

Fishery Data Series No. 01-34

Harvest Estimates for Selected Marine Sport Fisheries in Southeast Alaska During 2000

by

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Alaska Department of Fish and Game

Division of Sport Fish



Symbols and Abbreviations

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Weights and measures (metric)

Centimeter	cm
Deciliter	dL
Gram	g
Hectare	ha
Kilogram	kg
Kilometer	km
Liter	L
Meter	m
metric ton	mt
Milliliter	ml
Millimeter	mm

Weights and measures (English)

cubic feet per second	ft ³ /s
Foot	ft
Gallon	gal
Inch	in
Mile	mi
Ounce	oz
Pound	lb
Quart	qt
Yard	yd
Spell out acre and ton.	

Time and temperature

Day	d
degrees Celsius	°C
degrees Fahrenheit	°F
hour (spell out for 24-hour clock)	h
Minute	min
Second	s
Spell out year, month, and week.	

Physics and chemistry

all atomic symbols	
alternating current	AC
Ampere	A
Calorie	cal
direct current	DC
Hertz	Hz
Horsepower	hp
hydrogen ion activity	pH
parts per million	ppm
parts per thousand	ppt, ‰
Volts	V
Watts	W

General

All commonly accepted abbreviations.	e.g., Mr., Mrs., a.m., p.m., etc.
All commonly accepted professional titles.	e.g., Dr., Ph.D., R.N., etc.
and	&
at	@
Compass directions:	
east	E
north	N
south	S
west	W

Copyright

Corporate suffixes:	©
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
et alii (and other people)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.,
id est (that is)	i.e.,
latitude or longitude	lat. or long.
monetary symbols (U.S.)	\$, ¢
months (tables and figures): first three letters	Jan, ..., Dec
number (before a number)	# (e.g., #10)
pounds (after a number)	# (e.g., 10#)
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S. state and District of Columbia abbreviations	use two-letter abbreviations (e.g., AK, DC)

Mathematics, statistics, fisheries

alternate hypothesis	H _A
base of natural logarithm	E
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	F, t, χ^2 , etc.
confidence interval	C.I.
correlation coefficient	R (multiple)
correlation coefficient	r (simple)
covariance	Cov
degree (angular or temperature)	°
degrees of freedom	Df
divided by	÷ or / (in equations)
equals	=
expected value	E
fork length	FL
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	Ln
logarithm (base 10)	Log
logarithm (specify base)	Log ₂ , etc.
mideye-to-fork	MEF
minute (angular)	'
multiplied by	X
not significant	NS
null hypothesis	H ₀
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
standard length	SL
total length	TL
variance	Var

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IN SOUTHEAST ALASKA DURING 2000**

by
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and
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Anchorage, Alaska

December 2001

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ABSTRACT

Onsite surveys of selected marine sport fisheries for chinook salmon *Oncorhynchus tshawytscha* were conducted during 2000 in Southeast Alaska. These surveys were necessary to provide data for inseason estimates of sport harvests of chinook salmon in Southeast Alaska to ensure compliance with all-gear chinook quotas determined by the Pacific Salmon Treaty. Creel surveys estimated a harvest of 25,536 chinook salmon in the combined Ketchikan, Sitka, and Juneau boat sport fisheries. Those harvests were below the long-term average (1984, and 1986–99) in the Ketchikan fishery, below average (1983–99) in the Juneau fishery, and 127% of the long-term average (1987–88 and 1992–99) in the Sitka fishery. Hatcheries in Alaska produced 24% of the total chinook salmon harvest while hatcheries in British Columbia, Washington, and Oregon produced about 14% of the harvest. Alaska hatcheries produced 51% of the chinook salmon harvest in Ketchikan, 58% in Juneau, and 9% in Sitka. Non-Alaskan hatcheries accounted for 21% of the chinook salmon harvest in Sitka, 2% of the harvest in Ketchikan, and less than 1% in Juneau. Coded wire tag sampling in the Petersburg, Wrangell, Craig/Klawock, and Yakutat sport fisheries revealed that chinook salmon from Alaska hatcheries contributed about 41%, 18%, 4% and 6% of the harvest, respectively.

An estimated 64,985 coho salmon *Oncorhynchus kisutch*, 21,560 pink salmon *Oncorhynchus gorbuscha*, 43,318 Pacific halibut *Hippoglossus stenolepis*, and 24,127 rockfish *Sebastes*, were also harvested in the combined Ketchikan, Juneau, and Sitka marine boat fisheries. Hatcheries produced 54%, 20% and 19% of the coho salmon harvest in Ketchikan, Juneau, and Sitka, respectively. The Pacific halibut harvest of 6,169 in Juneau was only 55% of the long-term average, the Ketchikan harvest of 6,039 was 61% of average, but the Sitka harvest of 31,110 was another record high and 210% of the long-term average. Shellfish effort was above average in the Juneau and Ketchikan fisheries. Dungeness crab *Cancer magister* harvest was well below average in Juneau but above average in Ketchikan.

Key words: Creel survey, angler effort and harvest, harvest per unit effort, age composition, length-at-age estimation, 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, 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, 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 (Howe et al. 2001). This statewide survey has been an

economical means of comprehensively monitoring often remote sport fisheries, and estimates generated are used for official regional and statewide sport harvest numbers. The SWHS estimates, however, cannot be used directly for inseason management because estimates for a given year are not available until the following summer.

Estimates from onsite 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

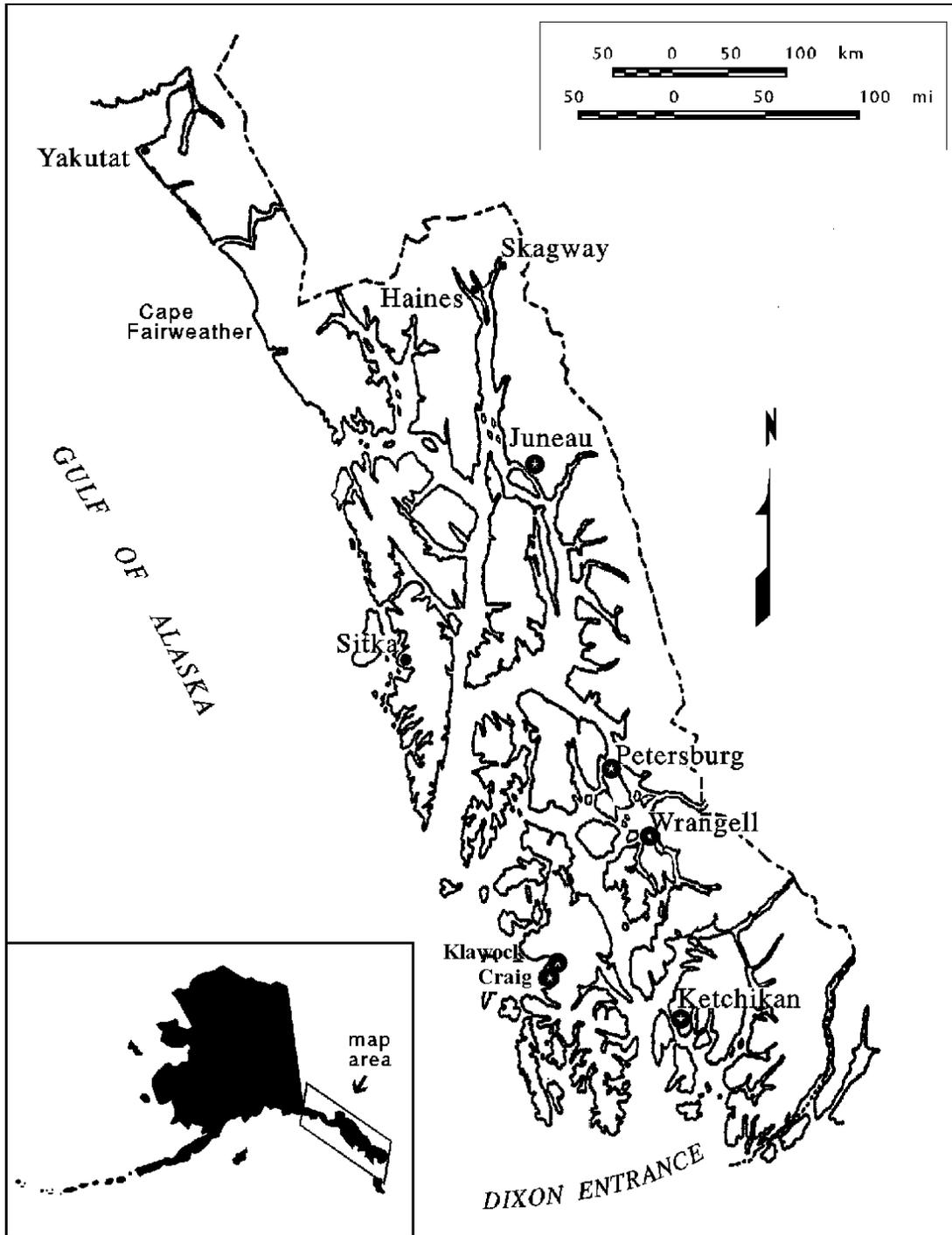


Figure 1.—Location of Yakutat, Juneau, Sitka, Petersburg, Wrangell, Ketchikan, Craig, and Klawock in Southeast Alaska.

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).

Expansion of the onsite creel survey program in Southeast Alaska was necessary beginning in 1992 to monitor sport harvests of chinook salmon on an inseason basis. The Alaska Board of

Fisheries allocated the Pacific Salmon Treaty catch quota for chinook salmon in Southeast Alaska between the sport and commercial fisheries in March of 1992. They 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. In February 2000, the Southeast Alaska sport management plan was revised by the Board of Fisheries so that inseason management of the chinook sport fishery was eliminated, however, precise inseason monitoring of sport harvests remained necessary to ensure compliance with annual all-gear quotas for chinook salmon set under the Pacific Salmon Treaty.

In order to monitor the entire Southeast Alaska chinook salmon fishery with adequate precision to ensure compliance with all-gear chinook quotas, it was determined that creel surveys or catch sample programs were needed in the Ketchikan, Craig, Petersburg, Wrangell, Sitka, Juneau and Yakutat boat fisheries during the major portion of the fishery for chinook salmon. In 1999, 95% of the total sport harvest of chinook salmon of Southeast Alaska occurred in the SWHS areas represented by these fisheries (Howe et al. 2001). Sport harvests in other SWHS areas (Haines/Skagway and Glacier Bay) were determined to be too small or too dispersed to be effectively monitored with onsite programs, although a spring chinook survey is ongoing in Haines (Ericksen 2000).

In addition to estimating the total number of chinook salmon taken in the sport fishery, contribution estimates of Alaska hatchery chinook salmon were also necessary as most of this harvest does not count toward the sport fishery allocation. Sampling of sport-harvested chinook salmon for coded-wire tags by creel samplers was necessary 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 or all-gear quota, and post-season estimates from the SWHS will be adequate to document harvests within these fisheries.

Inseason harvest estimates of chinook salmon for all of Southeast Alaska were obtained by combining information from past SWHS and respective onsite surveys. This report, however, will only present information from the onsite surveys conducted in 2000, because current estimates of total harvest will be revised when final SWHS estimates are completed.

Onsite survey information from the marine boat sport fisheries is used for a variety of other management and reporting purposes. Coho salmon *Oncorhynchus kisutch* harvests by the boat sport fisheries are also of special interest, as coho salmon management continues 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 Jaenicke and Frenette (Unpublished). This information has also been provided to the North Pacific Fisheries Management Council during their consideration of Guideline Harvest Levels (GHL's) and Individual Fishing Quotas (IFQ's) for the sport charter fisheries in the region.

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 is gathered so that the Alaska Department of Fish and Game (ADF&G), in conjunction with the Alaska Board of Fisheries, 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 from onsite creel surveys since 1988.

This report presents the findings of onsite surveys of marine boat sport fisheries conducted in 2000 by the Division of Sport Fish of ADF&G. We

present both expanded estimates in the Ketchikan, Juneau, and Sitka areas and results from CWT sampling programs conducted at Petersburg, Wrangell, Craig/Klawock, and Yakutat. 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., Jaenicke 2000, Ericksen 2000).

REGULATIONS

Beginning 24 April, filleting, mutilating, or heading sport caught chinook or coho salmon was prohibited by emergency order (E.O.) at ports sampled by the creel program until marine sport boats reached the dock (E.O. #1-2-00). This regulation was enacted to increase the number of salmon which could be sampled for CWTs.

During the February 2000 Board of Fisheries meeting in Sitka, a major rewrite of the Southeast Alaska Chinook Salmon Management Plan took place. Instead of using management “tools” to manage the sport fishery inseason, preseason management measures implemented on an annual basis were dependent upon a “preseason abundance index” released by the Chinook Technical Committee (CTC) of the Pacific Salmon Commission (PSC).

Beginning on 1 January, the sport bag limit for chinook salmon in marine waters was two fish ≥ 28 " (" = inches in total length) per day/2 in possession with an annual limit of 4 for non-resident anglers. After release of the “preseason abundance index” under the revised plan, the bag/possession limit was reduced to one chinook salmon ≥ 28 " effective 3 May (E.O. #1-4-00). Additional restrictions were implemented on 3 June (E.O. #1-5-00) which specifically targeted nonresident anglers and anglers fishing from charter vessels, but these were repealed on 27 June due to a revision of the preseason abundance index. The revised regulations of 27 June (E.O. #1-21-00) kept the bag limit at one chinook salmon for all anglers and enacted an annual limit of 3 chinook salmon for non-residents. All these regulations should have been implemented by May 1, however, revisions of the management plan did not go into effect until early June.

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 2000:

- E.O. #1-6-00 increased the chinook salmon bag and possession limit to four ≥ 28 " and eight < 28 " in Wrangell Narrows terminal area near Petersburg from 1 June through 31 July.
- E.O. #1-9-00 increased the chinook salmon bag and possession limit to four chinook salmon, of which no more than three could be ≥ 28 " in a terminal area near Juneau from 10 June through 31 August.
- E.O. #1-11-00 increased the chinook salmon bag and possession limit to one ≥ 28 " and two < 28 " in terminal areas near Skagway from 10 June through 31 August.
- E.O. #1-12-00 increased the chinook salmon bag and possession limit to two ≥ 28 " and two < 28 " in the Eastern Passage (Earl West Cove) terminal area near Wrangell from 14 June through 1 September.
- E.O. #1-13-00 increased the chinook salmon bag and possession limit to six ≥ 28 " and twelve < 28 " in two terminal areas near Ketchikan from 17 June through 1 August.

Nonresident annual limits for chinook salmon ≥ 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 two fish per day, four in possession. The season for lingcod *Ophiodon elongatus* opened on 1 May. The bag limit for lingcod was two per day, four in possession until E.O. #1-7-00 reduced it to one per day and two in possession in northern Southeast Alaska excluding the Yakutat area (Juneau and Sitka areas) from 6 June through 31 December. In addition, E.O. #1-7-00 established a minimum size limit of 38 inches for lingcod caught by nonresident anglers and anglers fishing from chartered vessels in the area of northern Southeast Alaska affected and required that all lingcod caught by anglers fishing from chartered

vessels be landed only by hand or with a landing net. Anglers were limited to five pelagic rockfish *Sebastes* per day, 10 in possession, and five non-pelagic rockfish, 10 in possession. Only two of the non-pelagic rockfish per day (four 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 three fish per day, only one 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, 1990). Personal use harvests of red and blue king crab *Paralithodes* were closely regulated in the commercial fishery subdistrict 11-A near Juneau. When the fishery opened on July 1, the daily bag and possession limit was 1 male crab with a 7" minimum carapace and a harvest permit was required which included a seasonal limit of 5 king crab per individual and 10 per household. Regulations were later liberalized after crab abundance was determined to be higher than expected. On 20 July, the limits were increased to 2 crab per day with seasonal limits of 10 per individual and 20 per household, and then on 4 August, the limits were further increased to 3 per day with a seasonal limit to 20 per individual and 40 per household. A bag and possession limit of 6 male king crab was in effect elsewhere in Southeast Alaska with local exceptions of 2 in the Yakutat area and 3 in commercial subdistricts 12-B and 15-C near Juneau.

OBJECTIVES

The primary goals of the 2000 Southeast Alaska marine boat sport fishery surveys were to obtain: (1) inseason estimates of the regionwide harvest of chinook salmon; (2) estimates of the regionwide harvest of chinook salmon of Alaska hatchery origin; and (3) estimates of the harvest of coho salmon of Alaska hatchery origin in the Ketchikan, Sitka, and Juneau fisheries. 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 24 April to 24 September 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: 1) prior to the commercial troll opening in early July; 2) prior to the troll opening in early August; and 3) at the end of the marine sport fishery survey period in late September.

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 terms¹ for each individual fishery is within ± 15 percentage points of the true value 90% of the time.
3. Estimate total sport harvest of coho salmon landed in the Ketchikan, Sitka, and Juneau marine boat sport fisheries from 24 April to 24 September such that each individual estimate for the entire season is 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 is 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 and Wrangell from 24 April to 10 September; and
 - b. Petersburg from 1 May to 10 September; and
 - c. Yakutat from 17 April to 24 September;such that the total relative contribution estimate is 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

¹ Contributions in relative terms, equals the contribution estimate divided by the total harvest.

the following marine boat sport fisheries during the noted time periods:

- a. Craig/Klawock and Wrangell from 24 April to 10 September; and
- b. Petersburg from 1 May to 10 September; and
- c. Yakutat from 17 April to 24 September;

such that the total relative contribution estimate is within ± 15 percentage points of the true values 90% of the time.

7. Estimate the harvest of wild mature chinook salmon ≥ 28 " in the Juneau marine boat spring fishery (24 April through 2 July) such that the estimate is within $\pm 20\%$ of the true value 90% of the time.
8. Estimate the age composition of the Juneau and Ketchikan marine boat spring chinook salmon harvest from 24 April to 2 July such that the estimates are within ± 5 percentage points of the true value 90% of the time.
9. Estimate the average net weight of Pacific halibut harvested by both chartered and non-chartered anglers in each surveyed port such that with 90% confidence, the estimates for chartered anglers are within $\pm 5\%$ of the true value and the estimates for the non-chartered anglers are within $\pm 10\%$ of the true value.
10. Estimate the average round weight of lingcod harvested in Craig/Klawock, Sitka, and Yakutat to within $\pm 10\%$ of the true value 90% of the time.
11. Estimate sport harvest of pink salmon, Pacific halibut, and rockfish (all species combined) in Juneau, Sitka, and Ketchikan such that the estimates for each are within $\pm 20\%$ of the true value 90% of the time.
12. Estimate sport effort for both salmon and bottomfish to within $\pm 25\%$ of the true value 90% of the time in Ketchikan, Juneau, and Sitka.
13. Estimate shellfish effort and harvest of Dungeness crab *Cancer magister* (in both Juneau and Ketchikan), shrimp (Ketchikan only), and king crab (Juneau only) such that the estimates are 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 2000 included:

1. Collect baseline age and maturity data from chinook salmon harvested during 24 April through 2 July in Ketchikan, Petersburg and Wrangell;
2. Collect age information from chinook salmon in Juneau and Ketchikan from 3 July through 24 September;
3. Collect Dolly Varden *Salvelinus malma* harvest information from anglers in Juneau;
4. Compute HPUEs for coho salmon from both catch sample and creel survey data for informational use by the public and fishery managers;
5. Collect the number of fish released (by species) to estimate total catch; and
6. 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 surveys. Site-specific differences in procedures are outlined in later sections of this report.

ONSITE CREEL SURVEY ANGLER EFFORT AND HARVEST ESTIMATES

Direct expansion creel surveys were conducted of 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 vs. weekend-holiday), time of day (early vs. 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 two harbors were selected at random WOR for surveying. During each sampled day, a creel technician attempted to interview all exiting boat parties² 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. At some sites and for some strata, only one sampling period existed; for these strata at any sampled day-location combination, the entire period was sampled. Minimally, two periods were sampled for each day-location combination for strata with more than one 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. 1993–2000). One important access location, Clover Pass Resort near Ketchikan, could not be sampled because of access problems. Since 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, 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 was recorded in Juneau and Ketchikan. In Ketchikan, 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). Mean harvest of boat-parties interviewed during a sample was expanded by the number of boat-parties counted exiting the 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.

² A boat party is defined as all sport anglers from one boat exiting a fishery at an access location.

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 in 1997, 1998, 1999, and 2000 because a major access location, Clover Pass, refused access to staff).
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 three anglers and two of them fished for three hours and one fished for two hours, both combinations of rods and hours were recorded as two rods for three hours and one rod for two hours and not as three rods for three 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 Commercial Fisheries (CF) Division Mark Tag and Age Laboratory 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). Since 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 were also estimated after obtaining the marked fraction (?). In some instances, wild stock marked fractions were not obtained, and therefore tags were only expanded by the sampling fraction.

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 essentially 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 24 April through 10 September, Petersburg harbors from 3 May through 10 September, Craig and Klawock harbors from 24 April through 10 September, and the Yakutat harbor from 17 April through 24 September. Sampling effort was continued in Klawock in 2000 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 29 May to 24 September, in Sitka from 22 May to 27 August, and in Juneau from 24 April through 24 September. Specific equations for estimating the relative contributions of hatchery stocks in Wrangell, Petersburg, Craig/Klawock, and Yakutat 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, Craig/Klawock, or Yakutat since 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. 2000, Johnson 2001) Chinook salmon landed in the four fisheries sampled are believed to be primarily from local chinook stocks (especially those caught in spring fisheries).

Four scales were taken from the preferred area (Welander 1940 and 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 2 July (i.e. spring data) from harvested chinook salmon within each of these fisheries were treated as one sample (i.e., ignoring internal stratification and sampling stages). Data from 3 July through 24 September (i.e., summer data) in Juneau and Ketchikan 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 2 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):

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

where p is the proportion of fish in a given biweek with determined maturity status of mature (unknown or unevaluated fish ignored), and 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). Since 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. This result was then subtracted from the biweekly harvest of mature chinook salmon calculated above to obtain the harvest of wild mature chinook salmon. The variance of this estimate was conservatively estimated by summing the variances of both the total mature and hatchery biweekly harvests.

Maturity of chinook salmon taken through 2 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

In pursuit of Objective 9, 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 1999 biological sampling data. Stratum weights were based on group specific harvests reported in the 1998 SWHS. Since the ports of Petersburg and Wrangell are in the same SWHS area, we elected to estimate mean weight 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 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.

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 1999 interview data.

Sub-sampling occurred every 3rd day in Juneau, Ketchikan and Petersburg/Wrangell, 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 day³, 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

³ 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 since we purposely avoided these derby day samples.

sampling was adjusted forward—counts to the next sub-sample 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 post-season 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, Sitka, and Yakutat. 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, Commercial Fisheries Division (D. Carlile, Juneau ADF&G, 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.

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 harvest per unit effort (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, Alaska Department of Fish and Game, Douglas, personal communication). Mean HPUE from these fisheries was considered to be an index of abundance under the traditional linear model:

$$hpue_k = qN + e_k \quad (4)$$

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 e is a random error with mean equal to zero 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 (Yakutat).

ANGLER EFFORT

An estimated 659,896 (SE = 23,539) 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 only 56% and 72%, respectively, of that expended in Juneau. Seventy-six percent of the total angler-hours of effort was targeted on salmon in Ketchikan, 77% 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 13%, 11%, and 8% of the total salmon fishing effort, respectively, occurred during these short time periods.

CHINOOK SALMON FISHERIES

An estimated 25,536 (SE = 1,232) 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 67% (17,230) of the monitored harvest of chinook salmon was taken in the Sitka fishery. The Juneau fishery accounted for an additional 19% of the harvest, and 14% was taken in the Ketchikan fishery. Most of the chinook salmon harvested were at least 28" in length, but an estimated 329 small (<28") chinook salmon were also harvested, demonstrating a

Table 1.—Summary of estimated total and derby angler effort by target for the Ketchikan, Sitka, and Juneau marine boat sport fisheries during 2000.

TOTAL EFFORT BY TARGET AND TIME PERIOD					
		Ketchikan 4/24–9/24	Juneau 4/24–9/24	Sitka 4/24–9/24	Total
Boat-hours		58,987	110,434	66,523	235,944
	SE	3,558	6,054	3,167	7,704
Salmon-hours		124,005	222,710	138,705	485,420
	SE	10,978	14,562	7,245	19,623
Bottomfish-hours ^a		38,340	65,190	69,918	173,448
	SE	3,162	4,709	5,117	7,639
Angler-hours ^b		162,344	288,525	209,027	659,896
	SE	11,927	17,066	10,982	23,539
% salmon-hours ^c		76	77	66	74

DERBY EFFORT BY TARGET AND TIME PERIOD					
		Ketchikan 5/27–29, 6/03–04, 6/10–11	Juneau 8/18–20	Sitka 5/27–29, 6/03–04	Total
Boat-hours		8,398	11,490	6,492	26,380
	SE	895	2,639	642	2,860
Salmon-hours		18,160	29,882	13,604	61,646
	SE	1,810	7,458	1,276	7,780
Bottomfish-hours		2,689	1,457	3,560	7,706
	SE	415	444	624	872
Angler-hours		20,849	31,339	17,208	69,396
	SE	2,084	7,797	1,334	8,180
% of total salmon fishery ^d		13	11	8	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) * 100.

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

modest response to emergency openings in hatchery terminal areas.

Harvest of chinook salmon during the Ketchikan King Salmon Derby constituted 14% of the total chinook salmon harvest in the Ketchikan marine fishery, while only 6% of the chinook salmon harvest in the Juneau fishery was taken during the Juneau Golden North Salmon Derby, due to its later timing (Table 2). About 11% (1,810) of the total Sitka chinook harvest was taken during the Sitka Salmon Derby. Anglers entered a total of 1,287 chinook salmon in the Ketchikan, Juneau and Sitka derbies from a harvest of 2,602 fish during the derby time periods. In the Petersburg Salmon Derby held from 26 May–29 May, 329 chinook salmon were entered.

About 31% (7,828) 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 24% 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 ± 17 percentage points of the true value 90% of the time as only Ketchikan failed to meet the goal of ± 15 percentage points. Substantial numbers of hatchery fish also originated in British Columbia, Washington, and Oregon. In aggregate, 38% of the chinook salmon harvested in these three fisheries originated in hatcheries.

Table 2.—Summary of estimated harvests of chinook salmon in the Ketchikan, Sitka, and Juneau marine boat sport fisheries surveyed during 2000.

TOTAL CHINOOK SALMON HARVESTS						
Sport fishery	Time period	Harvest of chinook ≥28"	Harvest of chinook <28"	Combined	SE	Relative precision (α = 0.10)
Ketchikan	4/24–9/24	3,428	93	3,521	413	19%
Juneau	4/24–9/24	4,549	236	4,785	401	14%
Sitka	4/24–9/24	17,230	0	17,230	1,089	10%
Total		25,207	329	25,536	1,232	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	5/27–29, 6/03–04, 6/10–11	433	493	0	0	493	14	14
Juneau Golden North Salmon Derby	8/18–8/20	212	299	0	0	299	33	6
Sitka Salmon Derby	5/27–29, 6/03–04	642	1,810	0	0	1,810	109	11
Petersburg Salmon Derby ^c	5/26–5/29	329	329 ^c	0	0	329 ^c	0	

^a Includes entered and take-home harvests.

^b (Total derby harvest/total area harvest) * 100.

^c Number taken home was not estimated.

Only 9% of the chinook salmon harvest in Sitka came from Alaska hatcheries, while the overall hatchery contribution was 30%. About half 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 1% from non-Alaskan hatcheries. About 59% of the Alaska hatchery chinook salmon taken in Ketchikan originated from the Whitman Lake hatchery. About 58% of the chinook salmon harvest in the Juneau boat fishery was of Alaska hatchery origin, with most from Gastineau and Hidden Falls hatcheries. 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, wild stock recoveries were expanded to estimate contributions. Nine tagged chinook salmon from the Unuk River wild stock were recovered in Ketchikan; 3 tagged

chinook salmon from the Taku River wild stock were recovered in Juneau; and 3 Unuk River and 1 Columbia River (Washington) wild stock tags were recovered in Sitka (Appendices A12, A13, and A14).

Of the 425 chinook salmon examined for clipped adipose fins in Petersburg, about 41% were estimated to be from Alaska hatcheries with Crystal Lake hatchery contributing about 37% (Appendix A15). About 18% of the 186 chinook salmon sampled from the Wrangell fishery came from releases from Crystal Lake hatchery at Earl West Cove (Appendix A16). Overall, 65% of the 956 chinook salmon sampled in Craig/Klawock came from hatcheries, but only 4% of those were from Alaska (Appendix A17). Of the 378 chinook salmon examined at Yakutat (Appendix A18), 27% were estimated to be hatchery fish with only 6% from Alaska hatcheries. Only a small fishery for chinook salmon took place at

Table 3.—Contributions of hatchery chinook salmon to the Ketchikan, Sitka, and Juneau marine boat sport fisheries of Southeast Alaska, 24 April–24 September 2000.

Region or hatchery	Marine boat sport fishery			Total
	Juneau	Ketchikan ^a	Sitka	
British Columbia	12	60	1,255	1,327
Idaho	0	0	1	1
Oregon	0	0	647	647
Washington	25	5	1,689	1,719
Non-Alaskan total	37	65	3,592	3,694
	SE	26	576	577
Alaska				
Crystal Lake	42	0	43	85
Crystal Lake/Earl West Cove	0	0	30	30
Crystal Lake/Neets Bay	0	240	36	276
Deer Mountain	0	116	0	116
Gastineau	2,194	0	0	2,194
Hidden Falls	488	0	190	678
Little Port Walter	44	0	38	82
Medvejie	0	0	776	776
Neets Bay	0	0	37	37
Sheldon Jackson	0	0	115	115
Tamgas Creek	0	377	94	471
Whitman Lake	0	1,050	198	1,248
Alaskan total	2,768	1,783	1,557	6,108
	SE	434	277	632
Relative precision (%) ^b	15	17	3	4
Total all areas	2,805	1,848	5,149	9,802
	SE	435	660	873
Relative precision (%) ^b	15	17	6	6
Chinook salmon harvest	4,785	3,521	17,230	25,514
	SE	401	1,089	1,232
% Alaska hatchery	58	51	9	24
% total hatchery	59	52	30	38

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

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

False Outer Point near Juneau, and none of the 36 chinook salmon sampled were adipose clipped.

In total, 1,017 chinook salmon were successfully aged from the Ketchikan, Juneau, Petersburg, and Wrangell fisheries (Table 4; Appendix A19). The age composition of chinook salmon sampled at the various ports is usually post-season stratified into spring (24 April–2 July) and summer (3 July–24 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 24 April–18 June, than during the remainder of the season; i.e., from 19 June–24 September. Therefore, we used a modified temporal stratification of spring (24 April–18 June) and summer (19 June–24 September) for Ketchikan age composition analysis.

Only 4% 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 area produce age-0. chinook salmon. Saltwater ages varied considerably; all of the chinook salmon sampled during the Juneau Golden North Salmon Derby were age-.3 or less, whereas only 48% of chinook salmon sampled in the Petersburg fishery

Table 4.—Summary of the age composition of chinook salmon sampled in selected marine sport fisheries in Southeast Alaska during 2000.

FRESHWATER AGE COMPOSITION						
Sport fishery	Period	Age 0.		Age 1. or more		Total sampled
		Sample size	Percent	Sample size	Percent	
Ketchikan	4/24–6/18 ^a	19	7	263	93	282
	6/19–9/24	10	6	143	94	153
Juneau non-derby	4/24–7/02	6	2	345	98	351
	7/03–9/24	0	0	84	100	84
Juneau Derby	8/18–20	1	2	53	98	54
Petersburg	4/24–7/02	1	2	57	98	58
Wrangell	4/24–7/02	1	3	34	97	35
Total		38	4	979	96	1,017

SALTWATER AGE COMPOSITION						
Sport fishery	Period	Age .3 or less		Age .4 or more		Total sampled
		Sample size	Percent	Sample size	Percent	
Ketchikan	4/24–6/18 ^a	251	89	31	11	282
	6/19–9/24	147	96	6	4	153
Juneau non-derby	4/24–7/02	279	79	72	21	351
	7/03–9/24	82	98	2	2	84
Juneau Derby	8/18–20	54	100	0	0	54
Petersburg	4/24–7/02	28	48	30	52	58
Wrangell	4/24–7/02	26	74	9	26	35
Total		867	85	150	15	1,017

^a Ketchikan seasonal strata modified to 4/24–6/18 and 6/19–9/24 due to Ketchikan derby fish being sampled disproportionately high during late May to mid-June 2000.

were age-.3 or less. Mean length-at-age of sampled chinook salmon varied only slightly among the fisheries surveyed (Appendix A20). In general, fish of a given age were smaller in the northern Juneau fishery than in the Ketchikan fishery at the south end of the region. Sample sizes in the other fisheries were small, but generally also fit in with a north-south trend of increasing fish size at age.

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 97% mature in the Juneau fishery to a low of 83% mature in the Petersburg fishery. Very little difference was noted in maturity by sex.

The estimated harvest of large wild mature chinook salmon in the Juneau fishery from 24 April through 18 June totaled 922 (SE = 188). Most of these are assumed to be of Taku River

origin (Appendix A13). Another 352 (SE = 144) were taken in the biweek from 19 June through 2 July when a tagged chinook salmon from the Taku River was also recovered. Due to the relatively small harvests, relative precision ($\pm 31\%$) of the wild mature spring harvest of 1,274 (SE = 237) chinook salmon in the Juneau fishery did not meet the goal of $\pm 20\%$.

COHO SALMON FISHERIES

Harvests of coho salmon in the Ketchikan, Sitka, and Juneau fisheries totaled an estimated 64,985 fish (SE = 5,111) (Table 6). The only monitored derby in which coho salmon were heavily targeted was the Juneau Golden North Salmon Derby, where an estimated 1,856 coho salmon (SE = 246) were taken during this event (Appendix A2).

Harvests of hatchery coho salmon were estimated from an overall sample of 33% of the coho salmon harvest (Appendix A21). Estimates of hatchery and tagged wild stock coho contributions by tag code and time period are presented in

Table 5.–Summary of estimated maturity of chinook salmon in the spring (through 2 July) Ketchikan, Juneau, Petersburg, and Wrangell marine boat sport fisheries, 2000.

Sport fishery	Statistic	Males		Females		Total ^a	
		Mature	Immature	Mature	Immature	Mature	Immature
Ketchikan	Sample size	107	12	87	9	194	23
	Percent	90	10	91	9	89	11
Juneau	Sample size	90	2	88	2	396	13
	Percent	98	2	98	2	97	3
Petersburg	Sample size	19	7	36	4	55	11
	Percent	73	27	90	10	83	17
Wrangell	Sample size	9	1	29	1	38	2
	Percent	90	10	97	3	95	5
Total	Sample size	225	22	240	16	683	49
	Percent	91	9	94	6	93	7

^aTotal includes unsexed fish.

Table 6.–Summary of estimated catch and harvest of coho salmon in the Ketchikan, Sitka, and Juneau marine boat sport fisheries, 24 April–24 September 2000.

Sport fishery	Total harvest		Total catch		% retained
	Estimate	SE	Estimate	SE	
Ketchikan	14,778	2,315	18,074	2,653	82%
Juneau	11,960	2,064	12,221	2,141	98%
Sitka	38,247	4,062	39,454	4,221	97%
TOTAL	64,985	5,111	69,749	5,426	93%

Appendix A22 for the Ketchikan fishery, Appendix A23 for the Juneau fishery, and Appendix A24 for the Sitka fishery.

About 235 (SE = 83) hatchery coho salmon taken in Sitka and Ketchikan originated in British Columbia hatcheries, but most of the 17,767 (SE = 2,317) hatchery coho salmon taken in the combined Ketchikan, Sitka, and Juneau fisheries were from Alaska (Table 7). Hatchery contributions were 20%, 19%, and 54% of the total harvest in Juneau, Sitka, and Ketchikan, respectively. The Neets Bay hatchery contributed the most coho salmon to the Ketchikan fishery, while Gastineau contributed the most coho salmon to the Juneau fishery. Nine different hatcheries contributed more than 200 fish to the Sitka fishery

with Neets Bay hatchery being the largest contributor.

About 29% of the 6,773 coho salmon examined for clipped adipose fins from the Craig/Klawock fishery were from Alaska hatcheries with Klawock hatchery contributing about 20% (Appendices A21 and A25). Very few coho salmon were sampled in Petersburg and Wrangell, but Crystal Lake hatchery contributed to the Petersburg fishery (Appendices A21 and A26) and Burnett Inlet hatchery contributed to the Wrangell fishery (Appendices A21 and A28). Less than 1% of the sampled harvest of 2,023 coho salmon in Yakutat originated from hatcheries (Appendices A21 and A28).

Additionally, some recoveries of coho salmon from wild-tagged indicator stocks were obtained in the Ketchikan, Juneau, Sitka, Craig/Klawock and Yakutat fisheries (Appendices A22, A23, A24, A25, and A28). Contributions of these wild-tagged stocks were estimated when an estimate of the tagging fraction, θ_c , was available, if not available, recoveries were expanded only by the sampling fraction. The sport fishery with the greatest percentage of wild-tagged coho stocks was Juneau, with an estimated 35% of the total coho harvest of 11,960 fish from wild Taku River stocks (Appendix A23).

The weekly harvest per unit of effort (HPUE) for coho salmon in the Ketchikan, Juneau, Sitka, and Craig/Klawock fisheries reached highs of 0.356

Table 7.—Contributions of hatchery coho salmon to the Ketchikan, Sitka, and Juneau marine boat sport fisheries of Southeast Alaska, 24 April–24 September 2000.

Region or hatchery	Marine boat sport fishery			Total
	Juneau	Ketchikan ^a	Sitka	
British Columbia	0	43	192	235
Non-Alaskan total	0	43	192	235
SE	0	33	77	83
Alaska				
Auke Creek	24	0	0	24
Burnett Inlet	0	0	21	21
Crystal Lake	4	0	7	11
Deer Mountain	0	258	0	258
Earl West Cove/Crystal Lake	29	0	82	111
Gastineau	2,030	0	170	2,200
Hidden Falls	311	0	663	974
Klawock River	0	0	495	495
Medvejie	0	0	143	143
Medvejie CIF	0	0	296	296
Nakat Inlet	0	171	299	470
Neets Bay	0	6,514	3,209	9,723
Port Armstrong	0	0	326	326
Sheldon Jackson	0	0	241	241
Tamgas Creek	0	446	980	1,426
Whitman Lake	0	516	297	813
Alaskan total	2,398	7,905	7,229	17,532
SE	506	1,926	1,169	2,309
Relative precision ^b	7	21	5	6
Total all areas	2,398	7,948	7,421	17,767
SE	506	1,927	1,184	2,317
Relative precision ^b	7	21	5	6
Coho salmon harvest	11,960	14,778	38,247	64,985
SE	2,064	2,315	4,062	5,111
Percent Alaska hatchery	20	53	19	27
Percent total hatchery	20	54	19	27

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

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

(SE = 0.023), 0.215 (SE = 0.036), 1.010 (SE = 0.081), and 0.678 (SE = 0.053) coho salmon per angler-hour, respectively (Table 8). The peak in HPUE for coho salmon occurred in early September in Ketchikan and Juneau and in early August in Sitka and Craig/Klawock. Usually, Sitka and Craig/Klawock anglers experienced higher weekly HPUEs for coho salmon than did Ketchikan and Juneau anglers.

BOTTOMFISH FISHERIES

Most bottomfish effort in Southeast Alaska targets Pacific halibut, and an estimated 43,318

(SE = 2,673) Pacific halibut were harvested in Ketchikan, Sitka, and Juneau (Table 9). The estimated harvest of 31,110 in Sitka was more than double the combined Ketchikan and Juneau harvest. 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, and Wrangell, and there was no need for seasonal stratification of the length data. We estimated about 980,700 pounds (net weight) of Pacific halibut were taken in the 3 major ports with about 73% of this poundage landed in Sitka (Table 10). Estimated average net weight (headed and eviscerated) of

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 2000.

Mean harvest of coho salmon per angler-hour of effort								
Weekly period	Ketchikan		Juneau		Sitka		Craig/Klawock	
	HPUE	SE	HPUE	SE	HPUE	SE	HPUE	SE
5/22–5/28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5/29–6/04	0.000	0.000	0.000	0.000	0.001	0.001	0.004	0.003
5/05–6/11	0.000	0.000	0.000	0.000	0.002	0.001	0.023	0.010
6/12–6/18	0.006	0.004	0.000	0.000	0.014	0.005	0.012	0.007
6/19–6/25	0.003	0.001	0.001	0.001	0.013	0.004	0.058	0.015
6/26–7/02	0.057	0.018	0.000	0.000	0.043	0.009	0.067	0.019
7/03–7/09	0.054	0.014	0.001	0.000	0.075	0.018	0.084	0.017
7/10–7/16	0.231	0.062	0.005	0.002	0.297	0.046	0.308	0.062
7/17–7/23	0.073	0.016	0.024	0.006	0.436	0.056	0.311	0.047
7/24–7/30	0.120	0.029	0.026	0.007	0.536	0.057	0.386	0.068
7/31–8/06	0.103	0.027	0.049	0.016	0.846	0.058	0.678	0.053
8/07–8/13	0.130	0.030	0.124	0.015	1.010	0.081	0.421	0.055
8/14–8/20	0.184	0.033	0.068	0.005	0.726	0.097	0.532	0.071
8/21–8/27	0.205	0.034	0.180	0.019	0.642	0.081	0.213	0.054
8/28–9/03	0.246	0.020	0.215	0.036	0.572	0.144	0.192	0.060
9/04–9/10	0.356	0.023	0.177	0.026	0.058	0.008	0.094	0.094
9/11–9/17	0.354	0.032	0.136	0.045	0.242	0.101		
9/18–9/24	0.176	0.024	0.091	0.032	0.289	0.149		
All periods	0.134	0.006	0.052	0.003	0.280	0.014	0.277	0.015

Table 9.–Summary of estimated catch and harvest of Pacific halibut, rockfish, and lingcod in the Ketchikan, Sitka, and Juneau marine boat sport fisheries, 24 April–24 September 2000.

	Sport fishery	Total catch	SE	Harvest	SE	% retained
Pacific halibut	Ketchikan	7,037	843	6,039	663	86
	Juneau	7,875	646	6,169	532	78
	Sitka	45,210	3,783	31,110	2,535	69
	Total	60,122	3,929	43,318	2,673	72
Rockfish	Ketchikan	10,956	1,062	4,784	550	44
	Juneau	1,756	239	1,591	225	91
	Sitka	38,674	2,168	17,752	1,308	46
	Total	51,386	2,426	24,127	1,437	47
Lingcod	Ketchikan	1,093	256	513	109	47
	Juneau	78	44	66	43	85
	Sitka	4,458	434	2,269	257	51
	Total	5,629	506	2,848	283	51

Table 10.—Average length (cm), average net weight (lb), and estimated number and total net weight (lb) of Pacific halibut harvested in Southeast Alaska marine boat sport fisheries during 2000.

Sport fishery	Class	Sample size	Mean length (cm)	SE	Average net weight (lbs.)	SE	Relative precision ^b	Estimated harvest	
								Number ^c	Net weight (thousand lb) ^c
Ketchikan									
	Charter	682	98.8	0.8	24.1	0.8	5%		
	Non-charter	337	98.7	1.4	25.2	1.3	8%		
	Overall ^a	1,021	98.7	0.7	24.5	0.7	5%	6,039	148.0
Juneau									
	Charter	149	89.0	1.2	15.8	0.8	8%		
	Non-charter	411	87.1	1.4	19.5	1.2	10%		
	Overall ^a	560	87.6	1.1	18.5	0.9	8%	6,170	114.1
Sitka									
	Charter	410	95.6	1.2	23.3	1.4	10%		
	Non-charter	120	93.8	2.4	22.5	2.3	17%		
	Overall ^a	530	95.2	1.1	23.1	1.2	9%	31,108	718.6
Petersburg/Wrangell									
	Charter	718	104.4	0.8	27.6	0.9	5%		
	Non-charter	725	92.5	0.9	20.4	0.8	6%		
	Overall ^a	1,443	98.4	0.6	24.0	0.6	4%		
Craig/Klawock									
	Charter	950	81.9	0.6	13.4	0.5	6%		
	Non-charter	383	85.4	1.1	15.9	0.9	9%		
	Overall ^a	1,333	82.9	0.5	14.1	0.4	5%		
Yakutat									
	Charter	1,226	116.7	0.8	41.3	0.9	4%		
	Non-charter	150	91.0	1.9	19.3	1.6	14%		
	Overall ^a	1,376	113.9	0.7	38.9	0.8	3%		
Total								43,317	980.7

^a Includes data where class was not identified, therefore total may be more than the sum by class.

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

^c Estimates of harvest were only determined in Ketchikan, Juneau, and Sitka, therefore, total net weight estimates for other areas were not calculated. Ketchikan estimates are biased low because a major access site (Clover Pass) was not sampled.

harvested Pacific halibut ranged from 14.1 pounds in Craig/Klawock to 38.9 pounds in the Yakutat fishery. Overall, average net weights in all the sampled ports were estimated to within $\pm 10\%$ of the true value 90% of the time. But despite exceeding our target sample sizes in most ports and classes, some class specific estimates fell short of our objectives (relative precision = 8% for charter in Juneau, 10% for charter and 17% for non-charter in Sitka, 6% for charter in Craig/Klawock, and 14% for non-charter in Yakutat).

Although rockfish are not a primary target of most Southeast Alaska sport anglers, an estimated 51,386 (SE = 2,426) rockfish were caught in the combined Ketchikan, Sitka, and Juneau fisheries (Table 9). Only 47% (24,127, SE = 1,437) of the rockfish caught were retained. Retention in Juneau, where few rockfish were caught, was much higher at 91%.

Major species composition of the rockfish harvest was estimated for the Ketchikan and Sitka fisheries (Table 11). Yelloweye rockfish constituted nearly 58% of the harvest in Sitka but

Table 11.—Rockfish composition in Ketchikan and Sitka marine boat sport fisheries during 2000. (An estimated 1,591 rockfish harvested in the Juneau marine boat sport fishery were not identified by individual species).

Rockfish species	Ketchikan		Sitka	
	Harvest ^a	%	Harvest ^a	%
Quillback	1,792	38	790	5
Dusky	309	6	1,239	7
Copper	172	4	59	0
Black	102	2	4,241	24
Yelloweye	1,792	38	10,288	58
Silvergry	163	3	335	2
Other nonpelagic	294	6	374	2
Other pelagic	160	3	426	2
Total	4,784		17,752	

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

only 38% of the harvest in Ketchikan. Quillback rockfish *S. maliger* (38%) were tied with yelloweye rockfish as the most frequently taken species in Ketchikan, but constituted only about 5% of the rockfish harvest in Sitka. Black rockfish *S. melanops* were the second most commonly harvested species in Sitka at 24%. Other rockfish species in the sport harvest included copper *S. caurinus*, dusky *S. ciliatus*, and silvergrey *S. brevispinis*, along with a variety of other unidentified species.

An estimated 2,269 (SE = 257) lingcod were harvested in Sitka, 513 (SE = 109) in Ketchikan, and 66 (SE = 43) in Juneau (Table 9). Except for males in Sitka and both males and females in Ketchikan, sample sizes for lingcod length measurements were adequate to obtain precision goals of $\pm 10\%$ for round weight in all sampled fisheries and even by sex by fishery (Table 12). Over 80% of the lingcod sampled in Sitka and Yakutat were female, while samples from Craig/Klawock had slightly more males (58%) than females. In all areas, average total length and round weight of females were much greater than males. The 30.6 lb average weight of lingcod taken in Sitka was highest because a lingcod minimum size limit of 38 inches for charter and nonresident anglers was in effect in

the Sitka area for most of the fishing season. Lingcod taken in Yakutat (25.6 lb average) were much larger than those taken in Craig (13.2 lb average).

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 17,990 (SE = 4,625). Only 1,675 (SE = 219) pink salmon were harvested in Sitka and only 1,895 (SE = 306) in Juneau. Retention rates for pink salmon were 69% in Juneau, 53% in Sitka, and 81% in Ketchikan. Harvests of both chum and sockeye salmon were much less, totaling 7,102 chum salmon and 181 sockeye salmon for the three fisheries combined. Juneau anglers took most (69%) of the 306 Dolly Varden harvested.

SHELLFISH FISHERIES

Shellfish effort and harvests of Dungeness, Tanner, and king crab were estimated for Ketchikan and Juneau (Table 14). Shellfish effort in boat-days for the Juneau fishery was 5,209 boat-days, more than three times that estimated for the Ketchikan fishery (1,739 boat-days). A popular red king crab personal use fishery in the Juneau area is the main reason for the high effort there. Substantial numbers of Dungeness, Tanner and king crab were harvested in the Juneau fishery, but no king crab or Tanner crab were taken in the Ketchikan area. Shrimp harvest was estimated only in Ketchikan (156,990 shrimp, SE = 9,538).

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

Table 12.—Average total length (in cm) and round weight (in pounds) by sex of lingcod harvested in sampled sport fisheries of Southeast Alaska during 2000.

Sport fishery	Sex	Sample size	Percent by sex	Mean TL (cm)	SE	Avg. round wt. (lb)	SE	Relative precision ^a
Craig/Klawock	Males	224	58	71.3	0.71	9.0	0.27	5%
	Females	162	42	89.4	1.51	19.4	0.92	8%
	All ^b	412		78.6	0.84	13.2	0.47	6%
Sitka	Males	29	8	88.0	3.36	18.3	2.09	19%
	Females	317	92	109.1	0.53	32.1	0.47	2%
	All ^b	365		106.9	0.65	30.6	0.51	3%
Yakutat	Males	226	18	78.8	0.82	12.3	0.37	5%
	Females	999	82	105.3	0.29	28.7	0.23	1%
	All ^b	1,252		100.2	0.41	25.6	0.27	2%
Ketchikan	Males	16	38	73.5	4.29	11.0	2.47	37%
	Females	26	62	90.9	4.63	21.7	3.26	25%
	All ^b	75		81.8	2.65	16.3	1.65	17%

^a Relative precision (alpha of 0.10) = (SE*1.645/estimate)*100. A precision of $\pm 10\%$ at 0.10 alpha level was the sampling goal in Craig/Klawock, Sitka, and Yakutat.

^b Includes data where sex was not determined; therefore, totals greater than the sum by sex.

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 24 April–24 September 2000.

	Sport fishery	Total catch	SE	Harvest	SE	% retained
Pink salmon	Ketchikan	22,091	5,530	17,990	4,625	81
	Juneau	2,735	384	1,895	306	69
	Sitka	3,175	387	1,675	219	53
	Total	28,001	5,557	21,560	4,640	77
Chum salmon	Ketchikan	4,194	758	3,296	649	79
	Juneau	3,163	721	2,185	428	69
	Sitka	2,001	437	1,621	372	81
	Total	9,358	1,134	7,102	861	76
Sockeye salmon	Ketchikan	56	24	56	24	100
	Juneau	32	18	32	18	100
	Sitka	93	47	93	47	100
	Total	181	56	181	56	100
Dolly Varden	Ketchikan	0	0	0	0	0
	Juneau	542	123	211	60	39
	Sitka	116	86	95	85	82
	Total	658	150	306	104	47

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 2000.

Sport fishery	Time period	Effort		Harvest			
		Boat-days	SE	Dungeness crab	Tanner crab	King crab	Shrimp
Ketchikan	4/24–9/24	1,739	184	5,070	0	0	156,990
Juneau ^a	4/24–9/24	5,209	336	5,716	791	6,583	
Total		6,948	382	10,786	791	6,563	156,990

fishery during 2000 (as in 1997, 1998 and 1999), 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 1997–2000.

Effort, harvest and total catch estimates from the three creel surveys reported here should not be considered to encompass all of these three fisheries. Overall statistics are best estimated by the SWHS (Howe et al. 2001). 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 which were not sampled because they were not observed by creel samplers. As previously discussed, omission of the Clover Pass access location in Ketchikan during 2000 had the largest impact. Mills and Howe (1992) reported that SWHS estimates were generally about 10% higher than creel survey estimates for comparable surveys from the same geographic areas in Southeast Alaska.

Onsite creel surveys of the Juneau marine boat sport fishery have been conducted every year since 1960 (Schmidt et al. 1973; Schmidt and Robards 1974, 1975; Mattson 1975; Robards 1976, 1977, 1978; Marriott et al. 1979; Schwan 1980, 1981, 1982; Neimark and Schwan 1983; Neimark 1984, 1985; Mecum and Suchanek 1986, 1987; Bingham et al. 1988; Suchanek and

Bingham 1989, 1990, 1991, 1992; and Hubartt et al. 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000). These reports also present results from other surveys that have been done more sporadically. The Ketchikan fishery has been monitored for the entire spring and summer season since 1984, except for a one-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 1992–2000. 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; and in Petersburg in 1995. Additional catch sampling results are presented in these reports for Wrangell from 1995–2000, Petersburg from 1996–2000, and Craig from 1993–2000. 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, however, in comparison to effort during the middle of the season. Among-year comparisons are generally valid, but the variation in survey periods should be noted. Variances for the harvest estimates have been generated since 1987, but we have not done detailed statistical

comparisons with prior years, as we have primarily examined general trends. 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 (Table 15 and Figure 2). Total effort in the Juneau fishery during 2000 was 9% lower than in 1999, and 17% lower than the 1983–1999 average of 348,692 angler-hours. In Ketchikan, total 2000 effort was down 4% from 1999, and 34% below the 1984–1999 average of 245,082 angler-hours. Effort in the Sitka fishery decreased slightly, as total effort during 2000 was 9% lower than in 1999, but 34% higher than the 1987–1999 average of 155,822 angler-hours.

Estimated effort for both salmon and bottomfish was below average in Juneau and Ketchikan in 2000 (Table 15). In Juneau and Ketchikan, 77% and 76% of the 2000 effort targeted salmon, respectively; near average for both fisheries. In the Sitka fishery, bottomfishing effort was the highest on record while salmon fishing effort was below 1997–1999 levels. The shift to bottomfishing effort in Sitka was probably due in part to restrictions in the sport fishery for chinook salmon (annual limit for nonresidents reduced from 4 and bag limit in the spring reduced from 2 to 1). In the Juneau and Ketchikan fisheries, harvests of chinook salmon were much lower, and, therefore, chinook restrictions probably had little impact on the distribution of effort between salmon and bottomfish.

CHINOOK SALMON FISHERIES

Total harvest of chinook salmon in the Juneau marine boat fishery has shown little trend since 1983 although 1998 to 2000 harvests were some of the lowest for the period (Table 16 and Figure 3). The 2000 Juneau harvest of 4,785 chinook salmon was 68% of average, and the Juneau Golden North Derby harvest was the lowest since 1993. The Ketchikan chinook harvest increased to a peak in 1991, and then steadily declined to 16% of the 1991 peak in 1998. In 2000, the

Ketchikan harvest of 3,521 remained well below the 1984–99 average of 5,068. Chinook harvests in the Sitka fishery generally increased from 1992 to 1997 but have since been slowly declining. The 2000 Sitka harvest of 17,230 was slightly lower than in 1999, but 27% above average.

Hatchery contributions of chinook salmon to the Juneau and Ketchikan fisheries increased steadily during the late 1980s but remained fairly consistent since about 1990 (Table 17 and Figure 4). In 2000, a record 58% of the 2000 chinook salmon harvest in Juneau originated in Alaska hatcheries, compared to the 1983–99 average of 22%. An estimated 51% of the 2000 chinook salmon harvest in Ketchikan originated in Alaskan hatcheries, a percentage also substantially higher than the average of 37%. Due to smaller than average non-Alaskan hatchery contributions in Ketchikan, the total hatchery contribution of 52% was only slightly higher than the average of 48%. 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, whereas non-Alaskan hatchery fish do count toward the quota.

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 2000, the total hatchery percentage of 30% in Sitka was below average, as was the Alaska hatchery percentage of 9%.

COHO SALMON FISHERIES

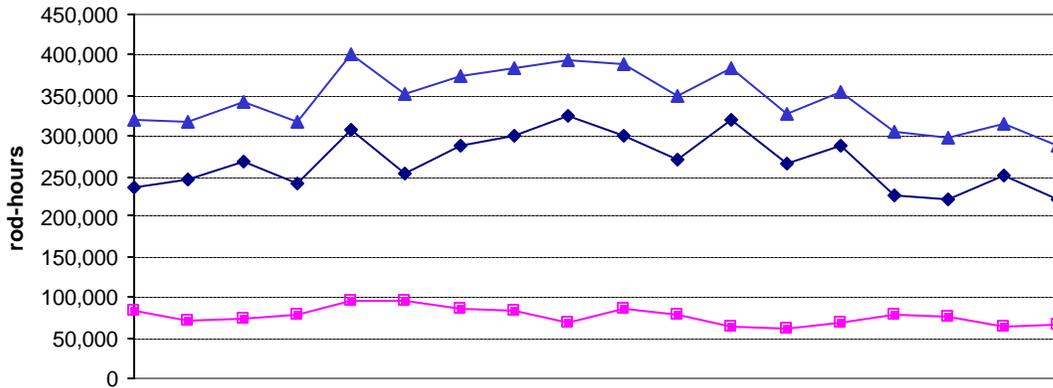
The coho harvest in Southeast Alaska during 2000 was below average in Juneau and Ketchikan (Table 18). The 2000 harvest of 14,778 coho salmon in the Ketchikan area was 36% below the average of 23,046, and the Juneau area harvest of 11,960 coho salmon was 40% below the average of 19,838. The Juneau Golden North Salmon derby harvest of 1,856 coho salmon was 38% below the average of 2,974 and the lowest coho derby harvest since 1988. The Sitka area harvest of 38,247 coho salmon was only 52% of the 1999 harvest, but was still 65% above average.

Harvests of coho salmon in the Juneau, Ketchikan and Sitka areas are increasingly supplemented by hatchery fish (Table 19). Hatchery coho salmon

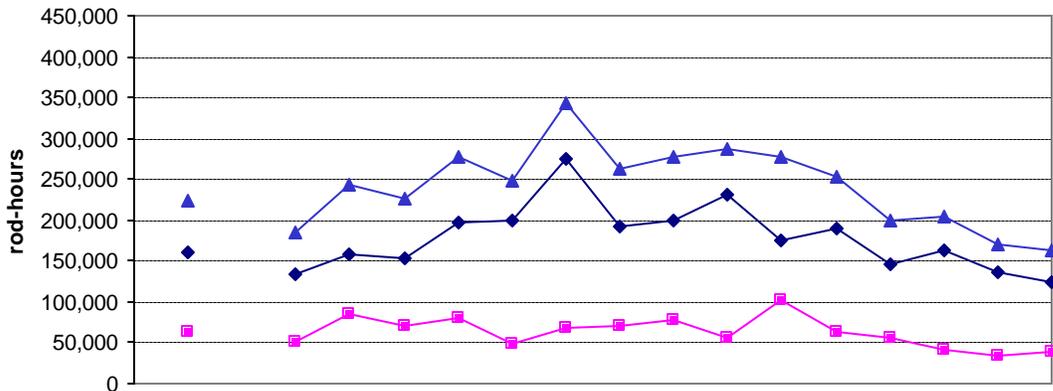
Table 15.–Estimated angler effort in the Juneau, Ketchikan and Sitka marine boat sport fisheries as determined by onsite creel surveys for comparable sample periods, 1983–2000.

Sport fishery	Year	Survey dates	Salmon-hours		Bottomfish-hours		Total angler-hours	
			Estimate	Percent	Estimate	Percent		
Juneau	1983	4/17–10/01	236,344	74	84,259	26	320,603	
	1984	4/29–9/29	246,732	77	72,090	23	318,822	
	1985	4/15–9/29	269,077	79	72,381	21	341,458	
	1986	4/14–10/05	240,921	76	77,165	24	318,086	
	1987	3/16–9/27	307,124	76	94,658	24	401,840	
	1988	4/11–9/25	254,196	72	96,188	27	351,247	
	1989	4/24–9/24	287,676	77	85,354	23	373,504	
	1990	4/23–9/23	300,167	78	83,106	22	383,976	
	1991	4/15–9/29	324,788	82	69,475	18	394,275	
	1992	4/27–9/27	301,588	78	84,718	22	388,498	
	1993	4/26–9/26	270,838	77	78,820	23	349,965	
	1994	4/25–9/25	320,385	83	63,398	16	384,528	
	1995	4/24–9/24	265,923	81	60,158	18	326,807	
	1996	4/22–9/22	287,481	81	67,555	19	355,381	
	1997	4/28–9/28	226,921	74	78,435	26	305,097	
	1998	4/27–9/27	221,598	75	75,288	25	297,229	
	1999	4/26–9/26	252,169	80	63,578	20	316,442	
	Average		271,408	78	76,860	22	348,692	
	2000	4/24–9/24	222,710	77	65,190	23	288,525	
	% of average		82		85		83	
Ketchikan	1984	4/29–9/29	161,100	72	62,625	28	223,725	
	1985	-----no comparable survey-----						
	1986	4/28–9/28	133,518	72	51,208	28	184,726	
	1987	4/20–9/27	157,306	65	84,954	35	242,274	
	1988	4/11–9/25	153,086	68	71,611	32	225,779	
	1989	4/24–9/24	195,974	71	79,958	29	276,516	
	1990	5/07–9/23	199,063	80	49,347	20	248,618	
	1991	4/29–9/29	275,856	80	67,842	20	343,698	
	1992	4/27–9/27	192,269	73	69,366	27	261,635	
	1993	4/26–9/26	198,960	72	78,002	28	276,969	
	1994	4/25–9/25	230,372	80	56,092	20	286,464	
	1995	4/24–9/24	175,765	63	101,381	37	277,146	
	1996	5/6–10/6	188,947	74	62,673	25	253,977	
	1997	4/28–9/28	144,735	72	55,242	28	199,977	
	1998	4/27–9/27	163,855	80	41,194	20	205,063	
	1999	4/26–9/26	136,284	80	33,359	20	169,664	
		Average		180,473	74	64,324	26	245,082
	2000	4/24–9/24	124,005	76	38,340	24	162,344	
	% of average		69		60		66	
Sitka	1987	4/20–9/13	33,130	56	24,266	41	58,814	
	1988	4/11–9/25	35,763	65	18,493	34	54,766	
	1989	-----no comparable survey-----						
	1990	no survey						
	1991	no survey						
	1992	5/11–8/30	74,183	64	40,756	35	115,031	
	1993	4/26–9/26	107,184	71	44,480	29	151,829	
	1994	4/25–9/25	123,971	74	43,363	26	168,146	
	1995	4/24–9/24	135,866	72	51,710	28	188,000	
	1996	4/22–9/22	136,585	75	45,075	25	182,513	
	1997	4/28–9/28	145,114	70	61,711	30	207,288	
	1998	4/27–9/27	144,850	71	57,378	28	202,818	
	1999	4/26–9/26	168,793	74	57,899	25	229,012	
		Average		110,544	71	44,513	29	155,822
		2000	4/24–9/24	138,705	66	69,918	33	209,027
	% of average		125		157		134	

Juneau marine boat sport fishery



Ketchikan marine boat sport fishery



Sitka marine boat sport fishery

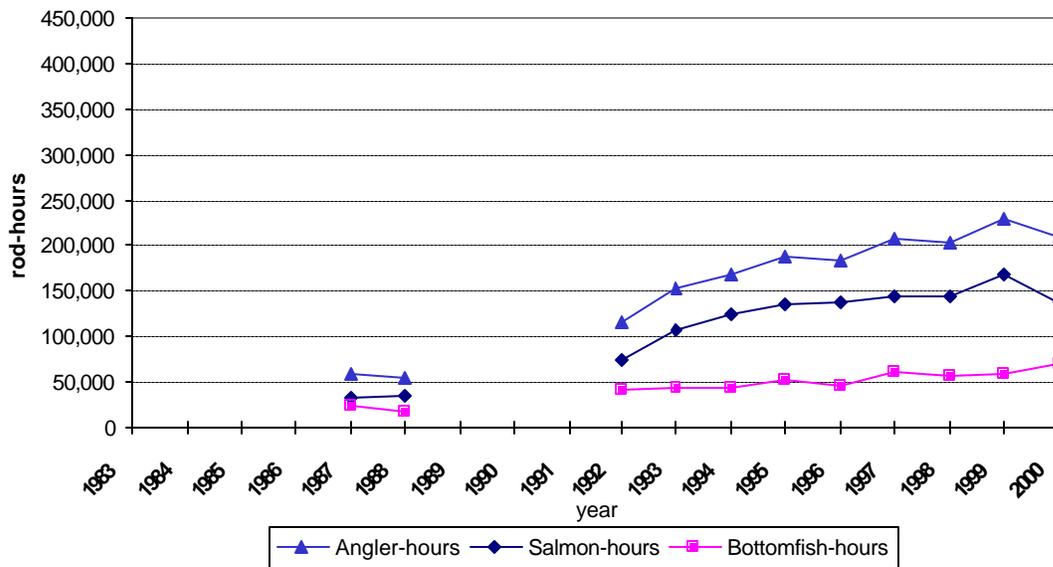


Figure 2.—Estimated effort in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys.

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, 1983–2000.

Year	Juneau ^a	Juneau Golden North Derby	Ketchikan	Sitka
1983	4,316	872		
1984	6,474	855	1,820	
1985	8,133	1,222		
1986	5,050	1,073	5,006	
1987	8,893	1,005	4,723	2,466
1988	5,683	677	5,245	3,177
1989	7,074	609	5,752	
1990	7,335	493	9,869	
1991	12,234	522	12,730	
1992	7,114	603	5,670	9,588
1993	8,337	243	5,277	13,779
1994	5,819	678	3,374	13,139
1995	6,371	399	3,499	16,048
1996	8,464	784	2,931	10,078
1997	7,952	472	3,245	25,850
1998	4,128	409	2,072	20,914
1999	6,150	506	4,814	20,804
Average	7,031	672	5,068	13,584
2000	4,785	299	3,521	17,230
% of average	68	45	69	127

^a Includes Juneau Golden North Salmon Derby harvest.

constituted 20% of the 2000 harvest in Juneau, and double the average of 10%. The Ketchikan fishery has been much more dependent upon hatchery coho salmon than has the Juneau fishery. About 35% of the 1984–99 Ketchikan harvest originated in hatcheries (Table 19). In 2000, the estimated coho hatchery harvest of 7,948 in Ketchikan was about average, but the hatchery contribution percentage of 54% was the highest recorded. The contribution of 7,421 hatchery-produced coho salmon to the Sitka fishery was the third highest harvest recorded, but about average in terms of percent of harvest (19%).

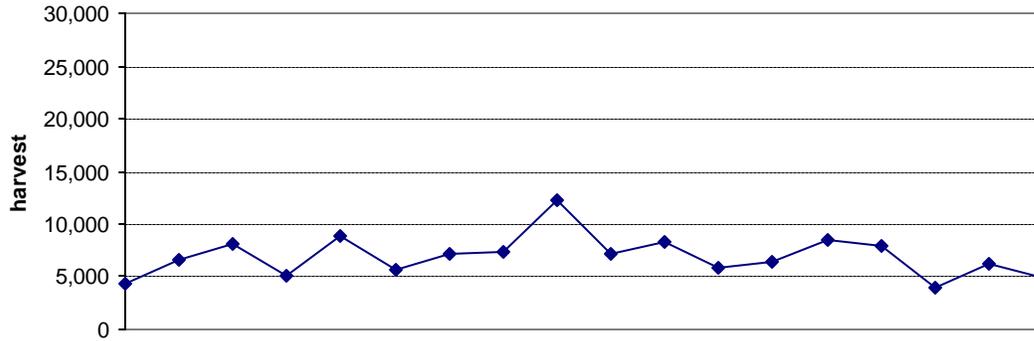
BOTTOMFISH FISHERIES

The 2000 harvest of 6,169 Pacific halibut in the Juneau fishery was the lowest since the 826 recorded in 1978 (Marriott et al. 1979) and only 55% of the 1983–99 average of 11,143 (Table 20). The Ketchikan halibut harvest of 6,039 was only 61% of the 1984–99 average of 9,836 and the second lowest recorded over this period. The numbers of Pacific halibut released in the Juneau

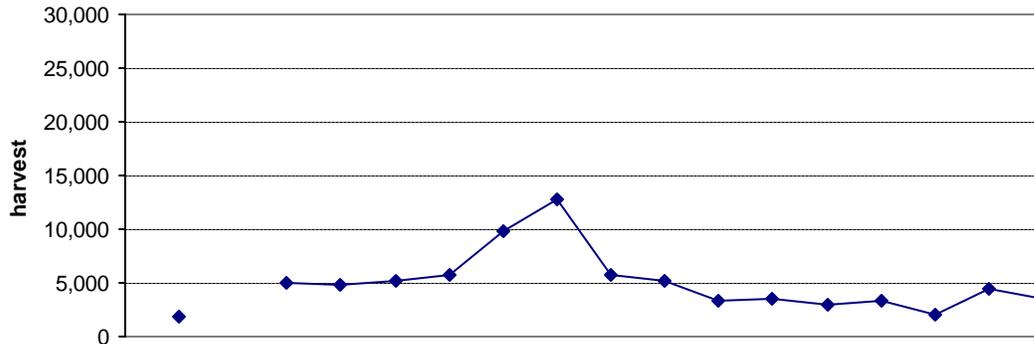
and Ketchikan fisheries were similarly poor. The retention rate of 78% for Pacific halibut in Juneau was above the average of 72%, and the retention rate in Ketchikan (86%) was above the 1984–99 average of 79%. The decrease in Pacific halibut harvest in Ketchikan may in part be due to decreased bottomfish effort since 1995 (Figure 2 and Table 15), while in Juneau the fairly consistent bottomfish effort since 1983 coupled with decreasing harvests might indicate problems with localized depletion of Pacific halibut stocks.

The Sitka harvest of 31,110 Pacific halibut in 2000 was the highest recorded and more than double the average harvest of 14,832 (Table 20). The Sitka retention rate of 69% in 2000 was slightly above average. The creel survey estimates of Pacific halibut harvest in Sitka have increased from a consistent level of 12,000 to 13,200 fish during 1992–96 to harvest levels ranging from 19,600 to 31,100 fish during 1997–2000, even though bottomfish effort in Sitka increased only slightly during 1997–2000 (Figure 2 and Table 15). The increase in Pacific

Juneau marine boat sport fishery



Ketchikan marine boat sport fishery



Sitka marine boat sport fishery

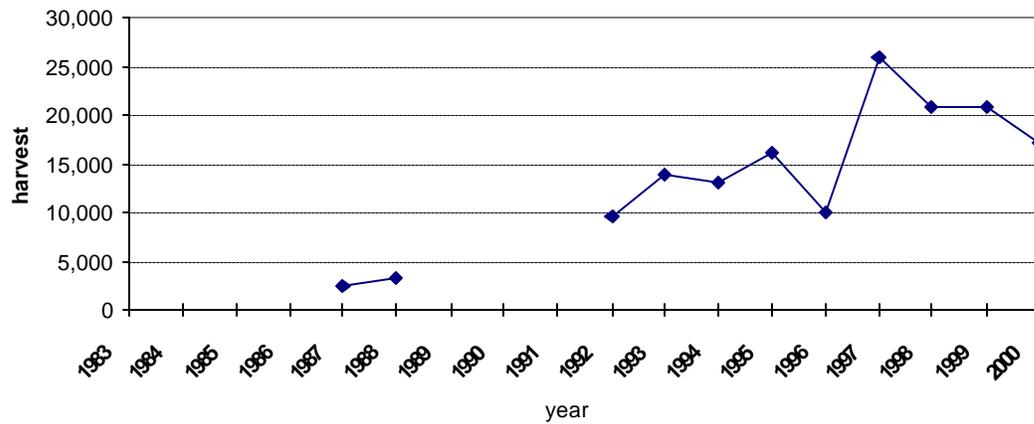


Figure 3.—Estimated harvest of chinook salmon in the Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys.

Table 17.—Estimated contributions of hatchery-produced chinook salmon to Juneau, Ketchikan and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1983–2000.

Year	Juneau				Ketchikan				Sitka			
	Total	% of harvest	Alaska	% of harvest	Total	% of harvest	Alaska	% of harvest	Total	% of harvest	Alaska	% of harvest
1983	46	1	25	1	350	10	233	6				
1984	577	9	444	7	432	24	333	18				
1985	1,037	13	831	10	862	34	838	33				
1986	1,032	20	918	18	2,226	44	1,638	33				
1987	2,060	23	2,015	23	1,409	30	999	21	150	6	53	2
1988	1,210	21	979	17	1,747	33	1,405	27	1,026	32	66	2
1989	1,018	14	865	12	2,992	52	2,082	36				
1990	2,011	27	1,584	22	6,023	61	4,511	46				
1991 ^a	4,279	37	2,957	26	8,373	66	7,035	55				
1992	2,958	42	1,762	25	3,628	64	2,604	46	4,074	42	1,092	11
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
Average	1,841	26	1,564	22	2,457	48	1,854	37	6,364	47	1,792	13
2000 ^b	2,805	59	2,768	58	1,848	52	1,783	51	5,149	30	1,557	9

^a Juneau percentages for 1991 were calculated without including 803 chinook salmon taken in strata which were not sampled for coded wire tags.

^b Ketchikan estimates of total hatchery harvests are biased low because a major access site (Clover Pass) was not sampled.

halibut harvest in Sitka since 1997 coincides with an increased percentage of charter bottomfish effort and corresponding higher HPUE of the charter fishery (Jaenicke and Frenette *Unpublished*). 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 on the outer coast port of Sitka where excellent chinook HPUEs result in charter clients relatively quickly obtaining their chinook salmon annual limits and then targeting bottomfish. The latter would be particularly true during May and June when other salmon species are not yet available in number.

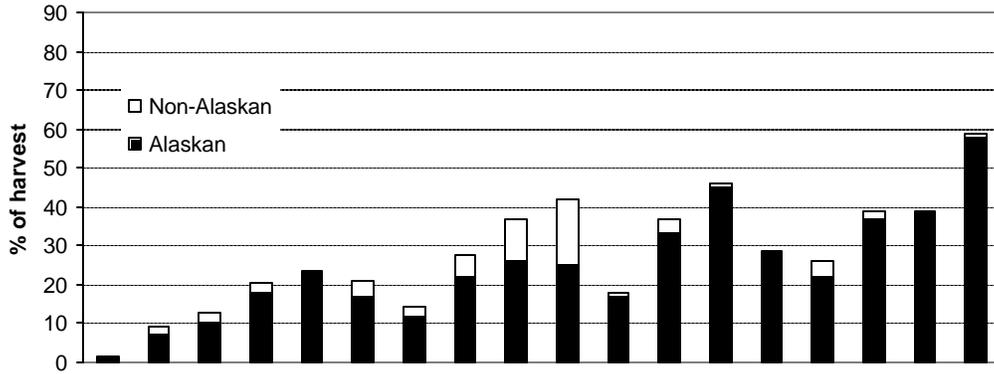
Rockfish harvest in the 2000 Ketchikan fishery (4,784) was only 52% of the 1984–99 average of 9,248 (Table 21), probably due in part to decreased bottomfish effort in Ketchikan since 1995 (Figure 2 and Table 15). Retention of

rockfish at 44% was about the 1986–99 average of 45%. Targeted and non-targeted HPUE and CPUE for rockfish remained below levels of the late 1980's when the rockfish fishery peaked in the Ketchikan area.

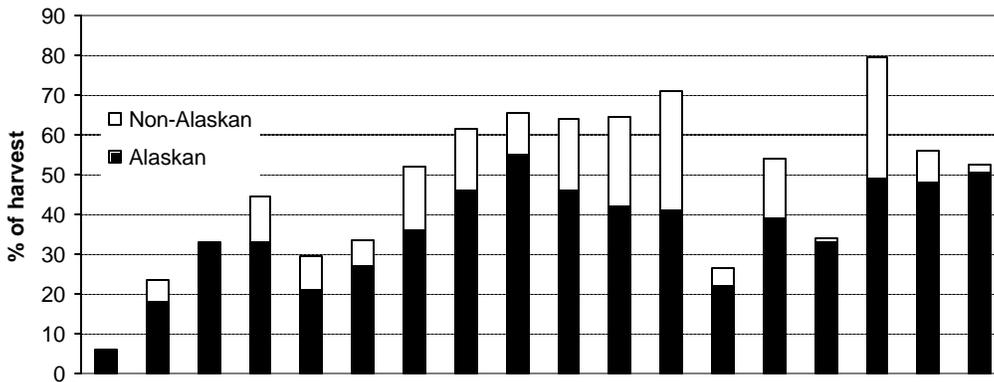
SHELLFISH FISHERIES

Shellfish harvests in the Juneau and Ketchikan areas have been estimated with creel surveys since 1988 (Table 22). In 2000, the estimated shellfish effort of 5,209 boat-days in the Juneau area was above average, as was the harvest of 6,583 king crab. However, the Dungeness crab harvest was the second lowest on record, and the Tanner crab harvest was below average. The decreasing Dungeness crab harvest in Juneau during the last five years corresponds with decreasing commercial harvests in the Juneau area due to weak crab recruitment (Bishop et al. 2001). In Ketchikan, shellfish effort of 1,739

Juneau marine boat sport fishery



Ketchikan marine boat sport fishery



Sitka marine boat sport fishery

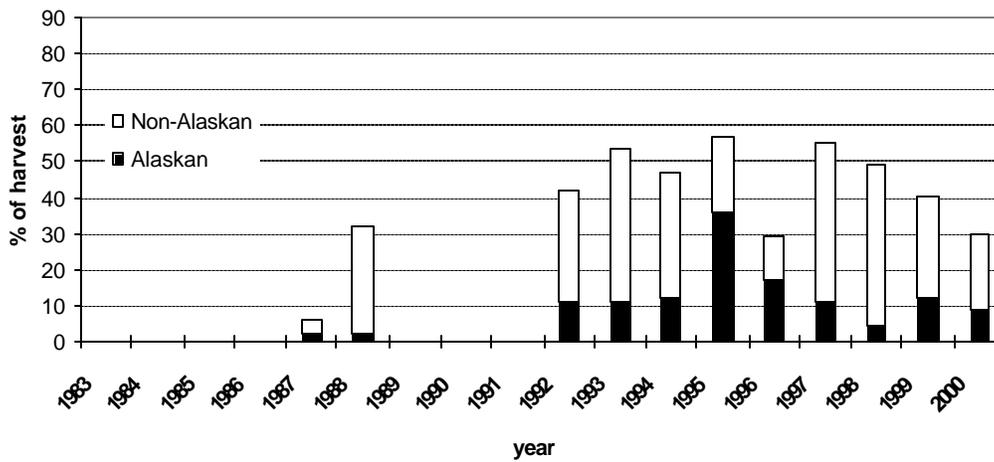


Figure 4.—Estimated contributions of hatchery-produced chinook salmon to Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys.

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, 1983–2000.

Year	Juneau ^a	Juneau Golden North Derby	Ketchikan	Sitka
1983	12,662	2,964	---	
1984	10,100	1,594	14,231	
1985	17,138	2,919	---	
1986	9,763	367	20,814	
1987	17,610	3,056	10,464	1,185
1988	12,017	1,453	5,525	616
1989	23,819	3,173	10,781	
1990	26,343	1,914	33,661	
1991	22,379	2,567	43,789	
1992	18,482	2,166	22,688	4,336
1993	15,921	2,031	18,703	14,166
1994	62,218	8,358	44,673	23,080
1995	15,172	2,914	19,165	12,015
1996	18,816	4,505	42,220	28,981
1997	12,477	1,919	14,204	30,789
1998	15,730	4,327	24,059	42,524
1999	26,604	4,324	20,719	73,757
Average	19,838	2,974	23,046	23,145
2000	11,960	1,856	14,778	38,247
% of average	60	62	64	165

^a Includes Juneau Golden North Salmon Derby harvest.

Table 19.—Estimated contributions of hatchery-produced coho salmon to Juneau, Ketchikan, and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1983–2000.

Year	Juneau		Ketchikan		Sitka	
	Total	% of harvest	Total	% of harvest	Total	% of harvest
1983	227	2				
1984	52	1	5,181	36		
1985	1,353	8				
1986	37	< 1	3,200	15		
1987	94	1	4,663	45	57	5
1988	262	2	292	5	218	35
1989	930	4	1,147	11		
1990	482	2	9,515	28		
1991 ^a	2,526	12	18,627	43		
1992	905	5	9,588	42	1,264	29
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 ^b	2,162	17	5,822	41	4,798	16
1998 ^b	3,597	23	12,455	52	8,906	21
1999 ^b	5,306	20	6,843	33	19,772	27
Average	1,886	10	8,021	35	4,893	21
2000 ^b	2,398	20	7,948	54	7,421	19

^a Juneau percentages for 1991 calculated without 1,111 coho salmon taken in strata not sampled for CWTs.

^b Ketchikan estimates of total hatchery harvests are biased low because a major access site (Clover Pass) was not sampled.

Table 20.—Estimated harvest and catch of Pacific halibut in the Juneau, Ketchikan, and Sitka marine boat sport fisheries, 1983–2000.

Year	JUNEAU				KETCHIKAN				SITKA			
	Kept	Released	Total catch	Percent retained	Kept	Released	Total catch	Percent retained	Kept	Released	Total catch	Percent retained
1983	16,414	4,674	21,088	78								
1984	14,609	9,100	23,709	62	8,913	748	9,661	92				
1985	11,931	3,955	15,886	75								
1986	13,132	6,868	20,000	66	8,208	1,577	9,785	84				
1987	13,513	10,357	23,870	57	10,493	3,390	13,883	76	8,314	7,214	15,528	54
1988	12,672	5,027	17,699	72	7,317	1,338	8,655	85	6,923	5,962	12,885	54
1989	12,484	2,406	14,890	84	10,797	1,256	12,053	90				
1990	11,774	4,018	15,792	75	7,419	1,281	8,700	85				
1991	8,611	2,363	10,974	78	9,650	1,125	10,775	90				
1992	9,265	2,554	11,819	78	10,257	2,582	12,839	80	12,549	3,927	16,476	76
1993	6,928	2,652	9,580	72	12,783	4,443	17,226	74	12,720	4,289	17,009	75
1994	8,843	4,047	12,890	69	10,960	2,849	13,809	79	13,185	5,233	18,418	72
1995	9,252	3,234	12,486	74	19,675	7,089	26,764	74	13,151	5,963	19,114	69
1996	11,158	3,183	14,341	78	11,177	4,052	15,229	73	12,015	5,859	17,874	67
1997	12,547	5,701	18,248	69	7,983	3,566	11,549	69	21,852	13,518	35,370	62
1998	8,200	2,198	10,398	79	6,778	2,335	9,113	74	19,640	9,704	29,344	67
1999	8,104	2,986	11,090	73	5,126	961	6,087	84	27,967	13,580	41,547	67
Average	11,143	4,372	15,574	72	9,836	2,573	12,409	79	14,832	7,525	22,357	66
2000	6,169	1,706	7,875	78	6,039	998	7,037	86	31,110	14,100	45,210	69
% of average	55	39	51		61	39	57		210	187	202	

Table 21.—Comparative effort and catch statistics for the Ketchikan rockfish sport fishery, 1984–2000.

Year	Survey dates	Angler effort		Total rockfish harvest and catch				Harvest per unit effort ^g		Catch per unit effort ^g	
		Total angler-hours	Bottomfish-hours	Harvest	Released	Total catch	% harvest	Targeted ^a	Non-targeted ^b	Targeted ^c	Non-targeted ^d
1984	4/29–9/29	223,725	62,625	9,805	---	---	---	0.16	0.04	---	---
1985 ^e	4/15–6/30	---	---	---	---	---	---	---	---	---	---
1986	4/28–9/28	184,726	51,208	6,017	7,527	13,544	44	0.12	0.03	0.54	0.19
1987	4/20–9/27	242,274	84,954	18,591	27,539	46,130	40	0.22	0.08	0.26	0.07
1988	4/11–9/25	225,779	71,611	17,477	15,516	32,993	53	0.24	0.08	0.46	0.15
1989	4/24–9/24	276,516	79,958	11,224	6,742	17,966	62	0.14	0.04	0.22	0.06
1990	5/07–9/23	248,618	49,347	9,561	9,132	18,693	51	0.19	0.04	0.38	0.08
1991	4/29–9/29	343,698	67,842	12,442	10,714	23,156	54	0.18	0.04	0.34	0.07
1992	4/27–9/27	261,635	69,366	8,149	15,272	23,424	35	0.12	0.03	0.34	0.09
1993	4/26–9/26	276,969	78,002	10,573	15,192	25,765	41	0.14	0.04	0.33	0.09
1994	4/25–9/25	286,464	56,092	5,604	8,283	13,887	40	0.10	0.02	0.25	0.05
1995	4/24–9/24	277,146	101,381	10,132	13,015	23,147	44	0.10	0.04	0.23	0.08
1996	5/06–10/06	253,977	62,673	5,492	7,401	12,893	43	0.09	0.02	0.21	0.05
1997 ^f	4/28–9/28	199,977	55,242	6,514	9,806	16,320	40	0.12	0.03	0.30	0.08
1998 ^f	4/27–9/27	205,063	41,194	3,864	6,964	10,828	36	0.09	0.02	0.26	0.05
1999 ^f	4/26–9/26	169,693	33,360	3,282	4,838	8,120	40	0.10	0.02	0.24	0.05
Average		245,084	64,324	9,248	11,282	20,490	45	0.14	0.04	0.31	0.08
2000 ^f	4/24–9/24	162,344	38,340	4,784	6,172	10,956	44	0.12	0.03	0.29	0.07
% of average		66	60	52	55	53		85	79	93	84

^a Rockfish harvest per bottomfish-hour of effort.

^b Rockfish harvest per angler-hour of effort.

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

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

^e Data in 1985 are not comparable because the creel survey lasted only through 30 June, instead of late September.

^f Ketchikan estimates are biased low because a major access site (Clover Pass) was not sampled.

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

Table 22.—Comparison of estimated shellfish effort and harvest for the Juneau and Ketchikan marine boat fisheries, 1988–2000.

Fishery	Year	Effort (boat-days)	Dungeness crab harvest	Tanner crab harvest	King crab harvest	Shrimp harvest
Juneau	1988	2,287	6,459	3,042	552	
	1989	2,652	8,356	3,369	1,849	
	1990	2,622	6,289	1,883	1,960	
	1991	3,812	13,433	1,294	2,467	
	1992	5,411	12,675	1,034	5,673	
	1993	6,013	11,980	1,557	8,963	
	1994	5,486	6,786	2,328	5,925	
	1995	5,161	10,460	2,161	4,598	
	1996	5,036	15,605	2,134	4,826	
	1997	5,382	12,440	1,348	4,839	
	1998	5,551	8,112	768	5,310	
	1999	5,130	5,599	1,773	7,339	
	Average		4,545	9,850	1,891	4,525
2000		5,209	5,716	791	6,583	
Ketchikan	1988	1,398	9,043	0	0	27,643
	1989	508	2,688	100	0	12,730
	1990	614	3,367	0	0	17,130
	1991	1,394	7,631	0	0	69,450
	1992	1,387	10,227	0	0	130,720
	1993	1,973	8,897	0	0	37,060
	1994	1,439	7,032	0	0	34,580
	1995	2,590	14,258	0	0	164,390
	1996	1,255	5,528	0	0	76,840
	1997	1,566	6,224	0	0	51,150
	1998	743	4,190	210	0	99,680
	1999	1,211	4,959	0	0	57,920
	Average		1,340	7,004	26	0
2000		1,739	10,786	0	0	156,990

boat-days was 30% above the average of 1,340 boat-days, while the Dungeness crab harvest of 10,786 was 54% above the average of 7,004. There has been a similar increase in commercial Dungeness crabbing effort and harvest in the Ketchikan area over the last few years, although it is not known whether the local crab population has experienced better recruitment recently or if simply there is more interest by commercial fishers in targeting Dungeness crab (Bishop et al. 2001). Shrimp harvest in the Ketchikan area during 2000 (156,990 shrimp) was the second highest harvest recorded and can be attributed in part to the increased shellfish effort in Ketchikan.

CONCLUSION AND RECOMMENDATIONS

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

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. Due in part to 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 2000. 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 2000, the contributions of hatchery chinook and coho salmon to the Ketchikan fishery were 52% and 54%, respectively. During 2000, about 24% of the chinook salmon and 27% of the coho salmon taken in the combined Ketchikan, Sitka, and Juneau marine fisheries originated in Alaska hatcheries. An additional 14% of the chinook harvest 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 Alaska Board of Fisheries 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 2000, 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 coded wire tag sampling programs in Craig/Klawock, Petersburg, Wrangell, and Yakutat were also necessary to better document harvests of

Alaska hatchery fish for catch reporting required by the Pacific Salmon Treaty. We recommend continuation of this expanded program.

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 Alaska Board of Fisheries 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, 24 April–24 September 2000^a.

	Estimate	Standard Error	Relative Precision ^b
Finfish effort			
Boat-hours	58,987	3,558	10%
Salmon-hours	124,005	10,978	15%
Bottomfish-hours	38,340	3,162	14%
Angler-hours	162,344	11,927	12%
Boat-days	15,332	910	10%
Finfish harvests^c			
Total chinook salmon ≥ 28"	3,428	412	20%
Derby take-home & entered	493	20	7%
Total chinook salmon < 28"	93	23	41%
Coho salmon	14,778	2,315	26%
Pink salmon	17,990	4,625	42%
Chum salmon	3,296	649	32%
Sockeye salmon	56	24	71%
Pacific halibut	6,039	663	18%
Lingcod	513	109	35%
Total rockfish	4,784	550	19%
Quillback rockfish	1,023	144	23%
Dusky rockfish	177	51	47%
Copper rockfish	98	29	49%
Black rockfish	58	21	60%
Yelloweye rockfish	1,023	173	28%
Silvergrey rockfish	93	45	80%
Other pelagic rockfish	91	28	51%
Other non-pelagic rockfish	168	55	54%
Unidentified rockfish	2,056	431	34%
Finfish total catch^c			
Chinook salmon ≥ 28"	4,179	555	22%
Chinook salmon < 28"	7,999	954	20%
Coho salmon	18,074	2,653	24%
Pink salmon	22,091	5,530	41%
Chum salmon	4,194	758	30%
Sockeye salmon	56	24	71%
Pacific halibut	7,037	843	20%
Lingcod	1,093	256	39%
Total rockfish	10,956	1,062	16%
Shellfish effort and harvest^c			
Boat-days fished	1,739	184	17%
Pots or rings	4,843	533	18%
Crab boat-days fished	957	114	20%
Crab pots or rings	1,978	282	23%
Dungeness crab kept	5,070	724	24%
Shrimp kept	156,990	9,538	10%

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

^b Relative precision ($\alpha = 0.10$) = (SE * 1.645 / estimate) * 100.

^c No cutthroat trout, steelhead, 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, 24 April–24 September 2000.

	Estimate	Standard error	Relative Precision ^a
Finfish effort			
Boat-hours	110,434	6,054	9%
Salmon-hours	222,710	14,562	11%
Bottomfish-hours	65,190	4,709	12%
Angler-hours	288,525	17,066	10%
Boat-days	26,994	1,388	8%
Finfish harvests^b			
Total chinook salmon ≥ 28"	4,549	397	14%
Derby take-home	87	33	62%
Derby entered	212	0	0%
Derby take-home & entered	299	33	18%
Total chinook salmon < 28"	236	57	40%
Coho salmon	11,960	2,064	28%
Derby take-home	810	246	50%
Derby entered	1,046	0	0%
Derby take-home & entered	1,856	246	22%
Chum salmon	2,185	428	32%
Derby take-home	9	26	93%
Derby entered	3	0	0%
Derby take-home & entered	12	26	70%
Sockeye salmon	32	18	93%
Pink salmon	1,895	306	27%
Pacific halibut	6,169	532	14%
Total rockfish	1,591	225	23%
Lingcod	66	43	109%
Dolly Varden	211	60	47%
Finfish total catch^b			
Chinook salmon ≥ 28"	4,746	403	14%
Chinook salmon < 28"	5,377	710	22%
Coho salmon	12,221	2,141	29%
Chum salmon	3,163	721	38%
Sockeye salmon	32	18	93%
Pink salmon	2,735	384	23%
Pacific halibut	7,875	646	13%
Total rockfish	1,756	239	22%
Lingcod	78	44	94%
Dolly Varden	542	123	37%
Shellfish effort and harvest			
Boat-days fished	5,209	336	11%
Pots or rings	8,613	626	12%
King crab boat-days fished	3,218	256	13%
King crab pots or rings	5,023	436	14%
King crab kept	6,583	813	20%
Dungeness crab kept	5,716	697	20%
Tanner crab kept	791	183	38%

^a Relative precision ($\alpha = 0.10$) = (SE * 1.645 / estimate) * 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, 24 April–24 September 2000.

	Estimate	Standard error	Relative precision ^a
Finfish effort			
Boat-hours	66,523	3,167	8%
Salmon-hours	138,705	7,245	9%
Bottomfish-hours	69,918	5,117	12%
Angler-hours	209,027	10,982	9%
Boat-days	17,758	878	8%
Finfish harvests^b			
Total chinook salmon ≥ 28"	17,230	1,089	10%
Derby take-home	1,168	109	15%
Derby entered	642	0	0%
Derby take-home & entered	1,810	109	10%
Total chinook salmon < 28"	0	0	0%
Coho salmon	38,247	4,062	17%
Chum salmon	1,621	372	38%
Sockeye salmon	93	47	83%
Pink salmon	1,675	219	22%
Pacific halibut	31,110	2,535	13%
Lingcod	2,269	257	19%
Total rockfish	17,752	1,308	12%
Quillback rockfish	770	146	31%
Dusky rockfish	1,208	290	39%
Copper rockfish	58	27	77%
Black rockfish	4,134	525	21%
Other pelagic rockfish	415	114	45%
Yelloweye rockfish	10,024	859	14%
Silvergrey rockfish	327	129	65%
Other non-pelagic rockfish	365	176	79%
Unidentified rockfish	447	116	43%
Steelhead	4	3	123%
Dolly Varden	95	85	147%
Finfish total catch^b			
Chinook salmon ≥ 28"	23,788	1,600	11%
Chinook salmon < 28"	1,412	190	22%
Coho salmon	39,454	4,221	18%
Sockeye salmon	93	47	83%
Chum salmon	2,001	437	36%
Pink salmon	3,175	387	20%
Pacific halibut	45,210	3,783	14%
Lingcod	4,458	434	16%
Total rockfish	38,674	2,168	9%
Unidentified rockfish	19,765	1,328	11%
Steelhead	4	3	123%
Dolly Varden	116	86	122%

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

^b No 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, 24 April–24 September 2000^a.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	501	47,757	615	64,963	301	21,841	916	136,981
08May-21May	1,200	49,104	1,806	261,139	969	59,682	2,775	366,662
Derby ^b	8,398	800,485	18,160	3,275,831	2,689	172,423	20,849	4,343,877
22May-04Jun	2,007	197,637	4,000	1,073,874	725	68,873	4,724	1,156,695
05Jun-18Jun	3,218	1,019,574	4,727	1,991,569	2,779	1,369,397	7,506	6,121,124
19Jun-02Jul	8,922	2,302,588	19,897	34,250,447	6,491	1,444,535	26,387	36,387,604
03Jul-16Jul	7,957	2,763,117	14,524	23,118,130	8,021	4,488,467	22,545	31,405,925
17Jul-30Jul	4,363	390,470	10,347	4,486,711	2,819	272,536	13,166	5,697,237
31Jul-13Aug	5,729	1,079,429	13,015	24,722,871	5,465	595,335	18,480	25,308,438
14Aug-27Aug	3,653	532,034	8,440	5,190,056	3,037	513,727	11,477	7,027,954
28Aug-10Sep	8,542	2,163,112	18,082	11,835,322	4,077	888,617	22,160	14,159,681
11Sep-24Sep	4,497	1,311,936	10,392	10,242,571	967	104,318	11,359	10,138,902
Total	58,987	12,657,243	124,005	120,513,484	38,340	9,999,751	162,344	142,251,080

Seasonal period	Boat-days		Chinook salmon ≥ 28"		Chinook salmon ≥ 28"		Chinook salmon < 28"	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	234	6,761	0	0	0	0	0	0
08May-21May	393	5,377	15	112	15	112	41	532
Derby ^b	1,779	33,789	503	236	493	208	132	741
22May-04Jun	556	14,523	89	1,607	89	1,607	51	605
05Jun-18Jun	1,022	80,379	338	8,667	289	5,491	117	7,525
19Jun-02Jul	2,323	190,656	1,623	122,902	1,427	86,644	940	157,536
03Jul-16Jul	2,310	229,813	1,410	171,539	968	74,511	421	58,398
17Jul-30Jul	1,201	29,471	165	3,156	126	1,110	471	25,900
31Jul-13Aug	1,578	57,580	25	108	10	54	622	45,761
14Aug-27Aug	991	30,034	4	10	4	10	1,312	192,060
28Aug-10Sep	1,980	110,741	7	0	7	0	2,443	271,985
11Sep-24Sep	965	39,498	0	0	0	0	1,449	148,219
Total	15,332	828,622	4,179	308,337	3,428	169,747	7,999	909,262

Seasonal period	Chinook salmon < 28"		Coho salmon		Coho salmon		Pink salmon	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	0	0	0	0	0	0	0	0
Derby ^b	0	0	0	0	0	0	9	55
22May-04Jun	0	0	0	0	0	0	0	0
05Jun-18Jun	0	0	25	248	17	252	10	87
19Jun-02Jul	14	80	464	15,898	436	14,099	372	12,132
03Jul-16Jul	53	352	1,768	376,536	1,658	334,103	4,069	2,559,708
17Jul-30Jul	9	78	1,148	179,667	1,113	176,759	3,807	1,788,410
31Jul-13Aug	12	0	1,522	178,444	1,046	91,957	9,254	24,562,417
14Aug-27Aug	4	10	2,200	376,088	1,636	157,584	3,249	1,498,142
28Aug-10Sep	1	0	6,847	2,677,976	5,453	1,854,452	1,247	161,048
11Sep-24Sep	0	0	4,100	3,231,889	3,419	2,732,260	74	3,059
Total	93	520	18,074	7,036,746	14,778	5,361,466	22,091	30,585,058

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Seasonal period	Pink salmon harvested		Chum salmon total catch		Chum salmon harvested		Sockeye salmon catch and harvest	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	0	0	0	0	0	0	0	0
Derby ^b	9	55	26	38	23	38	0	0
22May-04Jun	0	0	0	0	0	0	0	0
05Jun-18Jun	10	87	0	0	0	0	0	0
19Jun-02Jul	307	9,765	133	4,424	133	4,424	15	88
03Jul-16Jul	3,301	1,826,198	1,950	365,881	1,682	367,209	15	199
17Jul-30Jul	3,319	1,245,438	1,648	196,904	1,129	44,227	11	53
31Jul-13Aug	7,891	17,523,177	159	2,939	153	2,969	0	0
14Aug-27Aug	2,306	686,616	75	635	56	442	15	215
28Aug-10Sep	806	97,302	176	3,602	96	1,686	0	0
11Sep-24Sep	41	1,443	27	86	24	73	0	0
Total	17,990	21,390,081	4,194	574,509	3,296	421,068	56	555

Seasonal period	Pacific halibut total catch		Pacific halibut harvested		Rockfish total catch		Rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	88	5,359	88	5,359	178	5,596	17	128
08May-21May	66	694	55	555	314	37,278	255	36,469
Derby ^b	188	2,476	166	2,155	1,020	24,823	313	9,077
22May-04Jun	17	124	17	124	530	54,081	148	5,766
05Jun-18Jun	552	104,804	386	56,655	675	63,578	417	67,002
19Jun-02Jul	1,237	94,498	1,142	85,905	2,353	116,165	889	28,427
03Jul-16Jul	1,501	313,066	1,226	152,912	2,354	634,168	838	69,955
17Jul-30Jul	709	53,387	592	39,273	340	8,800	240	7,075
31Jul-13Aug	1,101	33,476	1,070	30,625	1,442	66,900	645	27,832
14Aug-27Aug	597	25,738	513	19,903	510	22,685	288	11,512
28Aug-10Sep	765	47,754	630	32,769	1,054	87,228	645	39,020
11Sep-24Sep	216	28,722	154	13,167	186	6,862	89	742
Total	7,037	710,098	6,039	439,402	10,956	1,128,164	4,784	303,005

Seasonal period	Lingcod total catch		Lingcod harvested		Quillback rockfish harvested		Dusky rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	30	773	7	48	7	48	21	370
Derby ^b	124	2,709	36	129	43	414	11	46
22May-04Jun	51	1,801	15	207	68	1,880	17	98
05Jun-18Jun	181	11,006	80	5,600	0	0	0	0
19Jun-02Jul	189	3,268	161	3,002	322	9,237	71	1,501
03Jul-16Jul	307	43,381	84	1,601	165	4,592	11	89
17Jul-30Jul	34	394	34	394	31	108	0	0
31Jul-13Aug	77	894	42	220	153	1,462	0	0
14Aug-27Aug	63	924	20	114	66	758	21	315
28Aug-10Sep	37	526	34	534	146	1,992	19	100
11Sep-24Sep	0	0	0	0	22	119	6	32
Total	1,093	65,676	513	11,849	1,023	20,610	177	2,551

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Seasonal period	Copper rockfish harvested		Black rockfish harvested		Other pelagic rockfish harvested		Yelloweye rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	7	42
08May-21May	0	0	0	0	0	0	11	92
Derby ^b	6	9	22	235	9	25	40	287
22May-04Jun	24	228	0	0	0	0	8	52
05Jun-18Jun	0	0	0	0	0	0	24	246
19Jun-02Jul	18	108	0	0	5	16	160	2,780
03Jul-16Jul	12	142	11	89	29	474	235	10,269
17Jul-30Jul	26	326	0	0	4	9	145	6,313
31Jul-13Aug	5	21	7	35	5	21	92	451
14Aug-27Aug	4	9	4	9	4	10	78	581
28Aug-10Sep	3	8	14	79	35	255	196	8,358
11Sep-24Sep	0	0	0	0	0	0	27	306
Total	98	851	58	447	91	810	1,023	29,777

Seasonal period	Silvergrey rockfish harvested		Other non-pelagic rockfish harvested		Unidentified rockfish total catch		Unidentified rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	171	5,470	10	86
08May-21May	0	0	16	126	259	35,453	199	35,663
Derby ^b	0	0	3	5	888	17,241	181	3,350
22May-04Jun	0	0	0	0	413	36,570	31	276
05Jun-18Jun	0	0	0	0	650	62,142	392	67,135
19Jun-02Jul	0	0	5	18	1,773	99,242	309	9,461
03Jul-16Jul	0	0	55	1,272	1,837	575,288	321	45,913
17Jul-30Jul	0	0	0	0	134	2,450	34	355
31Jul-13Aug	20	260	12	32	1,148	54,262	351	20,377
14Aug-27Aug	4	10	57	1,464	275	5,868	52	792
28Aug-10Sep	66	1,775	20	94	554	24,766	145	2,235
11Sep-24Sep	3	5	0	0	128	3,756	31	181
Total	93	2,050	168	3,011	8,230	922,508	2,056	185,824

Seasonal period	Shellfish boat-days		Shellfish pots or rings		Crab boat-days		Crab pots or rings	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	102	1,470	437	43,080	50	1,154	101	4,617
08May-21May	99	2,540	229	13,766	44	341	78	942
Derby ^b	167	1,129	342	4,222	118	546	202	1,482
22May-04Jun	18	270	24	480	0	0	0	0
05Jun-18Jun	233	6,101	580	33,692	120	1,607	167	3,159
19Jun-02Jul	175	5,522	471	65,409	113	1,626	366	40,252
03Jul-16Jul	394	11,783	937	62,499	249	6,261	455	22,345
17Jul-30Jul	99	843	418	20,307	32	136	95	1,063
31Jul-13Aug	147	682	414	6,389	116	388	314	2,963
14Aug-27Aug	60	361	219	9,181	25	99	63	961
28Aug-10Sep	163	2,654	438	18,476	81	877	122	1,809
11Sep-24Sep	82	322	334	6,388	9	38	15	135
Total	1,739	33,677	4,843	283,889	957	13,073	1,978	79,728

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Seasonal period	Dungeness crab total catch		Dungeness crab harvested		Shrimp harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	564	153,605	216	22,748	11,820	2,420,770
08May-21May Derby ^b	517	178,181	131	7,623	6,050	1,918,200
	2,013	335,718	687	26,247	2,330	87,780
22May-04Jun	0	0	0	0	780	50,700
05Jun-18Jun	2,496	1,013,549	582	57,716	11,810	3,593,330
19Jun-02Jul	1,870	641,666	768	97,021	3,830	761,180
03Jul-16Jul	4,734	2,355,743	1,312	254,973	19,420	6,295,050
17Jul-30Jul	924	186,715	319	19,133	26,740	21,536,430
31Jul-13Aug	2,963	737,779	664	22,352	7,190	3,309,900
14Aug-27Aug	312	25,955	63	1,197	9,300	2,944,610
28Aug-10Sep	1,247	258,826	303	14,143	45,860	46,765,390
11Sep-24Sep	492	202,794	25	520	11,860	1,281,340
Total	18,132	6,090,531	5,070	523,673	156,990	90,964,680

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

^b Includes 433 large chinook salmon entered in the Ketchikan derby.

Appendix A5.—Estimated effort, harvest and catch for the Juneau marine boat sport fishery by seasonal period, 24 April-24 September 2000.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	3,534	890,964	8,379	6,932,711	36	990	8,415	7,082,339
08May-21May	9,866	1,879,814	22,992	12,473,548	36	1,080	23,028	12,467,614
22May-04Jun	12,558	1,097,973	28,724	6,910,605	1,899	329,232	30,684	8,433,454
05Jun-18Jun	12,712	3,098,410	28,826	18,570,015	6,014	4,819,013	34,888	35,835,726
19Jun-02Jul	8,112	864,970	15,702	8,363,559	5,850	1,288,642	21,671	10,123,305
03Jul-16Jul	11,884	1,927,392	14,588	4,391,090	16,268	5,729,140	31,020	15,246,921
17Jul-30Jul	8,101	1,359,353	11,383	4,813,048	10,303	2,594,202	21,748	11,209,097
31Jul-13Aug	10,207	2,039,833	17,238	10,060,936	11,520	1,637,874	28,808	15,473,819
Derby ^a	11,490	6,966,762	29,882	55,618,819	1,457	197,574	31,339	60,787,753
14Aug-27Aug	11,094	12,737,978	24,621	67,236,653	6,211	3,923,943	30,953	88,611,373
28Aug-10Sep	8,544	3,060,016	15,455	13,813,650	4,980	1,573,365	20,435	22,293,692
11Sep-24Sep	2,332	732,939	4,920	2,872,361	616	84,128	5,536	3,679,684
Total	110,434	36,656,404	222,710	212,056,995	65,190	22,179,183	288,525	291,244,777

Seasonal Period	Boat-days		Chinook salmon ≥ 28" total catch		Chinook salmon ≥ 28" harvested		Chinook salmon < 28" total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	948	44,291	228	10,238	228	10,238	47	1,300
08May-21May	2,371	73,699	343	4,239	339	4,210	109	2,181
22May-04Jun	3,129	74,295	606	10,905	598	10,833	275	4,747
05Jun-18Jun	3,006	156,994	1,490	69,545	1,448	71,565	572	20,136
19Jun-02Jul	2,345	72,769	690	36,401	670	32,946	244	4,485
03Jul-16Jul	3,213	114,591	191	2,536	178	2,277	171	5,130
17Jul-30Jul	2,171	93,572	284	10,998	263	10,210	611	40,193
31Jul-13Aug	2,582	141,948	380	11,764	344	10,330	798	45,426
Derby ^a	1,634	133,372	333	1,920	299	1,116	1,612	280,037
14Aug-27Aug	2,704	759,949	131	3,028	131	3,028	667	83,263
28Aug-10Sep	2,234	215,555	23	129	23	129	232	16,566
11Sep-24Sep	657	45,800	47	838	28	487	41	747
Total	26,994	1,926,835	4,746	162,541	4,549	157,369	5,379	504,211

Seasonal Period	Chinook salmon < 28" harvested		Coho salmon total catch		Coho salmon harvested		Pink salmon total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	16	240	0	0	0	0	0	0
22May-04Jun	6	30	0	0	0	0	9	78
05Jun-18Jun	100	1,596	12	132	12	132	6	30
19Jun-02Jul	96	1,257	16	84	16	84	22	282
03Jul-16Jul	16	79	41	326	41	326	311	5,285
17Jul-30Jul	1	0	252	3,671	248	3,691	777	56,225
31Jul-13Aug	0	0	2,101	270,518	2,005	247,310	904	57,609
Derby ^a	0	0	1,882	64,647	1,856	60,645	292	6,563
14Aug-27Aug	1	0	4,311	3,411,877	4,200	3,150,318	333	17,865
28Aug-10Sep	0	0	3,097	789,745	3,073	755,275	81	3,407
11Sep-24Sep	0	0	509	44,148	509	44,148	0	0
Total	236	3,202	12,221	4,585,148	11,960	4,261,929	2,735	147,344

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Seasonal Period	Pink salmon harvested		Chum salmon total catch		Chum salmon harvested		Sockeye salmon catch and harvest	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	0	0	0	0	0	0	0	0
22May-04Jun	0	0	0	0	0	0	0	0
05Jun-18Jun	6	30	60	824	60	824	0	0
19Jun-02Jul	22	282	362	8,705	320	6,888	0	0
03Jul-16Jul	202	4,542	2,164	490,519	1,387	165,295	15	206
17Jul-30Jul	722	55,286	291	14,806	208	7,183	11	110
31Jul-13Aug	634	27,771	181	2,681	127	2,028	0	0
Derby ^a	101	814	31	57	9	10	6	10
14Aug-27Aug	192	4,777	66	661	66	661	0	0
28Aug-10Sep	16	99	8	57	8	57	0	0
11Sep-24Sep	0	0	0	0	0	0	0	0
Total	1,895	93,601	3,163	520,489	2,185	182,946	32	326

Seasonal Period	Pacific halibut total catch		Pacific halibut harvested		Rockfish total catch		Rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	48	2,016	48	2,016
08May-21May	22	270	6	30	6	30	0	0
22May-04Jun	392	53,111	376	53,039	44	264	40	252
05Jun-18Jun	558	33,818	396	22,284	308	7,572	224	3,252
19Jun-02Jul	714	26,347	542	14,335	288	7,034	272	6,578
03Jul-16Jul	2,016	111,491	1,598	61,393	335	10,193	309	9,609
17Jul-30Jul	1,554	82,665	1,132	43,341	267	9,414	249	8,506
31Jul-13Aug	1,370	44,465	1,026	29,803	199	6,699	188	6,629
Derby ^a	232	2,641	184	1,799	22	68	22	68
14Aug-27Aug	615	47,362	565	44,385	81	1,822	81	1,822
28Aug-10Sep	380	14,617	322	12,638	158	12,042	158	12,042
11Sep-24Sep	22	248	22	248	0	0	0	0
Total	7,875	417,035	6,169	283,295	1,756	57,154	1,591	50,774

Seasonal Period	Lingcod total catch		Lingcod harvested		Dolly Varden total catch		Dolly Varden harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	12	120	0	0	12	120	12	120
22May-04Jun	0	0	0	0	173	3,299	61	725
05Jun-18Jun	48	1,728	48	1,728	284	10,964	88	2,328
19Jun-02Jul	0	0	0	0	32	248	24	192
03Jul-16Jul	4	14	4	14	41	413	26	207
17Jul-30Jul	0	0	0	0	0	0	0	0
31Jul-13Aug	6	25	6	25	0	0	0	0
Derby ^a	0	0	0	0	0	0	0	0
14Aug-27Aug	0	0	0	0	0	0	0	0
28Aug-10Sep	8	52	8	52	0	0	0	0
11Sep-24Sep	0	0	0	0	0	0	0	0
Total	78	1,939	66	1,819	542	15,044	211	3,572

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Seasonal Period	Shellfish boat -days		Shellfish pots or rings		King crab boat -days		King crab pots or rings	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	71	1,682	86	1,428	0	0	0	0
08May-21May	111	1,048	159	1,613	0	0	0	0
22May-04Jun	252	4,300	613	44,186	0	0	0	0
05Jun-18Jun	272	3,072	428	9,908	0	0	0	0
19Jun-02Jul	288	3,261	472	8,283	36	276	38	306
03Jul-16Jul	877	13,861	1,327	27,106	607	9,990	860	17,452
17Jul-30Jul	884	14,321	1,525	54,178	648	9,676	1,142	34,495
31Jul-13Aug	884	18,925	1,394	67,357	703	10,321	1,018	27,394
Derby ^a	107	685	149	2,137	91	608	110	1,165
14Aug-27Aug	655	35,496	968	84,069	550	27,050	822	73,159
28Aug-10Sep	547	5,814	909	24,002	393	3,532	631	17,012
11Sep-24Sep	261	10,107	583	68,083	190	4,143	402	18,756
Total	5,209	112,572	8,613	392,350	3,218	65,596	5,023	189,739

Seasonal Period	King crab harvested		Tanner crab harvested		Dungeness crab harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	12	132
08May-21May	0	0	0	0	312	9,232
22May-04Jun	0	0	32	528	1,026	132,745
05Jun-18Jun	0	0	60	2,700	700	31,800
19Jun-02Jul	54	1,758	20	204	730	38,654
03Jul-16Jul	900	30,224	250	23,080	856	57,163
17Jul-30Jul	1,445	76,925	219	4,542	813	54,995
31Jul-13Aug	1,616	71,327	146	1,074	218	5,965
Derby ^a	165	2,634	19	236	77	2,118
14Aug-27Aug	1,492	411,019	30	885	141	3,371
28Aug-10Sep	597	53,712	15	206	462	44,498
11Sep-24Sep	314	12,873	0	0	369	104,668
Total	6,583	660,472	791	33,455	5,716	485,341

^a Includes 212 large chinook salmon, 1,046 coho salmon, and 3 chum salmon entered in the derby.

Appendix A6.–Estimated effort, harvest and catch for the Sitka marine boat sport fishery by seasonal period, 24 April-24 September 2000.

Seasonal period	Boat-hours		Salmon-hours		Bottomfish-hours		Angler-hours	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	1,194	73,710	1,742	165,229	945	86,261	2,687	343,358
08May-21May	4,337	634,020	8,277	1,488,698	4,369	1,731,204	12,769	5,951,886
Derby ^a	6,492	411,779	13,604	1,629,251	3,560	389,588	17,208	1,780,169
22May-04Jun	3,714	841,829	7,079	2,117,828	3,814	3,062,581	10,926	8,582,886
05Jun-18Jun	8,850	844,037	17,500	3,324,037	10,556	5,274,027	28,115	8,707,842
19Jun-02Jul	9,058	543,137	17,673	2,494,384	11,986	2,142,398	29,659	5,561,347
03Jul-16Jul	8,566	1,905,264	18,108	9,971,804	9,319	3,666,647	27,544	22,907,381
17Jul-30Jul	7,516	1,596,317	18,666	13,261,204	6,574	2,082,279	25,240	24,352,496
31Jul-13Aug	8,866	1,933,958	19,050	8,406,269	10,638	5,082,764	29,716	24,663,062
14Aug-27Aug	4,962	921,321	12,504	7,945,948	4,005	1,212,137	16,509	12,627,444
28Aug-10Sep	1,948	234,923	2,934	989,762	2,442	913,082	5,376	2,692,003
11Sep-24Sep	1,020	91,189	1,568	700,876	1,710	536,372	3,278	2,434,513
Total	66,523	10,031,484	138,705	52,495,290	69,918	26,179,340	209,027	120,604,387

Seasonal period	Boat-days		Chinook salmon ≥ 28" total catch		Chinook salmon ≥ 28" harvested		Chinook salmon < 28" total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	405	7,677	615	25,728	411	10,215	0	0
08May-21May	1,231	58,794	1,677	160,820	1,267	87,085	54	837
Derby ^a	1,327	18,101	2,493	31,791	1,810	11,821	91	640
22May-04Jun	1,051	54,591	1,358	264,351	936	94,781	38	505
05Jun-18Jun	2,226	68,403	4,412	285,731	2,872	98,812	205	6,829
19Jun-02Jul	2,635	68,023	6,685	932,305	4,211	286,609	266	2,932
03Jul-16Jul	2,216	119,805	1,769	114,999	1,679	102,135	177	5,007
17Jul-30Jul	1,861	132,274	1,515	212,130	1,219	125,939	98	1,306
31Jul-13Aug	2,470	140,651	2,683	493,912	2,307	342,036	309	15,780
14Aug-27Aug	1,416	71,630	541	37,600	478	27,068	102	1,427
28Aug-10Sep	572	22,597	40	426	40	426	19	162
11Sep-24Sep	348	8,346	0	0	0	0	53	821
Total	17,758	770,892	23,788	2,559,793	17,230	1,186,927	1,412	36,246

Seasonal period	Chinook salmon < 28" harvested		Coho salmon total catch		Coho salmon harvested		Pink salmon total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	0	0	0	0	0	0	0	0
Derby ^a	0	0	5	4	5	4	0	0
22May-04Jun	0	0	0	0	0	0	0	0
05Jun-18Jun	0	0	123	2,227	117	2,256	6	30
19Jun-02Jul	0	0	443	13,153	426	12,095	27	185
03Jul-16Jul	0	0	3,775	1,006,259	3,719	977,542	229	4,522
17Jul-30Jul	0	0	9,105	5,155,991	8,702	4,502,085	1,591	78,861
31Jul-13Aug	0	0	16,398	7,716,828	15,978	7,353,706	701	36,079
14Aug-27Aug	0	0	7,432	3,354,892	7,208	3,126,084	542	29,281
28Aug-10Sep	0	0	1,549	393,930	1,500	375,080	31	171
11Sep-24Sep	0	0	624	171,281	592	153,927	48	596
Total	0	0	39,454	17,814,565	38,247	16,502,779	3,175	149,725

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Seasonal period	Pink salmon harvested		Chum salmon total catch		Chum salmon harvested		Sockeye salmon total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0	0	0
08May-21May	0	0	5	23	5	23	0	0
Derby ^a	0	0	3	4	3	4	0	0
22May-04Jun	0	0	10	83	10	83	0	0
05Jun-18Jun	6	30	27	154	22	91	0	0
19Jun-02Jul	16	110	177	3,650	161	3,282	17	71
03Jul-16Jul	201	4,194	339	31,534	328	32,329	59	2,069
17Jul-30Jul	864	26,879	730	86,306	641	82,647	5	18
31Jul-13Aug	312	6,101	469	56,142	302	10,707	6	35
14Aug-27Aug	264	10,671	203	11,883	149	8,909	6	35
28Aug-10Sep	12	130	6	32	0	0	0	0
11Sep-24Sep	0	0	32	832	0	0	0	0
Total	1,675	48,115	2,001	190,643	1,621	138,075	93	2,228

Seasonal period	Sockeye salmon harvested		Pacific halibut total catch		Pacific halibut harvested		Rockfish total catch	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	336	34,782	102	6,585	492	30,894
08May-21May	0	0	1,693	312,374	1,323	242,721	1,562	199,543
Derby ^a	0	0	1,645	141,540	1,083	52,800	2,493	70,596
22May-04Jun	0	0	1,526	465,059	1,248	331,190	1,997	358,372
05Jun-18Jun	0	0	6,354	2,132,543	3,451	659,744	7,091	1,054,592
19Jun-02Jul	17	71	7,835	581,385	5,897	341,615	6,783	672,642
03Jul-16Jul	59	2,069	5,316	1,845,055	4,136	977,039	5,125	947,381
17Jul-30Jul	5	18	5,193	2,395,552	3,396	1,149,352	4,567	696,397
31Jul-13Aug	6	35	9,328	4,818,964	6,752	1,963,880	4,938	324,938
14Aug-27Aug	6	35	3,725	1,122,298	2,501	526,074	2,269	252,824
28Aug-10Sep	0	0	1,537	367,445	899	158,475	772	31,128
11Sep-24Sep	0	0	722	93,320	322	14,851	585	60,702
Total	93	2,228	45,210	14,310,317	31,110	6,424,326	38,674	4,700,009

Seasonal period	Rockfish harvested		Lingcod total catch		Lingcod harvested		Quillback rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	168	11,283	63	1,818	45	774	0	0
08May-21May	623	40,459	156	2,471	113	1,013	128	7,489
Derby ^a	917	20,592	584	27,065	331	14,042	115	3,298
22May-04Jun	691	112,084	288	32,957	173	20,337	19	148
05Jun-18Jun	3,400	298,234	815	40,240	330	10,236	179	3,963
19Jun-02Jul	4,033	357,681	631	29,811	236	1,916	72	936
03Jul-16Jul	3,021	433,779	626	24,347	363	7,048	95	2,044
17Jul-30Jul	1,234	126,021	253	3,775	114	1,257	22	402
31Jul-13Aug	2,266	202,580	555	10,758	277	3,604	59	854
14Aug-27Aug	1,042	95,764	286	9,244	190	4,698	53	1,799
28Aug-10Sep	240	6,970	180	5,924	81	1,194	28	513
11Sep-24Sep	117	5,260	21	146	16	64	0	0
Total	17,752	1,710,707	4,458	188,556	2,269	66,183	770	21,446

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Seasonal period	Dusky rockfish harvested		Copper rockfish harvested		Black rockfish harvested		Other pelagic rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	45	1,800	9	72
08May-21May	0	0	0	0	101	3,072	91	5,260
Derby ^a	99	1,676	3	4	136	1,203	0	0
22May-04Jun	19	148	19	330	125	3,191	0	0
05Jun-18Jun	236	15,279	0	0	1,193	96,714	59	2,453
19Jun-02Jul	188	14,003	0	0	904	96,185	114	3,390
03Jul-16Jul	291	28,911	17	232	408	30,058	46	501
17Jul-30Jul	163	13,364	0	0	222	5,591	8	51
31Jul-13Aug	91	6,585	0	0	627	25,811	6	35
14Aug-27Aug	96	3,398	19	169	278	9,697	70	1,196
28Aug-10Sep	25	520	0	0	56	1,016	12	130
11Sep-24Sep	0	0	0	0	39	875	0	0
Total	1,208	83,884	58	735	4,134	275,213	415	13,088

Seasonal period	Yelloweye rockfish harvested		Silvergrey rockfish harvested		Unidentified rockfish total catch		Unidentified rockfish harvested	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	54	1,665	0	0	324	25,329	0	0
08May-21May	191	7,732	0	0	997	91,471	112	5,086
Derby ^a	480	9,667	35	280	1,547	33,773	35	347
22May-04Jun	307	21,076	38	1,321	1,258	103,542	0	0
05Jun-18Jun	1,612	122,107	61	1,016	3,563	520,716	50	565
19Jun-02Jul	2,564	126,829	0	0	2,506	120,156	101	3,535
03Jul-16Jul	1,892	197,848	179	13,876	1,686	123,142	92	2,299
17Jul-30Jul	805	91,330	14	164	2,998	356,786	0	0
31Jul-13Aug	1,462	122,683	0	0	2,678	241,627	19	292
14Aug-27Aug	461	30,953	0	0	1,227	93,347	38	1,244
28Aug-10Sep	118	4,152	0	0	513	15,180	0	0
11Sep-24Sep	78	2,157	0	0	468	37,555	0	0
Total	10,024	738,199	327	16,657	19,765	1,762,624	447	13,368

Seasonal period	Dolly Varden total catch		Dolly Varden harvested		Steelhead catch and harvest	
	Estimate	Variance	Estimate	Variance	Estimate	Variance
24Apr-07May	0	0	0	0	0	0
08May-21May	0	0	0	0	4	12
Derby ^a	16	89	0	0	0	0
22May-04Jun	0	0	0	0	0	0
05Jun-18Jun	0	0	0	0	0	0
19Jun-02Jul	5	23	0	0	0	0
03Jul-16Jul	95	7,265	95	7,265	0	0
17Jul-30Jul	0	0	0	0	0	0
31Jul-13Aug	0	0	0	0	0	0
14Aug-27Aug	0	0	0	0	0	0
28Aug-10Sep	0	0	0	0	0	0
11Sep-24Sep	0	0	0	0	0	0
Total	116	7,377	95	7,265	4	12

^a Includes 642 large chinook salmon entered in the derby.

Appendix A7.–Recorded effort and harvest from the Petersburg marine boat catch sampling program by biweekly period, 3 May-10 September 2000.

Biweekly period ^d	Salmon-hours	Bottomfish-hours	Terminal harvest area excluded		Terminal harvest area only			
			Chinook salmon ≥28" harvested	Chinook salmon ≥28" sampled ^b	Chinook salmon ≥28" harvested	Chinook salmon ≥28" sampled ^b	Chinook salmon <28" harvested	Chinook salmon <28" sampled ^b
24 Apr-07 May ^c	147	26	3	3	0	0	0	0
08 May-21 May	491	108	23	22	0	0	0	0
22 May-04 Jun	429	195	17	17	5	5	3	3
Derby entered ^d			329	329	0	0	0	0
Derby other			17	17	0	0	0	0
05 Jun-18 Jun	1,123	496	37	29	61	59	11	11
19 Jun-02 Jul	339	885	4	4	64	64	5	5
03 Jul-16 Jul	205	1,518	1	0	9	9	2	2
17 Jul-30 Jul	9	964	0	0	0	0	0	0
31 Jul-13 Aug	114	1,611	3	3	0	0	0	0
14 Aug-27 Aug	83	838	1	1	0	0	0	0
28 Aug-10 Sep	238	674	0	0	0	0	0	0
Total	3,178	7,315	435	425	139	137	21	21

Biweekly period ^d	Coho salmon harvested	Coho salmon sampled ^b	Pink salmon harvested	Chum salmon harvested	Sockeye salmon harvested	Pacific halibut harvested	Lingcod harvested	Rockfish harvested
24 Apr-07 May ^c	0	0	0	0	0	1	0	5
08 May-21 May	0	0	0	0	0	6	0	12
22 May-04 Jun	0	0	0	0	0	16	0	1
05 Jun-18 Jun	0	0	0	0	0	52	0	2
19 Jun-02 Jul	1	1	0	0	0	190	0	9
03 Jul-16 Jul	9	8	0	0	32	323	1	22
17 Jul-30 Jul	0	0	0	0	0	209	0	12
31 Jul-13 Aug	8	8	4	0	0	415	0	32
14 Aug-27 Aug	35	35	0	0	0	208	1	31
28 Aug-10 Sep	25	24	0	1	0	147	0	23
Total	78	76	4	1	32	1,567	2	149

^a Sampling was conducted 5 days per week by one 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 31 July.

^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 26-29 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, 24 April-10 September 2000.

Biweekly period ^d	Salmon-hours	Bottomfish-hours	Chinook salmon =28" harvested	Chinook salmon =28" sampled ^b	Chinook salmon <28" sampled ^b	Coho salmon harvested	Coho salmon sampled ^b
24 Apr-07 May	300	54	6	6	0	0	0
08 May-21 May	1,975	23	70	64	0	0	0
22 May-04 Jun ^c	2,720	181	103	94	0	0	0
05 Jun-18 Jun ^c	0	0	0	0	0	0	0
19 Jun-02 Jul ^c	159	497	7	4	1	0	0
03 Jul-16 Jul	219	702	5	5	0	12	10
17 Jul-30Jul	123	719	8	5	0	6	6
31 Jul-13 Aug	337	735	5	0	0	30	4
14 Aug-27 Aug	461	903	7	7	0	13	6
28 Aug -10 Sep	48	324	0	0	0	4	3
Total	6,342	4,138	211	185	1	65	29

Biweekly period ^d	Pink salmon harvested	Chum salmon harvested	Sockeye salmon harvested	Lingcod harvested	Pacific halibut harvested	Rockfish harvested
24 Apr-07 May	0	0	0	0	0	0
08 May-21 May	0	0	0	0	2	0
22 May-04 Jun ^c	0	0	0	0	11	0
05 Jun-18 Jun ^c	0	0	0	0	0	0
19 Jun-02 Jul ^c	0	0	0	2	38	28
03 Jul-16 Jul	5	0	0	0	84	41
17 Jul-30Jul	1	0	2	3	68	14
31 Jul-13 Aug	17	1	1	2	103	7
14 Aug-27 Aug	36	0	0	3	76	18
28 Aug -10 Sep	0	0	0	0	37	3
Total	59	1	3	10	419	111

^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 No sampling from 3 June – 26 June 2000.

Appendix A9.—Recorded effort and harvest from the Craig/Klawock marine boat catch sampling program by biweekly period, 24 April-10 September 2000.

Biweekly Period ^a	Salmon-hours	Bottomfish-hours	Chinook salmon harvested	Chinook salmon sampled ^b	Coho salmon harvested	Coho salmon sampled ^b	Chum salmon harvested
24Apr-07May	168	109	10	10	0	0	0
08May -21May	316	194	11	11	0	0	0
22May -04Jun	1,036	616	42	38	2	2	0
05Jun-18Jun	900	536	75	62	15	15	0
19Jun-02Jul	1,604	1,165	157 ^c	109 ^c	83	69	0
03Jul-16Jul	1,418	1,355	58	43	308	230	8
17Jul-30Jul	1,891	1,000	50	36	657	513	20
31Jul-13Aug	2,615	1,499	28	18	1,434	1,067	19
14Aug-27Aug	1,167	683	4	4	465	422	2
28Aug-10Sep	259	732	0	0	63	38	0
Total	11,374	7,889	435	331	3,027	2,356	49

Biweekly Period ^a	Pink salmon harvested	Pacific halibut harvested	Lingcod harvested	Rockfish harvested	Additional CWT Sampling ^d	
					Chinook salmon	Coho salmon
24Apr-07May	0	7	3	29	0	0
08May -21May	0	20	4	55	1	0
22May -04Jun	0	260	45	184	36	1
05Jun-18Jun	0	197	40	226	76	17
19Jun-02Jul	1	431	108	319	183	55
03Jul-16Jul	2	361	104	364	141	433
17Jul-30Jul	145	335	73	261	104	777
31Jul-13Aug	230	472	102	345	70	2,068
14Aug-27Aug	19	288	54	147	14	1,000
28Aug-10Sep	0	163	41	198	0	66
Total	397	2,534	574	2,128	625	4,417

^a Sampling was conducted at the Craig harbors from 12 p.m. through 7 p.m. each Monday through Wednesday and from 11 a.m. through 8 p.m. each Thursday through Sunday. Sampling was conducted at the Klawock sites from 12 p.m. through 7 p.m. Saturday and Sunday. Additional harvest included 2 sockeye salmon.

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

^c One of the chinook salmon harvested (and sampled) was <28" in length.

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

Appendix A10.–Recorded effort and harvest from the Yakutat marine boat catch sampling program by biweekly period, 17 April-30 September 2000.

Biweekly period	Guided Anglers	Unguided Anglers	Guided Trips	Unguided Trips	Chinook salmon $\geq 28''$	Coho salmon	Lingcod	Halibut
9 Apr - 23 Apr	13	0	4	0	1	0	0	9
24Apr - 7 May	85	12	23	6	2	0	23	140
8 May - 21 May	127	10	32	3	65	0	36	228
22 May - 04 Jun	88	52	23	20	49	0	42	167
05 Jun - 18 Jun	199	29	47	11	5	0	66	295
19 Jun - 02 Jul	348	74	72	28	107	5	230	492
03 Jul - 16 Jul	319	37	68	16	58	154	215	389
17 Jul - 30Jul	180	27	42	14	58	127	128	195
31 Jul - 13 Aug	210	83	50	35	28	357	200	267
14 Aug - 27 Aug	381	154	81	59	3	840	187	362
28 Aug - 10 Sep	291	259	64	106	1	505	168	177
11 Sep - 24 Sep	129	34	31	14	1	35	100	58
25 Sep - 8 Oct	30	4	7	2	0	0	12	19
Total	2,400	775	544	314	378	2,023	1,407	2,798

Appendix A11.—Numbers of chinook salmon examined for coded wire tags in Southeast Alaska marine boat sport fisheries in 2000.

Sport fishery	Seasonal period	Chinook salmon $\geq 28''$			Chinook salmon $< 28''$		
		Estimated harvest	Number Sampled	Percent	Estimated harvest	Number Sampled	Percent
Creel surveys							
Ketchikan	4/24–6/18	393	80	20%	0	0	0
	Derby entered ^a	433	389	90%	0	0	0
	Derby not entered	60	28	47%	0	0	0
	6/19–7/30	2,521	611	24%	76	13	17%
	7/31–9/24	21	17	81%	17	14	82%
	Total	3,428	1,125	33%	93	27	29%
Juneau	4/24–6/18	2,613	512	20%	122	37	30%
	6/19–7/30	1,111	415	37%	113	26	23%
	7/31–9/24	526	136	26%	1	1	100%
	Derby entered ^b	212	212	100%	0	0	0
	Derby take-home	87	22	25%	0	0	0
	Total	4,549	1,297	29%	236	64	27%
Sitka	4/24–6/18	5,486	1,187	22%	0	0	0
	Derby entered ^c	642	642	100%	0	0	0
	Derby take-home	1,168	407	35%	0	0	0
	6/19–7/30	7,109	2,234	31%	0	0	0
	7/31–9/24	2,825	845	30%	0	0	0
	Total	17,230	5,315	31%	0	0	0
Creel survey subtotal		25,207	7,737	31%	329	91	28%
Catch sampling programs							
Petersburg	5/03–9/10 ^d		79			0	
	Derby entered ^e		329			0	
	Derby take-home		17			0	
	Total		425			0	
Wrangell	4/24–9/10		185			1	
Craig/Klawock	4/24–9/10		955			1	
Yakutat	4/17–9/24		378			0	
False Outer Pt.	4/15–6/03		36			0	
Catch sampling subtotal			1,979			2	
Grand total sampled			9,716			93	

^a Derby held 27-29 May, 3-4 June, and 10-11 June.

^b Derby held 18-20 August.

^c Derby held 27-29 May and 3-4 June.

^d Does not include chinook salmon ($137 \geq 28''$ and $21 < 28''$) sampled from the Wrangell Narrows terminal harvest area.

^e Derby held 26–29 May.

Appendix A12.—Estimates of hatchery-produced and wild tagged chinook salmon contributed to the Ketchikan marine boat sport fishery, 24 April–24 September 2000.

Region	Agency ^b	Hatchery/ release site	Tag code	Derby ^a			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Total		
				Rec ^c	Con ^a	Variance ^c	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS															
British Columbia	CDFO	Kincolith River	18-32-14				2	19	184	1	2	2	3	21	186
		Quinsam River	18-18-30	1	8	57							1	8	57
			18-25-11	1	23	493							1	23	493
			18-25-16	1	8	57							1	8	57
		B.C. total		3	39	607	2	19	184	1	2	2	6	60	793
Washington	WDFW	Wells Hatchery	63-01-34				1	5	23				1	5	23
		Washington Total					1	5	23				1	5	23
Alaska	ADFG	Crystal Lake/ Neets Bay	04-42-42	1	13	156	1	46	2,074				2	59	2,230
			04-42-43	1	12	130							1	12	130
			04-50-03				3	169	10,096				3	169	10,096
	KTHC	Deer Mountain	04-47-37	1	6	27	3	62	1,316				4	68	1,343
			04-47-38	1	6	32							1	6	32
			04-49-42	1	14	187	2	28	432				3	42	619
	MIC	Tamgas Creek	47-17-11	1	4	11							1	4	11
			47-17-27	3	23	157	4	117	3,854				7	140	4,012
			47-17-28	1	4	14							1	4	14
			47-17-35	1	56	3,053	2	173	14,944				3	229	17,996
	SSRA	Whit man Lake	04-45-63	1	15	221							1	15	221
			04-47-54	1	10	91	3	114	4,566				4	124	4,657
			04-47-56				2	95	4,451				2	95	4,451
			04-47-57				3	85	2,689				3	85	2,689
			04-47-58	1	10	82	1	35	1,158				2	45	1,240
			04-47-59	1	11	104	2	87	3,753				3	98	3,857
			04-47-60				2	78	3,087				2	78	3,087
			04-49-59	2	16	108	3	102	3,614				5	118	3,722
			04-49-60	2	18	140	3	118	4,842				5	136	4,982
			04-49-61				2	67	2,286				2	67	2,286
			04-49-62				4	173	7,896				4	173	7,896
			04-50-01	1	16	231							1	16	231
		Alaska total		20	234	4,956	40	1,549	129,199				60	1,783	134,155
		All regions		23	273	5,563	43	1,573	131,883	1	2	2	67	1,848	137,448

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Region	Agency ^b	Hatchery/ release site	Tag code	Derby ^a			Non-derby 6/19-7/30			Non-derby 7/30-9/24			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
WILD STOCKS^f																	
Alaska	ADFG	Unuk River	04-35-58	1	12	142							1	12	142		
			04-35-59	1	13	142							1	13	142		
			04-38-29	1	8	58							1	8	58		
			04-42-36	1	8	58							1	8	58		
			04-46-46				1	44	1,964				1	44	1,964		
			04-47-12	1	8	57	1	30	844				2	38	901		
			04-47-13							1	44	1,964			1	44	1,964
			04-47-15							1	44	1,964			1	44	1,964
Wild stocks total				5	49	457	4	162	6,942			9	211	7,399			

^a Derby held on 27-29 May, 3-4 June, and 10-11 June 2000.

^b CDFO = Canada Department of Fisheries and Oceans, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, SSRA = 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 contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds.

Appendix A13.—Estimates of hatchery-produced and wild tagged chinook salmon contributed to the Juneau marine boat sport fishery, 24 April-24 September 2000.

Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Non-derby 6/19-7/30			Non-derby 7/31-9/24			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	Quinsam River	18-18-30										1	7	42	1	7	42
		Snootli Creek	18-27-35				1	5	22							1	5	22
		B.C. total					1	5	22				1	7	42	2	12	64
Washington	WDFW	Turtle Rock	63-58-46	1	25	611										1	25	611
		Washington total		1	25	611										1	25	611
Alaska	ADFG	Crystal Lake	04-45-26							1	24	569				1	24	569
			04-47-17				1	18	319							1	18	319
	DIPC	Gastineau	04-42-61	1	18	315										1	18	315
			50-04-01	1	17	285	1	11	103							2	28	388
			50-04-22										2	17	135	2	17	135
			50-04-23							1	39	1,516	2	18	138	3	57	1,654
			50-04-24	5	223	10,632	1	25	582				1	9	66	7	257	11,280
			50-04-25	3	135	6,391										3	135	6,391
			50-04-26	3	141	6,628	1	26	664				1	9	76	5	176	7,368
			50-04-27	4	188	9,536	1	25	613							5	213	10,149
			50-04-28				1	11	105				2	9	32	3	20	136
			50-04-37	5	210	9,843	4	101	2,584							9	311	12,426
			50-04-38	4	193	10,110							1	36	1,277	5	229	11,387
			50-04-39	5	137	4,170	4	106	4,054							9	243	8,224
			50-04-40	4	122	3,954	4	63	1,046							8	185	5,000
			50-04-41	3	70	1,827	5	87	1,734							8	157	3,562
			50-04-42							1	47	2,164				1	47	2,164
			50-04-43	1	31	919				1	34	1,099				2	65	2,018
			50-04-55	1	27	711	1	9	80							2	36	791
	NMFS	Little Port Walter	03-01-44							1	3	8				1	3	8
			03-23-01										1	1	0	1	1	0
			03-62-12										3	3	0	3	3	0
			03-62-15										2	2	0	2	2	0
			03-62-35							1	3	8				1	3	8
			03-62-36							1	5	18				1	5	18
			03-62-39				2	7	15	1	5	19	4	4	0	7	16	34
			03-62-40							1	4	13	1	1	0	2	5	13
			03-63-36							1	5	17	1	1	0	2	6	17
	NSRA	Hidden Falls	04-47-11	2	111	6,012	2	50	1,300							4	161	7,312
			04-48-17	3	180	10,893	1	41	1,645	2	106	5,964				6	327	18,502
		Alaska total		45	1,803	150,159	29	580	21,617	12	275	14,821	21	110	1,725	107	2,768	188,322
		All regions		46	1,828	151,005	30	585	21,776	12	275	14,821	22	117	1,768	110	2,805	189,370

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Derby ^a			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
WILD STOCKS^f																		
Alaska	ADFG	Taku River	04-42-34				1	209	43,430							1	209	43,430
			04-46-32	1	184	35,441										1	184	35,441
			04-46-35	1	183	35,441										1	183	35,441
			Wild stocks total	2	367	70,882	1	209	43,430							3	576	114,312

^a Derby held on 18-20 August 2000.

^b CDFO = Canada Department of Fisheries and Oceans, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, DIPC = Douglas Island Pink and Chum, NMFS = National Marine Fisheries Service, NSRA = Northern 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 contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds.

Appendix A14.—Estimates of hatchery-produced and wild tagged chinook salmon contributed to the Sitka marine boat sport fishery, 24 April-24 September 2000.

Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Derby ^a			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS																		
British Columbia	CDFO	Fort Babine	18-33-56	1	6	31				1	4	10				2	10	41
		Kincolith River	18-32-14							1	5	16				1	5	16
		Kitimat River	18-22-55				1	3	8							1	3	8
			18-28-49	1	16	227				2	29	395				3	45	622
			18-28-50							1	63	3,865				1	63	3,865
		Masset	18-28-32							1	20	389				1	20	389
		Nitinat River	18-13-48				1	33	1,036				1	132	17,377	2	165	18,413
			18-13-50							1	109	11,814				1	109	11,814
			18-18-32							1	120	14,305				1	120	14,305
			18-18-63	1	32	1,021	1	29	802							2	61	1,823
			18-23-57	1	10	92				2	20	191				3	30	283
		Quinsam River	18-25-09	1	90	8,021										1	90	8,021
			18-25-17	1	66	4,324										1	66	4,324
		Shotbolt Bay	18-22-50							1	4	16				1	4	16
		Shuswap River	18-25-01							1	12	142				1	12	142
			18-31-49	2	154	13,636	1	34	1,112	4	157	6,275				7	345	21,023
			18-42-16										1	36	1,236	1	36	1,236
		Snootli Creek	18-21-52	1	4	12										1	4	12
		Sooke River	18-32-08				1	1	0							1	1	0
		Terrace	18-06-08							1	4	9				1	4	9
			18-23-41										1	4	13	1	4	13
			18-27-49							1	4	9				1	4	9
			18-27-52							1	4	9				1	4	9
			18-27-55							1	4	9				1	4	9
		Tofino	18-22-51							1	3	7				1	3	7
			18-33-55	2	33	510				1	6	31				3	39	540
			18-39-10										1	4	10	1	4	10
		B.C. total		11	411	29,290	5	100	2,974	22	568	39,901	4	176	19,334	42	1,255	91,499
Idaho	NEZP	Big Canyon	63-51-20				1	1	0							1	1	0
		Idaho total					1	1	0							1	1	0
Oregon	ODFW	Bonneville	07-09-27							1	28	781				1	28	781
			09-17-12							2	432	94,603				2	432	94,603
		Youngs Bay	09-22-14	1	13	157										1	13	157
			09-22-15							1	10	91				1	10	91
		Elk River	07-09-51				1	2	2							1	2	2
		Gardiner Creek	07-11-18							2	7	17				2	7	17
		Marion Forks	09-23-19							1	4	13				1	4	13
			09-23-20							1	4	9				1	4	9
		McKenzie	09-21-60							1	3	4				1	3	4
			09-22-46										1	2	2	1	2	2

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Derby ^a			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Total						
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance				
Oregon	ODFW	Priorli Creek	09-18-46										1	7	47	1	7	47				
			09-18-55							1	13	168				1	13	168				
		Rock Creek	07-07-52				1	1	0	2	7	18			1	4	14	4	12	33		
			07-09-62												1	5	19	1	5	19		
		Salmon River	07-12-52				1	3	7						1	2	2	2	5	9		
			07-09-60							1	12	132						1	12	132		
		Trask	09-18-63							1	7	37						1	7	37		
			07-13-22							1	29	822						1	29	822		
		Umatilla	09-17-48				1	7	38	1	7	38			1	8	61	3	22	137		
			09-21-34							1	9	76						1	9	76		
Yaquina Bay	09-21-47											1	21	403	1	21	403					
Oregon total				2	20	195	4	15	85	16	563	97,652	7	49	612	29	647	98,544				
Washington	COOP	Willapa	63-60-02									1	23	508			1	23	508			
			Ltl White	05-01-01																		
	FWS	Salmon	-1211					1	11	103	4	126	4,190				5	137	4,292			
			05-01-02											1	2	4	1	2	4			
			-0203																			
			05-01-02											1	2	4	1	2	4			
			-0204																			
			05-01-02											1	35	1,212	1	35	1,212			
			-0407																			
			05-01-01																			
			-1213				1	9	79	2	63	1,974						3	72	2,053		
			05-01-02																			
	10206				1	9	64									1	9	64				
	MAKA	Hoko Falls	21-29-53										1	3	8			1	3	8		
			23-30-26											1	4	9			1	4	9	
	NMFS	Columbia River	23-30-30										1	4	9			1	4	9		
			23-30-31											1	2	4			1	2	4	
			23-30-51												1	4	13	1	4	13		
			23-30-54											1	4	9			1	4	9	
			23-30-56											1	4	9			1	4	9	
			23-27-12				1	4	13										1	4	13	
			21-30-42											4	30	204			4	30	204	
	QDNR	Quinault Lake	21-55-12												2	4	4	3	8	18		
			21-55-13												1	31	934	1	31	934		
			21-29-48											1	4	12	1	5	17	2	9	29
			21-29-61													1	6	25	1	6	25	
			21-30-03													1	3	7	1	3	7	
WDFW	Carlton Pond	63-60-53															2	2	0			
		63-53-19															1	11	104			
		63-60-49															4	20	112			
		63-60-49											1	4	9			5	24	121		
		63-63-40													1	5	18	1	5	18		
		63-60-06											1	72	5,059			1	72	5,059		
		63-60-07											1	82	6,618			2	157	12,142		

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Derby ^a			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Total				
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance		
Washington	WDFW	Klickitat	63-61-06							1	43	1,768				1	43	1,768		
		Lyons Ferry	63-63-20							1	4	9				1	4	9		
		Marblemount	63-53-23							1	4	9				1	4	9		
		Priest Rapids	63-60-01	1	104	10,622					2	183	16,773				3	287	27,394	
			63-63-28								4	326	27,120				4	326	27,120	
		Ringold Springs	05-01-02																	
			-0406	3	41	542					4	47	535				7	88	1,077	
			09-17-09								1	50	2,486				1	50	2,486	
			63-63-27								1	53	2,771				1	53	2,771	
		Similkameen	63-55-34	1	4	13											1	4	13	
			63-60-51	2	13	92					1	3	8	1	4	13	4	20	113	
		Turtle Rock	63-01-24	1	3	8	1	1	0								2	4	8	
			63-46-07	3	16	101	2	4	6	2	7	20	1	4	14	8	31	140		
			63-58-46	1	55	2,919											1	55	2,919	
		Wells	63-41-29	2	13	90											5	22	111	
			63-41-30	1	4	13	1	3	6							1	4	13	32	
			63-60-54	1	10	95										1	2	2	3	16
			63-63-23	1	4	13											1	4	13	
		Washington total				26	390	20,994	8	30	194	46	1,197	83,508	12	72	1,250	92	1,689	105,946
		Alaska	ADFG	Crystal Lake	04-46-19	1	43	1,847										1	43	1,847
Crystal Lake/ Earl West Cove	04-45-32						1	30	893							1	30	893		
Crystal Lake/ Neets Bay	04-42-42			1	36	1,266										1	36	1,266		
MIC	Tamgas Creek		47-17-27				1	20	396							1	20	396		
			47-17-35	1	74	5,460										1	74	5,460		
NMFS	Little Port Walter		03-22-45								1	4	9				1	4	9	
			03-22-47				1	1	0							1	1	0		
			03-22-55	1	3	8										1	3	8		
			03-23-08				1	3	5							1	3	5		
			03-62-17	1	4	13										1	4	13		
			03-62-18				1	1	0							1	1	0		
			03-62-23				2	4	6							2	4	6		
			03-62-27	1	4	12				1	3	8				2	7	20		
			03-62-29				1	1	0							1	1	0		
	03-62-40												2	10	47	2	10	47		
NSRA	Hidden Falls		04-45-21	1	45	1,949										1	45	1,949		
			04-47-11	1	34	1,131	4	62	1,191	1	37	1,355				6	133	3,678		
		04-48-17				1	12	128							1	12	128			

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Region	Agency ^b	Hatchery/ release site	Tag code	Non-derby 4/24-6/18			Derby ^a			Non-derby 6/19-7/30			Non-derby 7/31-9/24			Total			
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance	
Alaska	NSRA	Medvejie	04-07-09	3	132	5,804	1	11	109	1	39	1,465				5	182	7,378	
			04-45-37				1	15	222							1	15	222	
			04-47-01	3	203	15,912	3	58	1,369	1	42	1,698				7	303	18,979	
			04-47-03	1	44	1,936	4	86	2,211							5	130	4,147	
			04-48-20	1	52	2,651										1	52	2,651	
			04-48-30				1	13	165							1	13	165	
			04-48-56	2	52	1,300	1	6	35	1	23	497				4	81	1,831	
			Sheldon Jackson	04-48-14	2	115	7,770									2	115	7,770	
		SJ	Neets Bay	04-45-44						1	37	1,312				1	37	1,312	
		SSRA	Whitman Lake	04-47-58	1	34	1,091									1	34	1,091	
				04-47-59	1	85	7,194									1	85	7,194	
				04-49-58									1	28	773	1	28	773	
				04-49-59						1	25	594				1	25	594	
			04-49-60						1	26	668				1	26	668		
		Alaska total		22	960	60,692	24	323	6,961	9	236	8,188	3	38	857	58	1,557	76,698	
		All regions		61	1,781	128,368	42	469	10,453	93	2,564	270,680	26	335	25,971	222	5,149	435,472	
WILD STOCKS^f																			
Alaska	ADFG	Unuk River	04-35-56	1	44	1,936										1	44	1,936	
			04-47-12	1	29	795											1	29	795
			04-47-15				1	10	87								1	10	87
		Alaska total		2	73	2,761	1	10	87							3	83	2,848	
Washington	WDFW	Hanford Reach	63-61-17				1	3	5							1	3	5	
			Washington total				1	3	5								1	3	5
		Wild stocks total		2	73	2,761	2	13	92							4	86	2,853	

^a Derby held on 27-29 May and 3-4 June 2000.

^b CDFO = Canada Department of Fisheries and Oceans, NEZP = Nez Perce Tribe, ODFW = Oregon Department of Fish and Wildlife, COOP=Washington Department of Fish and Wildlife - Cooperative, FWS = U.S.Fish and Wildlife Service, MAKAA=Makah Tribe, NMFS = National Marine Fisheries Service, QDNR = Quinault Department of Natural Resources, WDFW = Washington Department of Fisheries and Wildlife, ADFG=Alaska Department of Fish and Game, MIC = Metlakatla Indian Community, NSRA = Northern Southeast Regional Aquaculture Association, SJ = Sheldon Jackson College, SSRA = 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 Alaskan wild stock contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds. Non-Alaskan wild stock recovery was only expanded by using the sampling fraction because tagging fraction was unavailable.

Appendix A15.–Estimates (from sampled fish only) of hatchery-produced chinook salmon contributed to 425 chinook salmon examined during the Petersburg marine boat sport fishery from 3 May to 10 September 2000.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
Alaska	ADFG	Crystal Lake	04-45-25	1	6	26	1%
			04-45-26	2	11	48	3%
			04-46-08	1	5	16	1%
			04-46-10	4	40	369	10%
			04-46-11	7	68	601	16%
			04-46-19	2	22	214	5%
			04-47-18	1	5	24	1%
			NMFS	Crystal Lake/Earl West Cove Little Port Walter	04-45-38	1	11
	03-22-45	2			2	0	0%
	03-22-48	1			1	0	0%
	03-22-57	1			1	0	0%
	03-22-58	2			2	0	0%
	03-23-05	1			1	0	0%
	03-62-17	1			1	0	0%
	Alaska total				27	176	1,404
TOTAL ALL REGIONS				27	176	1,404	41%

^a ADFG = Alaska Department of Fish and Game; NMFS = National Marine Fisheries Service.

^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 A16.–Estimates (from sampled fish only) of hatchery-produced chinook salmon contributed to 186 chinook salmon examined during the Wrangell marine boat sport fishery from 24 April to 10 September 2000.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
Alaska	ADFG	Crystal Lake/ Earl West Cove	04-45-32	1	11	101	6%
			04-45-38	2	22	213	12%
			Alaska total				3
TOTAL ALL REGIONS				3	33	314	18%

^a 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.

Appendix A17.–Estimates (from sampled fish only) of hatchery-produced chinook salmon contributed to 956 chinook salmon examined during the Craig/Klawock marine boat sport fishery from 24 April to 10 September 2000.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Conuma River	18-20-44	1	36	1,279	4%
		Fort Babine	18-33-56	1	2	1	0%
		Kincolith River	18-32-15	1	2	2	0%
		Masset	18-28-33	1	6	33	1%
		Nitinat River	18-13-50	1	36	1,273	4%
		Quinsam River	18-19-01	2	272	36,661	28%
			18-23-56	1	3	4	0%
			18-18-31	1	7	39	7%
			18-25-09	1	24	558	25%
			18-25-10	1	13	166	1%
			18-25-13	1	11	114	12%
			18-25-16	1	8	55	1%
		Robertson Creek	18-14-60	1	37	1,308	4%
		Shuswap River	18-31-49	2	25	295	3%
		Terrace	18-06-42	1	1	0	0%
			18-23-42	1	1	0	0%
			18-27-55	2	2	0	0%
			Thornton Creek	18-33-58	1	5	22
		Toboggan Creek	18-32-10	1	1	0	0%
		Tofino	18-33-55	2	4	3	0%
B.C. total				24	496	41,813	52%
Oregon	ODFW	Bonneville	07-09-21	1	9	65	1%
		Oregon total		1	9	65	1%
Washington	MAKA	Hoko Falls	21-29-53	1	1	0	0%
	NEZP	Lyons Ferry	63-63-46	1	unknown ^e	unknown ^e	
	QDNR	Quinault Lake	21-30-41	1	13	161	1%
	WDFW	Klickitat	63-60-07	1	25	593	3%
			63-61-07	1	24	545	2%
		Ringold Springs	63-63-27	1	18	292	2%
		Turtle Rock	63-01-20	1	1	0	0%
			63-46-07	1	1	0	0%
		Wells	63-02-17	1	1	0	0%
	Washington total				9	84	1,591
Non-Alaska total				34	589	43,469	62%
Alaska	KTHC	Deer Mountain	04-47-37	2	11	47	1%
	NMFS	Little Port Walter	03-22-45	1	1	0	0%
	SSRA	Whitman Lake	04-47-58	1	9	92	1%
			04-50-02	1	13	155	1%
Alaska total				5	34	294	4%
TOTAL ALL REGIONS				39	623	43,763	65%

^a CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fish and Wildlife, MAKA = Makah Tribe, NEZP = Nez Perce Tribe, QDNR = Quinault Department of Natural Resources, WDFW = Washington Department of Fisheries and Wildlife, KTHC = Ketchikan Tribal Hatchery Corporation, NMFS = National Marine Fisheries Service, SSRA = 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 Recovery coded as “nonsense” in CWT database due to lack of release information, and therefore contribution and its variance could not be estimated.

Appendix A18.–Estimates (from sampled fish only) of hatchery-produced chinook salmon contributed to 378 chinook salmon examined during the Yakutat marine boat sport fishery, 17 April to 24 September 2000.

Region	Agency ^a	Hatchery/ release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
British Columbia	CDFO	Quinsam River	18-25-15	1	8	51	2%
			18-25-17	1	7	48	2%
		Shuswap River	18-24-62	1	9	75	2%
			Toboggan Creek	18-16-55	1	1	0
		Tofino	18-33-55	1	2	1	0%
		B.C. total				5	27
Oregon	ODFW	Youngs Bay	09-20-35	1	1	0	0%
			09-23-19	1	1	0	0%
		Marion Forks	09-23-20	3	3	0	0%
			Mckenzie	09-22-29	1	1	0
			09-22-31	1	1	0	0%
			09-22-37	1	1	0	0%
			09-22-43	1	1	0	0%
			09-22-49	1	1	0	0%
			09-22-50	2	2	0	1%
		Salmon River	09-24-47	1	1	0	0%
		South Santiam	09-21-57	1	10	99	3%
		Umtilla	09-17-29	1	2	3	1%
		Willamette	09-21-59	2	2	0	1%
		Oregon total				17	27
Washington	FWS	Makah on Sooes	05-40-53	1	22	481	6%
			Mixed Columbia	23-30-59	1	1	0
	ODFW	Mckenzie	09-22-45	1	1	0	0%
			Salmon River	21-29-48	1	1	0
	WDFW	Dryden Pond	21-29-61	1	1	1	0%
			63-60-49	1	1	0	0%
			63-60-50	1	1	0	0%
	Washington total				7	28	482
Non-Alaska total				29	82	759	21%
Alaska	ADFG	Big Boulder	04-01-03				
			-0215	1	1	0	0%
			Crystal Lake	04-46-11	1	10	91
	NSRA	Hidden Falls	04-47-11	1	11	107	3%
			Alaska total		3	22	198
TOTAL ALL REGIONS				32	104	957	27%

^a CDFO = Canada Department of Fisheries and Oceans, ODFW = Oregon Department of Fish and Wildlife, FWS = U.S. Fish and Wildlife Service, NMFS = National Marine Fisheries Service, QDNR = Quinault Department of Natural Resources, WDFW = Washington Department of Fisheries and Wildlife, ADFG = Alaska Department of Fish and Game, NSRA = 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 A19.–Age composition of chinook salmon from selected Southeast Alaska sport fisheries, 2000.

Sport Fishery	Season		BROOD YEAR										Sample Size	
			1997		1996		1995			1994				1993
			0.2	1.1	0.3	1.2	0.4	1.3	2.2	0.5	1.4	2.3		1.5
Ketchikan	4/24-6/18 ^a (spring)	Males	n		1	19		38		6				64
			Percent		1.6	29.7		59.4		9.4				
			SE ^b		1.6	5.8		6.2		3.7				
		Females	n		2	6		28		9				45
			Percent		4.4	13.3		62.2		20.0				
			SE ^b		3.1	5.1		7.3		6.0				
Total ^f	n		19	64		168		31				282		
	Percent		6.7	22.7		59.6		11.0						
	SE ^b		1.5	2.5		2.9		1.9						
Ketchikan	6/19-9/24 (summer)	Males	n		1	36		23		2			62	
			Percent		1.6	58.1		37.1		3.2				
			SE ^b		1.6	6.3		6.2		2.3				
		Females	n	2	1	4	17	2	40		1		1	68
			Percent	2.9	1.5	5.9	25.0	2.9	58.8		1.5		1.5	
			SE ^b	2.1	1.5	2.9	5.3	2.1	6.0		1.5		1.5	
Total ^f	n	2	1	6	67	2	71		3		1	153		
	Percent	1.3	0.7	3.9	43.8	1.3	46.4		2.0		0.7			
	SE ^b	0.9	0.7	1.6	4.0	0.9	4.0		1.1		0.7			
Juneau	4/24-7/02 (spring)	Males	n		1	31		1	32		11	2	79	
			Percent		1.3	1.3	39.2	1.3	40.5		13.9	2.5		
			SE ^b		1.3	1.3	5.5	1.3	5.6		3.9	1.8		
		Females	n			1	6	1	49		18			75
			Percent		0.0	1.3	8.0	1.3	65.3		24.0			
			SE ^b		0.0	1.3	3.2	1.3	5.5		5.0			
Total ^f	n	2		4	86	2	182		72	3		351		
	Percent	0.6		1.1	24.5	0.6	51.9		20.5	0.9				
	SE ^b	0.4		0.6	2.3	0.4	2.7		2.2	0.5				
Juneau	7/03-9/24 (summer)	Males	n			8		2		1			11	
			Percent			72.7		18.2		9.1				
			SE ^b			14.1		12.2		9.1				
		Females	n			1	9		9		1			11
			Percent			9.1	81.8		9.1		9.1			
			SE ^b			9.1	12.2		9.1		9.1			
Total ^f	n			44	38		2		2			84		
	Percent			52.4	45.2		2.4		2.4					
	SE ^b			5.5	5.5		1.7		1.7					

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Sport Fishery	Season			BROOD YEAR									Sample Size			
				1997		1996		1995			1994			1993		
				0.2	1.1	0.3	1.2	0.4	1.3	2.2	0.5	1.4		2.3	1.5	
Juneau Golden North Derby	8/18-8/20	Males	n											1		
			Percent													
			SE ^b													
		Females	n													53
			Percent													
			SE ^b													
Total ^f	n			1	32		21							54		
	Percent			1.9	59.3		38.9									
	SE ^b			1.9	6.7		6.7									
Petersburg	5/03-7/02	Males	n					10		10				20		
			Percent					50.0		50.0						
			SE ^b					11.5		11.5						
		Females	n			1		11		14			1		27	
			Percent			3.7		40.7		51.9			3.7			
			SE ^b			3.7		9.6		9.8			3.7			
Total ^f	n			1		27		29			1		58			
	Percent			1.7		46.6		50.0			1.7					
	SE ^b			1.7		6.6		6.6			1.7					
Wrangell	4/24-7/02	Males	n					5					1	6		
			Percent					83.3					16.7			
			SE ^b					16.7					16.7			
		Females	n			1		18		4					23	
			Percent			4.3		78.3		17.4						
			SE ^b			4.3		8.8		8.1						
Total ^f	n			1	1	24		8			1		35			
	Percent			2.9	2.9	68.6		22.9			2.9					
	SE ^b			2.9	2.9	8.0		7.2			2.9					

^a Ketchikan season strata modified to 4/24–6/18 and 6/19–9/24 due to Ketchikan derby fish being sampled disproportionately high during late May to mid-June 2000.

^b SE in percent.

^c Includes both sexed and unsexed chinook salmon.

Appendix A20.—Length-at-age in millimeters (from tip of snout to fork of tail) by sex for chinook salmon from selected Southeast Alaska sport fisheries, 2000.

Sport Fishery			BROOD YEAR										Sample Size	
			1998		1997		1996		1995		1994			1993
			0.1	0.2	1.1	0.3	1.2	0.4	1.3	2.2	0.5	1.4		2.3
Ketchikan	Males	Mean				860	783			899			1,076	
		SE				2	6			9			38	
		n				2	55			61			8	126
	Females	Mean		685	510	848	767	910	901		950			1,010
		SE		5	0	19	11	10	7		15			0
		n		2	1	6	23	2	68		10			1
Total ^a	Mean		685	510	878	784	910	900		984			1,010	
	SE		5	0	11	5	10	4		15			0	
	n		2	1	25	131	2	239		34			1	
Juneau	Males	Mean			453	750	703	870	822		955		805	
		SE			0	0	8	0	12		18		16	
		n			1	1	38	1	34		11		2	88
	Females	Mean				715	709	1,000	829		916			
		SE				0	26	0	8		14			
		n				1	7	1	57		19			85
Total ^a	Mean			468	759	713	935	826		925		840		
	SE			15	20	4	65	4		7		96		
	n			2	4	127	2	210		71		3	419	
Juneau Derby	Total ^a	Mean				860	718		814					
	SE				0	8		14						
	n				1	32		21					55	
Petersburg	Males	Mean							867			943		
		SE							22			23		
		n							10			10	20	
	Females	Mean				900			850		888			1,030
		SE				0			19		12			0
		n				1			11		14			1
Total ^a	Mean				900			863		912			1,030	
	SE				0			12		12			0	
	n				1			27		29			1	
Wrangell	Males	Mean							944				1,180	
		SE							50				0	
		n							5				1	
	Females	Mean				800			874		963			
		SE				0			11		53			
		n				1			18		4			23
Total ^a	Mean				820	800		884		965			1,180	
	SE				0	0		15		26			0	
	n				1	1		24		8			1	

^a Includes sexed and unsexed chinook salmon.

Appendix A21.—Numbers of coho salmon examined for coded wire tags in Southeast Alaska marine boat sport fisheries in 2000.

Sport fishery	Seasonal period	Estimated Harvest	Number sampled	Percent sampled
Creel surveys				
Ketchikan	4/24–7/30 non-derby	3,224	690	21%
	Derby entered ^a	0	0	
	Derby not entered ^a	0	0	
	7/31–9/24 non-derby	11,554	5,296	46%
	Total	14,778	5,986	41%
Juneau	4/24–7/30 non-derby	317	145	46%
	7/31–9/24 non-derby	9,787	2,518	26%
	Derby entered ^b	1,046	1,046	100%
	Derby take-home ^b	810	207	26%
	Total	11,960	3,916	33%
Sitka	4/24–7/30 non-derby	12,964	4,732	37%
	Derby entered ^c	0	0	
	Derby take-home ^c	5	2	40%
	7/31–9/24 non-derby	25,278	7,267	29%
	Total	38,247	12,001	31%
Creel survey totals		66,078	21,903	33%
Catch sampling programs				
Craig/Klawock	4/24–9/10		6,773	
Petersburg	5/03-9/10		76	
Wrangell	4/24-9/10		29	
Yakutat	4/17-9/24		2,023	
Catch sample total			8,901	
Total sampled			30,804	

^a Derby held 27–29 May, 3-4 June, and 10-11 June.

^b Derby held 18–20 August.

^c Derby held 27–29 May and 3-4 June.

Appendix A22.–Estimates of hatchery-produced and wild tagged coho salmon contributed to the Ketchikan marine boat sport fishery, 24 April–24 September 2000.

Region	Agency ^a	Hatchery/ release site	Tag code	Non-derby 6/19–7/30			Non-derby 7/31–9/24			Total		
				Rec ^b	Con ^c	Variance ^d	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS												
British Columbia	CDFO	Fort Babine	18-35-04				1	2	2	1	2	2
		Hartley Bay	18-33-12	1	33	1,049				1	33	1,049
		Snootli Creek	18-31-05				2	4	2	2	4	2
			18-31-06				2	4	2	2	4	2
B.C. total				1	33	1,049	5	10	9	6	43	1,058
Alaska	KTHC	Deer Mountain	04-01-51	10	160	3,840	3	18	94	13	178	3,934
			04-01-53	9	77	837	1	3	8	10	80	845
	MIC	Tamgas Creek	47-01-02				2	351	75,829	2	351	75,829
			47-17-36				1	95	8,917	1	95	8,917
	SSRA	Nakat Inlet	04-02-26				7	125	2,670	7	125	2,670
			04-02-27				2	46	1,092	2	46	1,092
		Neets Bay	04-02-16				13	594	39,618	13	594	39,618
			04-02-17				13	635	40,164	13	635	40,164
			04-02-18				6	363	25,037	6	363	25,037
		04-02-19				7	380	27,027	7	380	27,027	
		04-02-20				15	724	60,612	15	724	60,612	
		04-02-21				9	620	61,895	9	620	61,895	
		04-02-28				6	316	18,985	6	316	18,985	
		04-02-29				9	877	140,140	9	877	140,140	
	04-02-30				21	1,184	138,155	21	1,184	138,155		
	04-02-31				10	529	36,506	10	529	36,506		
	Whitman Lake	04-02-32				5	292	19,833	5	292	19,833	
		04-02-22				9	303	17,018	9	303	17,018	
		04-02-23				6	213	8,903	6	213	8,903	
	Alaska total				19	237	5,584	145	7,668	3,705,421	164	7,905
TOTAL ALL REGIONS				20	270	7,539	150	7,678	3,705,905	170	7,948	3,713,444
WILD STOCKS^e												
British Columbia	CDFO	Toboggan Creek	08-03-21				1	16	239	1	16	239
		Zolzap Creek	18-43-12	1	10	95	1	4	14	2	14	109
		B.C. total				1	10	95	2	20	253	3
Alaska	ADFG	Hugh Smith Lake	04-40-20	1	7	37	2	7	18	3	14	55
		Naha River	04-47-28				3	109	4,807	3	109	4,807
			04-47-29				1	36	1,624	1	36	1,624
Alaska total				1	7	37	6	152	6,496	7	159	6,533
WILD STOCK TOTAL				2	17	132	8	172	6,749	10	189	6,881

^a CDFO = Canada Department of Fisheries and Oceans, KTHC = Ketchikan Tribal Hatchery Corporation, MIC = Metlakatla Indian Community, SSRA = 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 Alaskan wild stock contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds. Non-alaskan wild stock recoveries were only expanded by using the sampling fraction since tagging fractions were unavailable.

Appendix A23.–Estimates of hatchery-produced and wild tagged coho salmon contributed to the Juneau marine boat sport fishery, 24 April-24 September 2000.

Region	Agency ^b	Release site	Tag code	Non-derby 6/19–7/30			Non-derby 7/31–9/24			Derby ^a			Total		
				Rec ^c	Con ^d	Variance ^e	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS															
Alaska	ADFG	Crystal Lake	04-01-03-1213							1	4	12	1	4	12
	DIPC	Gastineau	50-04-44				3	17	107				3	17	107
			50-04-45				2	10	48				2	10	48
			50-04-46				3	15	65	1	1	0	4	16	65
			50-04-47				1	3	7	2	2	0	3	5	7
			50-04-48				3	15	65	2	2	0	5	17	65
			50-04-49				1	3	7	2	2	0	3	5	7
			50-04-50				4	16	66				4	16	66
			50-04-51				3	12	42	3	3	0	6	15	42
			50-04-52							1	1	0	1	1	0
			50-04-60				2	137	11,015	1	44	1,879	3	181	12,893
			50-04-61				3	124	6,040	7	75	727	10	199	6,767
			50-04-62				4	142	6,153	2	49	1,568	6	191	7,721
			50-04-63				3	113	4,991	6	58	510	9	171	5,501
			50-31-01				3	173	12,699	1	12	122	4	185	12,821
			50-31-02				7	269	12,871	4	45	463	11	314	13,335
		Sheep Creek	50-31-03				4	214	15,223	3	29	243	7	243	15,466
			50-31-04				8	310	15,730	8	134	3,599	16	444	19,329
	NMFS	Auke Creek	03-01-01				6	23	106	1	1	0	7	24	106
	NSRA	Hidden Falls	04-48-57				1	95	8,972	1	137	18,580	2	232	27,552
			04-49-14							1	79	6,106	1	79	6,106
	SSRA	Earl West Cove	04-02-24				1	29	794				1	29	794
		Total					62	1,720	211,971	47	678	43,643	109	2,398	255,614
WILD STOCKS^f															
Alaska	ADFG	Auke Creek	04-46-39				8	25	92	3	3	0	11	28	92
		Berners River	04-43-03				2	40	1,120	1	5	24	3	45	1,144
			04-45-31				5	99	2,741	4	22	95	9	121	2,836
		Chilkat Lake	04-01-28				1	144	20,635				1	144	20,635
		Chilkat River	04-01-23				1	325	105,229	2	106	5,757	3	431	110,986
		Taku River	04-01-26				1	235	84,277	1	57	4,798	2	270	78,250
			04-01-27				10	2,350	842,770	9	511	43,178	19	2,567	743,379
			04-01-31							1	57	4,798	1	135	39,125
			04-01-32	1	111	12,219	1	235	84,277	4	227	19,190	6	811	234,751
			04-46-43				1	349	121,366				1	349	121,366
		Wild Stock Total					1	111	12,219	30	3,802	1,624,915	25	988	77,839

^a Derby held on 18–20 August 2000.

^b ADFG = Alaska Department of Fish and Game, DIPC = Douglas Island Pink and Chum, NMFS = National Marine Fisheries Service, NSRA = Northern Southeast Regional Aquaculture Association, SSRA = 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 estimated harvest of the release of the noted tag code.

^f Wild stock contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds.

Appendix A24.—Estimates of hatchery-produced and wild tagged coho salmon contributed to the Sitka marine boat sport fishery, 24 April-24 September 2000. CDFO = Canada Department of Fisheries and Oceans, ADFG = Alaska Department of Fish and Game, AKI = Armstrong-Keta, Inc., DIPC = Douglas Island Pink and Chum, Inc., MIC = Metlakatla Indian Community, NSRA = Northern Southeast Regional Aquaculture Association, PWHA = Prince of Wales Hatchery Association, SJ = Sheldon Jackson College, SSRA = Southern Southeast Regional Aquaculture Association, USFS = U.S. Forest Service.

Region	Agency	Release site	Tag code	Non-derby 4/24–6/18			Non-derby 6/19–7/30			Non-derby 7/31–9/24			Total		
				Rec ^a	Con ^b	Variance ^c	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS															
British Columbia	CDFO	Fort Babine	18-33-18				2	7	16	1	4	15	3	11	32
			18-33-19							1	4	15	1	4	15
			18-35-04				1	4	10	1	4	15	2	8	25
			18-35-05				1	3	5				1	3	5
		Hartley Bay	18-33-12							1	13	146	1	13	146
		Kitimat River	18-02-63							1	70	4,866	1	70	4,866
		Kitsumkalum	18-35-07				1	4	12	1	4	10	2	8	22
			18-35-08							2	12	58	2	12	58
			18-35-09							1	6	28	1	6	28
		Snootli Creek	18-31-05							1	4	12	1	4	12
			18-31-06				3	8	18				3	8	18
			18-38-17				1	7	42	3	25	200	4	32	241
		Toboggan Cr.	18-35-12				1	3	5				1	3	5
			18-35-13							1	4	11	1	4	11
			18-35-15				2	6	12				2	6	12
		B.C. Total					12	42	156	14	150	5,727	26	192	5,883
Alaska	ADFG	Crystal Lake	04-01-46				1	7	46				1	7	46
	AKI	Port Armstrong	04-44-53							3	134	6,571	3	134	6,571
			04-44-54				1	49	2,333	2	143	10,373	3	192	12,706
	DIPC	Gastineau	50-04-46				1	3	6				1	3	6
			50-04-47							1	4	15	1	4	15
			50-04-48							1	3	5	1	3	5
			50-04-52							1	3	5	1	3	5
			50-04-61							2	83	3,480	2	83	3,480
		Sheep Creek	50-31-03							2	74	2,747	2	74	2,747
			12-01-01												
	MIC	Tamgas Creek	-0207				3	759	199,754	1	221	46,639	4	980	248,393
	NSRA	Hidden Falls	04-48-57				1	93	8,513	2	223	25,764	3	316	34,276
			04-48-58				2	208	21,570				2	208	21,570
			04-49-12				1	61	3,657				1	61	3,657
			04-49-14							1	78	6,023	1	78	6,023
		Medvejje	04-49-27				13	35	125	33	108	480	46	143	605
			04-01-03												
		Medvejje CIF	-1311				1	120	14,336	1	176	30,856	2	296	45,192
	PWHA	Klawock River	50-31-27				1	45	1,943				1	45	1,943
			50-31-28				4	179	9,314				4	179	9,314
			50-31-29				3	138	6,982	1	67	4,484	4	205	11,466
			50-31-33							1	66	4,249	1	66	4,249
	SJ	Sheldon Jackson	04-49-07				18	49	194	57	192	1,161	75	241	1,355

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Region	Agency	Release site	Tag code	Non-derby 4/24–6/18			Non-derby 6/19–7/30			Non-derby 7/31–9/24			Total		
				Rec ^a	Con ^b	Variance ^c	Rec	Con	Variance	Rec	Con	Variance	Rec	Con	Variance
HATCHERY STOCKS (cont.)															
Alaska	SSRA	Burnett Inlet	04-01-03-1310	1	21	418							1	21	418
		Earl West Cove	04-02-25 04-49-51				2	56	1,597	1	26	655	3	82	2,253
		Nakat Inlet	04-02-26				1	25	591	3	82	2,379	4	107	2,971
			04-02-27				4	99	2,823	2	59	1,812	6	158	4,635
			04-49-57				1	34	1,127				1	34	1,127
		Neets Bay	04-02-16				3	157	9,024	2	126	8,133	5	283	17,156
			04-02-17				1	62	3,749	2	278	43,095	3	340	46,844
			04-02-18				2	137	9,774	3	264	24,475	5	401	34,249
			04-02-19				2	126	8,252	1	59	3,395	3	185	11,647
			04-02-20				1	53	2,759	4	227	14,062	5	280	16,821
			04-02-21				1	72	5,118	2	173	15,499	3	245	20,617
			04-02-28				2	131	8,596				2	131	8,596
			04-02-29							4	505	68,883	4	505	68,883
			04-02-30				3	206	14,791	3	265	24,417	6	471	39,209
			04-02-31				3	187	12,832	1	91	8,232	4	278	21,064
			04-02-32							1	90	8,017	1	90	8,017
			04-01-03												
		Whitman Lake	-1306				1	129	16,412				1	129	16,412
			04-02-22				3	113	4,695	1	55	3,018	4	168	7,713
		Alaska Total		1	21	418	80	3,333	751,802	139	3,875	613,838	220	7,229	1,366,058
		TOTAL ALL REGIONS		1	21	418	92	3,375	760,321	153	4,025	640,650	246	7,421	1,401,389
WILD STOCKS^d															
British Columbia	CDFO	Lachmach R.	08-03-18							1	12	128	1	12	128
		Zolzap Creek	18-43-12				1	5	21	1	6	31	2	11	52
		B.C. total					1	5	21	2	18	163	3	23	184
Alaska	ADFG	Berners River	04-45-31				1	17	281				1	17	281
		Ford Arm Lake	04-46-50				2	47	1,151	5	174	6,676	7	221	7,827
		Hugh Smith L.	04-40-20				5	22	102	2	13	75	7	35	1786
		Naha River	04-47-28							2	193	20,692	2	193	20,692
		Nakwasina R.	04-47-30							2	61	1,924	2	61	1,924
		Salmon Lake	04-50-05				3	8	17	1	2	4	4	10	21
		Slippery Creek	04-50-09				1	7	47	3	25	191	4	32	238
		Unuk River	04-01-43							2	268	71,493	2	268	71,493
	USFS	Eagle River	04-01-03-1211							1	8	60	1	8	60
		Alaska total					12	101	1,829	18	844	106,041	30	945	107,870
		WILD STOCK TOTAL					13	106	1,864	20	862	106,475	33	968	108,339

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

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

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

^d Alaskan wild stock contribution estimates, with the exception of Salmon River and Eagle Creek, were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds. Non-alaskan and two Alaskan (Salmon Lake and Eagle Creek) wild stocks were only expanded by the sampling fraction since tagging fractions were unavailable.

Appendix A25.–Estimates (from sampled fish only) of hatchery-produced and wild tagged coho salmon contributed to 6,773 coho salmon examined during the Craig/Klawock marine boat sport fishery, 24 April-10 September 2000.

Region	Agency ^a	Hatchery/release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
HATCHERY STOCKS							
British Columbia	CDFO	Fort Babine	18-33-18	1	1	0	0%
			18-35-04	1	1	0	0%
		Hartley Bay Creek	18-33-10	1	5	22	0%
		Kitsumkalum	18-35-09	1	2	1	0%
		Quinsam River	18-38-57	1	23	512	0%
		Snootli Creek	18-31-06	1	1	0	0%
			18-38-17	1	7	8	0%
		Toboggan Creek	18-35-13	1	1	0	0%
			18-35-15	1	1	0	0%
		B.C. total		9	42	543	1%
Alaska	ADFG	Crystal Lake	04-01-46	2	6	11	0%
	KTHC	Deer Mountain	04-01-51	2	6	14	0%
			04-01-53	2	4	5	0%
	MIC	Tamgas Creek	47-01-01	2	141	9,779	2%
			47-01-02	1	70	4,768	1%
	PWHA	Klawock River	50-31-27	17	296	4,872	4%
			50-31-28	23	404	6,684	6%
			50-31-29	27	486	8,276	7%
			50-31-33	11	193	3,191	3%
	SJ	Sheldon Jackson	04-49-07	1	1	0	0%
	SSRA	Earl West Cove	04-02-24	1	11	108	0%
			04-02-25	1	11	108	0%
		Nakat Inlet	04-02-27	1	10	85	0%
		Neets Bay	04-02-17	2	48	1,118	1%
			04-02-18	1	27	689	0%
			04-02-20	1	21	410	0%
			04-02-28	1	23	518	0%
			04-02-29	2	82	3,307	1%
			04-02-30	1	24	531	0%
			04-02-32	1	24	554	0%
		Whitman Lake	04-02-23	3	44	612	1%
		Alaska total		103	1,932	45,640	29%
		TOTAL ALL REGIONS		112	1,974	46,183	29%
WILD STOCKS^e							
Alaska	ADFG	Hugh Smith Lake	04-40-20	2	3	3	0%
		Naha River	04-47-28	1	17	265	0%
		Unuk River	04-01-43	1	77	5,865	1%
		Alaska total		4	97	6,131	1%
		WILD STOCK TOTAL		4	97	6,131	1%

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

^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 Alaskan wild stock contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds.

Appendix A26.–Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to 76 coho salmon examined during the Petersburg marine boat sport fishery, 3 May–10 September 2000.

Region	Agency ^a	Hatchery/release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
Alaska	ADFG	Crystal Lake	04-01-46	2	8	26	11%
		Alaska total		2	8	26	11%
TOTAL ALL REGIONS				2	8	26	11%

^a 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.

Appendix A27.–Estimates (from sampled fish only) of hatchery-produced coho salmon contributed to 29 coho salmon examined during the Wrangell marine boat sport fishery, 24 April–10 September 2000.

Region	Agency ^a	Hatchery/release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
Alaska	SSRA	Burnett Inlet	04-01-03-1310	1	9	74	31%
		Alaska total		1	9	74	31%
TOTAL ALL REGIONS				1	9	74	31%

^a SSRA = Southern Southeast Regional Aquaculture Association.

^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.

Appendix A28.—Estimates (from sampled fish only) of hatchery-produced and wild tagged coho salmon contributed to 2,023 coho salmon examined during the Yakutat marine boat sport fishery, 17 April-24 September 2000.

Region	Agency ^a	Hatchery/release site	Tag code	Rec ^b	Con ^c	Variance ^d	Relative contribution
HATCHERY STOCKS							
Alaska	ADFG	Elmendorf	31-01-40	1	3	8	0%
	KTHC	Nakat Inlet	04-02-27	1	10	94	1%
Alaska total				2	13	102	1%
TOTAL ALL REGIONS				2	13	102	1%
WILD STOCKS^e							
Alaska	ADFG	Berners River	04-01-03-0901	1	6	28	0%
			04-45-31	1	6	28	0%
	Ophir Creek	04-46-27	2	134	12,154	7%	
		04-46-28	2	134	12,154	7%	
	Tawah Creek	04-01-29	1	19	377	1%	
		04-01-30	2	39	754	2%	
Alaska total				9	338	25,497	17%
WILD STOCK TOTAL				9	338	25,497	17%

^a ADFG = Alaska Department of Fish and Game, KTHC = Ketchikan Tribal Hatchery Corporation.

^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 Alaskan wild stock contribution estimates were expanded by using tagging fractions estimated from the ratio of marked to total adults on the spawning grounds.

APPENDIX B: DATA FILES

Appendix B1.–Computer data files and analysis programs developed for the 2000 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 99518-1599.

Effort, Catch, and Harvest Estimation Files (in KMC00EST.ZIP, JMC00EST.ZIP, PMC00SAM.ZIP, SMC00EST.ZIP, WMC00SAM.ZIP, CMC00SAM.ZIP, and KLAWOCK00.ZIP)	
a-081000.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Ketchikan, 2000
b-075200.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Klawock, 2000
b-076000.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Craig, 2000
c-008200.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Petersburg, 2000
c-008100.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Wrangell, 2000
c00sim.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Sitka, 2000
c00jnm.dta	Data file (ASCII) containing interview information recorded on mark-sense interview forms (PORT SAMPLING INTERVIEW VERSION 1.0) recorded at Juneau, 2000
aMS00.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/Klawock.
aMC00ESS.SAS	SAS programs to create revised interview SAS save files from files created by aMS99.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'.
aMC00MSM.SAS	SAS programs to create SAS save files with only the sampling information associated with each sample for each survey from files created by aMC99ESS.SAS. See above for explanation of 'a'.
aMC00EST.SAS	SAS programs to estimate effort, catch, and harvest with associated variances using SAS save files created by aMC00ESS.SAS and aMC00MSM.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 CWT00.ZIP)	
SPRT_EXPNS00.XLS	Data file from tag lab with sampling information for each biweekly period at each fishery.
SFCON00.XLS	Data file from tag lab with recovery information for each adipose finclipped coho and chinook salmon sampled.
SEN00CWT.SAS	SAS program to do basic contribution estimates.
SEN00CO1.SAS	SAS program to summarize contributions across tag codes for main tables.
SEN00CWP.SAS	SAS program to list tags, contributions, and variances for appendices.
SEN00CW3.SAS	SAS program to summarize contributions at ports with catch sampling programs.
WILD_CWT_CALC.XLS	EXCEL file to do wild stock coho contribution estimates.
WILD00CWT.SAS	SAS program to do wild stock contribution estimates.
WILD00OUT.SAS	SAS program to summarize wild stock contributions by port for main tables.
Age-weight-length (AWL) Files (in CHI00AWL.ZIP and HAL00AWL.ZIP)	
CHIN_2000_AWL.XLS	Chinook data file for input to the SAS program.
REG_MAT00CH1.SAS	SAS programs to summarize chinook salmon AWL data.
LF_MAT00CH1.SAS	
HALIBUT_2000_ALL.XLS	Halibut data file for input to the SAS program.
L_2000_HAL.SAS	SAS program to summarize halibut AWL data.
2000_LING_AWL.XLS	Lingcod data file for input to the SAS program.
LF2000LC.SAS	SAS program to summarize lingcodAWL data.