04Aug-17Aug	8,832	1,424	22,536	3,860	614	193	23,150	3,932	1,334	224
18Aug-31Aug	4,680	864	9,687	1,881	2,386	837	12,073	2,430	1,442	255
01Sep-14Sep	4,094	907	9,091	2,587	1,338	571	10,442	3,115	1,110	188
15Sep-28Sep	1,592	736	2,659	1,256	906	492	3,565	1,675	462	164
Total	96,102	4,663	175,324	9,308	60,094	5,257	235,698	11,836	24,945	1,115

Seasonal period	Chinook salmon ≥ 28"				Chinook salmon < 28"				Coho salmon			
	Catch		Harvest		Catch		Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	478	137	478	137	96	35	0	0	0	0	0	0
12May-25May	546	122	546	122	157	46	0	0	0	0	0	0
Derby ^a	1,040	207	1,013	205	945	272	7	6	30	19	30	19
26May-08Jun	891	212	857	201	478	119	132	31	24	9	18	7
09Jun-22Jun	1,014	397	1,004	397	218	90	46	21	94	30	94	30
23Jun-06Jul	292	70	287	70	130	28	18	12	689	137	689	137
07Jul-20Jul	174	42	174	42	142	53	4	3	1,718	284	1,636	280
21Jul-03Aug	312	85	273	79	401	91	11	10	3,578	614	3,486	605
04Aug-17Aug	639	57	537	31	783	156	4	0	5,025	217	4,865	207
18Aug-31Aug	136	97	91	55	257	108	0	0	2,922	652	2,922	652
01Sep-14Sep	13	8	13	8	122	53	0	0	4,421	1,450	4,235	1,431
15Sep-28Sep	19	19	19	19	28	22	0	0	707	379	707	379
Total	5,554	553	5,292	539	3,757	388	222	41	19,208	1,788	18,682	1,768

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Seasonal period	Pink salmon				Chum salmon				Sockeye salmon		Pacific Halibut			
	Catch		Harvest		Catch		Harvest		Catch and harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	0	0	0	0	0	0	12	11	12	11
12May-25May	0	0	0	0	9	8	9	8	0	0	87	49	55	24
Derby ^a	0	0	0	0	370	114	275	79	0	0	795	465	704	456
26May-08Jun	70	31	54	31	495	107	441	88	6	5	1,597	512	1,363	422
09Jun-22Jun	554	128	398	105	1,988	487	1,064	225	0	0	1,618	421	1,378	331
23Jun-06Jul	768	102	458	92	1,264	373	699	162	0	0	2,831	548	2,255	420
07Jul-20Jul	933	224	387	163	122	36	67	26	0	0	2,174	449	1,646	344
21Jul-03Aug	1,538	356	547	102	46	18	28	13	29	16	2,156	497	1,624	398
04Aug-17Aug	88	18	8	4	52	8	33	7	3	2	259	64	212	59
18Aug-31Aug	358	156	81	35	0	0	0	0	40	39	509	166	333	112
01Sep-14Sep	51	39	0	0	0	0	0	0	0	0	103	49	83	41
15Sep-28Sep	0	0	0	0	0	0	0	0	0	0	94	43	88	42
Total	4,360	480	1,934	242	4,346	634	2,616	303	78	43	12,235	1,202	9,753	985

Seasonal period	Lingcod				Rockfish				Dolly Varden				Shellfish	
	Catch		Harvest		Catch		Harvest		Catch		Harvest		Boat-days	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	0	0	0	0	72	36	27	14	337	65
12May-25May	14	8	5	4	77	38	32	14	49	26	9	6	226	60
Derby ^a	137	91	0	0	239	149	24	12	756	227	224	74	306	54
26May-08Jun	24	15	12	11	344	235	290	231	148	84	28	17	372	77
09Jun-22Jun	0	0	0	0	160	52	140	49	108	70	36	19	694	132
23Jun-06Jul	22	21	22	21	446	114	358	120	0	0	0	0	1,343	174
07Jul-20Jul	0	0	0	0	268	141	256	140	0	0	0	0	1,171	175
21Jul-03Aug	3	2	3	2	129	59	74	23	13	12	13	12	1,359	185
04Aug-17Aug	0	0	0	0	8	3	6	3	6	4	0	0	151	30
18Aug-31Aug	0	0	0	0	40	39	0	0	0	0	0	0	729	141
01Sep-14Sep	0	0	0	0	6	6	6	6	0	0	0	0	571	243
15Sep-28Sep	0	0	0	0	0	0	0	0	0	0	0	0	110	61
Total	200	95	42	24	1,717	346	1,186	301	1,152	256	337	80	7,369	461

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Seasonal period	Shellfish		King crab						Tanner crab		Dungeness crab		Shrimp	
	Pots or rings		Boat-days		Pots or rings		Harvest		Harvest		Harvest		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	1,082	297	0	0	0	0	0	0	0	0	1,000	382	14,560	3,154
12May-25May	408	114	0	0	0	0	0	0	0	0	1,178	430	60	17
Derby ^a	757	152	0	0	0	0	0	0	4	3	1,720	439	3,680	569
26May-08Jun	786	220	0	0	0	0	0	0	12	11	1,174	486	3,240	401
09Jun-22Jun	1,260	269	358	104	610	180	1,252	374	20	15	1,144	322	1,900	283
23Jun-06Jul	2,330	342	961	135	1,599	235	2,389	374	64	20	1,087	345	3,120	533
07Jul-20Jul	2,189	339	832	119	1,462	244	2,230	367	98	64	1,436	400	8,780	981
21Jul-03Aug	2,512	425	985	166	1,485	245	1,915	350	86	43	1,415	394	16,850	2,478
04Aug-17Aug	272	63	88	18	140	31	121	31	25	20	124	49	1,430	207
18Aug-31Aug	1,067	235	526	100	708	144	1,065	240	151	60	854	307	5,080	1,327
01Sep-14Sep	1,155	518	424	201	776	402	1,360	619	282	277	289	102	9,500	2,435
15Sep-28Sep	578	387	0	0	0	0	0	0	0	0	209	111	23,930	6,850
Total	14,396	1,065	4,174	349	6,780	625	10,332	990	742	296	11,630	1,191	92,130	8,518

^a Includes 443 large Chinook salmon, 4 small Chinook salmon, 3,933 coho salmon, and 22 chum salmon entered in the derby.

Appendix A6.—Estimated effort, harvest and catch for the Sitka marine boat sport fishery by seasonal period, 28 April-28 September 2003.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours		Boat-days	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	1,959	246	2,807	1,057	814	397	3,675	1,298	576	196
12May-25May	2,058	79	4,133	588	1,110	269	5,244	786	542	64
Derby ^a	4,239	170	9,625	1,221	1,603	347	11,251	1,339	883	103
26May-08Jun	6,218	280	10,268	1,758	8,526	3,122	18,794	3,490	1,886	290
09Jun-22Jun	9,959	215	19,132	1,847	12,042	2,294	31,185	2,844	2,909	216
23Jun-06Jul	6,505	283	14,155	2,430	7,063	1,105	21,218	3,237	1,892	272
07Jul-20Jul	8,183	415	17,398	2,569	10,051	2,428	27,466	4,396	2,289	364
21Jul-03Aug	8,896	528	20,315	3,702	9,418	2,316	29,733	5,668	2,604	513
04Aug-17Aug	8,295	385	21,791	3,472	7,365	1,653	29,226	4,616	2,351	358
18Aug-31Aug	7,042	405	14,929	2,694	9,444	2,309	24,374	4,517	2,248	424
01Sep-14Sep	2,042	229	3,680	1,349	1,882	760	6,357	2,436	694	258
15Sep-28Sep	411	43	398	115	395	144	907	265	135	36
Total	65,807	3,341	138,631	7,538	69,713	6,042	209,430	11,576	19,009	1,015

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Seasonal period	Chinook salmon ≥ 28"				Chinook salmon < 28"				Coho salmon			
	Catch		Harvest		Catch		Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	366	144	300	109	42	20	0	0	0	0	0	0
12May-25May	774	131	715	122	36	16	0	0	0	0	0	0
Derby ^a	1359	102	1,247	89	24	8	0	0	11	4	11	4
26May-08Jun	3,409	624	2,782	487	105	29	0	0	138	45	132	43
09Jun-22Jun	7,288	720	5,472	454	221	67	0	0	1,700	390	1,700	390
23Jun-06Jul	3,508	671	2,852	542	118	55	0	0	5,864	1,774	5,529	1,623
07Jul-20Jul	3,055	523	2,575	434	275	133	0	0	9,809	2,075	9,631	2,015
21Jul-03Aug	2,902	601	2,686	560	276	118	0	0	16,250	3,281	15,148	3,124
04Aug-17Aug	3,750	862	2,802	557	202	65	0	0	18,409	3,269	17,850	3,218
18Aug-31Aug	2,905	601	2,316	500	314	89	0	0	19,856	4,018	19,383	3,981
01Sep-14Sep	389	220	365	197	150	109	0	0	4,108	1,766	4,075	1,760
15Sep-28Sep	12	11	12	11	0	0	0	0	333	150	300	142
Total	29,717	1,787	24,124	1,369	1,763	254	0	0	76,478	6,953	73,759	6,777

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Seasonal period	Pink salmon				Chum salmon				Sockeye salmon				Pacific halibut			
	Catch		Harvest		Catch		Harvest		Catch		Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	0	0	0	0	0	0	0	0	312	140	213	82
12May-25May	0	0	0	0	0	0	0	0	0	0	0	0	371	102	286	75
Derby ^a	11	5	11	5	8	5	5	4	0	0	0	0	684	184	505	128
26May-08Jun	74	34	62	25	103	31	103	31	0	0	0	0	4,007	1,192	2,940	935
09Jun-22Jun	194	62	182	62	148	41	142	39	17	11	17	11	7,375	1,124	5,752	783
23Jun-06Jul	2,400	1,009	566	136	502	232	324	113	39	21	39	21	4,490	855	3,698	695
07Jul-20Jul	5,962	1,536	2,183	527	621	134	582	129	108	65	103	65	6,733	1,481	5,454	1,001
21Jul-03Aug	3,959	827	1,793	390	887	249	780	230	372	151	322	118	7,573	1,727	6,324	1,439
04Aug-17Aug	1,407	173	350	92	148	52	88	42	13	8	13	8	6,477	1,463	5,192	1,182
18Aug-31Aug	1,184	368	386	112	62	25	37	16	6	6	6	6	7,507	1,680	5,980	1,445
01Sep-14Sep	98	44	74	36	0	0	0	0	0	0	0	0	1,266	680	956	492
15Sep-28Sep	19	17	19	17	0	0	0	0	0	0	0	0	222	93	173	82
Total	15,308	2,057	5,626	689	2,479	374	2,061	295	555	166	500	137	47,017	3,753	37,473	2,967

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Seasonal period	Lingcod				Rockfish				Quillback rockfish		Copper rockfish		Yelloweye rockfish	
	Catch		Harvest		Catch		Harvest		Harvest		Harvest		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	198	64	12	11	2,118	962	342	204	36	27	0	0	69	36
12May-25May	207	48	107	37	860	146	380	126	13	11	17	15	66	34
Derby ^a	321	60	168	46	1,997	388	804	278	69	52	13	8	115	45
26May-08Jun	1,491	405	722	206	3,110	505	1,742	512	11	6	0	0	924	450
09Jun-22Jun	1,492	293	611	177	4,775	605	2,374	426	109	43	54	24	1,290	383
23Jun-06Jul	607	148	0	0	3,260	434	1,959	332	29	18	83	53	747	167
07Jul-20Jul	1,431	307	0	0	5,031	916	3,047	814	77	64	28	17	1,421	389
21Jul-03Aug	1,148	350	0	0	4,146	994	1,767	441	26	17	14	13	692	216
04Aug-17Aug	1,133	220	91	56	5,299	1,000	2,468	519	6	6	6	6	654	270
18Aug-31Aug	1,711	368	862	199	4,057	854	2,180	518	0	0	0	0	892	289
01Sep-14Sep	259	124	177	85	776	342	452	217	0	0	0	0	177	75
15Sep-28Sep	16	9	0	0	367	156	159	98	40	30	0	0	0	0
Total	10,014	835	2,750	357	35,796	2,368	17,674	1,463	416	105	215	65	7,047	861

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Seasonal period	Silvergray rockfish		Other non-pelagic rockfish		Dusky rockfish		Black rockfish		Other pelagic rockfish		Unidentified rockfish	
	Harvest		Harvest		Harvest		Harvest		Harvest		Catch	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-11May	0	0	0	0	36	34	165	125	36	27	1,767	911
12May-25May	0	0	0	0	21	19	60	33	9	7	674	151
Derby ^a	3	2	5	4	5	3	479	181	38	14	1,254	212
26May-08Jun	5	5	164	75	11	10	220	71	114	84	1,661	440
09Jun-22Jun	71	56	59	34	0	0	474	134	90	28	2,562	497
23Jun-06Jul	6	5	17	12	5	5	229	89	111	71	1,924	405
07Jul-20Jul	0	0	87	68	14	13	510	294	437	268	2,327	554
21Jul-03Aug	5	4	63	25	0	0	573	196	51	30	2,562	837
04Aug-17Aug	5	4	56	35	6	6	550	202	26	18	3,982	896
18Aug-31Aug	0	0	24	18	13	12	100	48	21	11	2,990	672
01Sep-14Sep	0	0	0	0	0	0	193	138	0	0	406	194
15Sep-28Sep	0	0	0	0	0	0	50	46	0	0	277	145
Total	95	57	475	117	111	45	3,603	519	933	295	22,386	1,955

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Seasonal period	Unidentified rockfish		Dolly Varden			
	Harvest		Catch		Harvest	
	Estimate	SE	Estimate	SE	Estimate	SE
28Apr-1May	0	0	18	17	18	17
12May-25May	194	117	32	30	0	0
Derby ^a	76	56	8	6	8	6
26May-08Jun	293	178	5	5	5	5
09Jun-22Jun	227	69	12	11	0	0
23Jun-06Jul	732	224	0	0	0	0
07Jul-20Jul	473	211	163	145	77	68
21Jul-03Aug	342	198	0	0	0	0
04Aug-17Aug	1,157	330	0	0	0	0
18Aug-31Aug	1,130	298	5	4	0	0
01Sep-14Sep	82	47	0	0	0	0
15Sep-28Sep	68	51	0	0	0	0
Total	4,774	624	243	150	108	71

^a Includes 564 large Chinook salmon entered in the derby.

Appendix A7.–Recorded effort and harvest from the Petersburg marine boat catch sampling program by biweekly period, 5 May - 14 September 2003.

Biweekly period ^a	Salmon hours	Bottomfish hours	Chinook salmon ≥28"				Chinook salmon <28"	
			Harvested (terminal harvest area excluded)	Sampled (terminal harvest area excluded)	Harvested (terminal harvest area only)	Sampled (terminal harvest area only)	Harvested (terminal harvest area only)	Sampled (terminal harvest area only)
28Apr-11May ^c	115	10	3	3	0	0	0	0
12May-25May	207	11	12	11	0	0	0	0
Derby entered ^d	804	288	287	282	0	0	0	0
Derby other	697	890	2	2	0	0	0	0
26May-08Jun	591	1,086	52	48	7	7	3	3
09Jun-22Jun	63	1,096	25	24	52	52	7	7
23Jun-06Jul	61	807	3	3	147	143	17	16
07Jul-20Jul	279	1,027	0	0	2	2	1	1
21Jul-03Aug	154	951	0	0	0	0	0	0
04Aug-17Aug	56	208	2	2	0	0	0	0
18Aug-31Aug	115	10	1	1	0	0	0	0
01Sep-14Sep	207	11	0	0	0	0	0	0
Total	3,025	6,372	596	581	208	204	28	27

Biweekly period ^a	Coho salmon harvested	Coho salmon ^b sampled	Pink salmon harvested	Chum salmon harvested	Sockeye salmon harvested	Pacific halibut harvested	Lingcod harvested	Rockfish harvested
28Apr-11May ^c	0	0	0	0	0	2	0	0
12May-25May	0	0	0	0	0	2	0	0
26May-08Jun	0	0	0	0	0	29	0	8
09Jun-22Jun	3	3	1	1	0	275	1	15
23Jun-06Jul	6	6	3	3	0	321	0	12
07Jul-20Jul	20	20	5	5	0	278	0	10
21Jul-03Aug	35	35	20	2	0	217	0	7
04Aug-17Aug	124	124	11	0	0	268	0	5
18Aug-31Aug	106	106	25	2	0	214	0	28
01Sep-14Sep	19	19	1	0	0	25	0	3
Total	313	313	66	13	0	1,631	1	88

^a Sampling was conducted 5 days per week by 1 sampler working 7-hr shifts. The Wrangell Narrows/Blind Slough terminal harvest area for Chinook salmon was open to increased bag limits from 1 June through July 31.

^b Fish were sampled for presence or absence of adipose fins, and heads were collected from fish with missing adipose fins.

^c Sampling was only conducted during the second week of this biweekly period.

^d Petersburg derby held 23 – 26 May; effort and harvest of species other than Chinook salmon were not recorded during this event.

Appendix A8.—Recorded effort and harvest from the Wrangell marine boat catch sampling program by biweekly period, 28 April - 14 September 2003.

Biweekly period ^a	Salmon-hours	Bottomfish-hours	Chinook salmon $\geq 28''$ harvested	Chinook salmon $\geq 28''$ sampled ^b	Chinook salmon $< 28''$ sampled ^b	Coho salmon harvested	Coho salmon sampled ^b
28Apr-11May ^c	613	42	25	24	0	0	0
12May-25May	1,465	16	109	86	1	0	0
26May-08Jun	1,976	74	173	171	0	0	0
09Jun-22Jun	300	141	39	38	0	2	2
23Jun-06Jul	423	251	50	44	0	64	43
07Jul-20Jul	368	239	10	10	0	121	114
21Jul-03Aug	197	292	3	2	0	58	58
04Aug-17Aug	134	253	2	2	0	43	42
18Aug-31Aug	229	131	8	8	1	69	67
01Sep-14Sep	67	41	2	2	0	13	11
Total	5,771	1,480	421	387	2	370	337

Biweekly period ^a	Pink salmon harvested	Chum salmon harvested	Sockeye salmon harvested	Lingcod harvested	Pacific halibut harvested	Rockfish harvested
28Apr-11May ^c	0	0	0	0	3	0
12May-25May	0	0	0	0	0	0
26May-08Jun	0	0	0	0	22	0
09Jun-22Jun	0	0	0	0	28	12
23Jun-06Jul	23	0	0	0	44	9
07Jul-20Jul	20	1	0	4	33	8
21Jul-03Aug	12	0	0	2	35	19
04Aug-17Aug	1	1	0	0	32	3
18Aug-31Aug	1	1	0	0	11	2
01Sep-14Sep	0	0	0	0	3	0
Total	57	3	0	6	211	53

^a Sampling was conducted 5 days per week by one sampler working 7-hour shifts.

^b Fish were examined for presence or absence of adipose fins, and heads were collected from fish with missing adipose fins.

^c Only the first week of this biweek was sampled.

Appendix A9.—Recorded effort and harvest from the Craig/Klawock marine boat catch sampling program by biweekly period, 5 May - 14 September 2003.

Biweekly Period ^a	Salmon-hours	Bottomfish-hours	Chinook salmon harvested	Chinook salmon sampled ^b	Coho salmon harvested	Coho salmon sampled ^b	Chum salmon harvest
28Apr-11May ^d	57	16	0	0	0	0	0
12May-25May	340	158	23	21	0	0	0
26May-08Jun	812	344	35	22	0	0	0
09Jun-22Jun	1,492	519	119	97	69	55	3
23Jun-06Jul	2,216	441	220	201	385	358	37
07Jul-20Jul	3,688	1,641	101	75	1,166	900	199
21Jul-03Aug	1,370	493	28	20	817	608	27
04Aug-17Aug	1,679	593	28	25	1,442	1,280	36
18Aug-31Aug	890	172	8	8	662	662	7
01Sep-14Sep	174	17	0	0	127	127	4
Total	12,717	4,391	562	469	4,668	3,990	313

Biweekly Period ^a	Pink salmon	Pacific halibut	Lingcod	Rockfish	Additional CWT sampling ^c	
	harvested	harvested	harvested	harvested	Chinook salmon	Coho salmon
28Apr-11May ^d	0	6	0	10	1	0
12May-25May	0	18	11	108	5	0
26May-08Jun	0	123	11	138	68	0
09Jun-22Jun	23	261	9	115	76	24
23Jun-06Jul	81	461	1	225	180	355
07Jul-20Jul	264	446	1	193	164	1,388
21Jul-03Aug	109	171	0	128	125	1,653
04Aug-17Aug	174	312	1	84	56	1,476
18Aug-31Aug	82	102	6	63	8	183
01Sep-14Sep	19	6	0	4	1	0
Total	752	1,906	40	1,068	683	5,079

^a Sampling was conducted at the Craig harbors from 12 p.m. through 7 p.m. each Monday through Wednesday, from 3 p.m. through 8 p.m. on Thursdays, and from 11 a.m. through 8 p.m. each Friday through Sunday. Sampling was conducted at the Klawock sites from 12 p.m. through 7 p.m. Saturday and Sunday. Additional harvest included 5 sockeye salmon.

^b Fish were sampled for presence or absence of adipose fin, and heads were collected from fish with missing adipose fins.

^c Sampling was conducted at additional charter sites as time permitted to increase recoveries of coded wire tags.

^d Sampling in Craig/Klawock was conducted only during the second week of this biweek period.

Appendix A10.–Recorded effort and harvest from the Gustavus marine boat catch sampling program by biweekly period, 5 May - 14 September 2003.

Biweekly Period ^a	Salmon-hours	Bottomfish-hours	Chinook salmon harvested	Chinook salmon sampled ^b	Coho salmon harvested	Coho salmon sampled ^b	Chum salmon harvested
28Apr-11May ^c	0	5	0	0	0	0	0
12May-25May	190	263	21	21	0	0	6
26May-08Jun	547	797	31	29	0	0	58
09Jun-22Jun	795	1,302	67	59	19	16	142
23Jun-06Jul	461	1,485	18	15	40	40	29
07Jul-20Jul	480	2,360	4	4	88	87	20
21Jul-03Aug	1,051	1,705	6	6	521	505	16
04Aug-17Aug	1,395	2,060	24	22	636	552	7
18Aug-31Aug	1,156	1,666	10	10	802	719	2
01Sep-14Sep	478	637	2	2	385	345	2
Total	6,551	12,278	183	168	2,491	2,264	282

Bartlett Cove additional sampling

Biweekly Period ^a	Pink salmon harvested	Pacific halibut harvested	Lingcod harvested	Rockfish harvested	Chinook salmon sampled ^b	Coho salmon sampled ^b	Pacific halibut harvested
28Apr-11May ^c	0	2	0	3			
12May-25May	0	93	6	25			
26May-08Jun	0	276	9	39			
09Jun-22Jun	9	508	3	2	0	0	26
23Jun-06Jul	81	474	0	25	0	0	45
07Jul-20Jul	496	816	6	31	0	0	20
21Jul-03Aug	492	654	0	39	0	0	31
04Aug-17Aug	129	838	0	12	0	0	48
18Aug-31Aug	26	642	2	29	0	0	27
01Sep-14Sep	3	236	1	0			
Total	1,236	4,539	27	205	0	0	197

Elfin Cove additional sampling

Biweekly Period ^a	Salmon-hours	Bottomfish-hours	Chinook salmon harvested	Chinook salmon sampled ^b	Coho salmon harvested	Coho salmon sampled ^b	Pacific halibut harvested
28Apr-11May ^d							
12May-25May							
26May-08Jun ^d	116	110	10	9	5	5	25
09Jun-22Jun	405	384	62	62	72	61	97
23Jun-06Jul	369	505	42	42	74	40	105
07Jul-20Jul	204	482	18	18	39	39	112
21Jul-03Aug	313	494	11	11	115	110	126
04Aug-17Aug	267	325	22	19	146	144	67
18Aug-31Aug	451	328	19	18	470	344	67
01Sep-14Sep	141	161	0	0	189	185	39
Total	2,266	2,789	184	179	1,110	928	638

^a Sampling was conducted at the Gustavus harbor 5 days per week during 7 hour shifts with random start times. Sampling at Bartlett Cove and Elfin Cove was intermittent.

^b Fish were sampled for presence or absence of adipose fin, and heads were collected from fish with missing adipose fins.

^c Sampling in Gustavus was conducted only during the second week of this biweek period.

^d Sampling in Elfin Cove was conducted only during the second week of this biweek period.

Appendix A11.—Estimated numbers of Chinook salmon examined for coded wire tags in Southeast Alaska marine boat sport fisheries in 2003.

Sport fishery	Seasonal period	Chinook salmon $\geq 28''$			Chinook salmon $< 28''$		
		Estimated harvest	Number Sampled	Percent	Estimated harvest	Number Sampled	Percent
<u>Creel surveys</u>							
Ketchikan	4/28-6/22	2,079	457	22	139	15	11
	Derby entered ^a	627	566	90	0	0	0
	Derby not entered	182	38	21	0	0	0
	6/23-8/03	4,031	776	19	379	66	17
	8/04-9/28	243	102	42	35	21	60
	Total		7,162	1,939	27	544	102
Juneau	4/28-6/22	2,894	468	16	139	30	22
	6/23-8/03	1,465	356	24	68	10	15
	8/04-9/28	396	114	31	11	2	18
	Derby entered ^b	443	443	100	4	4	100
	Derby take-home	94	17	18	0	0	0
	Total		5,292	1,398	26	222	46
Sitka	4/28-6/22	9,269	2,074	22	0	0	0
	Derby entered ^c	564	469	83	0	0	0
	Derby take-home	683	218	32	0	0	0
	6/23-8/03	8,113	2,583	32	0	0	0
	8/04-9/28	5,495	1,400	25	0	0	0
	Total		24,124	6,744	28	0	0
Creel survey subtotal		36,578	10,081	28	766	148	19
<u>Catch sampling programs</u>							
Petersburg	5/05-9/14 ^d		297			0	
	Derby entered ^e		282			0	
	Derby take-home		2			0	
	Total			581			0
Wrangell	4/28-9/14		387			0	
Craig/Klawock	5/05-9/14		1,152			0	
Gustavus	5/05-9/14		168			0	
Elfin Cove	6/01-9/01		179			0	
Catch sampling subtotal			2,560			0	
Grand total sampled			12,641			148	

^a Derby held 24 - 26 May, 31 May -1 June, and 7-8 June.

^b Derby held 22 - 24 August.

^c Derby held 24 - 26 May and 31 May-1 June.

^d Does not include Chinook salmon (208 $\geq 28''$ and 28 $< 28''$) sampled from the Wrangell Narrows terminal harvest area.

^e Derby held 23 - 26 May.

Appendix A12.—Estimates of hatchery-produced salmon contributed to and numbers of wild tagged Chinook salmon recovered from the Ketchikan marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Derby ^a			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
HATCHERY STOCKS																				
British Columbia	CDFO	Kincolith River	28-01-01				1	2	3							1	2	3		
			28-01-02				1	2	3							1	2	3		
			28-01-03				1	2	3							1	2	3		
		Quinsam River	18-37-36								1	42	1,725				1	42	1,725	
		Robertson Creek	18-03-62	1	90	8,046											1	90	8,046	
		B.C. total		1	90	3	6	10	1	42	1,725				5	138	9,781			
Oregon	ODFW	Bonneville Hatchery	09-27-41							1	21	422				1	21	422		
			09-32-06								1	70	4,808				1	70	4,808	
		Elk River	09-30-52											1	4	10	1	4	10	
		McKenzie	09-31-42											1	2	1	1	2	1	
		Oregon Total									2	91	5,498	2	6	11	4	97	5,509	
Washington	FWS	Little White Salmon	05-01-02-1005							1	43	1,832				1	43	1,832		
	QDNR	Salmon River Fish Culture	21-01-67								1	6	34				1	6	34	
			21-30-01									1	11	108				1	11	108
	WDFW	Dryden Pond	63-04-74								1	6	32				1	6	32	
			63-04-75								1	5	17				1	5	17	
		Klickitat	09-30-31									1	6	29				1	6	29
			63-10-45									1	4	16				1	4	16
			North Toutle	63-10-40								1	45	2,022				1	45	2,022
		Similkameen	63-04-69								1	6	32	1	1	0	2	7	32	
		Turtle Rock	63-04-70								1	5	16				1	5	16	
	Wells Hatchery	63-04-68								2	9	32	1	2	3	3	11	35		
	Washington Total									12	146	4,662	2	3	3	14	149	4,665		
Alaska	ADFG	Crystal Lake/ Neets Bay	04-01-50							1	51	2,565				1	51	2,565		
			04-04-20	3	138	6,545	4	44	442							7	182	6,987		
	DIPAC	Macaulay	04-02-45				1	4	11							1	4	11		
			04-04-23	5	117	3,367	1	6	30	4	117	3,948				10	240	7,345		
	KTHC	Deer Mountain	04-01-71				1	5	18	3	73	2,042				4	78	2,060		
			47-01-09	1	105	10,963	4	156	7,426	2	283	43,463				7	544	61,853		
	MIC	Tamgas Creek	04-48-25							1	41	1,632				1	41	1,632		
	NSRAA SSRAA	Crystal Lake	04-05-18											1	20	369	1	20	369	
			04-05-20								1	70	4,889				1	70	4,889	
			Crystal Lake/ Neets Bay	04-01-76	1	44	1,867								1	38	1,412	2	82	3,279
		04-01-77	1	44	1,885					2	88	3,994				3	132	5,878		
		04-01-78	1	92	8,384					3	175	11,909	2	38	703	6	305	20,997		

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Derby ^a			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
Alaska (cont.)	SSRAA (cont.)	Neets Bay	04-01-03-1506							1	34	1,099				1	34	1,099		
			04-01-03-1507	1	34	1,091	1	9	65								2	43	1,156	
			04-01-04-0209	1	46	2,065								1	40	1,561	2	86	3,627	
			04-01-04-0401				1	18	325								1	18	325	
		Whitman Lake	04-01-97	1	32	1,008	1	9	64	1	43	1,840					3	84	2,913	
			04-01-98							1	32	973					1	32	973	
			04-02-34							1	38	1,388					1	38	1,388	
			04-02-37					1	10	84							1	10	84	
			04-02-39					1	20	361							1	20	361	
			04-02-64								1	32	1,018				1	32	1,018	
			04-02-65					1	9	65							1	9	65	
			04-02-66					2	39	729	1	101	10,139				3	140	10,869	
			04-02-67					1	21	403					1	39	1,474	2	60	1,877
			04-04-26	1	41	1,621	3	32	318	3	151	8,092					7	224	10,030	
			04-04-27	1	41	1,621	2	59	2,343	2	110	6,459					5	210	10,423	
			04-04-28	1	46	2,059	4	48	524	1	63	3,883					6	157	6,466	
			04-04-29	4	183	9,921	5	61	675	1	62	3,735					10	306	14,331	
			04-04-30	2	114	6,820											2	114	6,820	
			04-04-31	3	125	5,388	4	44	446	1	56	3,103					8	225	8,937	
			04-04-32	2	84	3,657	6	104	2,916								8	188	6,573	
	04-06-56							1	42	1,718					1	42	1,718			
	04-49-58							1	34	1,159					1	34	1,159			
	04-06-59							1	34	1,159					1	34	1,159			
	04-06-61							1	52	2,721	1	18	306	2	70	3,026				
Alaska total				29	1,286	143,384	44	698	18,891	35	1,782	240,485	7	193	6,722	115	3,959	409,482		
All regions				30	1,376	164,944	47	704	18,901	50	2,061	293,604	11	202	6,883	138	4,343	484,332		
WILD STOCKS (recovery information only presented)^f																				
Alaska	ADFG	Unuk River	04-01-42															2		
			04-01-45	1															1	
			04-02-56	2				1												3
			04-05-57	1																1
Wild stocks total				4			1			2								7		

^a Derby held on 24–26 May, 31 May -1 June, and 7-8 June 2003.

^b CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fisheries and Wildlife, FWS = U.S.Fish and Wildlife Service, QDNR = Quinault Department of Natural Resources, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, DIPAC = Douglas Island Pink and Chum, KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association.

^c Rec = Number of fish recovered of noted tag code.

^d Con = Estimated harvest (contribution) of the release of the noted tag code.

^e Variance = Variance of the estimated harvest of the release of the noted tag code.

^f Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A13.—Estimates of hatchery-produced salmon contributed to and numbers of wild tagged Chinook salmon recovered from the Juneau marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Derby ^a			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS																		
British Columbia	CDFO	Kitimat River	18-41-18										1	8	51	1	8	51
		B.C. total											1	8	51	1	8	51
Washington	WDFW	Kalama Falls	63-02-73				1	3	5							1	3	5
		Washington total					1	3	5							1	3	5
Alaska	ADFG	Crystal Lake	04-04-22	1	66	4,309							1	12	122	2	78	4,431
	DIPAC	Macaulay	04-01-54				1	87	7,516	1	35	1,221				2	122	8,737
			04-01-55	1	54	2,908	1	41	1,698				1	9	76	3	104	4,683
			04-01-56	1	65	4,153				1	34	1,156				2	99	5,309
			04-01-58	1	43	1,796	2	68	2,645	1	27	712	2	15	91	6	153	5,244
			04-01-59	3	122	5,012	1	33	1,043	1	26	651				5	181	6,706
			04-01-60				1	33	1,080							1	33	1,080
			04-01-62	1	47	2,193	4	155	7,208							5	202	9,401
			04-02-46										1	3	8	1	3	8
			04-03-93				1	3	6	2	5	13	4	4	0	7	12	20
			04-03-95	1	41	1,656	3	107	3,924	2	67	2,257	6	43	267	12	258	8,105
			50-04-53				1	44	1,881							1	44	1,881
			50-04-54	8	431	29,621	1	43	1,829							9	474	31,449
			50-04-55	1	54	2,891	1	45	1,956							2	99	4,847
			50-04-56	3	161	9,190										3	161	9,190
			50-04-58				1	34	1,127							1	34	1,127
			50-04-59	1	43	1,770										1	43	1,770
			50-31-22	4	190	10,284	3	118	4,944							7	308	15,228
			50-31-23	3	132	5,950	2	76	3,242							5	208	9,192
	MIC	Tamgas Creek	47-01-13										1	15	204	1	15	204
	NMFS	Little Port	03-01-51				1	5	20							1	5	20
		Walter	03-01-53										1	1	0	1	1	0
			03-23-10										1	1	0	1	1	0
			03-23-12										2	2	0	2	2	0
			03-62-42				1	3	5							1	3	5
			03-62-45										1	1	0	1	1	0
			03-62-47										3	8	27	3	8	27
			03-62-48										2	2	0	2	2	0
	NSRAA	Hidden Falls	04-46-63	1	120	14,287										1	120	14,287
			04-48-19				1	34	1,094	1	45	1,958	5	60	655	7	139	3,706
			04-48-52										1	14	171	1	14	171
			04-49-28										1	11	103	1	11	103
		Medvejie	04-48-26				1	30	895							1	30	895

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Derby ^a			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
Alaska (cont.)	SSRAA	Crystal Lake	04-01-85									1	11	103	1	11	103	
			04-01-87										1	6	31	1	6	31
			04-01-04-0401	1	35	1,182										1	35	1,182
		Whitman Lake	04-01-98										1	7	45	1	7	45
		Alaska total			31	1,604	140,441	27	959	89,244	9	239	10,672	36	225	1,904	103	3,027
All regions				31	1,604	140,441	28	962	89,274	9	239	10,672	37	233	1,955	105	3,038	242,342
WILD STOCKS (recovery information only presented)^f																		
Alaska	ADFG	Chilkat River	04-01-66	1							1						2	
			04-01-67										1				1	
			04-03-62											1				1
			04-03-66											1				1
		Taku River	04-01-41	1													1	
Wild stocks total				2						1			3			6		

^a Derby held on 22–24 August 2003.

^b CDFO = Canada Department of Fisheries and Oceans, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, DIPAC = Douglas Island Pink and Chum, MIC = Metlakatla Indian Community, NMFS = National Marine Fisheries Service, NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association.

^c Rec = Number of fish recovered of noted tag code.

^d Con = Estimated harvest (contribution) of the release of the noted tag code.

^e Variance = Variance of the estimated harvest of the release of the noted tag code.

^f Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A14.—Estimates of hatchery-produced salmon contributed to and numbers of wild tagged Chinook salmon recovered from the Sitka marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Derby ^a			Non-derby 6/23-8/03			Non-derby 8/04- 9/28			Total			
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	
HATCHERY STOCKS																			
British Columbia	CDFO	Clayoquot	18-43-06				1	7	39	1	25	602				2	32	641	
			18-43-07				1	22	450	1	25	590				2	47	1,040	
		Conuma River	18-22-14	1	122	14,731								1	119	13,968	2	241	28,699
			18-22-15	3	280	27,478	1	69	4,719	1	79	6,164	1	86	7,370	6	514	45,731	
			18-31-62				1	31	909							1	31	909	
			18-31-63	1	69	4,708										1	69	4,708	
			18-45-16	1	69	4,712				1	62	3,812	1	67	4,468	3	198	12,993	
		Kincolith River	28-01-03										1	7	45	1	7	45	
			Kitimat River	18-45-36							2	49	1,195				2	49	1,195
				18-45-37	1	66	4,232				1	59	3,423				2	125	7,655
		Qualicum	18-44-50								1	134	17,903				1	134	17,903
			Nitinat River	18-23-51	3	41	544				3	33	348	2	36	665	8	110	1,558
				18-37-48	1	39	1,492										1	39	1,492
			18-37-51										1	159	25,033	1	159	25,033	
			18-38-37	1	105	10,835	1	74	5,385	1	93	8,594	1	102	10,273	4	374	35,087	
			18-43-60							1	7	39	1	7	47	2	14	86	
			18-43-61	1	18	314										1	18	314	
			18-45-17							2	179	15,855				2	179	15,855	
			18-45-57										1	97	9,261	1	97	9,261	
		Quinsam River	18-32-52							1	61	3,623				1	61	3,623	
			18-37-37										1	37	1,334	1	37	1,334	
		Robertson Cr.	18-21-60	1	167	27,600							1	162	26,170	2	329	53,770	
			18-21-61							3	400	56,201	1	144	20,577	4	544	76,778	
			18-21-62										1	120	14,401	1	120	14,401	
			18-21-63	1	94	8,692							1	235	55,083	2	329	63,775	
			18-34-34							1	194	37,575				1	194	37,575	
		San Juan River	18-45-41							1	86	7,370	1	94	8,810	2	180	16,180	
			18-46-05	1	124	15,361				1	78	6,041				2	202	21,402	
			18-46-07	1	17	276										1	17	276	
			18-46-34										1	98	9,496	1	98	9,496	
			18-44-44										1	46	2,028	1	46	2,028	
		Shuswap River	18-44-45										2	85	3,557	2	85	3,557	
			18-42-08	1	18	315										1	18	315	
Terrace	18-45-61							1	3	4				1	3	4			
	18-45-62							1	3	4				1	3	4			
B.C. total				18	1,229	126,974	5	203	11,563	24	1,570	198,473	20	1,701	260,395	67	4,703	597,405	

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Derby ^a			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total			
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	
Oregon	ODFW	3andon	09-20-27										1	38	1,403	1	38	1,403	
		3onneville	09-24-41				1	3	7					1	3	7	1	3	7
				09-24-42						1	270	72,484				1	270	72,484	
				09-27-51	1	4	15									1	4	15	
				09-29-25	1	36	1,248									1	36	1,248	
				09-30-30									1	4	13	1	4	13	
			Butte Falls	09-19-14									1	8	62	1	8	62	
			Elk River	09-30-52						1	4	14	1	7	37	2	11	51	
			Gardiner Creek	09-19-08									1	4	12	1	4	12	
				09-30-50	2	11	50						1	5	18	3	16	68	
				09-33-14						1	4	11				1	4	11	
			Mckenzie	09-28-62	1	3	8									1	3	8	
				09-30-38									1	31	909	1	31	909	
				09-31-35									1	4	15	1	4	15	
				09-31-40									1	4	10	1	4	10	
			Nehalem	09-19-12						1	3	5				1	3	5	
				09-27-12						1	4	11				1	4	11	
			Salmon River	09-28-17									1	4	10	1	4	10	
				09-30-53	1	4	13						2	8	22	3	12	35	
				09-33-15									2	7	20	2	7	20	
			Umatilla	09-27-03						1	12	137				1	12	137	
				09-30-33	1	22	468			1	20	378				2	42	846	
				09-30-37				1	4	10						1	4	10	
		Willamette	09-27-44						1	7	48				1	7	48		
		Oregon total		7	80	1,829	2	7	17	8	324	73,616	14	124	2,745	31	535	78,207	
Washington	FWS	Ltl White	05-01-02-																
		Salmon	1005							1	36	1,291				1	36	1,291	
		Prosser Hatchery	05-01-02-																
		Quinault	1002	1	35	1,189										1	35	1,189	
		Cook Creek	05-01-64										1	6	27	1	6	27	
			05-01-65								1	6	30				1	6	30
			05-01-66											1	7	37	1	7	37
			05-01-86								1	6	29				1	6	29
			05-50-18								1	5	19				2	10	43
		MAKA	Hoko Falls	21-29-51							1	4	11				1	4	11
				21-30-04							3	8	16				6	23	74
		QDNR	Quinault Lake	21-01-28										1	12	126	1	12	126
				21-01-43							1	39	1,469				2	83	3,324
		21-01-44							1	7	40				2	13	67		
		21-01-65							1	35	1,200				1	35	1,200		
		Salmon River	21-01-67						1	4	12				1	4	11		

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/28-6/22			Derby ^a			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
Washington (cont.)	QDNR	Fish Culture	21-30-01	3	23	151				2	10	38	3	20	125	8	53	314		
			21-30-03							1	6	35	1	6	32	2	12	66		
	TULA WDFW	Bernie Gobin	21-02-72										1	9	77	1	9	77		
			Carlton Pond	63-10-33	3	12	39	1	1	0	1	3	4				5	16	43	
		Cowlitz	63-13-12	1	4	13										1	4	13		
			Dryden Pond	63-04-75										1	4	10	1	4	10	
		63-06-12									1	3	4				1	3	4	
			63-11-51	3	13	49					2	8	21				5	21	70	
			Dungeness Hat.	21-03-05							1	4	10				1	4	10	
		Fallert Creek	63-01-90				1	23	489							1	23	489		
		Kalama Falls	63-02-73							1	4	10				1	4	10		
		Klickitat	05-45-21	2	7	21										2	7	21		
		Hatchery	05-50-11	1	4	13					2	7	14	1	4	12	4	15	39	
			63-01-70	1	6	27					2	8	20	1	4	12	4	18	59	
		63-10-32		9	36	126					6	19	45				18	60	177	
			Washougal	63-01-94				3	5	5	1	4	11				1	4	11	
		Wells Hatchery	63-02-67	2	12	60											2	12	60	
			63-10-61	3	18	131	4	10	19	6	19	41	1	4	10	14	51	201		
		Washington total				4	290	4,350	12	99	3,333	44	358	14,816	27	167	2,148	128	914	24,647
		Alaska	ADFG	Crystal Lake	04-04-22	1	47	2,202									1	47	2,202	
Crystal L/ Earl W	04-04-19							2	50	1,544						2	50	1,544		
Crystal Lake/ Neets Bay	04-01-50			1	50	2,415										1	50	2,415		
	04-04-20			1	54	2,902										1	54	2,902		
MIC	Tamgas Creek		47-01-03	1	83	6,755									1	83	6,755			
			47-01-09	1	137	18,764									1	137	18,764			
NMFS	Little Port		03-01-54				1	1	0						1	1	0			
			Walter	03-62-42	1	6	27									1	6	27		
	03-62-43										1	4	11			1	4	11		
			03-62-44								2	8	21			2	8	21		
NSRAA	Hidden Falls		03-62-45										1	4	10	1	4	10		
			04-46-63	1	80	6,370										1	80	6,370		
	Medvejaie		04-49-34	2	102	5,160										2	102	5,160		
			04-48-16	1	702	34,910	2	23	232	10	291	10,944				27	1,016	46,086		
			04-48-21	9	489	27,732	1	12	136	5	157	5,502				15	658	33,370		
			04-48-25	1	38	1,423										1	38	1,423		
			04-48-26	1	44	1,933				2	68	2,316				3	112	4,249		
			04-48-29				1	45	2,005							1	45	2,005		
			04-48-30				1	13	165							1	13	165		
			04-48-31	3	133	5,889	1	35	1,172	1	28	755				5	196	7,816		
		04-48-60	4	170	7,212				1	27	688				5	197	7,900			
		04-49-06	1	35	1,187				1	22	461				2	57	1,648			
04-49-24	1	84	6,992										1	84	6,992					
04-49-25				1	8	51							1	8	51					

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/29-6/23			Derby ^a			Non-derby 6/24-8/04			Non-derby 8/05-9/29			Total			
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	
Alaska	SSRAA	Neets Bay Whitman Lake	04-01-04- 0209									1	42	1,723	1	42	1,723		
			04-01-98										1	26	634	1	26	634	
	04-04-26	1	38	1,425				1	34	1,096				2	72	2,555			
	04-04-28				1	10	82							1	34	1,096			
	04-04-32	1	55	2,933	1	10	82							2	65	3,015			
Alaska total				46	2,347	159,684	12	231	6,833	24	639	28,854	3	72	2,377	85	3,289	197,748	
All regions				116	3,946	329,815	31	540	22,964	100	2,891	368,026	64	2,064	291,011	311	9,441	1,011,816	
WILD STOCKS (recovery information only presented)^f																			
Alaska	ADFG	Stikine River	04-03-57				1									1			
			Unuk River	04-01-39				1									1		
		Columbia River	04-01-40	1													1		
			04-01-42										1				1		
Alaska total				1			2				1				4				
Washington	WDFW	Columbia River	63-06-35				1									1			
			Washington total	1												1			
Wild stocks total				1			3				1				5				

^a Derby held on 24–26 May and 31 May - 1 June 2003.

^b CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fish and Wildlife, FWS = U.S. Fish and Wildlife Service, MAKA = Makah Tribe, QDNR = Quinault Department of Natural Resources, TULA = Tulalip Tribe, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, MIC = Metlakatla Indian Community, NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association.

^c Rec = Number of fish recovered of noted tag code.

^d Con = Estimated harvest (contribution) of the release of the noted tag code.

^e Variance = Variance of the estimated harvest of the release of the noted tag code.

^f Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A15.–Estimates (from sampled fish only) of hatchery-produced Chinook salmon contributed to 581 Chinook salmon examined during the Petersburg marine boat sport fishery from 5 May to 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Big Qualicum R	18-41-32	1	29	836	8%
		Kincolith River	28-01-01	1	2	2	1%
		Snootli Creek	18-34-10	1	1	0	0%
		Ltl White Salmon NFH	05-01-02-10-05	1	10	87	3%
		Klickitat Hat.	63-01-70	1	1	0	0%
		B.C. total		5	43	925	12%
Alaska	ADFG	Crystal Lake	04-01-47	1	11	112	3%
			04-01-48	2	22	222	6%
			04-04-22	2	23	244	6%
		Crystal L/ Earl W	04-04-19	1	12	130	3%
	NMFS	Ltl Port Walter	03-62-47	1	1	0	0%
	SSRAA	Neets Bay	04-01-03-15-06	1	8	51	2%
		Alaska total		8	77	759	20%
		Total all regions		13	120	1,684	32%
WILD STOCKS (recovery information only presented)^e							
Alaska	ADFG	Stikine River	04-03-57	1			
		Wild stock total		1			

^a CDFO = Canada Department of Fisheries and Oceans, ADFG=Alaska Department of Fish and Game, NMFS= National Marine Fisheries Service, SSRAA = Southern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

Appendix A16.–Estimates (from sampled fish only) of hatchery-produced Chinook salmon contributed to 387 Chinook salmon examined during the Wrangell marine boat sport fishery from 28 April to 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Kincolith River	28-01-01	1	2	2	1%
Non-Alaskan Total				1	2	2	1%
Alaska	ADFG	Crystal Lake/ Earl	04-04-19	2	24	259	6%
		West					
	NSRAA	Crystal Lake/Anita	04-01-81	1	6	29	2%
		Bay					
		Whitman Lake					
		04-04-28	1	10	100	3%	
Alaska total				5	47	435	12%
All regions				6	49	437	13%
WILD STOCKS (recovery information only presented)^e							
Alaska	ADFG	Unuk	04-01-39	1			
Wild stock total				1			

^a CDFO = Canada Department of Fisheries and Oceans, ADFG=Alaska Department of Fish and Game, NSRAA = Northern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

Appendix A17.–Estimates (from sampled fish only) of hatchery-produced Chinook salmon contributed to 1,152 Chinook salmon examined during the Craig/Klawock marine boat sport fishery from 5 May to 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution	
British Columbia	CDFO	Clayoquot	18-43-07	1	7	41	1%	
		Conuma River	18-22-13	1	37	1,349	3%	
			18-31-62	1	31	958	3%	
			18-45-16	2	35	563	3%	
			Kincolith River	28-01-03	1	2	2	0%
			Nitinat River	18-23-51	1	3	6	0%
				18-37-47	1	4	13	0%
				18-38-37	1	26	658	2%
				18-43-60	1	2	2	0%
			Robertson Creek	18-21-60	1	42	1,694	4%
				18-21-62	1	31	926	3%
		18-45-41		1	24	563	2%	
		18-46-08		1	4	14	0%	
		San Juan River		18-44-45	1	12	122	1%
		Shuswap River		18-22-01	1	4	11	0%
			18-22-04	1	4	15	0%	
			18-22-05	1	4	13	0%	
			18-22-07	1	4	13	0%	
			18-45-06	1	3	6	0%	
			Terrace	18-42-14	1	1	0	0%
B.C. total				21	280	6,969	24%	
Oregon	ODFW		Bonneville	09-27-40	1	31	944	3%
		Elk River	09-30-52	1	2	1	0%	
		Oregon total		2	33	945	3%	
Washington	FWS	Little White Salmon	05-01-02-1005	1	10	92	1%	
		Quinault Lk Hatchery	21-01-43	1	11	108	1%	
	21-01-44		1	2	1	0%		
	WDFW	Dryden Pond	63-11-51	1	1	0	0%	
		Forks Creek	63-13-23	1	30	888	3%	
		Priest Rapids	63-13-33	1	26	668	2%	
		Turtle Rock	63-10-32	1	1	0	0%	
	Washington total			7	81	1,757	7%	
Non-Alaska total			30	394	9,671	34%		
Alaska	NMFS	Little Port Walter	03-01-53	1	1	0	0%	
	NSRAA	Medvejie	04-48-21	2	25	288	2%	
	SSRAA	Neets Bay	04-01-03-1506	1	8	54	1%	
	Alaska total			4	34	342	3%	
Total all regions			34	428	10,013	37%		
WILD STOCKS (recovery information only presented)^e								
Washington	WDFW	Columbia River	63-06-35	1				
		Wild stocks total		1				

^a CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fish and Wildlife, FWS = U.S. Fish and Wildlife Service, QDNR = Quinault Department of Natural Resources, WDFW = Washington Department of Fisheries and Wildlife, NMFS = National Marine Fisheries Service, NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

Appendix A18.–Estimates (from sampled fish only) of hatchery-produced Chinook salmon contributed to 168 Chinook salmon examined during the Gustavus marine boat sport fishery from 5 May to 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Conuma River	18-22-15	1	22	445	13%
Washington	WDFW	Klickitat Hatchery	05-45-21	1	1	0	1%
Non-Alaskan total				3	40	712	23%
Alaska	DIPC	Macaulay	04-01-61	1	3	7	2%
	NMFS	Little Port Walter	03-01-54	1	1	0	1%
	NSRAA	Hidden Falls	04-46-63	1	14	184	8%
		Medvejie	04-48-54	1	16	249	10%
	SSRAA	Whitman Lake	04-04-32	1	10	82	6%
Alaska total				5	44	522	26%
Total all regions				8	84	1,234	50%

^a CDFO = Canada Department of Fisheries and Oceans, WDFW = Washington Department of Fisheries and Wildlife, DIPC = Douglas Island Pink and Chum, NMFS = National Marine Fisheries Service, NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

Appendix A19.–Estimates (from sampled fish only) of hatchery-produced Chinook salmon contributed to 179 Chinook salmon examined during the Elfin Cove marine boat sport fishery from 1 June to 1 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Clayoquot	18-43-06	1	7	39	4%
Columbia		Tofino	18-31-13	1	2	1	1%
Oregon	ODFW	Morgan Creek	09-23-57	1	6	35	4%
		Salmon River	09-27-09	1	5	18	3%
			09-28-17	1	1	0	1%
Washington	WDFW	Similkameen	63-11-48	1	1	0	1%
Non-Alaskan total				6	22	93	12%
Alaska	ADFG	Crystal Lake/ Earl West	04-01-49	1	10	84	5%
	NSRAA	Hidden Falls	04-46-63	2	28	367	16%
		Medvejie	04-48-25	1	9	77	5%
Alaska total				4	47	528	26%
Total all regions				10	69	621	38%

^a CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fish and Wildlife, WDFW = Washington Department of Fisheries and Wildlife, ADFG=Alaska Department of Fish and Game, NSRAA = Northern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

Appendix A20.—Age composition of Chinook salmon from selected Southeast Alaska sport fisheries, 2003.

Sport fishery	Season			BROOD YEAR										<i>n</i>			
				2000		1999		1998			1997		1996				
				0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	1.5		2.4		
Ketchikan	4/28-6/22 ^a (spring)	Males	<i>n</i>			2	11		48		4					65	
			Percent			3.1	16.9		73.8		6.2						
			SE ^b			2.2	4.7		5.5		3.0						
		Females	<i>n</i>				2		61		11						77
			Percent				2.6		82.4		14.3						
			SE ^b				1.8		4.5		4.0						
		Total ^c	<i>n</i>				3	16		144		22					185
			Percent				1.6	8.6		77.8		11.9					
			SE ^b				0.9	2.1		3.1		2.4					
Ketchikan	6/23-9/28 (summer)	Males	<i>n</i>	1	5	3	11		8		2				30		
			Percent	3.3	16.7	10.0	36.7		26.7		6.7						
			SE ^b	3.3	6.9	5.6	8.9		8.2		4.6						
		Females	<i>n</i>	1	2	2	10		1	23		1	1			38	
			Percent	2.6	5.3	5.3	26.3		2.6	56.1		2.6	2.6				
			SE ^b	2.6	3.7	3.7	7.2		2.6	7.8		2.6	2.6				
		Total ^c	<i>n</i>	4	10	10	25		1	36		4	1			91	
			Percent	4.4	11.0	11.0	27.5		1.1	39.6		4.4	1.1				
			SE ^b	2.2	3.3	3.3	4.7		1.1	5.1		2.2	1.1				
Juneau	4/28-7/01 (spring)	Males	<i>n</i>	2			22		43		40				107		
			Percent	1.9			20.6		40.2		37.4						
			SE ^b	1.3			3.9		4.8		4.7						
		Females	<i>n</i>		2	1	8		1	28		41	5			86	
			Percent		2.3	1.2	9.3		1.2	32.6		47.7	5.8				
			SE ^b		1.6	1.2	3.2		1.2	5.1		5.4	2.5				
		Total ^c	<i>n</i>	2	2	2	46		1	100		111	5			269	
			Percent	0.7	0.7	0.7	17.1		0.4	37.2		41.3	1.9				
			SE ^b	0.5	0.5	0.5	2.3		0.4	3.0		3.0	0.8				
Juneau	7/02-9/28 (summer)	Males	<i>n</i>				4		7		1				12		
			Percent				33.3		58.3		8.3						
			SE ^b				14.2		14.9		8.3						
		Females	<i>n</i>							3		2				5	
			Percent							60.0		40.0					
			SE ^b							24.5		24.5					
		Total ^c	<i>n</i>				23		19		3					45	
			Percent				51.1		42.2		6.7						
			SE ^b				7.5		7.4		3.8						

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Sport fishery	Season			BROOD YEAR										n	
				2000		1999		1998			1997		1996		
				0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	1.5		2.4
Juneau Golden North Derby	8/22-8/24	Total ^c	n			2		26		35				63	
			Percent			3.2		41.3		55.6					
			SE ^b			2.2		6.3		6.3					
Petersburg	5/05-9/14	Males	n		1	2		12		4				19	
			Percent			5.3	10.5		63.2		21.1				
			SE ^b			5.3	7.2		11.4		9.6				
		Females	n		1			17		10			1		29
			Percent			3.4			58.6		34.5		3.4		
			SE ^b			3.4			9.3		9.0		3.4		
		Total ^c	n		2	2		33		14		1			52
			Percent			3.8	3.8		63.5		26.9		1.9		
			SE ^b			2.7	2.7		6.7		6.2		1.9		
Wrangell	4/28-6/29	Males	n		1	4		37		16		1		59	
			Percent			1.7	6.8		62.7		27.1		1.7		
			SE ^b			1.7	3.3		6.3		5.8		1.7		
		Females	n			1			51		18				70
			Percent				1.4		72.9		25.7				
			SE ^b				1.4		5.4		5.3				
		Total ^c	n		1	15		124		44		3			187
			Percent			0.5	8.0		66.3		23.5		1.6		
			SE ^b			0.5	2.0		3.5		3.1		0.9		
Gustavus	6/02-9/14	Males	n	1	8	3		29		13				54	
			Percent	1.9	14.8	5.6		53.7		24.1					
			SE ^b	1.9	4.9	3.1		6.8		5.9					
		Females	n		4	3		3	31		17		1		59
			Percent			6.8	5.1		5.1	52.5		28.8		1.7	
			SE ^b			3.3	2.9		2.9	6.6		5.9		1.7	
		Total ^c	n	1	14	7		4	65		32		1		124
			Percent	0.8	11.3	5.6		3.2	52.4		25.8		0.8		
			SE ^b	0.8	2.9	2.1		1.6	4.5		3.9		0.8		
Elfin Cove	7/01-8/31	Males	n												
			Percent												
			SE												
		Females	n												
			Percent												
			SE												
Total	n	4	18	4		7	64	1	23		1		122		
	Percent	3.3	14.8	3.3		5.7	52.5	0.8	18.9		0.8				
	SE	1.6	3.2	1.6		2.1	4.5	0.8	3.6		0.8				

^a Ketchikan season strata modified to 4/28-6/23 and 6/24-9/28 due to Ketchikan derby fish being sampled disproportionately high during late May to mid-June 2003.

^b No sex information collected at Elfin Cove.

Appendix A21.—Mean length-at-age in millimeters (from tip of snout to fork of tail) by sex for Chinook salmon from selected Southeast Alaska sport fisheries, 2003.

Sport fishery			BROOD YEAR											n	
			2001		2000		1999		1998		1997		1996		
			0.1	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	1.5		2.4
Ketchikan	Males	Mean		610	542	858	734		904		1062				
		SE			22	24	21		11		28				
		n		1	5	5	22		56		6			95	
	Females	Mean		680	530	780	708	910	898		951	860			
		SE			60	48	17		7		13				
		n		1	2	2	12	1	84		12	1		115	
	Total ^a	Mean		680	525	821	726	910	906		980	860			
		SE		27	16	19	13		5		13	0			
		n		4	10	13	41	1	180		26	1		276	
Juneau	Males	Mean		610			688		844		955				
		SE		0			8		8		10				
		n		2			26		50		41		119		
	Females	Mean			350	765	619	930	805		899	818			
		SE			0		18		11		10	18			
		n			2	1	8	1	31		43	5		91	
	Total ^a	Mean		610	350	778	677	930	818		926	818			
		SE		0	0	13	7		6		6	18			
		n		2	2	2	69	1	119		114	5		314	
Juneau Derby	Total ^a	Mean		825			721		819		940				
	SE			35			6		8						
	n			2			68		52		1		123		
Petersburg	Males	Mean				845	833		876		1003				
		SE					123		15		9				
		n				1	2		12		4		19		
	Females	Mean				1010			869		947	970			
		SE				0			8		18				
		n				1			17		10		1	29	
	Total ^a	Mean				928	833		866		963	970			
		SE				83	123		9		14				
		n				2	2		33		14		1	52	
Wrangell	Males	Mean				885	743		861		930		935		
		SE					20		14		18				
		n				1	4		37		16		1	59	
	Females	Mean					710		839		919				
		SE							8		11				
		n					1		51		18			70	
	Total ^a	Mean					726		844		920		1015		
		SE					10		6		9		8		
		n					15		124		44		3	187	

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Sport fishery			BROOD YEAR										<i>n</i>		
			2001		2000		1999		1998		1997			1996	
			0.1	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3		1.5	2.4
Gustavus	Males	Mean		740		826	795		830		973				
		SE				20	34		12		17				
		<i>n</i>		1		8	3		29		13			54	
	Females	Mean				799	730	948	856		858		895		
		SE				4	9	31	12		7				
		<i>n</i>				4	3	3	31		17		1	59	
	Total ^a	Mean		740		814	758	945	845		913		895		
		SE				12	19	22	8		39				
		<i>n</i>		1		14	7	4	65		32		1	124	
Elfin Cove	Males	Mean		^b											
		SE													
		<i>n</i>													
	Females	Mean		^b											
		SE													
		<i>n</i>													
	Total ^a	Mean		721		811	780	864	836	820	942		1030		
		SE		7		12	30	34	8		11				
		<i>n</i>		4		18	4	7	64	1	23		1	122	

^a Includes sexed and unsexed Chinook salmon.

^b No sex information collected at Elfin Cove.

Appendix A22.—Numbers of coho salmon examined for coded wire tags in Southeast Alaska marine boat sport fisheries in 2003.

Sport fishery	Seasonal period	Estimated harvest	Number sampled	Percent sampled
Creel surveys				
Ketchikan	4/28-8/03 non-derby	13,583	3,545	26
	Derby entered ^a	0	0	0
	Derby not entered ^a	43	8	19
	8/04-9/28 non-derby	24,873	8,669	35
	Total	38,499	12,222	27
Juneau	4/28-8/03 non-derby	2,467	952	39
	8/04-9/28 non-derby	11,350	2,399	21
	Derby entered ^b	3,933	3,933	100
	Derby take-home ^b	932	258	28
	Total	18,682	7,542	40
Sitka	4/28-8/03 non-derby	32,140	8,630	27
	Derby entered ^c	0	0	0
	Derby take-home ^c	11	4	36
	8/04-9/28 non-derby	41,608	10,428	25
	Total	73,759	19,062	26
Creel survey totals		130,940	38,826	30
Catch sampling programs				
Craig/Klawock	5/05-9/14		9,069	
Petersburg	5/05-9/14		313	
Wrangell	4/28-9/14		337	
Gustavus	5/05-9/14		2,264	
Elfin Cove	6/01-9/01		928	
Catch sample total			12,911	
Total sampled			51,737	

^a Derby held 24 - 26 May, 31 May - 1 June, and 7 - 8 June.

^b Derby held 22 - 24 August.

^c Derby held 24 - 26 May, 31 May - 1 June.

Appendix A23.—Estimates of hatchery-produced salmon contributed to and numbers of wild tagged coho salmon recovered from the Ketchikan marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^a	Release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total				
				Rec ^b	Con ^c	Variance ^d	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
HATCHERY STOCKS																	
British Columbia	CDFO	Ft. Babine	18-35-52				1	9	66				1	9	66		
			18-35-53	1	8	64	1	7	39	1	5	25	3	20	127		
			18-45-19				1	3	8				1	3	8		
		Fulton River	18-45-13				1	4	15				1	4	15		
			18-45-14				1	4	15				1	4	15		
		Snootli Creek	18-28-21								2	8	26	2	8	26	
			Toboggan Ck.	18-35-56				1	4	15	1	3	5	2	7	20	
					18-48-28				1	4	16	1	3	5	2	7	21
		BC total		1	8	64	7	35	200	5	19	67	13	62	331		
Alaska	KTHC	Deer Mountain	04-04-89	2	20	188	37	394	7,280	3	26	217	42	440	7,685		
			04-04-91	1	10	85	13	115	1,162	2	13	69	16	138	1,316		
			04-43-16				1	8	58				1	8	58		
	MIC	Tamgas Creek	47-01-17				2	288	42,003	5	492	52,718	7	780	94,721		
			47-01-18							3	145	8,471	3	145	8,471		
			47-01-19							6	692	90,821	6	692	90,821		
	PWHA SSRAA	Klawock River	04-06-85				1	55	3,014				1	55	3,014		
			Burnett Inlet	04-01-04-0804				2	349	64,309				2	349	64,309	
				04-01-04-0804				2	349	64,309				2	349	64,309	
				04-01-04-0805				2	184	17,975				2	184	17,975	
				04-06-66	1	44	1,975	4	208	11,087	2	74	2,800	7	326	15,862	
				04-06-67				6	174	5,598	2	43	933	8	217	6,531	
				04-06-83							1	3	5	1	3	5	
		Nakat Inlet	04-06-45								3	86	2,595	3	86	2,595	
			04-06-46				1	30	849		1	27	719	2	57	1,569	
			04-06-47								1	40	1,542	1	40	1,542	
		Neets Bay	04-06-48								30	2,118	293,421	30	2,118	293,421	
			04-06-49								16	1,320	141,931	16	1,320	141,931	
			04-06-50								20	1,400	168,754	20	1,400	168,754	
			04-06-68						1	70	4,865	21	1,145	116,100	22	1,215	120,965
			04-06-69								8	927	138,934	8	927	138,934	
	04-06-70							1	155	23,926	9	1,158	188,837	10	1,313	212,764	
	Whitman Lake	04-06-71								5	828	160,521	5	828	160,521		
		04-06-72						1	131	17,084	16	1,243	158,462	17	1,374	175,546	
		04-06-51								8	214	7,634	8	214	7,634		
		04-06-52								15	691	53,722	15	691	53,722		
		04-06-54								2	62	2,037	2	62	2,037		
			Alaska total	4	74	3,025	73	2,358	346,855	180	12,872	6,324,006	257	15,304	6,673,886		
		Total all regions	5	82	3,163	80	2,393	351,101	185	12,891	6,325,489	270	15,366	6,679,753			

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Region	Agency ^a	Release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/03			Non-derby 8/04-9/28			Total		
				Rec ^b	Con ^c	Variance ^d	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
WILD STOCKS (recovery information only presented)^e															
Alaska	ADFG	Chickamin	04-05-22								3			3	
		Hugh Smith	04-04-69								5			5	
		Lake	04-04-70								3			3	
		Unuk River	04-05-36								2			2	
			04-05-37					2				1			3
		Alaska total									2			14	
		WILD STOCK TOTAL									2			14	

^a CDFO = Canada Department of Fisheries and Oceans, KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, PWHA = Prince of Wales Hatchery Association, SSRAA = Southern Southeast Regional Aquaculture Association, ADFG = Alaska Department of Fish and Game.

^b Rec = Number of fish recovered of noted tag code.

^c Con = Estimated harvest (contribution) of the release of the noted tag code.

^d Variance = Variance of estimated harvest of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A24.–Estimates of hatchery-produced salmon contributed to and numbers of wild tagged coho salmon recovered from the Juneau marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^b	Release site	Tag code	Non-derby 6/24-8/04			Non-derby 8/05-9/29			Derby ^a			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS															
Alaska	DIPAC	Macaulay	04-05-56				3	169	10,071	6	56	459	9	225	10,530
			04-05-57				6	292	15,610	7	124	3,195	13	416	18,805
			04-05-58				13	750	60,564	18	182	1,666	31	932	62,230
			04-05-59				4	245	16,016	14	141	1,275	18	386	17,291
			04-05-62				1	6	35	1	1	0	2	7	35
			04-05-64				2	13	80	5	8	11	7	21	91
			04-05-65				1	4	10	4	4	0	5	8	11
			04-05-68				1	6	35	2	2	0	3	8	35
			04-05-69				4	26	197	4	4	0	8	30	197
			04-05-70				2	13	80	3	3	0	5	16	80
			04-05-71				1	6	36	2	2	0	3	8	36
			04-05-72				2	20	210	1	1	0	3	21	210
			04-05-73				1	6	36	4	7	11	5	13	47
			04-05-74				1	14	175	2	2	0	3	16	175
			04-05-75				1	6	36	2	2	0	3	8	36
			04-05-76							4	4	0	4	4	0
			04-05-77				3	19	134	2	2	0	5	21	134
	NSRAA	Hidden Falls	04-48-32							1	23	493	1	23	493
		Alaska Total					46	1,595	162,743	82	568	7,171	128	2,163	169,914
British Columbia	CDFO	Snootli Creek	18-28-21							1	1	0	1	1	0
		B.C. total								1	1	0	1	1	0
Total all regions							46	1,595	162,743	83	569	7,171	129	2,164	169,914
WILD STOCKS (recovery information only presented)^f															
Alaska	ADFG	Auke Creek	04-03-70				6			2			8		
			04-01-04-05				1						1		
		Berners River	04-04-76				8			4			12		
			04-32-08				1						1		
			04-03-71							1			1		
		Chilkat River	04-05-52				2			2			4		
		Duck Creek	03-56-06							1			1		
		Jordon Creek	03-56-05				6			4			10		
		Switzer Creek	03-56-07				1						1		
		Taku	04-05-44				2			8			10		
			04-05-50				1			3			4		
			04-05-51				4			2			6		
		Alaska total					32			27			59		
WILD STOCK TOTAL							32			27			59		

^a Derby held on 22–24 August 2003.

^b DIPAC = Douglas Island Pink & Chum, NSRA = Northern Southeast Regional Aquaculture Association, CDFO = Canada Department of Fisheries & Oceans, ADFG = Alaska Department of Fish & Game.

^c Rec = Number of fish recovered of noted tag code.

^d Con = Estimated harvest (contribution) of the release of the noted tag code.

^e Variance = Variance of estimated harvest of the release of the noted tag code.

^f Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A25.—Estimates of hatchery-produced salmon contributed to and numbers of wild tagged coho salmon recovered from the Sitka marine boat sport fishery, 28 April - 28 September 2003.

Region	Agency ^b	Release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/3			Non-derby 8/4-9/28			Total					
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance			
HATCHERY STOCKS																		
Alaska	AKI	Port Armstrong	04-06-76				2	70	2,469	2	79	3,120	4	149	5,589			
			04-06-77				2	72	2,614	2	75	2,795	4	147	5,408			
			04-06-78				1	35	1,225	1	40	1,564	2	75	2,789			
			04-06-79							2	68	2,377	2	68	2,377			
			04-06-80				1	35	1,211	2	74	2,702	3	109	3,913			
			04-06-81				1	35	1,195	1	34	1,142	2	69	2,337			
			04-48-39							3	285	28,990	3	285	28,990			
			04-05-57	DIPAC	Macaulay				1	37	1,325	1	36	1,266	2	73	2,590	
			04-05-58						1	37	1,329				1	37	1,329	
			04-05-59						1	37	1,309				1	37	1,309	
	04-05-68						1	4	11	1	8	57	2	12	68			
	04-05-73						1	4	11				1	4	11			
		KAKE	Gunnuk Creek	04-01-04-0407				2	11	52				2	11	52		
		KTHC	Deer Mountain	04-04-89				2	17	146				2	17	146		
		MIC	Tamgas Creek	47-01-17				1	135	18,034	4	568	83,378	5	703	101,412		
									1	99	9,758	2	177	15,492	3	276	25,250	
												2	320	53,152	2	320	53,152	
		NSRAA	Hidden Falls	04-48-32				2	181	16,282	2	162	13,495	4	343	29,777		
									1	37	1,352	2	78	3,017	3	115	4,370	
												1	261	68,002	1	261	68,002	
												1	82	6,573	1	82	6,573	
												1	37	1,319	1	37	1,319	
					Medvejie	04-48-34				6	196	7,569	9	297	11,455	15	493	19,024
										5	170	6,151	24	825	39,270	29	995	45,421
										18	68	336	40	167	1,014	58	235	1,350
					Medvejie CIF	04-01-04-0408				3	476	77,246	2	292	44,121	5	768	121,367
		PWHA	Klawock River	04-06-85				4	237	14,527				4	237	14,527		
				SJ	Sheldon Jackson	04-07-21				3	11	35	3	12	36	6	23	71
		SSRAA	Burnett Inlet			04-01-04-0803				2	299	48,432				2	299	48,432
						04-01-04-0805	1	112	12,351						1	112	12,351	
						04-06-66				1	45	1,942				1	45	1,942
					04-06-67				5	130	4,407				5	130	4,407	
				Crystal Lake	04-04-92				2	44	920				2	44	920	
					Nakat Inlet	04-06-45				4	140	5,043	3	94	3,122	7	234	8,165
						04-06-46				2	63	2,023	5	169	5,890	7	232	7,913
						04-06-47				4	139	4,855	5	163	5,683	9	302	10,537
						04-06-48				1	87	7,507	13	1,413	184,252	14	1,500	191,758
				Neets Bay	04-06-49							4	378	39,917	4	378	39,917	

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Region	Agency ^b	Release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/3			Non-derby 8/4-9/28			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
Alaska	SSRAA	Neets Bay	04-06-50				5	554	67,887	11	1,097	129,108	16	1,651			
			04-06-68				2	150	11,569	6	533	54,848	8	683	66,417		
			04-06-69				1	161	25,661	8	1,402	279,234	9	1,563	304,895		
			04-06-70				4	693	127,063	4	673	119,546	8	1,366	246,608		
			04-06-71							3	773	203,970	3	773	203,970		
			04-06-72				3	299	34,715	8	885	112,783	11	1,184	147,498		
			Whitman Lake	04-06-51				3	101	3,624	6	213	7,997	9	314	11,621	
				04-06-52				4	284	21,183	6	472	44,979	10	756	66,162	
				04-06-53				6	243	10,811	8	305	12,670	14	548	23,481	
				04-06-54				3	115	4,457	6	224	8,869	9	339	13,326	
	USFS	Medvejie CIF	04-01-03-1212							2	11	51	2	11	51		
				Alaska total	1	112	12,351	112	5,551	1,051,749	206	12,782	4,450,712	319	18,445	5,514,812	
	British Columbia	CDFO	Chicago Cr	08-29-36		1	6	34						1	6	34	
Fort Babine			18-35-51					1	7	44	1	8	57	2	15	101	
			18-35-52				1	8	64	2	14	88	3	22	152		
			18-45-18				2	7	23	2	8	22	4	15	45		
			18-45-19							1	4	9	1	4	9		
			18-45-13		1	5	17	3	10	29				4	15	46	
Heiltsuk			18-48-47				1	10	84				1	10	84		
Kitimat River			18-49-02				1	36	1,257				1	36	1,257		
Snootli Creek			18-28-21		1	5	17	1	4	12	1	5	16	3	14	45	
			18-49-25					1	5	18				1	5	18	
Toboggan Cr.			18-35-54								1	4	13	1	4	13	
			18-35-55					1	4	10				1	4	10	
			18-35-56								1	4	13	1	4	13	
Columbia		B.C. Total	3	16	70	12	91	1,674	9	47	246	24	154	1,990			
Total all regions				4	128	12,551	124	5,642	1,070,385	215	12,829	4,472,536	343	18,599	5,555,472		
WILD STOCKS (recovery information only presented)^f																	
Alaska	ADFG	Auke Creek	04-03-70									1		1			
		Berners River	04-04-76										1		1		
		Chickamin R.	04-05-22							2					2		
		Chilkat River	04-05-52										1		1		
		Chuck Creek	04-05-27										1		3		
		Ford Arm	04-43-04								23			35		58	
			04-46-56											1		1	
		Hugh Smith	04-04-69		1									6		9	
			04-04-70											1		4	
		Nakwasina R	04-03-69											1		4	
			04-05-30											1		5	
		Slippery Creek	04-03-78										4		9		
		Stikine River	04-05-48										2		4		

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Region	Agency ^b	Release site	Tag code	Non-derby 4/28-6/22			Non-derby 6/23-8/3			Non-derby 8/4-9/28			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
Alaska	ADFG	Taku River	04-05-51				1						1		
		Unuk River	04-05-36				1						1		
	NSRAA	Salmon Lake	04-07-12				4			9			13		
	Alaska total				1			45			71			117	
British Columbia	CDFR	S. West Arm Creek	08-11-12	1									1		
		B.C. total				1								1	
WILD STOCK TOTAL				2			45			71			118		

^a AKI = Armstrong-Keta, Inc., DIPAC = Douglas Island Pink and Chum, Inc., KAKE = Kake Non-Profit Fisheries Corp., KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, NSRAA = Northern Southeast Regional Aquaculture Association, PWHA = Prince of Wales Hatchery Association, SJ = Sheldon Jackson College, SSRA A= Southern Southeast Regional Aquaculture Association, USFS = United States Forest Service, CDFO = Canada Department of Fisheries and Oceans, ADFG = Alaska Department of Fish and Game, CDFR = Canadian Department of Fisheries and Oceans Research.

^b Rec = Number of fish recovered of noted tag code.

^c Con = Estimated harvest (contribution) of the release of the noted tag code.

^d Variance = Variance of estimated harvest of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution or variance estimates.

Appendix A26.—Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to 313 coho salmon examined during the Petersburg marine boat sport fishery, 28 April to 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
HATCHERY STOCKS							
Alaska	SSRAA	Burnett Inlet	40-10-04-08-02	1	45	1,948	14%
			40-10-04-08-06	1	27	687	9%
		Crystal Lake	04-04-93	1	5	23	2%
			04-04-94	3	16	70	5%
		Neets Bay	04-06-50	1	26	675	9%
			04-06-70	1	45	2,019	15%
		Whitman Lake	04-06-54	3	30	266	10%
Alaska total				11	194	5,688	63%
Total all regions				11	194	5,688	63%

^a SSRAA = Southern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

Appendix A27.—Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to 337 coho salmon examined during the Wrangell marine boat sport fishery, 28 April - 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
HATCHERY STOCKS							
Alaska	KTHC	Deer Mountain	04-01-69	1	2	2	1%
			04-04-89	2	6	13	2%
	SSRAA	Burnett Inlet	04-01-04-08-04	1	47	2,183	14%
			04-06-66	1	16	233	5%
		Whitman Lake	04-06-67	3	28	226	8%
			04-06-54	1	12	126	3%
Alaska total				9	111	2,783	33%
Total all regions				9	111	2,783	33%

^a KTHC = Ketchikan Tribal Hatchery Corporation, SSRAA = Southern Southeast Regional Aquaculture Association.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

Appendix A28.–Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to and numbers of wild tagged coho salmon recovered from the 9,069 coho salmon examined during the Craig/Klawock marine boat sport fishery, 5 May - 14 September 2003.

Region	Agency ^a	Hatchery/release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution	
HATCHERY STOCKS								
British Columbia	CDFO	Heiltsuk	18-48-47	1	3	5	0%	
		Kispiox Nation	08-29-46	1	1	0	0%	
		Kitimat River	18-49-02	2	22	210	0%	
		Toboggan Creek	18-35-54	1	1	0	0%	
		B.C. total			5	27	215	0%
Alaska	AKI	Port Armstrong	04-06-76	1	10	82	0%	
		KTHC	Deer Mountain	04-04-89	1	3	4	0%
	MIC	Tamgas Creek	47-01-18	1	23	506	0%	
		PWHA	Klawock River	04-06-85	60	973	14,803	11%
	50-31-44			6	107	1,788	1%	
	SSRAA	Burnett Inlet	04-06-67	1	8	53	0%	
		Crystal Lake	04-04-94	1	5	23	0%	
	Nakat Inlet			04-06-45	1	9	69	0%
				04-06-46	2	17	133	0%
				04-06-48	2	52	1,311	1%
				04-06-49	1	27	677	0%
				04-06-68	1	21	402	0%
	Neets Bay			04-06-72	2	60	1,727	1%
				04-06-51	1	9	77	0%
				04-06-53	1	10	89	0%
	Whitman Lake			04-06-54	1	10	89	0%
				Alaska total			83	1,344
Total all regions				88	1,371	22,048	15%	
WILD STOCKS (Recovery information only presented)^e								
Alaska	ADFG	Chuck Creek	04-05-24	9				
		Alaska total			9			
WILD STOCK TOTAL				9				

^a CDFO = Canada Department of Fisheries and Oceans, AKI = Armstrong-Keta, Inc, KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, PWHA = Prince of Wales Hatchery Association, SSRAA = Southern Southeast Regional Aquaculture Association, ADFG = Alaska Department of Fish and Game.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to the sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

Appendix A29.—Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to and numbers of wild tagged coho salmon recovered from the 2,264 Chinook salmon examined during the Gustavus marine boat sport fishery, 5 May - 14 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution	
HATCHERY STOCKS								
Alaska	DIPAC	Macaulay	04-05-56	3	29	243	1%	
			04-05-57	6	62	586	3%	
			04-05-59	2	21	193	1%	
			04-05-64	1	1	0	0%	
			04-05-65	1	1	0	0%	
			04-05-69	1	1	0	0%	
			04-05-74	1	1	0	0%	
	NSRAA	Hidden Falls	04-48-32	3	70	1,564	3%	
			04-48-51	1	75	5,602	3%	
	SSRAA	Burnett Inlet	04-06-67	1	8	56	0%	
	USFS	Medvejie CIF	04-01-03-1212	2	3	1	0%	
	Alaska total				22	272	8,245	12%
	Total all regions				22	272	8,245	12%
WILD STOCKS (recovery information only presented)^e								
Alaska	ADFG	Berners River	04-04-76	4				
			Chilkat River	04-03-71	1			
				04-05-52	3			
		Taku River		04-05-44	1			
				04-05-50	1			
				04-05-51	2			
			Alaska total				12	
WILD STOCK TOTAL				12				

^a DIPAC = Douglas Island Pink and Chum, Inc., NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association, USFS = United States Forest Service, ADFG = Alaska Department of Fish and Game.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

Appendix A30.—Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to and numbers of wild tagged coho salmon recovered from the 928 coho salmon examined during the Elfin Cove marine boat sport fishery, 1 June - 1 September 2003.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
HATCHERY STOCKS							
Alaska	DIPAC	Macaulay	04-05-76	1	1	0	0%
	NSRAA	Hidden Falls	04-48-33	1	10	94	1%
			04-48-51	2	147	10,602	16%
	SSRAA	Nakat Inlet	04-06-47	1	9	70	1%
		Whitman Lake	04-06-51	1	9	77	1%
			04-06-52	1	19	328	2%
	USFS	Medvejie CIF	04-01-03-1212	1	1	1	0%
		Alaska total		8	196	11,172	21%
		Total all regions		8	196	1,1172	21%
WILD STOCKS (recovery information only presented)^e							
Alaska	ADFG	Berners River	04-04-76	2			
		Chilkat River	04-05-52	1			
		Stikine River	04-05-48	1			
Alaska total				4			
		WILD STOCK TOTAL		4			

^a DIPAC = Douglas Island Pink and Chum, Inc., NSRAA = Northern Southeast Regional Aquaculture Association, SSRAA = Southern Southeast Regional Aquaculture Association, USFS = United States Forest Service, ADFG = Alaska Department of Fish and Game.

^b Rec = Recovered number of fish of noted tag code from the sampled harvest.

^c Con = Contribution to sampled harvest of the release of the noted tag code.

^d Variance = Variance of the estimated contribution of the release of the noted tag code.

^e Wild stock recovery information only presented, and not contribution, variance or relative precision estimates.

APPENDIX B: DATA FILES

Appendix B1.–Computer data files and analysis programs developed for the 2003 Southeast Alaska marine boat sport fishery survey. Data files (*.DTA) archived at Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services, 333 Raspberry Rd., Anchorage, AK 99518.

Effort, Catch, and Harvest Estimation Files (in KMC03EST.ZIP, JMC03EST.ZIP, SMC03EST.ZIP, WMC03SAM.ZIP, PMC03SAM.ZIP, CRG_KLW03SAM.ZIP, GMC03SAM.ZIP, AND EMC03SAM.ZIP, BCM03SAM.ZIP, Yakutat Marine Data.xls, 2003_AWL_ALL.zip)	
03ktm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Ketchikan, 2003
03cgm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Klawock, 2003
03bkm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Craig, 2003
03bcm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Petersburg, 2003
c03wgm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Wrangell, 2003
c03sim.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Sitka, 2003
c03jnm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Juneau, 2003
c03gvm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Gustavus, 2003
c03elm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Elfin Cove, 2003
aMS03.SAS	SAS programs to create basic interview SAS save files from mark-sense data files. 'a' stands for the letter of each site respectively: K for Ketchikan, P for Petersburg, W for Wrangell, S for Sitka, J for Juneau, C for Craig, B for Klawock, G for Gustavus, BC for Bartlett Cove and E for Elfin Cove.
aMC03SMP	SAS programs to list effort, catch, and harvest by aMS03.SAS. Revised files have stratification information added to them, have non fin-fish (i.e., shellfish) data removed, and/or have multi-line interviews collapsed to one record per interview. "a" stands for P = Peterstburg, W for Wrangell, C for Craig, B for Klawock, G for Gustavus, and E for Elfin Cove. NOTE: B was also used for Bartlett Cove which is listed in a separate zip file (BCM03SAM.ZIP).
aMC03ESS.SAS	SAS programs to create revised interview SAS save files from files created by aMS03.SAS. Revised files have stratification information added to them, have non fin-fish (i.e., shellfish) data removed, and/or have multi-line interviews collapsed to one record per interview. See above for explanation of 'a'.
aMC03MSM.SAS	SAS programs to create SAS save files with only the sampling information associated with each sample for each survey from files created by aMC03ESS.SAS. See above for explanation of 'a'.
aMC03EST.SAS	SAS programs to estimate effort, catch, and harvest with associated variances using SAS save files created by aMC03ESS.SAS and aMC03MSM.SAS. Program operates on one species at a time as determined by inputs in temporary input data file 'SPECLIST.DAT'. See above for explanation of 'a'.
Coded Wire Tag Contribution Estimation Files (in CWT03.ZIP)	
SPRT_EXPNS03.XLS	Data file from tag lab with sampling information for each biweekly period at each fishery.
SFCON03.XLS	Data file from tag lab with recovery information for each adipose fin clipped coho and Chinook salmon sampled.
SEN03CWT.SAS	SAS program to do basic contribution estimates.
SEN03CO1.SAS	SAS program to summarize contributions across tag codes for main tables.
SEN03CWP.SAS	SAS program to list tags, contributions, and variances for appendices.
SEN03CW3.SAS	SAS program to summarize contributions at ports with catch sampling programs.
Age-weight-length (AWL) Files (in All_ALW_2003.zip)	
CHIN_2003_AWL.XLS	Chinook data file for input to the SAS program.
LF_MAT03CHL.SAS	SAS programs to summarize Chinook salmon AWL data.
HALIBUT_2003_ALL.XLS	Halibut data file for input to the SAS program.
L_2003_HAL.SAS	SAS program to summarize halibut AWL data.
LINGCOD_2003_AWL.XLS	Lingcod data file for input to the SAS program.
LF_2003_LC.SAS	SAS program to summarize lingcod AWL data.