

**Fishery Data Series No. 10-81**

---

---

**Production of Coho Salmon from Slippery Creek,  
2002–2005**

by

**Douglas F. Fleming**

---

---

December 2010

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



## Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the *Système International d'Unités* (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

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

***FISHERY DATA SERIES NO. 10-81***

**PRODUCTION OF COHO SALMON FROM SLIPPERY CREEK,  
2002–2005**

by

Douglas F. Fleming  
*Division of Sport Fish, Petersburg*

Alaska Department of Fish and Game  
Division of Sport Fish, Research and Technical Services  
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2010

The report was prepared by Douglas Fleming under awards NA16FP2993 (Alaska Sustainable Salmon Fund project 45257) from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, administered by the Alaska Department of Fish and Game. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Oceanic and Atmospheric Administration, or the U.S. Department of Commerce. This investigation was also partially financed by the Federal Aid in Sport Fish Restoration Act (16 U.S.C. 777-777K) under Projects F-10-17 and F-10-18.

ADF&G Fishery Data Series was established in 1987 for the publication of Division of Sport Fish technically oriented results for a single project or group of closely related projects, and in 2004 became a joint divisional series with the Division of Commercial Fisheries. Fishery Data Series reports are intended for fishery and other technical professionals and are available through the Alaska State Library and on the Internet: <http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm> This publication has undergone editorial and peer review.

*Douglas F. Fleming<sup>a</sup>*  
*Alaska Department of Fish and Game, Division of Sport Fish, Region I*  
*P. O. Box 667, Petersburg, AK 99833, USA*

<sup>a</sup> *Author to whom all correspondence should be addressed: e-mail: [doug.fleming@alaska.gov](mailto:doug.fleming@alaska.gov)*

*This document should be cited as:*

*Fleming, Douglas F. 2010. Production of coho salmon from Slippery Creek, 2002–2005. Alaska Department of Fish and Game, Fishery Data Series No. 10-81, Anchorage*

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

**If you believe you have been discriminated against in any program, activity, or facility please write:**

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526

U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA 22203

Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW MS 5230, Washington DC 20240

**The department's ADA Coordinator can be reached via phone at the following numbers:**

(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648,

(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

**For information on alternative formats and questions on this publication, please contact:**

ADF&G, Division of Sport Fish, Research and Technical Services, 333 Raspberry Road, Anchorage AK 99518 (907) 267-2375.

# TABLE OF CONTENTS

	<b>Page</b>
LIST OF TABLES.....	ii
LIST OF FIGURES.....	ii
LIST OF APPENDICES.....	ii
ABSTRACT.....	1
INTRODUCTION.....	1
OBJECTIVES.....	3
METHODS.....	4
Smolt Capture and Coded Wire Tagging.....	4
Smolt Abundance.....	7
Age Composition And Mean Size Estimates For Smolt.....	7
Coded Wire Tag Recovery And Estimation Of Harvests.....	8
Escapement Sampling.....	9
Run Size, Exploitation Rate, Marine Survival.....	11
RESULTS.....	12
Production 2002-2003.....	12
Smolt Tagging, Age, Length, and Weight in 2002.....	12
Coded Wire Tag Recovery in 2003.....	12
Harvest, Exploitation and Escapement in 2003.....	12
Smolt Abundance in 2002.....	13
Production 2003-2004.....	14
Smolt Tagging, Age, Length, and Weight in 2003.....	14
Coded Wire Tag Recovery in 2004.....	14
Harvest, Exploitation and Escapement in 2004.....	14
Smolt Abundance in 2003.....	16
Production 2004-2005.....	17
Smolt Tagging, Age, Length, and Weight in 2004.....	17
Coded Wire Tag Recovery in 2005.....	17
Harvest, Exploitation and Escapement in 2005.....	17
Smolt Abundance in 2004.....	19
DISCUSSION.....	19
ACKNOWLEDGMENTS.....	23
APPENDIX A.....	25
APPENDIX B.....	35
APPENDIX C.....	51
APPENDIX D.....	61

-

## LIST OF TABLES

Table	Page
1. Timing, mark type, and location of time-stratified marks given to weir-captured coho salmon released above the Slippery Creek weir. ....	10
2. Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2003. ....	13
3. Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2004. ....	15
4. Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2005. ....	18
5. Coho salmon production relating spawners and progeny by tracking estimates of production from 4 brood years at Slippery Creek. ....	21
6. Estimated coho salmon total smolt production , number of valid CWTs released , fraction of adults carrying CWTs, adult harvest and exploitation rate, smolt-to-adult survival, total adult return and escapement at Slippery Creek corresponding to production cycles 1997–98, 1999–2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, and 2004-2005. ....	22

## LIST OF FIGURES

Figure	Page
1. Map of Slippery Creek drainage on Kuiu Island, Southeast Alaska.....	2
2. Map showing migration routes through Southeast Alaska of coho salmon bound for Slippery Creek. ....	3
3. Diagrammatic depiction of the Slippery Creek smolt trapping and tagging operation.....	5
4. Photographed view looking upstream on the dewatering table portion of the Slippery Creek smolt trap during moderately high flows. ....	6
5. Photograph lateral view showing the downstream portions of the Slippery Creek smolt trap. ....	6
6. Photograph showing the adult picket weir with attached trap and covered sampling raft located at the outlet of Slippery Lake. ....	9

## LIST OF APPENDICES

Appendix	Page
A1. Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2002 .....	26
A2. Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2003.....	27
A3. Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, 17August through 13 October, 2003. ....	33
B1. Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2003. ....	36
B2. Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2004.....	37
B3. Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, 19 August through 16 October, 2004.....	49
C1. Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2004. ....	52
C2. Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2005.....	53
C3. Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, August 18 through October 13, 2005.....	60
D1. Computer data files for Slippery Creek coho salmon smolt (2002, 2003, and 2004), returning adults (2003, 2004, and 2005), and files used to generate parameter estimates associated with smolt production, harvest, exploitation, escapement, and marine survival. ....	62

## ABSTRACT

Smolt abundance, harvest, exploitation rate, and production of coho salmon were estimated for 3 production cycles at Slippery Creek in central Southeast Alaska. Sampling of returning adult coho salmon in 2003, 2004, and 2005 in conjunction with recoveries of coded wire tags (CWTs) from smolt tagging efforts during the previous years were used to estimate the parameters. A smolt trap was operated below the outlet of Slippery Lake between mid-April and early June in 2002, 2003, and 2004. In each of these periods emigrating coho salmon smolt  $\geq 70$  mm fork length were finclipped, tagged with CWTs, and released alive to continue downstream to enter marine waters. Concurrent age, length, and weight sampling characterized emigrating smolt composition in each of the years. In the year following, adult coho salmon bearing valid CWTs of Slippery Creek origin were recovered in samples of marine troll, net, and recreational fisheries through Alaska Department of Fish and Game programs that sample and survey marine commercial and recreational harvests. Adult escapement was counted and sampled for the presence of CWTs as well as for age, sex, and length composition using a picket weir and trap during the mid-August through mid-October period in 2003, 2004, and 2005. Mark-recapture sampling was added to the project in order to estimate total escapement after flood waters breached the picket weir on 2 occasions.

Key words: coho salmon, *Oncorhynchus kisutch*, Slippery Creek, fish pass, harvest, troll fishery, drift gillnet fishery, recreational fishery, seine fishery, escapement, migratory timing, production, exploitation rate, marine survival, picket weir, mark-recapture.

## INTRODUCTION

The Slippery Creek watershed (Figure 1), located on Kuiu Island in central Southeast Alaska (SEAK), was enhanced in the late 1980s to increase coho salmon *Oncorhynchus kisutch* production by construction of a fish pass and stocking. In the late 1970s surveys indicated that ample habitat, including a 50 ha lake and more than 13 km of stream, existed upstream of a 6 m barrier waterfall. In 1987, the U.S. Forest Service (USFS) constructed an Alaska steep pass (Zeimer 1962) past the barrier waterfall located approximately 1 km from tidewater. In 1987, the USFS, Alaska Department of Fish and Game (ADF&G) and Northern Southeast Regional Aquaculture Association (NSRAA) first released coho salmon into the system using wild stock obtained from nearby systems (Wright et al. 1997). The USFS and ADF&G continued to stock the system with coho salmon from 1988 to 1990 using Crystal Lake Hatchery brood stock. Continued annual maintenance by the USFS and monitoring by ADF&G staff have documented entry and colonization by coho salmon and other anadromous fish populations into previously inaccessible habitat that had been populated exclusively by cutthroat trout (*O. clarki*) and resident Dolly Varden (*Salvelinus malma*). Wild populations of steelhead trout (*O. mykiss*), pink (*O. gorbuscha*) and chum salmon (*O. keta*), and anadromous populations of Dolly Varden have since become established and now utilize the upper watershed.

In 1997, the USFS constructed and operated a smolt trap 1 km below the lake outlet and placed coded wire tags (CWTs) in 33,077 juvenile coho salmon. ADF&G assisted with fabrication of a weir structure placed inside the existing fish pass which allowed full counts and sampling of upstream migrants from 1998 through 2002. Additionally, ADF&G staff constructed a smolt tagging/sampling shed adjacent to the smolt trap which was used in conjunction with on-site USFS administrative cabins. Stock assessments were designed to estimate smolt production, adult escapement, harvest, exploitation, and marine survival, which have been reported on through 4 production cycles since 1998 (Beers 1999, 2001, 2003; Fleming 2005). The studies suggested that Slippery Creek annually produced (on average) around 30,000 smolt and 4,800 adult coho salmon (total return), of which approximately 60% were caught in commercial troll and seine fisheries operated throughout central SEAK. Data have indicated Slippery Creek coho salmon travel primarily along the outer coast and enter inside waters around the southern tip of Baranof Island and into Chatham Strait before entering Port Camden during their

spawning migration (Figure 2). Comprehensive stock assessment data from Slippery Creek coho salmon have provided valuable information about central-inside stocks of coho, and it has been used as an index stock for the area.

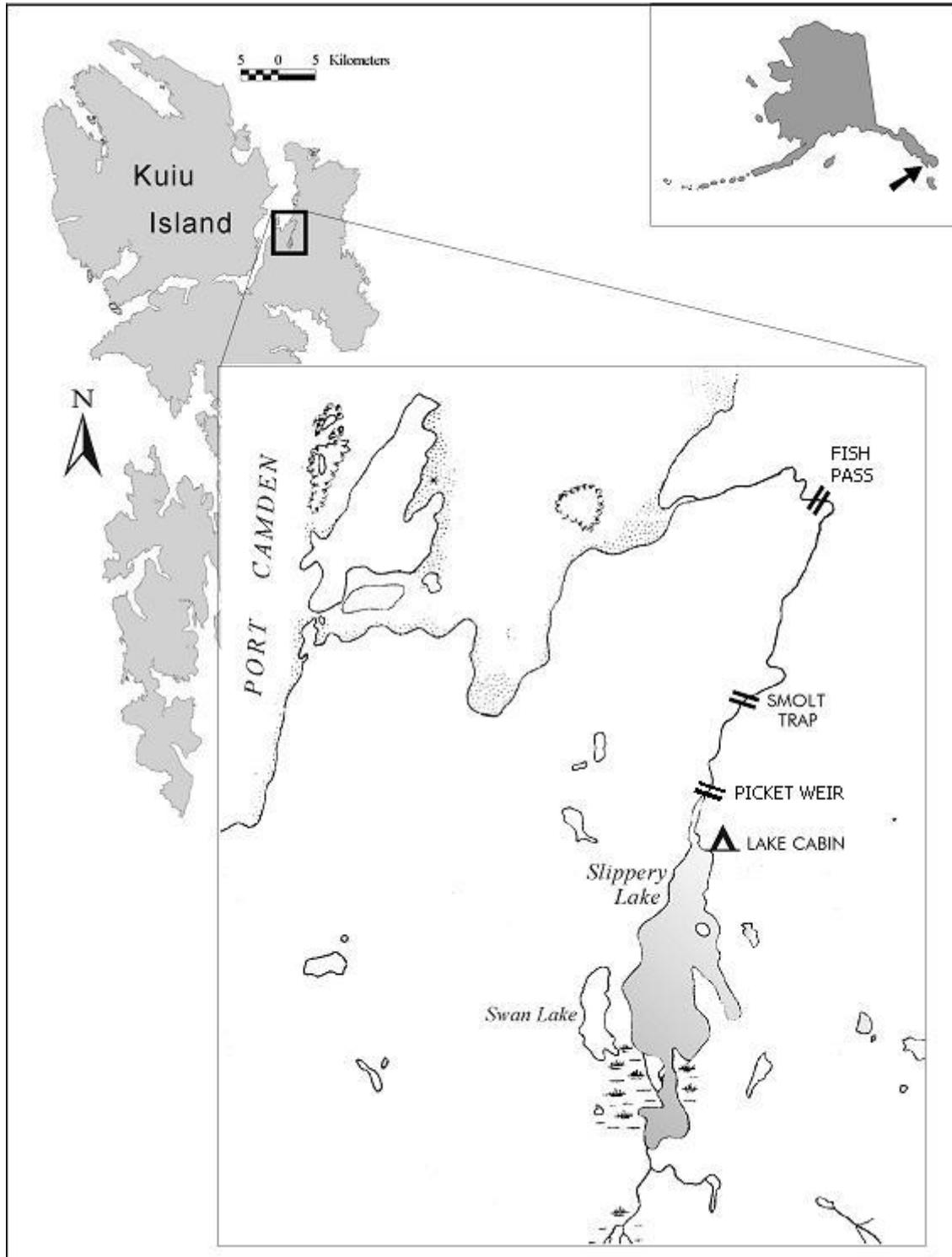


Figure 1.-Slippery Creek drainage on Kuiu Island, Southeast Alaska.



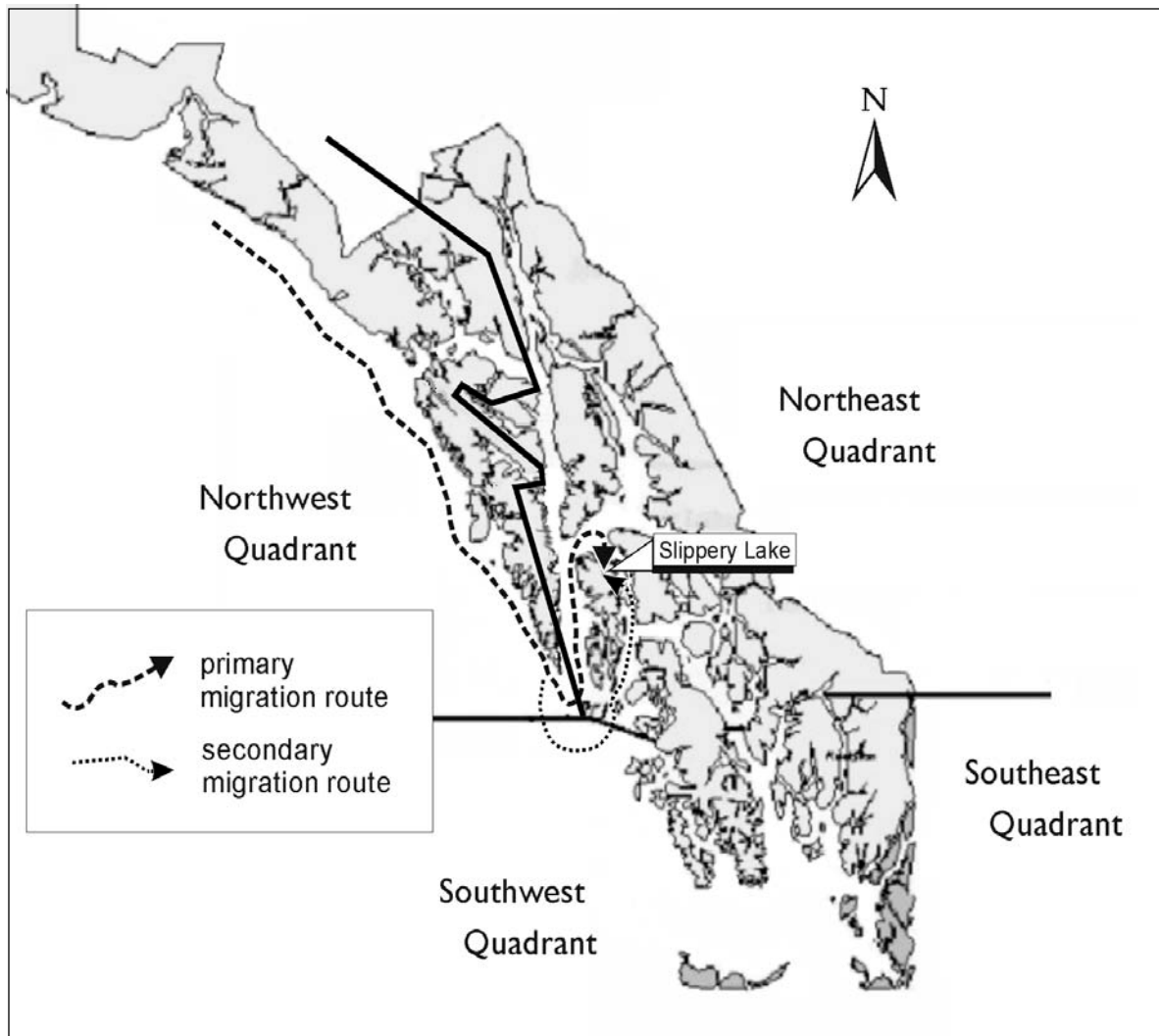


Figure 2.—Migration routes through Southeast Alaska of coho salmon bound for Slippy Creek.

This report documents results from the Slippy Creek coho salmon stock assessment project in the last three production cycles between the spring of 2002 and the fall of 2005. The continuation of field work in these last 3 years differed only by the use of a picket weir to enumerate and sample returning adult coho salmon.

## OBJECTIVES

Objectives for the studies were to estimate: (1) escapement; (2) ocean harvest; (3) smolt abundance; and, (4) age composition and mean size of smolt and escaping adults. These objectives were accomplished by tagging and sampling outmigrating smolt in Slippy Creek each spring from 2002 through 2004, and operating a picket weir to sample adults and either enumerate or estimate the escapement in 2003 through 2005.

## METHODS

### SMOLT CAPTURE AND CODED WIRE TAGGING

Emigrating smolt were captured about 0.8 km below the lake outlet using a smolt trap styled after a “Wolf trap” design (Wolf 1956). Downstream migrants were directed into the trap’s entrance by a series of adjoining perforated panels that were angled downstream toward the center of the stream channel and the trap (Figure 3). Each of the 12 panels were 1.2 x 2.4 m in dimension and constructed using lumber framing covered by aluminum panels (3-mm thick) with milled slot openings (6 x 25 mm). The array of panels was supported in the stream’s current by metal posts mounted onto 25-mm solid steel pins drilled into bedrock, with additional support provided by numerous tensioned steel cables anchored to large adjacent trees. As water passed through and past the perforated panels the emigrating fish were concentrated and carried toward the trap. The remaining flows carried emigrating smolt up onto a large dewatering table that was permanently anchored to bedrock in the middle of the creek. The dewatering table’s perforated aluminum panels, coupled with its sloped configuration, allowed most of the flowing water to pass back into the creek (Figure 4), while directing the concentrated smolt in the small remaining volume of water along a marginal gutter spilling into a baffled separator box. This framed box (1.2 m wide x 1.8 m long x 1.2 m high) included vertical plywood baffles with slots to allow smaller fish to exit into a secondary chamber, where they passed out through a submerged 13-cm connecting hose and into a submerged 1.2-m<sup>2</sup> holding pen located downstream of the trap’s structure (Figure 5). Larger adult fish such as Dolly Varden, cutthroat trout, and steelhead trout were temporarily held in the baffled box until the crew arrived each morning. Additionally, the sampling crew checked upstream corners created by the trapping panels for prespawning steelhead. When found, they were dip netted and passed upstream of the Wolf trap which had temporarily blocked their upstream passage.

Captured fish were sorted each morning after removing them from the holding pen and separator. All fish excepting coho smolt were counted and immediately released back to Slippery Creek. Captured smolt were removed from the submerged holding pen and transported to instream holding pens prior to tagging. Coho smolt were separated by inspection from other species of salmon, trout (cutthroat, rainbow, or juvenile steelhead), and Dolly Varden using a combination of external morphological characteristics (McConnell and Snyder 1972). All live coho salmon smolt  $\geq 70$  mm FL were tranquilized in a solution of tricain-methane sulfonate (MS 222). The solution was buffered with sodium bicarbonate until the pH was neutral. All smolt were tagged with a full-length CWT injected by a Northwest Marine Technology Mark IV<sup>1</sup> tagging machine. Each tagged smolt was also given a secondary mark by excision of the adipose fin following methods in Koerner (1977). Marked smolt were allowed to recover in aerated stream water and then held overnight in enclosed, instream holding pens to assess short-term tag retention and tagging mortality.

The following morning, all mortalities were identified and 100 live coho salmon smolts were checked for retention of CWTs using a Northwest Marine Technology detector. The number of fish tagged, number of tagging-related mortalities, and number of fish that had shed their tags were compiled and recorded on *ADF&G CWT Tagging Summary and Release Information Forms*, which were submitted to the ADF&G Mark, Tag, and Age Laboratory (Tag Lab) in Juneau when field work ended.

---

<sup>1</sup> This and subsequent product names are included for a complete description of the process and do not constitute product endorsement.

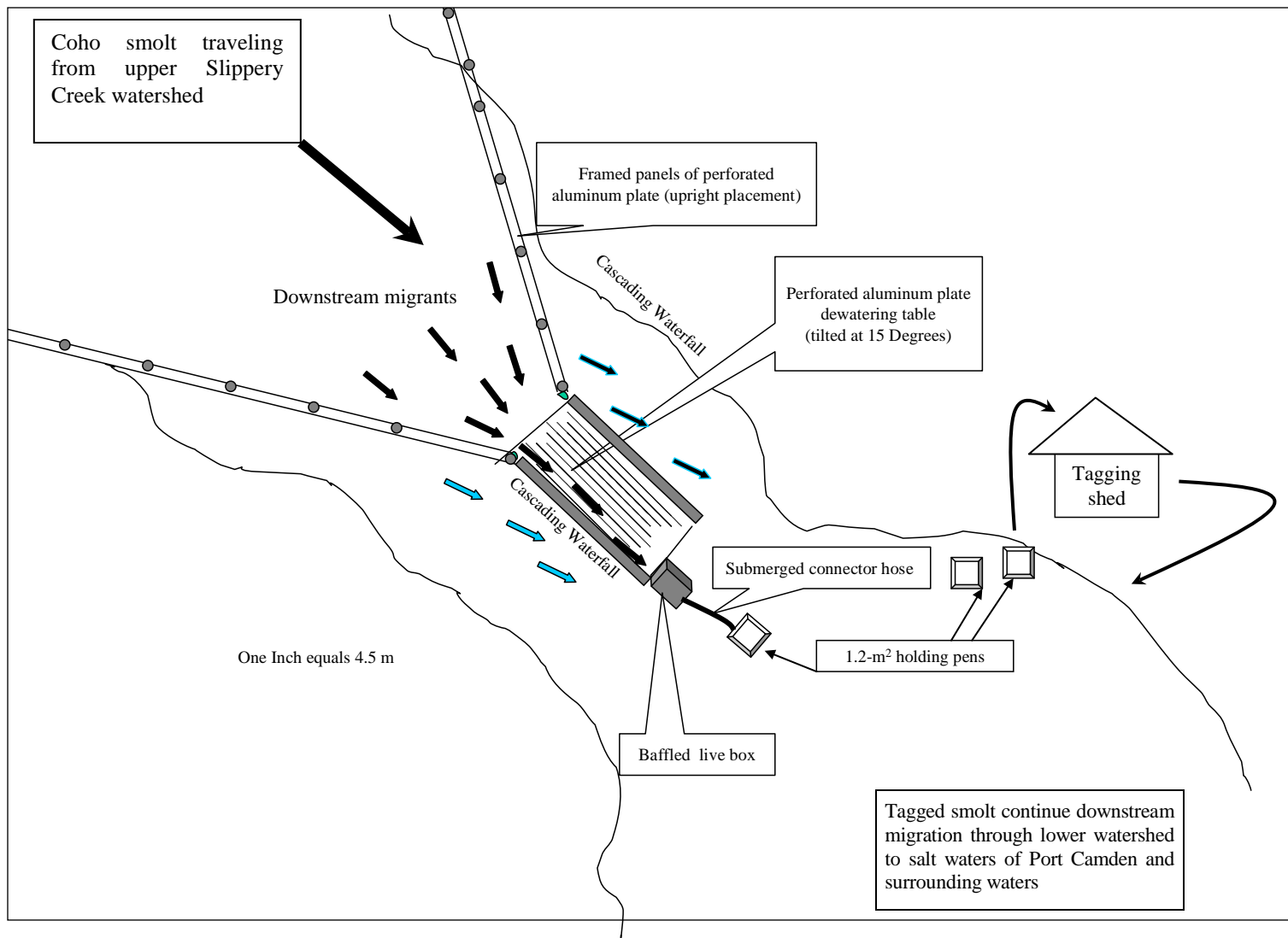


Figure 3.—Diagrammatic depiction of the Slippery Creek smolt trapping and tagging operation.



Figure 4.—View looking upstream on the dewatering table portion of the Slippery Creek smolt trap during moderately high flows. (note photograph is showing vertical panels constructed with plastic mesh which was changed prior to this reporting period to milled aluminum “smolt plate” identical to the flooring seen in the photograph).

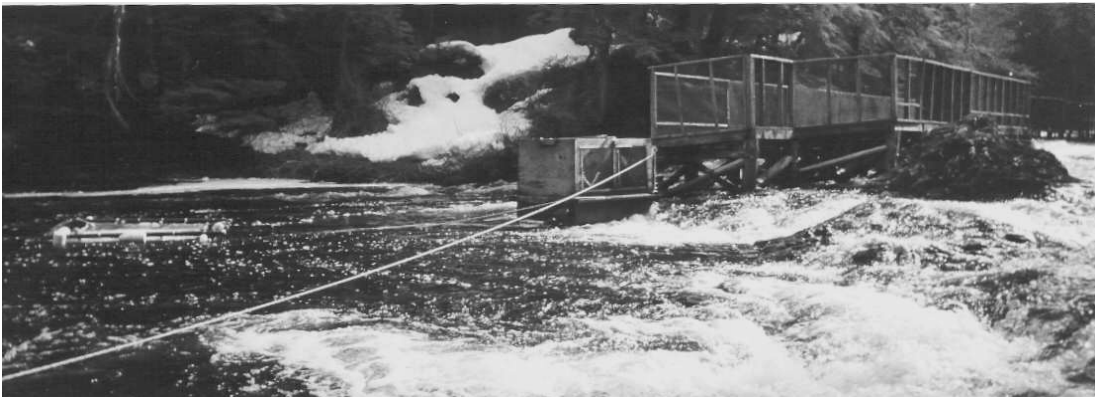


Figure 5.—View showing the downstream portions of the Slippery Creek smolt trap. The dewatering table is seen in the upper right side, from which the remaining flow and fish spill into the baffled smolt/adult separator box (near center) before smaller fish (smolt and others) travel through a submerged 13-cm plastic hose into the floating net pen (seen floating on photo left).

## SMOLT ABUNDANCE

Diagnostic tests (contingency table tests of association) were conducted to detect potential sources of bias in smolt abundance estimates. The first test, designed to detect differential probability of capture, compared the marked-to-unmarked ratio in each of the 2 freshwater ages (1.x versus 2.x) among returning adults. The second test, designed to detect differential mortality by age, compared freshwater age composition between smolt and clipped returning adults.

If either diagnostic test was insignificant ( $P > 0.05$ ), the estimated abundance of coho salmon smolt emigrating from Slippery Creek was calculated using the unstratified Chapman's modified Petersen estimator for a closed population (Seber 1982):

$$\hat{N} = \frac{(n_1 + 1)(n_2 + 1)}{(m_2 + 1)} - 1 \quad (1)$$

$$\text{var}[\hat{N}] = \frac{(n_1 + 1)(n_2 + 1)(n_1 - m_2)(n_2 - m_2)}{(m_2 + 1)^2(m_2 + 2)} \quad (2)$$

where  $n_1$  is the number of smolt tagged,  $n_2$  is the number of returning coho salmon from the escapement that were inspected for marks during the following year at the adult weir, and  $m_2$  is the number of adults inspected at the adult weir (in the same years) that were missing their adipose fin.

## AGE COMPOSITION AND MEAN SIZE ESTIMATES FOR SMOLT

A systematically drawn sample of coho salmon smolt was taken to estimate age composition, and mean length- and weight-at-age. Each day, the first smolt handled was sampled, and every 40<sup>th</sup> smolt thereafter was sampled. Every sampled coho salmon smolt was measured to the nearest 1 mm FL, sampled for scales and weighed to the nearest 0.1 g with a digital balance. Twelve to 15 scales were removed from the preferred area (Scarnecchia 1979) on the left side of the smolt. Scales were sandwiched between two 25 × 75-mm microscope slides and the sequential number assigned to each sampled smolt was written on the frosted portion of the slide. Ages of each sampled smolt were later determined from interpretation of circuli patterns (70X magnification).

Composition of emigrating smolt by age was estimated:

$$\hat{p}_i = \frac{w_i}{w} \quad (3)$$

$$\text{var}[\hat{p}_i] = \left[1 - \frac{w}{\hat{N}}\right] \frac{p_i(1 - \hat{p}_i)}{w - 1} \quad (4)$$

where  $w$  is the number aged, and  $w_i$  is the subset of  $w$  that belong to age group  $i$ . Estimates of mean length- and weight-at-age and its variance were calculated using standard procedures.

## CODED WIRE TAG RECOVERY AND ESTIMATION OF HARVESTS

Harvests of adult coho salmon originating from Slippery Creek were estimated using CWT-sampled catches in commercial and recreational fisheries and the escapement into Slippery Creek. ADF&G Commercial Fisheries Division annually samples landings from commercial drift gillnet, set gillnet, purse seine, and troll fisheries throughout Southeast Alaska and Yakutat. During summer and early fall, samplers are stationed at processors in Ketchikan, Craig, Wrangell, Petersburg, Sitka, Pelican, Port Alexander, Elfin Cove, Excursion Inlet and Juneau. The sample goal has been to inspect at least 20% of the total catch of Chinook and coho salmon for missing adipose fins, indicating the possible presence of a CWT. On a weekly basis, harvested Chinook and coho salmon found missing their adipose fin subsequently had their heads removed and sent to the Tag Lab. There the heads were tested for the presence or absence of valid CWT, which was then decoded and entered into a coastwide database.

Because fisheries take place over several months, harvest were estimated over several strata, each a combination of time, area, and type of fishery. Statistics from the commercial troll fishery were stratified by fishing period and by fishing quadrant (Figure 2). Statistics from commercial net fisheries were stratified by week and by fishing district. Statistics from the recreational fishery were stratified biweekly based on established methods for sampling the recreational fisheries (e.g., see Hubartt et al. 1999). An unpublished manual maintained by the Commercial Fisheries Division provided detailed instructions on sampling, logistics and an explanation of the analytical process in which the methods of Bernard and Clark (1996) were used with sampling data and tag recoveries to estimate harvests and exploitation rates in the Southeast Alaskan fisheries.

Estimates of harvest  $\hat{r}_i$  were calculated for each stratum, then summed across strata and across fisheries to obtain an estimate of the total harvest  $\hat{T}$  :

$$\hat{r}_i = \hat{H}_i \left( \frac{m_{ij}}{\lambda_i k_i} \right) \theta^{-1} \quad (5)$$

$$\hat{T} = \sum_i \hat{r}_i \quad (6)$$

$$\text{var}[\hat{T}] = \sum_i \text{var}[\hat{r}_i] \quad (7)$$

where  $\hat{H}_i$  is the estimated harvest in stratum  $i$ ,  $\hat{\theta}$  is the fraction of the cohort marked with CWTs (from sampling returning adults at the trap),  $k_i$  is the subset of  $\hat{H}_i$  examined for missing adipose fins,  $m_i$  is the number of decoded CWTs recovered, and  $\lambda_i = (a'_i t'_i) / (a_i t_i)$  is the decoding rate of CWTs for marked fish in the sample from stratum  $i$  where  $a_i$  is the number of fish missing adipose fins in the sample from stratum  $i$ ,  $a'_i$  is the subset of  $a_i$  that are sacrificed having their heads removed and sent to the Tag Lab for decoding,  $t_i$  is the number of those heads sampled from stratum  $i$  that actually have CWTs detected magnetically at the laboratory, and  $t'_i$  is the

subset of  $t_i$  for which CWTs are decoded. This adjusts the sample size of fish collected with missing adipose fins to only those fish that have recoverable tags and that are successfully decoded (Bernard and Clark 1996). Variance of  $\hat{r}_i$  was estimated using the appropriate large-sample formulations (Table 1 in Bernard and Clark [1996]) for a wild stock harvested in recreational and commercial fisheries. Variance of the sum of estimates was estimated as the sum of variances because sampling was independent across strata and fisheries.

## ESCAPEMENT SAMPLING

A 2-person crew operated a picket weir and trap to enumerate and sample the escapement of adult coho salmon between mid-August and mid-October. Although small numbers of coho salmon may have spawned between the previous site for escapement sampling (fish pass) and the lake's outlet, it was assumed that nearly all fish would be counted as they passed upstream through the lake towards numerous spawning tributaries. The 38-m picket weir consisted of wooden tripods and aluminum angle stringers with holes punched (48 mm, on-center) to accept pickets made from 12-mm rigid steel conduit (Figure 6).



Figure 6.—View showing the adult picket weir with attached trap and covered sampling raft located at the outlet of Slippery Lake.

Fish were passed upstream using a funneled entry through the weir face and into a 2.4-m<sup>2</sup> holding box, also fabricated from aluminum angle and vertically placed pickets. Although the

weir's integrity was routinely checked using a diving mask, a combination of larger holes in the fabricated stringer and smaller sized pickets allowed small jack coho (< 405 mm TL) salmon to pass through the weir and not be counted or sampled, unlike the larger adults. Sampling activities were conducted from an attached floating, covered raft. Every captured coho salmon was counted, visually inspected for the presence of the adipose fin, and tested using a Northwest Marine Technology detector to determine if the snout of the fish contained a valid CWT. Fish missing adipose fins that tested negative for a CWT were subsequently sacrificed by removal of the head, which was preserved in salt and shipped to the Tag Lab.

Beginning in 2004, all fish passed upstream were given an additional mark (partial fin clip or opercle punch) to allow mark-recapture sampling in the event that the weir became inoperable and fish were passed uncounted. In 2004 passed fish were initially given partial fin clips on the upper lobe of the caudal fin, which was changed to the lower lobe following a short period when a storm event's high water breached the weir's lowest point. For the 2005 escapement project, differential marks were given to weir-trapped coho salmon on a time-stratified basis. The marks included opercular punches (5 mm diameter), and later partial fin clips at varied locations to denote a timing-specific mark. For example during week 1 fish received an upper-right side opercular punch and during week 2, a middle-right side punch, etc. (Table 1).

Table 1.—Timing, mark type, and location of time-stratified marks given to weir-captured coho salmon released above the Slippery Creek weir.

Weir capture week	Type of mark	Marking location
1	Opercular punch	upper-right operculum
2	Opercular punch	middle-right operculum
3	Opercular punch	lower-right operculum
4	Opercular punch	upper-left operculum
5	Opercular punch	middle-left operculum
6	Opercular punch	lower-left operculum
7	Partial fin clip	upper caudal fin
8	Partial fin clip	lower caudal fin

Systematic sampling was used to sample scales, sex (visual examination of secondary maturation characteristics), and length (nearest 5 mm MEF). The sampling frequency was every 4<sup>th</sup> fish in 2003, but later reduced to every 8<sup>th</sup> fish during the 2004 and 2005 field projects. Five scales were removed from the preferred area (Scarnecchia 1979) on the left side of the fish. The preferred area on the right side of the fish was sampled when the preferred area on the left side was lacking scales. Scales were mounted on scale gum cards, 5 per row, which were labeled completely at the time of sampling. Scale impressions were pressed onto clear acetate slides, which were then viewed with a microfiche reader; ages were determined from interpretation of circuli patterns.

The proportions by age were estimated with equations 3 and 4, with appropriate substitutions. Estimates of mean length-at-age and its variance were estimated using standard procedures.



## RUN SIZE, EXPLOITATION RATE, MARINE SURVIVAL

Estimates of total run size (harvest plus escapement of coho salmon returning to Slippery Creek above the trap in 2003, 2004, or 2005) is the sum of the estimated harvest ( $T$ ) and escapement ( $N_e$ ) in the year of adult return:

$$\hat{N}_R = \hat{T} + N_e \quad (8)$$

$$\text{var}[\hat{N}_R] = \text{var}[\hat{T}] \quad (9)$$

where  $\text{var}(N_e) = 0$  when  $N_e$  is a census.

Escapement of adults was estimated using mark-recapture methods during 2004 and 2005 following periods when the weir was damaged and breached. The unknown number of passing adult coho salmon during that period was estimated as the difference between observed counts and an estimated abundance upstream of the weir at the end of the project. The estimated abundance of coho salmon upstream upon completion of the adult run was calculated using Chapman's modified Petersen estimator for a closed population (equations 1 and 2), where  $n_1$  is the number of adult coho salmon marked with partial fin clips or opercular punches during weir operations,  $n_2$  is the number of adult coho salmon that were inspected in lake and tributary areas upstream of the weir for marks (fin clips or opercle punches), and  $m_2$  is the number of adults inspected that were marked with a partial fin clip or opercle punch given at the time they were passed upstream of the weir.

The estimated marine fishery exploitation rate was:

$$\hat{E} = \frac{\hat{T}}{\hat{N}_R} \quad (10)$$

$$\text{var}[\hat{E}] \approx \frac{N_e^2}{\hat{N}_R^4} \text{var}[\hat{T}] \quad (11)$$

The estimated marine survival rate (smolt to adult) and associated variance was:

$$\hat{S} = \frac{\hat{N}_R}{\hat{N}_S} \quad (12)$$

$$\text{var}[\hat{S}] \approx \hat{S}^2 \left[ \frac{\text{var}[\hat{N}_R]}{\hat{N}_R^2} + \frac{\text{var}[\hat{N}_S]}{\hat{N}_S^2} \right] \quad (13)$$

The variances in equations 11 and 13 are approximations using the delta method (Seber 1982).

## **RESULTS**

### **PRODUCTION 2002-2003**

#### **Smolt Tagging, Age, Length, and Weight in 2002**

The spring smolt project's start was significantly delayed in 2002 by a prolonged heavy snow and ice pack that prevented the crew from setting up the smolt trap according to the planned schedule. Between 29 April and 28 May 2002 a total of 16,248 coho salmon smolt  $\geq 70$  mm FL belonging to the 2000 and 2001 brood years were captured and implanted with full length CWTs (Appendix A1) that were coded 40378. There were an additional 374 post-tagging mortalities documented from the overnight holding pens that represented a sampling mortality rate of 2.3%. The short-term tag retention rate was 100%, which left a total valid release of 15,874 tagged smolts. There were no records of trapping mortalities of coho smolt in 2002. In addition to trap catches of coho smolt, the crews released 1,462 Dolly Varden, 262 smolting steelhead juveniles, 36 cutthroat trout, and 25 sockeye salmon smolt.

Age-1. coho smolt (2000 brood year) composed 50% (SE = 0.03) of sampled smolt ( $n = 317$ ), and averaged 98 mm FL (SD = 11) and 9 g (SD = 3) in weight. Age-2. fish composed the remaining 50% (SE = 0.03), and averaged 114 mm FL (SD = 11) and 14 g (SD = 4) in weight.

#### **Coded Wire Tag Recovery in 2003**

During random sampling among sport and commercial fisheries in 2003, 189 CWTs were recovered from adult coho salmon originating from 2002 tagging operations at Slippery Creek (Table 2, Appendix A2). Of these, 145 CWTs were recovered from the commercial troll fishery. The greatest number of tags (86) were recovered from the troll fishery in the Northeast (NE) Quadrant (Figure 2). Purse seine fisheries in the NE Quadrant that target pink salmon accounted for 35 CWTs. The SEAK marine recreational fishery accounted for the recovery of 9 tags, all of which were recovered in the Northwest (NW) Quadrant near Sitka, between late June and mid-September.

#### **Harvest, Exploitation and Escapement in 2003**

An estimated 1,572 (SE = 219) coho salmon originating from Slippery Creek were harvested in marine commercial and sport fisheries in 2003 (Table 2). Harvests in these fisheries occurred from the end of June through mid-September. Harvests from the commercial troll fishery accounted for 58.5% of the overall harvest of Slippery Creek coho salmon. Within the troll fishery, the highest harvest contributions came from the NE and NW Quadrants (57.5 and 41.6% of total harvest, respectively). Seine fisheries accounted for 37.0% of the overall harvest, with all harvests in the NE Quadrant, primarily along the migration route (Figure 2). The estimated sport harvest contribution from Slippery Creek in the marine recreational fishery was 70 fish, representing 4.5% of the total harvest.

The enumerated adult escapement passing the picket weir between 17 August and 13 October included 733 adult coho salmon and 0 jack coho (Appendix A3). However, a large storm event triggered flooding that breached the weir starting in the late hours of September 2. The weir was repaired by the early evening of September 4. Given that there were nearly 2 days when the weir was not fish tight, it is possible that a significant number of coho passed upstream uncounted, given water conditions. Thus the count of 733 adult coho salmon represents the minimum escapement in 2003.

Table 2.—Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2003. (In fishing periods and fishing quadrants for which no CWTs with the appropriate code were recovered, harvest was assumed to be zero. See text for an explanation of the notation).

<b>Troll Fishery</b>														
Stat week	Dates	Period	Quad	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]
28-32	6/30-8/9	3	NE	67,888		21,938	444	440	365	364	41	249	37	29%
27-32	7/6-8/9	3	NW	223,782		65,092	1,243	1,232	1,038	1,038	23	155	30	38%
29-32	7/13-8/9	3	SW	71,203		32,735	588	571	441	439	1	4	4	172%
33-37	8/10-9/13	4	NE	56,019		17,493	383	383	334	334	45	280	39	28%
34-37	8/17-9/13	4	NW	402,725		117,573	3,261	3,240	2,778	2,777	34	228	37	32%
35	8/24-8/30	4	SW	16,072		8,857	229	226	197	197	1	4	3	166%
<b>Total troll fishery</b>				837,689		263,688	6,148	6,092	5,153	5,149	145	920	72	15.4%

<b>Seine Fishery</b>														
Stat week	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
30	7/20-7/26	109	3,010		1,254	20	20	15	15	7	33	11	66%	
30	7/20-7/26	112	3,610		545	8	8	8	8	1	13	12	188%	
31	7/27-8/2	109	3,840		388	6	6	5	5	1	19	19	191%	
31	7/27-8/2	112	2,165		494	3	3	2	2	1	9	8	184%	
32	8/3-8/9	109	6,996		621	15	15	12	12	6	131	53	78%	
33	8/10-8/16	109	9,994		2,376	53	53	48	48	13	106	28	51%	
33	8/10-8/16	112	3,541		1,230	18	18	16	16	2	11	7	126%	
34	8/17-8/23	109	12,414		1,045	24	24	22	22	3	69	39	111%	
35	8/24-8/30	109	14,179		144	4	4	2	2	1	191	191	195%	
<b>Total seine fishery</b>				59,749		8,097	151	151	130	130	35	582	205	69.1%

<b>Sport Fishery</b>														
Biweek	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
13	6/23-7/6	Sitka	5,529	2.64E+06	1,657	35	35	31	31	2	13	9	135%	
15	7/21-8/3	Sitka	15,148	9.76E+06	4,196	121	121	105	104	2	14	10	132%	
16	8/4-8/17	Sitka	17,850	1.04E+07	4,407	134	132	123	123	1	8	7	184%	
17	8/18-8/31	Sitka	19,383	1.58E+07	5,439	173	173	151	151	3	21	12	110%	
18	9/1-9/14	Sitka	4,075	3.10E+06	541	13	13	13	13	1	15	14	190%	
<b>Total sport fishery</b>				61,985	4.17E+07	16,240	476	474	423	422	9	70	24	66.1%

<b>TOTAL ALL FISHERIES:</b>				959,423	4.17E+07	288,025	6,775	6,717	5,706	5,701	189	1,572	219	27.3%
-----------------------------	--	--	--	---------	----------	---------	-------	-------	-------	-------	-----	-------	-----	-------

Within the adult escapement, a total of 380 fin-clipped coho salmon yielded 378 valid CWT-marked fish, indicating the fraction of the 2002 smolt cohort tagged with CWTs ( $\theta$ ) was 51.8%. The total run (harvest plus escapement) was estimated to be 2,305 (SE = 219) adult coho salmon based on the minimum escapement count (733). The estimated marine survival rate was 7.5% (SE = 0.8%), and the estimated marine fishery exploitation rate was 68.2% (SE = 3%).

Age-1.1 coho salmon composed 55.1% (SE = 0.04) of the adult escapement and averaged 612 mm MEF (SD = 38). Age-2.1 coho salmon composed 44.9% (SE = 0.04) of the escapement and averaged 633 mm MEF (SD = 29). The observed female-to-male ratio in the 2003 escapement was 1.28:1.

### Smolt Abundance in 2002

Prior to estimating smolt abundance, tests were conducted to determine whether capture and tagging in the first sampling event was size selective, which could bias abundance and age composition estimates. The marked-to-unmarked ratio of adults returning in 2003 did not differ

between fish of different freshwater ages (1.x versus 2.x;  $\chi^2 = 0.65$ ,  $df = 1$ ,  $P = 0.42$ ), which is consistent with equal probability of capture between ages of smolt. Furthermore, freshwater age composition did not differ between smolt and tagged adults ( $\chi^2 = 1.82$ ,  $df = 1$ ,  $P = 0.18$ ), which is consistent with equal survival between ages. Based on the outcomes of these analyses the abundance of smolt was estimated without stratification.

In 2002, an estimated 30,580 coho salmon smolt ( $SE = 1,072$ )  $\geq 70$  mm emigrated from Slippery Creek. This estimate was based on the number of marked smolt released in the first sampling event (15,874 smolt), and the subsequent recovery of 380 marked (missing adipose fins) adult coho salmon out of the 733 inspected in 2003.

## **PRODUCTION 2003-2004**

### **Smolt Tagging, Age, Length, and Weight in 2003**

Between 18 April and 3 June 2003 a total of 26,320 coho salmon smolt  $\geq 70$  mm FL belonging to the 2001 and 2002 brood years were initially captured by the smolt trap (Appendix B1). The smolt trap fished the entire period, and was considered fish tight on all but 2 of 46 days. On 24-25 May combinations of highwater, debris, and trap damage by a log may have reduced catchability during that period even though significant catches occurred. Trapping mortality was 907 smolt (3.4%), which resulted from injury and/or stress associated with high turbulence and debris loads in the trap. Subtracting these trapping losses, the crew implanted 25,413 coho smolt with full length CWTs bearing tag codes 40820, 40821, and 40822. There were an additional 506 post-tagging mortalities documented from the overnight holding pens (1.9%). The observed sampling mortality rate (from initial capture to final release of tagged smolt) was 5.4%. The short-term tag retention rate was 100%, which left a total valid release of 24,907 tagged smolts. In addition to coho salmon smolts, the sampling crew released 1,395 molting steelhead juveniles, 4,845 Dolly Varden, and 57 adult cutthroat trout.

Age-1. coho smolt (2001 brood year) composed 79% ( $SE = 2\%$ ) of sampled smolt ( $n = 424$ ) and averaged 100 mm FL ( $SD = 12$ ) and 10 g ( $SD = 4$ ) in weight. Age-2. fish composed the remaining 21% ( $SE = 1\%$ ), averaged 123 mm FL ( $SD = 11$ ) and 18 g ( $SD = 5$ ) in weight.

### **Coded Wire Tag Recovery in 2004**

During random sampling among sport and commercial fisheries in 2004, there were 401 CWTs recovered from adult coho salmon originating from 2003 tagging operations at Slippery Creek (Table 3, Appendix B2). Of these, 355 CWTs were recovered from the commercial troll fishery. The greatest number of tags (202) was recovered from the troll fishery in the NW Quadrant (Figure 2). The SEAK marine recreational fishery accounted for the recovery of 9 tags, all of which but 1 was recovered in the NW Quadrant near Sitka, between late June and mid-September. Lastly, purse seine fisheries in the NE Quadrant, that target pink salmon, accounted for 37 CWTs.

### **Harvest, Exploitation and Escapement in 2004**

A total of 401 CWTs were recovered from harvested adult coho salmon originating from Slippery Creek. Following expansions for sampling, total harvest (marine commercial and sport fisheries) was estimated to be 3,261 ( $SE = 169$ ) coho salmon originating from Slippery Creek (Table 3). Harvests in these fisheries occurred from the end of June through mid-

September. Harvests from the commercial troll fishery accounted for 89.5% of the overall harvest of Slippery Creek coho salmon. Within the troll fishery, the highest harvest contributions came from the NW and NE Quadrants (56.2 and 36.5% of total harvest, respectively). The estimated sport harvest contribution from Slippery Creek in the marine recreational fishery was 70 fish, representing 2.1% of the total harvest. The seine fisheries accounted for 8.2% of the overall harvest.

Table 3.—Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2004. (In fishing periods and fishing quadrants for which no CWTs were recovered with the appropriate code, harvest was assumed to be zero. See text for an explanation of the notation).

<b>Troll Fishery</b>														
Stat week	Dates	Period	Quad	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]
29-32	7/11-8/7	3	NE	96,231		15,287	196	191	146	146	40	397	62	31%
28-32	7/4-8/7	3	NW	505,816		95,989	1,262	1,239	964	963	139	1,148	105	18%
30-32	7/18-8/7	3	SE	84,622		17,146	182	182	121	121	13	99	26	51%
29-32	7/11-8/7	3	SW	112,968		32,574	362	358	251	250	7	38	13	67%
33-38	8/8-9/18	4	NE	123,865		24,050	427	420	324	323	83	670	75	22%
33-39	8/8-9/25	4	NW	629,593		126,035	2,327	2,290	1,875	1,874	63	492	62	25%
35-36	8/22-9/4	4	SE	88,421		14,062	182	178	130	129	7	70	25	71%
34-35	8/15-8/28	4	SW	26,994		18,872	248	245	165	164	3	7	3	85%
<b>Total troll fishery</b>				1,668,510		344,015	5,186	5,103	3,976	3,970	355	2,920	161	10.8%

<b>Seine Fishery</b>														
Stat week	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
30	7/18-7/24	104	17,428		5,733	54	54	36	36	1	5	4	174%	
30	7/18-7/24	110	5,062		1,731	8	8	7	7	1	4	4	173%	
31	7/25-7/31	109	6,128		2,132	20	20	17	17	5	22	9	78%	
32	8/1-8/7	109	7,385		902	16	16	15	15	9	113	37	63%	
32	8/1-8/7	112	5,670		1,209	11	11	7	7	1	7	7	182%	
33	8/8-8/14	109	5,926		2,348	20	20	17	17	6	23	8	69%	
33	8/8-8/14	112	10,916		3,616	43	43	38	38	2	9	6	123%	
33	8/8-8/14	114	1,816		591	10	10	6	6	1	5	4	174%	
34	8/15-8/21	109	12,913		2,506	14	14	10	10	3	24	13	106%	
34	8/15-8/21	112	22,598		5,207	52	52	44	44	5	33	14	81%	
34	8/15-8/21	113	688		243	4	4	4	4	1	4	4	172%	
35	8/22-8/28	109	4,966		763	4	4	4	4	2	20	13	132%	
<b>Total seine fishery</b>				101,496		26,981	256	256	205	205	37	270	46	33.7%

<b>Sport Fishery</b>														
Biweek	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
14	7/5-7/18	SITKA	11,105	6.23E+06	2,315	18	18	16	16	2	15	10	133%	
15	7/19-8/1	SITKA	8,126	9.57E+06	1,463	18	18	15	15	2	17	12	142%	
16	8/2-8/15	SITKA	11,438	7.28E+06	2,200	33	32	29	29	3	25	14	113%	
17	8/16-8/29	SITKA	14,453	9.47E+06	3,488	52	51	48	48	1	6	6	181%	
17	8/16-8/29	JUNEAU	3,055	5.11E+05	654	11	11	8	8	1	7	7	183%	
<b>Total sport fishery</b>				48,177	3.31E+07	10,120	132	130	116	116	9	70	23	64.7%
<b>TOTAL ALL FISHERIES:</b>				1,818,183	3.31E+07	381,116	5,574	5,489	4,297	4,291	401	3,261	169	10.2%

The enumerated escapement passing the picket weir between August 19 and October 16 included 2,195 adult coho salmon and 0 jack coho (Appendix B3). The first fish passed the weir on September 13, following the first rise in stream level after a prolonged period of extremely low water conditions that likely delayed the run's timing past the weir. However a

week later, flows resulting from a large storm event topped a low point along the weir's upper edge of pickets between midnight and 0600 hrs on September 21. At the time of this event, a total of 527 adult coho had been passed upstream of the weir each bearing a partial fin clip on the upper caudal fin. Immediately following the high water event, the remaining 1,668 fish that were passed upstream from the weir trap received partial fin clips on the lower caudal fin. During the last 5 days of the weir's operation project staff conducted a series of sampling surveys in 3 of the larger lake inlet streams, and in the lake. A total of 51 adult coho were captured using dipnets, seines, hook-and-line gear, and gillnets yielding a total of 23 fish bearing partial fin clips.

Based upon examination of mark-recapture sampling data the estimated total escapement included 4,756 (SE = 694) adult coho that passed upstream of the weir during 2004. Subtracting the observed weir counts from the estimated total indicates that as many as 2,561 coho, or 54% of the 2004 estimated escapement passed uncounted at the weir during the short period of time the weir was breached (approximately 6 hrs). By the time the weir was again fish tight on September 21, as many as 3,088 fish, or 65% of the total estimated escapement, may have passed upstream into the lake, which is within the range of observed cumulative run counts in other years (2001, 2002, and 2005) when 56, 82, and 66% of the passage was completed by 21 September.

Within the adult escapement, a total sample of 1,435 fin-clipped coho salmon yielded 1,428 valid CWT-marked fish, indicating the fraction of the 2003 smolt cohort tagged with CWTs ( $\theta$ ), was 65.0%. The total run (harvest plus escapement) was estimated to be 8,017 (SE = 714) adult coho salmon. The estimated marine survival rate was 21.0% (SE = 1.9%), and the estimated marine fishery exploitation rate was 40.7% (SE = 3.7%).

Age 1.1 coho salmon composed 68.8% (SE = 3%) of the adult escapement and averaged 617 mm MEF (SD = 41). Age 2.1 coho salmon composed 31.2% (SE = 3%) and averaged 645 mm MEF (SD = 25). The observed female-to-male ratio in the 2004 escapement was 1.23:1.

### **Smolt Abundance in 2003**

The marked-to-unmarked ratio of adults returning in 2004 did not differ between fish of different freshwater ages (1.x versus 2.x;  $\chi^2 = 0.20$ , df = 1, P = 0.65), which is consistent with equal probability of capture between ages of smolt. On the other hand, freshwater age composition did differ between smolt and tagged adults ( $\chi^2 = 7.02$ , df = 1, P = 0.008), indicating that smolt of age 2.x survived at a higher rate. Based on the outcomes of these analyses the abundance of smolt was estimated without stratification.

The abundance of smolt was estimated with an unstratified approach using Chapman's modification to the Petersen model. In 2003, an estimated 38,088 coho salmon smolt (SE = 574)  $\geq 70$  mm emigrated from Slippery Creek. This estimate was based on the number of marked smolt released in the first sampling event (24,907 smolt), and the subsequent recovery of 1,435 marked (missing adipose fins) adult coho salmon out of the 2,195 inspected in 2004.

## **PRODUCTION 2004-2005**

### **Smolt Tagging, Age, Length, and Weight in 2004**

Between 16 April and 1 June 2004 a total of 24,228 coho salmon smolt  $\geq 70$  mm FL belonging to the 2002 and 2003 brood years were initially captured using the smolt trap downstream of Slippery Lake. The smolt trap was considered fish tight on all but 2 of 46 days when combinations of highwater, debris, and trap damage may have reduced catchability even though significant catches occurred. The tagging crew accounted for a trapping mortality of 1,565 smolt (6.5% of total handled), that either had been injured or stressed by high turbulence, debris abrasion, or crowding with other fish. Of the surviving smolt, 22,663 were implanted (Appendix C1) with full length CWTs bearing tag codes 041017, 041018 or 041019. There were an additional 776 post-tagging mortalities documented from the overnight holding pens (3.2%). The overall sampling mortality rate (from initial capture to final release of tagged smolt) was 9.7%. The short-term tag retention rate was 99.9%, which left a total valid release of 21,877 tagged smolts. In addition to coho smolt, the crews trapped and released numerous other fish in the downstream trap. This included juvenile and adult steelhead (1,536 and 56, respectively), Dolly Varden (3,390), cutthroat trout (50), and sockeye salmon (71).

Age-1. coho smolt composed 78% (SE = 2%) of sampled smolt (n = 375), and averaged 104 mm FL (SD = 62) and 8.7 g (SD = 4) in weight. Age-2. fish composed the remaining 22% (SE = 2%), and averaged 124 mm FL (SD = 11) and 17 g (SD = 5) in weight.

### **Coded Wire Tag Recovery in 2005**

During random sampling among sport and commercial fisheries in 2005, there were 229 CWTs recovered from adult coho salmon originating from 2004 tagging operations at Slippery Creek (Table 4, Appendix C2). Of these, 197 CWTs were recovered from the commercial troll fishery. The greatest number of tags (117) were recovered from the troll fishery in the NW Quadrant (Figure 2). The SEAK marine recreational fishery accounted for the recovery of 7 tags, all of which were recovered in the NW Quadrant near Sitka. Purse seine fisheries in the NE Quadrant, that target pink salmon, accounted for 23 CWTs, and drift gillnet fisheries in the NE Quadrant accounted for 2 CWTs.

### **Harvest, Exploitation and Escapement in 2005**

An estimated 2,139 (SE = 153) coho salmon originating from Slippery Creek were harvested in marine commercial and sport fisheries in 2004 (Table 4). Harvests in these fisheries occurred from the end of June through mid-September. Harvests from the commercial troll fishery accounted for 82.9% of the overall harvest of Slippery Creek coho salmon. Within the troll fishery, the highest harvest contributions came from the NW and NE Quadrants (51.8 and 43.7% of total harvest, respectively). The estimated sport harvest contribution from Slippery Creek in the marine recreational fishery along the outer coast near Sitka was 45 fish, representing 2.1% of the total harvest. The net fisheries accounted for the remaining 15 % of harvest (14.4% purse seine and 0.6% drift gillnet).

The enumerated escapement passing the picket weir in 2005 between August 18 and October 13 included 2,034 adult coho salmon and 0 jack coho (Appendix C3). Fish arrived and began passing the weir on August 20, and sampled fish were given time-stratified marks (opercle punches or partial fin clips) that followed the pre-assigned schedule (Table 1). During the

project's duration there were no instances of high water that breached the weir. Although contingent mark-recapture sampling was not needed, the sampling crew spent several days sampling in Slippery Lake and tributary streams where 23 adult coho were captured, of which 100% had marks given at the weir. Based upon the mark-recapture sampling, the weir count of 2,034 adult coho salmon was considered to be a census.

Table 4.–Estimated marine harvest of adult coho salmon bound for Slippery Creek in 2005. (In fishing periods and fishing quadrants for which no CWTs were recovered with the appropriate code, harvest was assumed to be zero. See text for an explanation of the notation).

<b>Troll Fishery</b>														
Stat week	Dates	Period	Quad	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]
25	6/12-6/18	2	NW	943		332	7	7	6	6	1	5	4	175%
27-33	6/26-8/13	3	NE	177,689		29,034	374	364	289	289	44	485	72	29%
28-33	7/10-8/13	3	NW	576,081		132,984	1,556	1,520	1,115	1,111	83	648	71	22%
30	7/17-7/23	3	SE	62,647		2,019	22	21	15	15	1	57	57	194%
32	7/31-8/6	3	SW	110,731		15,409	137	135	78	78	1	13	12	188%
34-36	8/14-9/3	4	NE	70,819		14,182	196	196	148	148	33	289	49	33%
34-37	8/14-9/10	4	NW	367,935		79,992	1,106	1,093	875	873	29	237	42	35%
35	8/21-8/27	4	SW	67,821		12,488	173	168	111	111	1	10	9	186%
38	9/11-9/17	5	NW	71,963		17,534	322	319	238	238	4	29	14	91%
<b>Total troll fishery</b>				1,506,629		303,974	3,893	3,823	2,875	2,869	197	1,774	135	14.9%

<b>Seine Fishery</b>														
Stat week	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
27	6/26-7/2	112	115		98	2	2	2	2	1	2	1	141%	
30	7/17-7/23	112	9,300		1,454	29	29	20	20	1	11	11	187%	
30	7/17-7/23	114	3,614		693	11	11	8	8	1	9	9	185%	
31	7/24-7/30	109	4,287		437	1	1	1	1	1	17	17	190%	
31	7/24-7/30	112	7,672		1,047	10	10	6	6	1	13	12	188%	
32	7/31-8/6	109	5,645		1,325	13	13	10	10	3	22	12	106%	
32	7/31-8/6	112	9,235		1,183	15	15	11	11	4	55	26	95%	
33	8/7-8/13	103	11,381		627	8	8	8	8	1	32	31	193%	
33	8/7-8/13	109	14,462		953	14	14	9	9	3	80	45	111%	
33	8/7-8/13	112	12,002		2,325	40	40	27	27	2	18	12	131%	
33	8/7-8/13	113	1,269		276	4	3	2	2	1	11	10	187%	
33	8/7-8/13	114	171		245	3	3	3	3	1	1	1	84%	
34	8/14-8/20	109	5,939		928	4	4	2	2	1	11	11	187%	
34	8/14-8/20	112	16,253		3,887	54	54	42	41	1	8	7	183%	
35	8/21-8/27	112	21,406		2,266	47	47	39	39	1	17	16	190%	
<b>Total seine fishery</b>				122,751		17,744	255	254	190	189	23	307	72	46.0%

<b>Sport Fishery</b>														
Biweek	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
12	6/6-6/19	SITKA	5,451	1.60E+06	1,336	15	15	12	12	1	7	7	183%	
13	6/20-7/3	SITKA	9,383	2.99E+06	2,657	43	43	31	31	1	6	6	180%	
15	7/18-7/31	SITKA	17,199	1.78E+07	3,848	46	46	37	37	1	8	7	184%	
16	8/1-8/14	SITKA	17,411	1.80E+07	4,973	101	100	85	85	2	12	8	132%	
17	8/15-8/28	SITKA	16,823	1.32E+07	5,161	66	65	61	61	2	12	8	130%	
<b>Total sport fishery</b>				66,267	5.37E+07	17,975	271	269	226	226	7	45	16	70.0%

<b>Drift Gillnet Fishery</b>														
Stat week	Dates	District	<i>H</i>	var[H]	<i>k</i>	<i>a</i>	<i>a'</i>	<i>t</i>	<i>t'</i>	<i>mij</i>	<i>rj</i>	SE[rj]	RP[rj]	
32	7/31-8/06	111	1,576		745	1	1	1	1	1	4	3	168%	
37	9/4-9/10	115	4,418		844	23	23	22	22	1	9	9	185%	
<b>Total drift gillnet fishery</b>				5,994		1,589	24	24	23	23	2	13	9	140.3%

<b>TOTAL ALL FISHERIES:</b>				1,701,641	5.37E+07	341,282	4,443	4,370	3,314	3,307	229	2,139	153	14.1%
-----------------------------	--	--	--	-----------	----------	---------	-------	-------	-------	-------	-----	-------	-----	-------



Within the adult escapement, a total of 1,180 fin-clipped coho salmon yielded 1,159 valid CWTs, indicating the fraction of the 2004 smolt cohort tagged with CWTs ( $\theta$ ) was 56.9%. The total run (harvest plus escapement) was estimated to be 4,160 (SE = 153) adult coho salmon. The estimated marine survival rate was 11.1% (SE = 0.5%), and the estimated marine fishery exploitation rate was 51.3% (SE = 1.8%).

Age 1.1 coho salmon composed 69.5% (SE = 0.03) of the adult escapement and averaged 599 mm MEF (SD = 40). Age 2.1 coho salmon composed 30.5% (SE = 0.03) and averaged 612 mm MEF (SD = 37). The observed female-to-male ratio in the 2005 escapement was 1.7:1.

### **Smolt Abundance in 2004**

The marked-to-unmarked ratio of adults returning in 2005 did not differ between fish of different freshwater ages (1.x versus 2.x;  $\chi^2 = 0.01$ , df = 1, P = 0.93), which is consistent with equal probability of capture between ages of smolt. On the other hand, freshwater age composition may have differed between smolt and tagged adults ( $\chi^2 = 3.48$ , df = 1, P = 0.06), with smolt of age 2.x surviving at a slightly higher rate. Based on the outcomes of these analyses the abundance of smolt was estimated without stratification.

An estimated 37,696 coho salmon smolt (SE = 691)  $\geq 70$  mm emigrated from Slippery Creek. This estimate was based on the number of marked smolt released in the first sampling event (21,877 smolt), and the subsequent recovery of 1,180 marked (missing adipose fins) adult coho salmon out of the 2,034 inspected in 2005.

## **DISCUSSION**

With its conclusion in 2005, the Slippery Creek project examined coho salmon production and utilization through 7 production cycles in central SEAK. Additionally, this work served to provide an in-depth evaluation from one of the central SEAK fish pass enhancement projects that began in the 1980s. Although there were several breaks in the sequential studies, the information collected to date indicates that the enhancement project appears to have successfully established a self-sustaining population of coho salmon. The enhancement project led to habitat utilization by a number of species including coho, pink, and chum salmon, steelhead, Dolly Varden and cutthroat trout. However, its value as an indicator coho salmon stock for managing fisheries in central SEAK was considered mixed and questioned by some who manage intensive fisheries closer to the mainland. Because the Slippery Creek return terminates in an area between the outer coast and inner islands, its return contributed to commercial troll and purse seine fisheries, but failed to be part of significant drift gillnet fisheries closer to the mainland. Lastly, the project has shown that coho salmon can coexist and even thrive with Dolly Varden and cutthroat trout populations, without the need for thinning or eradication, as had been suggested at the start of the enhancement project in the 1980s.

One component that separated the Slippery Creek project from others in SEAK was use of a large and unique smolt trapping structure (i.e., Wolf trap). Under most conditions this large trap structure worked well, was operable by a 2-person crew, and provided the means to sample a significant portion of the emigrating smolt. However, there were several instances when relatively high levels of trapping mortality occurred during periods of high stream flows. The trap's dewatering table was built as a permanent structure anchored into a steep bedrock rapid immediately at the head of a large scour pool, and was subject to higher velocity flows and

considerable energy. These trapping losses occurred during high stream flows when large numbers of smolt and other juvenile and adult fish were entrapped as well, which forced them into tight proximity with one another. Other SEAK coho salmon projects on lake-fed systems use passive trapping gear such as a trough trap at Chuck Creek (McCurdy 2008), and an inclined plane trap at Hugh Smith Lake (Shaul et al. 2009). The lower gradient-lower energy environments and traps used there do not appear to create conditions that cause injury or mortality. If the large permanent trap was not already present at Slippery Creek, using such trap designs may have been advantageous.

A picket tripod weir was used in all 3 of the return years for the adult escapement project that we constructed and located at the outlet of Slippery Lake in August 2003. The change from trapping conducted downstream at the remote fish pass was based primarily on improving logistics and safety for the 2-person crew. However, the tripod picket weir's integrity was soon tested in its first year when high water after a storm that dropped over 7 inches of rain breached the weir pickets, and strong winds dislodged large trees in the headwaters, which then damaged the weir. Since there were 2 days when the weir was down for repairs (open), it seemed likely that a significant number of fish could have passed upstream if they were present in the stream. Weir breaches have been reported by other fall coho salmon projects (Shaul et. al 2009), which used methods such as mark-recapture sampling to estimate uncounted fish. This back-up measure was not considered early enough in the 2003 run, however 100% of trapped and passed coho salmon were marked the following year. Other methods considered were to examine and adjust the observed 2003 passage using the averaged cumulative run timing from other years, or by applying average marine survival to smolt emigrating in the prior year.

Adult run-timing information collected at Slippery Creek between mid-August and mid-October in 2001, 2002, and 2005 showed an averaged cumulative passage of 12% of the annual escapement by the time of the 2003 weir breach (2 September), based on observed counts representing 9, 12 and 14% of the run, respectively. In the same years 2%, 4%, and 1% of the overall escapements passed upstream in the following 2-day period (3-4 September) corresponding to the days in 2003 when the weir was breached and being repaired. Applying this range in run timing suggested an additional 7 to 30 coho salmon may have passed upstream during the brief period the weir was breached. The weir counts remained low for 6 days following repairs to the weir. This appeared to support the projections that an inconsequential number of fish passed upstream. However, applying this adjustment does not markedly change the escapement levels for 2003, yet it would introduce uncertainty by its dependence on timing patterns, particularly given that September 2 is early in the overall run, and this adjustment would be based on a short data series. In the case of the 2003 run, no adjustment seems necessary or justified.

Another approach to adjust for uncounted escapement that year was briefly examined and then discounted. Applying averaged marine survival in recent years (13.6%) to the estimate of smolt that left in 2002 (30,580) would suggest a total return of 4,159 adults. After subtracting the estimated harvest (1,572) the calculated escapement would be approximately 2,600 fish, roughly 1,850 more than the 733 fish passed during the 56 days the weir operated. This suggests that the majority of escaping adults (71%) would not only have had to pass during a brief 2-day period, but also earlier than previously observed. This approach appeared to have several shortcomings. First, by selecting and applying an average marine survival that may not be close to the "true" level, large errors in estimated escapement and other parameters could occur, particularly

because marine survival in this and other stocks has been found to vary significantly from year to year. Second, applying this approach would ignore count and timing data collected on 56 of the 58 days during the 2003 run.

Mark-recapture sampling was conducted throughout the 2004 and 2005 runs to back-up the weir counts. In 2004 the mark-recapture sampling was needed and used after a brief weir breach during the peak migration period. In that year low water conditions persisted until fall storms arrived, which may have lead to the buildup of adults in tidal areas or the lower portion of the creek until the weir was breached. The mark-recapture experiment estimated that during the peak escapement period as much as 54% of the escapement passed uncounted during the 6-hr period the weir was breached. The estimated numbers of counted and uncounted fish passing upstream at the time the weir was breached fit the observed range in cumulative run timing seen at Slippery Creek. However, in 2005 mark-recapture sampling was not needed because the weir was operated the entire season without interruptions. In addition to periodic weir inspections to check that the weir was fish tight, limited recapture sampling was conducted in several headwater tributaries and in the lake at the end of the 2005 project and all captured fish ( $n = 23$ ) had been marked at the weir.

Smolt abundance and escapement in these years allowed a partial view of coho salmon production in Slippery Creek (Table 5). The short data series does not offer enough information to effectively examine spawner-recruit relationships and generate escapement goals for this stock. However some information on Slippery Creek’s intrinsic productivity was collected from tracking several brood years with widely varying escapement levels. The quantity and quality of habitat in the Slippery Creek drainage appear to provide a production “rebound” from small escapements as was seen in 2000 when 411 adult coho were passed, which produced an estimated 57 smolt per adult and eventually 9 adults to replace the initial spawning pair (Table 5). Both the calculated smolt per spawner and adults per spawner were lower when escapements were high in 2001. Unfortunately, returns from the largest escapement in 2002 were not completely reconstructed, owing to the project’s end in 2005. However, production of age-1 smolt from the 2002 brood year may indicate the escapement was well above adult numbers needed to seed the system. The range in smolt per adult observed at Slippery Creek across a wide range in escapement was very similar to that calculated from a 23-year project at Hugh Smith Lake (Shaul et al 2009).

Table 5.–Coho salmon production relating spawners and progeny by tracking estimates of production from 4 brood years at Slippery Creek.

Brood year	Spawner (adults):		Smolt (progeny)		Smolt per spawner			Adults ( surviving progeny )		
	Total Return	Escapement	age 1.	age 2.	age 1.	age 2.	total	return year	total return	per-adult
1998	3,564	632	19,002	11,697	30.1	18.5	48.6	2002	5,075	8.0
2000	2,604	411	15,290	7,998	37.2	19.5	56.7	2003	3,752	9.1
2001	5,611	2,772	30,090	8,293	10.9	3.0	13.8	2004	6,776	2.4
2002 <sup>a</sup>	7,430	5,341	29,403	nd	5.5	nd	nd	2005	nd	nd

Note: nd = no data

<sup>a</sup> The complete data were not available for the 2002 brood year without smolt tagging in 2005 and escapement data from 2006.

Overall, Slippery Creek’s average production of 37,073 smolt (Table 6) compares favorably with two other assessed lake populations in southern SEAK. Hugh Smith Lake’s average production (1984-2007) was 31,663 smolt (Shaul et al. 2008); Chuck Creek has on average been producing 17,041 smolt annually (2003-2007: Shaul et al. 2008). In terms of smolt production per unit watershed area, the productivity of Slippery Creek (2,600 ha, 14 smolt/ha) is intermediate between the larger Hugh Smith drainage (4,948 ha, 6 smolt/ha) and the smaller Chuck Creek drainage (750 ha, 23 smolt/ha)(Shaul et al. 2009; McCurdy 2008).

The recovery of Slippery Creek CWTs from the various fisheries and resulting estimates of harvest and exploitation have shown that the Slippery Creek stock of coho salmon is being utilized primarily by the troll and purse seine fleets along the migration corridor. Furthermore, the levels of harvest and exploitation estimated over the project’s lifespan have shown considerable variation, but the existing mixed-stock management used in troll and net fisheries has thus far resulted in sufficient escapement to sustain production from this relatively small system. Because the harvests have been significant, the levels of exploitation have averaged 58%, and from indications of its level and resilience of production, it is safe to say that the enhancement-established self-sustaining population of coho salmon in the Slippery Creek drainage has been a success on all levels.

Table 6.–Estimated coho salmon total smolt production ( $\hat{N}_s$ ), number of valid CWTs released ( $n_s$ ), fraction of adults carrying CWTs ( $\hat{\theta}_a$ ), adult harvest ( $\hat{H}$ ) and exploitation rate ( $\hat{\mu}$ ), smolt-to-adult survival ( $\hat{S}$ ), total adult return ( $\hat{N}_r$ ) and escapement( $N_e$ ) at Slippery Creek corresponding to production cycles 1997–98, 1999–2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, and 2004-2005.

Year (smolt-adult)	$\hat{N}_s$	$n_s$	$\hat{\theta}_a$	$\hat{H}$	$\hat{\mu}$	$\hat{S}$	$\hat{N}_r$	$N_e$
1997–1998 <sup>a</sup>	43,544	33,077	75.9%	2,932	82.3%	8.2%	3,564	632
1999–2000 <sup>b</sup>	31,015	12,956	36.3%	2,193	84.2%	8.4%	2,604	411
2000–2001 <sup>c</sup>	36,057	12,391	34.3%	2,839	50.6%	15.6%	5,611	2,772
2001–2002 <sup>d</sup>	42,533	19,193	45.3%	2,089	28.1%	17.5%	7,430	5,341
2002–2003 <sup>e</sup>	30,580	15,874	51.5%	1,572	68.2%	7.5%	2,305	733
2003–2004	38,088	24,907	65.1%	3,261	40.7%	21.0%	8,012	4,756
2004–2005	37,696	21,877	57.0%	2,139	51.3%	11.1%	4,160	2,034
Average	37,073	20,039	52.0%	2,432	58.0%	13.0%	4,812	2,383

<sup>a</sup> Beers (1999).

<sup>b</sup> Beers (2001).

<sup>c</sup> Beers (2003).

<sup>d</sup> Fleming (2005).

<sup>e</sup> Current report.

## **ACKNOWLEDGMENTS**

Many individuals helped complete this study; most personnel were from ADF&G unless noted otherwise. Brad Russell, Don Malherek, Ann Crane, and Jason Leavitt are thanked for running and maintaining the field studies and carefully collecting data in the field. Glen Oliver and his port sampling crews for commercial fisheries CWT recoveries; Mike Jaenicke and the creel studies crew for CWT recoveries from the Sitka area recreational fisheries; Ron Josephson, Detlef Buettner, Anna Sharp, and the Tag Lab in Juneau for dissecting and decoding heads and providing sampling supplies and data on CWT recoveries. Thanks also to Sue Millard and Bruce White for aging scales and cursory age analysis, and Steve Fleischman, Ed Jones, Scott McPherson, Bob Marshall, and especially, John DerHovanisian who provided editorial support. Joanne MacClellan helped prepare the final manuscript. Mary Meucci coordinated administrative services out of Petersburg. Dick Aho and John McDonell of the USFS promoted a cooperative atmosphere between government agencies and provided access to cabins. Special thanks also go to pilots Doug Reimer of Nordic Air, Steve “Wally” O’Brocta with Temsco Helicopters, and Cole, Dave, and Rod from Pacific Wing for their safe piloting and project assistance.

## REFERENCES CITED

- Beers, D. E. 1999. Production of coho salmon from Slippery Creek, 1997–1998. Alaska Department of Fish and Game, Division of Sport Fisheries, Fisheries Data Series Report No. 99-46, Petersburg.
- Beers, D. E. 2001. Production of coho salmon from Slippery Creek, 1999–2000. Alaska Department of Fish and Game, Division of Sport Fisheries, Fisheries Data Series Report No. 01-15, Petersburg.
- Beers, D. E. 2003. Production of coho salmon from Slippery Creek, 2000–2001. Alaska Department of Fish and Game, Division of Sport Fisheries, Fisheries Data Series Report No. 03-08, Petersburg.
- Bernard, D. R., and J. E. Clark. 1996. Estimating salmon harvest with coded-wire tags. *Canadian J. Fisheries and Aquatic Sciences*: 2323-2332.
- Fleming, D. F. 2005. Production of coho salmon from Slippery Creek, 2001–2002. Alaska Department of Fish and Game, Division of Sport Fisheries, Fisheries Data Series Report No. 05-08, Petersburg.
- Hubartt, D. J., A. E. Bingham, and P. M. Suchanek. 1999. Harvest estimates for selected marine sport fisheries in Southeast Alaska during 1998. Alaska Department of Fish and Game, Fishery Data Series No. 99-15, Anchorage.
- Koerner, J. F. 1977. The use of the coded-wire tag injector under remote field conditions. Alaska Department of Fish and Game, Division of Commercial Fisheries, Informational Leaflet No. 172, Juneau.
- McConnell, J. M. and G. R. Snyder. 1972. Key to field identification of anadromous juvenile salmonids in the Pacific Northwest. National Oceanic and Atmospheric Administration Technical Report NMFS CIRD-366, Seattle, WA.
- McCurdy, S. 2008. Production of Coho Salmon from the 2005 Smolt Emigration from Chuck Creek in Southeast Alaska. Alaska Department of Fish and Game, Division of Sport Fisheries, Fisheries Data Series Report No. 08-04, Craig.
- Scarnecchia, D. L. 1979. Variation of scale characteristics of coho salmon with sampling location on the body. *Progressive Fish Culturist* 41(3):132-135.
- Shaul, L. D., K. F. Crabtree, M. Kemp, and N. Olmsted. 2009. Coho salmon studies at Hugh Smith Lake, 1982-2007. Alaska Department of Fish and Game, Fishery Manuscript No. 09-04, Anchorage.
- Shaul, L., E. Jones, K. Crabtree, T. Tydingco, S. McCurdy, and B. Elliot. 2008. Coho salmon stock status and escapement goals in Southeast Alaska. Alaska Department of Fish and Game, Special Publication No. 08-20.
- Seber, G. A. F. 1982. On the estimation of animal abundance and related parameters, second edition. MacMillan and Company, New York.
- Wolf, P. 1956. A trap for the capture of fish and other organisms moving downstream. *American Fisheries Society*. P. 41-45.
- Wright, B. E., M. D. Bryant, P. E. Porter, and B. J. Frenette. 1997. Assessment of introduction of coho salmon into the Slippery Lake drainage, 1988 through 1991. USDA Forest Service, PNW Research Station, Juneau.
- Zeimer, G. L. 1962. Steeppass fishway development. ADF&G Informational Leaflet 12, Juneau.

## **APPENDIX A**

Appendix A1.–Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2002. (nd = no data).

26

Date	Total captured	Total tagged	Overnight mortality	Live tagged	Retention rate	Valid tags	Date	Total captured	Total tagged	Overnight mortality	Live tagged	Retention rate	Valid tags
15-Apr							9-May	nd	222	3	219	100%	219
16-Apr							10-May	nd	156	20	136	100%	136
17-Apr							11-May	nd	375	10	365	100%	365
18-Apr							12-May	nd	381	50	331	100%	331
19-Apr							13-May	nd	823	58	765	100%	765
20-Apr							14-May	nd	1,948	0	1,948	100%	1,948
21-Apr							15-May	nd	802	40	762	100%	762
22-Apr							16-May	nd	915	11	904	100%	904
23-Apr							17-May	nd	977	7	970	100%	970
24-Apr							18-May	nd	859	4	855	100%	855
25-Apr							19-May	nd	1,124	4	1,120	100%	1,120
26-Apr							20-May	nd	974	7	967	100%	967
27-Apr							21-May	nd	969	5	964	100%	964
28-Apr	<i>Install</i>	<i>trap</i>					22-May	nd	950	24	926	100%	926
29-Apr	nd	6	1	5	100%	5	23-May	nd	538	15	523	100%	523
30-Apr	nd	13	1	12	100%	12	24-May	nd	720	23	697	100%	697
1-May	nd	40	2	38	100%	38	25-May	nd	860	21	839	100%	839
2-May	nd	55	8	47	100%	47	26-May	nd	821	13	808	100%	808
3-May	nd	216	5	211	100%	211	27-May	nd	721	23	698	100%	698
4-May	nd	56	1	55	100%	55	28-May	nd	150	6	144	100%	144
5-May	nd	34	5	29	100%	29	<i>Project</i>	<i>end</i>					
6-May	nd	250	2	248	100%	248	<b>Total</b>	<b>nd 16,248</b>	<b>374</b>	<b>15,874</b>	<b>100%</b>	<b>15,874</b>	
7-May	nd	151	0	151	100%	151							
8-May	nd	142	5	137	100%	137							



Appendix A2.—Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2003.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	3035202	242554	R	SPORT	6/23/2003	26		NW	113	40378
SITKA	3035276	242723	R	SPORT	6/30/2003	27		NW	113	40378
SITKA	3030680	197665	R	TROLL	7/3/2003	27	3	NW	113	40378
PETERSBURG	3050328	516449	R	TROLL	7/14/2003	29	3	NE	109	40378
PORT ALEXANDER	3080022	160797	R	TROLL	7/16/2003	29	3	NE	109	40378
PORT ALEXANDER	3080020	160783	R	TROLL	7/16/2003	29	3	NW	113	40287
PORT ALEXANDER	3080021	160793	R	TROLL	7/16/2003	29	3	NW	113	40378
PORT ALEXANDER	3080020	160782	R	TROLL	7/16/2003	29	3	NW	113	40378
SITKA	3030864	220259	R	TROLL	7/18/2003	29	3	NW	113	40378
PORT ALEXANDER	3080026	160818	R	TROLL	7/18/2003	29	3	NW	113	40378
PORT ALEXANDER	3080028	160828	R	TROLL	7/19/2003	29	3	NW	113	40378
PETERSBURG	3050428	521034	R	TROLL	7/21/2003	30	3	NE	109	40378
PETERSBURG	3050428	521032	R	TROLL	7/21/2003	30	3	NE	109	40378
HOONAH	3110081	246385	R	TROLL	7/21/2003	30	3	NW	113	40378
PETERSBURG	3050443	516369	R	PURSE	7/22/2003	30		NE	109	40378
PORT ALEXANDER	3080032	160852	R	TROLL	7/22/2003	30	3	NE	109	40378
PELICAN	3010170	223557	R	TROLL	7/22/2003	30	3	NW		40378
SITKA	3030896	180134	R	TROLL	7/23/2003	30	3	NE	109	40378
SITKA	3030896	180142	R	TROLL	7/23/2003	30	3	NE	109	40378
PORT ALEXANDER	3080036	160872	R	TROLL	7/24/2003	30	3	NE	109	40378
CRAIG	3070174	523965	R	TROLL	7/24/2003	30	3	SW	104	40378
SITKA	3030897	180170	R	TROLL	7/25/2003	30	3	NW	113	40378
PETERSBURG	3050504	521079	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050518	516396	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050504	521085	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050504	521082	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050504	521074	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050509	521127	R	PURSE	7/26/2003	30		NE	109	40378
PETERSBURG	3050507	521093	R	PURSE	7/26/2003	30		NE	112	40378
PETERSBURG	3050522	521130	R	PURSE	7/26/2003	30		NE		40378
PORT ALEXANDER	3080042	160908	R	TROLL	7/26/2003	30	3	NE	109	40378
PORT ALEXANDER	3080044	160928	R	TROLL	7/26/2003	30	3	NE	109	40378
PORT ALEXANDER	3080045	160943	R	TROLL	7/26/2003	30	3	NE	109	40378
PORT ALEXANDER	3080043	160925	R	TROLL	7/26/2003	30	3			40378
PORT ALEXANDER	3080040	160893	R	TROLL	7/26/2003	30	3			40378
PETERSBURG	3050524	89696	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89691	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89690	R	TROLL	7/27/2003	31	3	NE	109	40378

-continued-

Appendix A2.–Page 2 of 6.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	3050524	89685	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89688	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	521048	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89695	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89689	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89687	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	89688	R	TROLL	7/27/2003	31	3	NE	109	40378
PETERSBURG	3050524	521048	R	TROLL	7/27/2003	31	3	NE	109	40378
HOONAH	3110085	246481	R	TROLL	7/28/2003	31	3	NE	109	40378
EXCURSION INLET	3100050	519055	R	PURSE	7/29/2003	31		NE	112	40378
PORT ALEXANDER	3080061	163208	R	TROLL	7/29/2003	31	3	NE	109	40378
PORT ALEXANDER	3080062	163213	R	TROLL	7/29/2003	31	3	NE	109	40378
PORT ALEXANDER	3080062	163220	R	TROLL	7/29/2003	31	3	NE	109	40378
PORT ALEXANDER	3080062	163217	R	TROLL	7/29/2003	31	3	NE	109	40378
PORT ALEXANDER	3080063	163228	R	TROLL	7/29/2003	31	3	NW	113	40378
PETERSBURG	3050564	521272	R	PURSE	7/31/2003	31		NE	109	40378
SITKA	3030948	180779	R	TROLL	7/31/2003	31	3	NW	113	40378
HOONAH	3110090	246550	R	TROLL	7/31/2003	31	3	NW	113	40378
ELFIN COVE	3020071	55477	R	TROLL	7/31/2003	31	3	NW	113	40378
HOONAH	3110093	246575	R	TROLL	7/31/2003	31	3	NW	113	40378
SITKA	3035445	242871	R	SPORT	7/31/2003	31		NW	113	40378
ELFIN COVE	3020087	55492	R	TROLL	8/1/2003	31	3	NW	114	40378
SITKA	3035452	242881	R	SPORT	8/1/2003	31		NW	113	40378
JUNEAU	3040503	207923	R	TROLL	8/2/2003	31	3	NW	113	40378
PETERSBURG	3050615	521229	R	PURSE	8/4/2003	32		NE	109	40378
PORT ALEXANDER	3080074	163296	R	TROLL	8/4/2003	32	3	NE	109	40378
PORT ALEXANDER	3080074	163298	R	TROLL	8/4/2003	32	3	NE	109	40378
PORT ALEXANDER	3080073	163286	R	TROLL	8/4/2003	32	3	NE	109	40378
SITKA	3035486	254610	R	SPORT	8/4/2003	32		NW	113	40378
PETERSBURG	3050641	521176	R	PURSE	8/6/2003	32		NE	109	40378
PETERSBURG	3050641	521179	R	PURSE	8/6/2003	32		NE	109	40378
PETERSBURG	3050641	521177	R	PURSE	8/6/2003	32		NE	109	40378
PETERSBURG	3050632	521357	R	TROLL	8/6/2003	32	3	NE	109	40378
SITKA	3030990	180890	R	TROLL	8/7/2003	32	3	NW	113	40378
PETERSBURG	3050677	521590	R	PURSE	8/8/2003	32		NE	109	40378
EXCURSION INLET	3100061	519519	R	PURSE	8/8/2003	32				40378
EXCURSION INLET	3100061	519515	R	PURSE	8/8/2003	32				40378
PETERSBURG	3050681	521452	R	PURSE	8/9/2003	32		NE	109	40378
SITKA	3031013	220736	R	TROLL	8/9/2003	32	3	NE	109	40378

-continued-

Appendix A2.–Page 3 of 6.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
HOONAH	3110115	246858	R	TROLL	8/10/2003	33	3	NW	113	40378
HOONAH	3110113	246832	R	TROLL	8/10/2003	33	3	NW	114	40378
PETERSBURG	3050694	521461	R	PURSE	8/11/2003	33		NE	109	40286
PETERSBURG	3050694	521463	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050694	521458	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050694	521466	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050694	521459	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050696	521663	R	TROLL	8/11/2003	33	3	NE	109	40378
PETERSBURG	3050696	521658	R	TROLL	8/11/2003	33	3	NE	109	40378
PETERSBURG	3050696	521660	R	TROLL	8/11/2003	33	3	NE	109	40378
PETERSBURG	3050694	521463	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050694	521458	R	PURSE	8/11/2003	33		NE	109	40378
PETERSBURG	3050710	521499	R	PURSE	8/12/2003	33		NE	109	40378
PETERSBURG	3050710	521495	R	PURSE	8/12/2003	33		NE	109	40378
PETERSBURG	3050710	521497	R	PURSE	8/12/2003	33		NE	109	40378
PETERSBURG	3050710	521496	R	PURSE	8/12/2003	33		NE	109	40378
PORT ALEXANDER	3080084	163361	R	TROLL	8/12/2003	33	3	NE	109	40378
PORT ALEXANDER	3080084	163359	R	TROLL	8/12/2003	33	3	NE	109	40378
PORT ALEXANDER	3080084	163357	R	TROLL	8/12/2003	33	3	NE	109	40378
PORT ALEXANDER	3080089	166301	R	TROLL	8/13/2003	33	3			40378
PETERSBURG	3050731	521704	R	PURSE	8/14/2003	33		NE	109	40378
EXCURSION INLET	3100071	519092	R	PURSE	8/14/2003	33		NE	112	40378
PETERSBURG	3050736	521701	R	PURSE	8/14/2003	33		NE	112	40378
SITKA	3031043	220794	R	TROLL	8/14/2003	33	3	NE	109	40378
SITKA	3031043	220799	R	TROLL	8/14/2003	33	3	NE	109	40378
PETERSBURG	3050729	521519	R	PURSE	8/14/2003	33		NE	109	40821
SITKA	3031042	220789	R	TROLL	8/14/2003	33	3	NW	113	40378
PETERSBURG	3050750	521533	R	PURSE	8/15/2003	33		NE	109	40287
PETERSBURG	3050759	521719	R	PURSE	8/15/2003	33		NE	109	40378
PORT ALEXANDER	3080092	166314	R	TROLL	8/15/2003	33	3	NE	109	40378
PORT ALEXANDER	3080091	166307	R	TROLL	8/15/2003	33	3	NE	109	40378
PORT ALEXANDER	3080094	166321	R	TROLL	8/16/2003	33	3	NE	109	40378
HOONAH	3110116	246882	R	TROLL	8/16/2003	33	3	NW	113	40378
HOONAH	3110116	246898	R	TROLL	8/16/2003	33	3	NW	113	40378
PORT ALEXANDER	3080096	166328	R	TROLL	8/17/2003	34	4	NE	109	40378
PETERSBURG	3050767	521879	R	TROLL	8/17/2003	34	4	NE	109	40378
PETERSBURG	3050767	521883	R	TROLL	8/17/2003	34	4	NE	109	40378
SITKA	3031057	220060	R	TROLL	8/18/2003	34	4	NE	109	40378
SITKA	3031057	220057	R	TROLL	8/18/2003	34	4	NE	109	40378

-continued-

Appendix A2.–Page 4 of 6.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	3031057	220062	R	TROLL	8/18/2003	34	4	NE	109	40378
PORT ALEXANDER	3080099	166343	R	TROLL	8/18/2003	34	4	NE	109	40378
PORT ALEXANDER	3080099	166341	R	TROLL	8/18/2003	34	4	NE	109	40378
SITKA	3035658	242968	R	SPORT	8/18/2003	34		NW	113	40378
PORT ALEXANDER	3080102	166355	R	TROLL	8/19/2003	34	4	NE	109	40378
PORT ALEXANDER	3080106	166382	R	TROLL	8/19/2003	34	4	NE	109	40378
PORT ALEXANDER	3080106	166382	R	TROLL	8/19/2003	34	4	NE	109	40378
PORT ALEXANDER	3080112	179026	R	TROLL	8/20/2003	34	4	NE	109	40378
PORT ALEXANDER	3080113	179038	R	TROLL	8/20/2003	34	4	NE	109	40378
PORT ALEXANDER	3080113	179045	R	TROLL	8/20/2003	34	4	NE	109	40378
PORT ALEXANDER	3080112	179028	R	TROLL	8/20/2003	34	4	NE	109	40378
PORT ALEXANDER	3080109	179013	R	TROLL	8/20/2003	34	4	NE	109	40378
PORT ALEXANDER	3080109	179017	R	TROLL	8/20/2003	34	4	NE	109	40378
HOONAH	3110138	247040	R	TROLL	8/20/2003	34	4	NW	113	40378
SITKA	3031064	220107	R	TROLL	8/20/2003	34	4	NW	113	40378
PORT ALEXANDER	3080112	179026	R	TROLL	8/20/2003	34	4	NE	109	40378
PETERSBURG	3050816	521939	R	PURSE	8/21/2003	34		NE	109	40378
PETERSBURG	3050810	516029	R	PURSE	8/21/2003	34		NE	109	40378
PETERSBURG	3050809	516043	R	PURSE	8/21/2003	34		NE	109	40378
PETERSBURG	3050799	521984	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050800	521963	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050800	521967	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050800	521962	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050800	521964	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050802	521961	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050803	516071	R	TROLL	8/21/2003	34	4	NE	109	40378
PETERSBURG	3050831	521992	R	TROLL	8/22/2003	34	4	NE	109	40378
PETERSBURG	3050831	521995	R	TROLL	8/22/2003	34	4	NE	109	40378
PETERSBURG	3050831	521999	R	TROLL	8/22/2003	34	4	NE	109	40378
SITKA	3031079	220121	R	TROLL	8/22/2003	34	4	NW	113	40378
PORT ALEXANDER	3080119	179071	R	TROLL	8/23/2003	34	4	NE	109	40378
PORT ALEXANDER	3080119	179072	R	TROLL	8/23/2003	34	4	NE	109	40378
PORT ALEXANDER	3080122	179092	R	TROLL	8/23/2003	34	4			40378
PORT ALEXANDER	3080126	179106	R	TROLL	8/24/2003	35	4	NE	109	40378
PETERSBURG	3050836	516091	R	TROLL	8/24/2003	35	4	NE	109	40378
PETERSBURG	3050836	516095	R	TROLL	8/24/2003	35	4	NE	109	40378
PETERSBURG	3050836	516096	R	TROLL	8/24/2003	35	4	NE	109	40378
PORT ALEXANDER	3080123	179100	R	TROLL	8/24/2003	35	4	NW	113	40378
PETERSBURG	3050845	518905	R	PURSE	8/25/2003	35		NE	109	40378

-continued-

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	3050843	518766	R	TROLL	8/25/2003	35	4	NE	109	40378
PETERSBURG	3050844	518755	R	TROLL	8/25/2003	35	4	NE	109	40378
SITKA	3031089	220129	R	TROLL	8/25/2003	35	4	NW	113	40378
SITKA	3035740	254829	R	SPORT	8/25/2003	35		NW	113	40378
PORT ALEXANDER	3080129	179120	R	TROLL	8/26/2003	35	4	NE	109	40378
PORT ALEXANDER	3080129	179122	R	TROLL	8/26/2003	35	4	NE	109	40378
PORT ALEXANDER	3080128	179119	R	TROLL	8/26/2003	35	4	NE	109	40378
PORT ALEXANDER	3080131	179136	R	TROLL	8/26/2003	35	4	NE	109	40378
SITKA	3031100	220156	R	TROLL	8/26/2003	35	4	NW	113	40378
SITKA	3031100	220160	R	TROLL	8/26/2003	35	4	NW	113	40378
SITKA	3031101	220863	R	TROLL	8/26/2003	35	4	NW	113	40378
PORT ALEXANDER	3080131	179136	R	TROLL	8/26/2003	35	4	NE	109	40378
SITKA	3031100	220156	R	TROLL	8/26/2003	35	4	NW	113	40378
PORT ALEXANDER	3080136	179177	R	TROLL	8/27/2003	35	4	NW	113	40378
SITKA	3031109	220616	R	TROLL	8/27/2003	35	4	NW	113	40378
SITKA	3031117	220192	R	TROLL	8/27/2003	35	4	NW	113	40378
SITKA	3035759	254863	R	SPORT	8/27/2003	35		NW	113	40378
PORT ALEXANDER	3080140	179711	R	TROLL	8/28/2003	35	4	NW	113	40378
PORT ALEXANDER	3080140	179704	R	TROLL	8/28/2003	35	4	NW	113	40378
PORT ALEXANDER	3080144	179756	R	TROLL	8/28/2003	35	4	NW	113	40378
PELICAN	3010255	226170	R	TROLL	8/28/2003	35	4	NW	113	40378
SITKA	3031120	235427	R	TROLL	8/28/2003	35	4	NW	113	40378
SITKA	3031120	235422	R	TROLL	8/28/2003	35	4	NW	113	40378
SITKA	3031120	235425	R	TROLL	8/28/2003	35	4	NW	113	40378
PORT ALEXANDER	3080146	179786	R	TROLL	8/28/2003	35	4			40378
HOONAH	3110159	247188	R	TROLL	8/29/2003	35	4	NW	114	40378
SITKA	3031127	220644	R	TROLL	8/30/2003	35	4	NW	113	40378
SITKA	3031130	220659	R	TROLL	8/30/2003	35	4	NW	113	40378
SITKA	3031130	220676	R	TROLL	8/30/2003	35	4	NW	113	40378
PETERSBURG	3050874	518898	R	TROLL	8/31/2003	36	4	NE	109	40378
PELICAN	3010261	226204	R	TROLL	9/1/2003	36	4	NW	113	40378
SITKA	3035775	254692	R	SPORT	9/1/2003	36		NW	113	40378
PETERSBURG	3050879	518917	R	TROLL	9/3/2003	36	4	NE	109	40378
PORT ALEXANDER	3080168	205529	R	TROLL	9/5/2003	36	4	NW	113	40378
SITKA	3031143	235649	R	TROLL	9/6/2003	36	4	NW	113	40378
CRAIG	3070430	523454	R	TROLL	9/6/2003	36	4	SW	104	40378
SITKA	3031153	235811	R	TROLL	9/7/2003	37	4	NW	113	40378
SITKA	3031154	235837	R	TROLL	9/7/2003	37	4	NW	113	40378
SITKA	3031158	235859	R	TROLL	9/7/2003	37	4	NW	113	40378

-continued-

Appendix A2–Page 6 of 6.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	3031158	235853	R	TROLL	9/7/2003	37	4	NW	113	40378
SITKA	3031159	235870	R	TROLL	9/7/2003	37	4	NW	154	40378
SITKA	3031167	235520	R	TROLL	9/8/2003	37	4	NW	113	40378
PORT ALEXANDER	3080174	205584	R	TROLL	9/8/2003	37	4			40378
PETERSBURG	3050928	518360	R	TROLL	9/9/2003	37	4	NE	109	40378
PETERSBURG	3050928	518356	R	TROLL	9/9/2003	37	4	NE	109	40378
SITKA	3031175	235596	R	TROLL	9/9/2003	37	4	NE	109	40378
SITKA	3031172	235947	R	TROLL	9/9/2003	37	4	NW	113	40378
PELICAN	3010279	226371	R	TROLL	9/9/2003	37	4	NW	113	40378
SITKA	3031184	235973	R	TROLL	9/10/2003	37	4	NW	113	40378
PETERSBURG	3050947	518321	R	TROLL	9/11/2003	37	4	NE	109	40378
PETERSBURG	3050947	518322	R	TROLL	9/11/2003	37	4	NE	109	40378

Appendix A3.—Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, 17August through 13 October, 2003. (nd = no data).

<i>Date</i>	Daily count of large coho <sup>a</sup>	Cumulative count of large coho <sup>a</sup>	Daily adipose fin clips	Cumulative adipose fin clips	Percent adipose clipped
15-Aug	-	-	-	-	-
16-Aug	-	-	-	-	-
17-Aug	Weir operational	0	0	-	-
18-Aug	0	0	0	-	-
19-Aug	2	2	2	2	100.0%
20-Aug	0	2	0	2	100.0%
21-Aug	1	3	1	3	100.0%
22-Aug	0	3	0	3	100.0%
23-Aug	0	3	0	3	100.0%
24-Aug	0	3	0	3	100.0%
25-Aug	0	3	0	3	100.0%
26-Aug	0	3	0	3	100.0%
27-Aug	0	3	0	3	100.0%
28-Aug	0	3	0	3	100.0%
29-Aug	0	3	0	3	100.0%
30-Aug	7	10	4	7	70.0%
31-Aug	20	30	9	16	53.3%
1-Sep	13	43	8	24	55.8%
2-Sep	0	43	0	24	55.8%
3-Sep	nd <sup>b</sup>	43	0	24	55.8%
4-Sep	nd <sup>b</sup>	43	0	24	55.8%
5-Sep	0	43	0	24	55.8%
6-Sep	0	43	0	24	55.8%
7-Sep	16	59	8	32	54.2%
8-Sep	2	61	0	32	52.5%
9-Sep	5	66	3	35	53.0%
10-Sep	51	117	32	67	57.3%
11-Sep	31	148	12	79	53.4%
12-Sep	8	156	3	82	52.6%
13-Sep	84	241	47	129	53.5%
14-Sep	5	246	4	133	54.1%
15-Sep	19	265	15	148	55.8%
16-Sep	9	274	5	153	55.8%
17-Sep	21	295	8	161	54.6%
18-Sep	111	406	53	214	52.7%
19-Sep	33	439	23	237	54.0%
20-Sep	57	496	32	269	54.2%
21-Sep	2	498	2	271	54.4%
22-Sep	8	506	5	276	54.5%
23-Sep	0	506	0	276	54.5%
24-Sep	85	590	44	320	54.2%
25-Sep	36	626	12	332	53.0%
26-Sep	0	626	0	332	53.0%
27-Sep	10	636	3	335	52.7%
28-Sep	16	652	3	338	51.8%
29-Sep	10	662	4	342	51.7%
30-Sep	0	662	0	342	51.7%
1-Oct	2	664	1	343	51.7%
2-Oct	0	664	0	343	51.7%
3-Oct	0	664	0	343	51.7%
4-Oct	0	664	0	343	51.7%
5-Oct	0	664	0	343	51.7%

-continued-

Appendix A3.–Page 2 of 2.

<i>Date</i>	Daily count of large coho <sup>a</sup>	Cumulative count of large coho <sup>a</sup>	Daily adipose fin clips	Cumulative adipose fin clips	Percent adipose clipped
6-Oct	65	729	36	379	52.0%
7-Oct	2	731	1	380	52.0%
8-Oct	0	731	0	380	52.0%
9-Oct	2	733	0	380	51.8%
10-Oct	0	733	0	380	51.8%
11-Oct	0	733	0	380	51.8%
12-Oct	0	733	0	380	51.8%
13-Oct	0	733	0	380	51.8%
<i>Project end</i>					

<sup>a</sup> >16 inches total length.

<sup>b</sup> The weir was not functional on 3 September and most of 4 September following damage during late evening 2 September.



## **APPENDIX B**

Appendix B1.–Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2003.

	Total	Total	Overnight	Live	Retention	Valid		Total	Total	Overnight	Live	Retention	Valid
Date	captured	tagged	mortality	tagged	rate	tags	Date	captured	tagged	mortality	tagged	rate	tags
17- Apr	<i>Install</i>	<i>trap</i>											
18-Apr	12	9	3	6	100%	6	13-May	4,343	3,947	106	3,841	100%	3,841
19-Apr	22	16	4	12	100%	12	13-May <sup>a</sup>	1,435	1,435	17	1,418	100%	1,418
20-Apr	12	11	1	10	100%	10	14-May	1,303	1,130	7	1,123	100%	1,123
21-Apr	37	37	1	36	100%	36	14-May <sup>a</sup>	1,795	1,794	11	1,783	100%	1,783
22-Apr	15	14	0	14	100%	14	15-May	1,078	1,073	12	1,061	100%	1,061
23-Apr	15	14	1	13	100%	13	16-May	587	586	5	581	100%	581
24-Apr	4	3	0	3	100%	3	17-May	735	735	4	731	100%	731
25-Apr	57	54	6	48	100%	48	18-May	702	702	5	697	100%	697
26-Apr	89	83	2	81	100%	81	19-May	972	969	29	940	100%	940
27-Apr	144	143	11	132	100%	132	20-May	1,126	1,122	8	1,114	100%	1,114
28-Apr	112	107	4	103	100%	103	21-May	817	814	4	810	100%	810
29-Apr	116	114	4	110	100%	110	22-May	696	696	3	693	100%	693
30-Apr	178	174	5	169	100%	169	23-May	1,770	1,754	50	1,704	100%	1,704
1-May	353	324	19	305	100%	305	24-May	1,002	939	60	879	100%	879
2-May	174	173	1	172	100%	172	25-May	482	429	8	421	100%	421
3-May	134	132	2	130	100%	130	26-May	291	247	6	241	100%	241
4-May	148	146	5	141	100%	141	27-May	312	310	1	309	100%	309
5-May	167	166	0	166	100%	166	28-May	163	159	2	157	100%	157
6-May	145	143	1	142	100%	142	29-May	242	238	0	238	100%	238
7-May	313	311	5	306	100%	306	30-May	164	162	1	161	100%	161
8-May	332	331	10	321	100%	321	31-May	126	126	0	126	100%	126
9-May	427	424	1	423	100%	423	01-June	124	121	0	121	100%	121
10-May	626	596	29	567	100%	567	02-June	188	185	6	179	100%	179
11-May	405	405	0	405	100%	405	03-June	113	113	0	113	100%	113
12-May	1,717	1,697	46	1,651	100%	1,651	<i>Project end</i>						
							<b>Total</b>	<b>26,320</b>	<b>25,413</b>	<b>506</b>	<b>24,907</b>	<b>100%</b>	<b>24,907</b>

<sup>a</sup> During peak emigration on 13 May and 14 May, significant numbers of trapped smolt were carried over to the following day for sampling due to the limitations on the 2-person tagging crew. Fish were held in additional floating net pens and had priority in their sampling.

Appendix B2.—Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2004.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	4030808	263385	R	TROLL	7/4/2004	28	3	NW	113	40820
HOONAH	4110135	273243	R	TROLL	7/5/2004	28	3	NW	113	40822
SITKA	4030838	263681	R	TROLL	7/6/2004	28	3	NW	113	40820
EXCURSION INLET	4100018	538080	R	TROLL	7/6/2004	28	3	NW		40820
SITKA	4030838	263676	R	TROLL	7/6/2004	28	3	NW	113	40822
HOONAH	4110143	273358	R	TROLL	7/7/2004	28	3	NW	113	40820
SITKA	4030855	249426	R	TROLL	7/7/2004	28	3	NW	113	40822
EXCURSION INLET	4100021	538120	R	TROLL	7/8/2004	28	3	NW		40820
PORT ALEXANDER	4080017	254055	R	TROLL	7/10/2004	28	3	NW	113	40820
SITKA	4035254	259773	R	SPORT	7/10/2004	28		NW	113	40820
PORT ALEXANDER	4080017	254053	R	TROLL	7/10/2004	28	3	NW	113	40821
PELICAN	4010019	266209	R	TROLL	7/11/2004	29	3	NW	113	40820
SITKA	4030889	249372	R	TROLL	7/11/2004	29	3	NW	113	40821
SITKA	4030901	263778	R	TROLL	7/12/2004	29	3	NW	113	40820
HOONAH	4110156	273500	R	TROLL	7/12/2004	29	3	NW	113	40820
EXCURSION INLET	4100029	538169	R	TROLL	7/12/2004	29	3	NW		40820
SITKA	4035268	259640	R	SPORT	7/12/2004	29		NW	113	40820
SITKA	4030901	263779	R	TROLL	7/12/2004	29	3	NW	113	40821
HOONAH	4110152	273444	R	TROLL	7/12/2004	29	3	NW	113	40821
KETCHIKAN	4060264	257253	R	TROLL	7/12/2004	29	3	SW		40821
PORT ALEXANDER	4080020	254068	R	TROLL	7/13/2004	29	3	NE	109	40821
PORT ALEXANDER	4080022	254076	R	TROLL	7/13/2004	29	3	NW	113	40821
SITKA	4030912	249643	R	TROLL	7/13/2004	29	3	NW	157	40821
PORT ALEXANDER	4080024	254091	R	TROLL	7/14/2004	29	3	NE	109	40820
EXCURSION INLET	4100033	538186	R	TROLL	7/14/2004	29	3	NW		40820
EXCURSION INLET	4100033	538196	R	TROLL	7/14/2004	29	3	NW		40820
PORT ALEXANDER	4080023	254087	R	TROLL	7/14/2004	29	3	NW	113	40821
PORT ALEXANDER	4080027	265010	R	TROLL	7/15/2004	29	3	NW	113	40820
SITKA	4030927	249802	R	TROLL	7/15/2004	29	3	NW	113	40820
SITKA	4030927	249810	R	TROLL	7/15/2004	29	3	NW	113	40820
SITKA	4030928	249816	R	TROLL	7/15/2004	29	3	NW	113	40820
SITKA	4030919	249675	R	TROLL	7/15/2004	29	3	NW	113	40821
SITKA	4030926	263797	R	TROLL	7/15/2004	29	3	NW	113	40821
SITKA	4030926	263795	R	TROLL	7/15/2004	29	3	NW	113	40821
SITKA	4030932	263972	R	TROLL	7/15/2004	29	3	NW	113	40821
YAKUTAT	4140041	530868	R	TROLL	7/15/2004	29	3	NW	181	40821
SITKA	4030938	262206	R	TROLL	7/16/2004	29	3	NW	113	40820
SITKA	4030956	249873	R	TROLL	7/16/2004	29	3	NW	113	40820

-continued-

Appendix B2.–Page 2 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
HOONAH	4110171	273710	R	TROLL	7/16/2004	29	3	NW	113	40820
SITKA	4030944	262421	R	TROLL	7/16/2004	29	3	NW	113	40821
SITKA	4030946	262430	R	TROLL	7/16/2004	29	3	NW	113	40821
SITKA	4030956	249885	R	TROLL	7/16/2004	29	3	NW	113	40821
SITKA	4030956	249879	R	TROLL	7/16/2004	29	3	NW	113	40821
ELFIN COVE	4020048	519271	R	TROLL	7/16/2004	29	3	NW	113	40821
CRAIG	4070059	286803	R	TROLL	7/16/2004	29	3	SW	104	40822
HOONAH	4110171	273710	R	TROLL	7/16/2004	29	3	NW	113	40820
PORT ALEXANDER	4080032	265020	R	TROLL	7/17/2004	29	3	NW	113	40821
PORT ALEXANDER	4080031	265015	R	TROLL	7/17/2004	29	3	NW	113	40821
SITKA	4030965	262488	R	TROLL	7/17/2004	29	3	NW	113	40822
PORT ALEXANDER	4080034	265029	R	TROLL	7/18/2004	30	3	NW	113	40822
SITKA	4030967	262500	R	TROLL	7/19/2004	30	3	NW	113	40820
SITKA	4030967	262503	R	TROLL	7/19/2004	30	3	NW	113	40820
SITKA	4035301	256925	R	SPORT	7/19/2004	30		NW	113	40820
SITKA	4030969	262512	R	TROLL	7/19/2004	30	3	NW	113	40821
PETERSBURG	4050468	534896	R	PURSE	7/20/2004	30		NE	110	40821
SITKA	4031029	262540	R	TROLL	7/20/2004	30	3	NW	113	40378
SITKA	4030973	262527	R	TROLL	7/20/2004	30	3	NW	113	40820
SITKA	4030975	262547	R	TROLL	7/20/2004	30	3	NW	113	40820
PORT ALEXANDER	4080040	265054	R	TROLL	7/20/2004	30	3	NW	113	40820
SITKA	4030973	262530	R	TROLL	7/20/2004	30	3	NW	113	40821
SITKA	4031028	262538	R	TROLL	7/20/2004	30	3	NW	113	40821
SITKA	4031028	262536	R	TROLL	7/20/2004	30	3	NW	113	40821
PORT ALEXANDER	4080040	265050	R	TROLL	7/20/2004	30	3	NW	113	40821
PELICAN	4010031	266473	R	TROLL	7/20/2004	30	3	NW	116	40821
ELFIN COVE	4020053	519276	R	TROLL	7/20/2004	30	3	NW	113	40822
KETCHIKAN	4060274	258169	R	PURSE	7/20/2004	30		SW	104	40822
PORT ALEXANDER	4080036	265035	R	TROLL	7/20/2004	30	3			40821
PETERSBURG	4050487	534751	R	TROLL	7/21/2004	30	3	NE	109	40821
PORT ALEXANDER	4080041	265067	R	TROLL	7/21/2004	30	3	NW	113	40820
PORT ALEXANDER	4080041	265062	R	TROLL	7/21/2004	30	3	NW	113	40820
PORT ALEXANDER	4080041	265068	R	TROLL	7/21/2004	30	3	NW	113	40820
SITKA	4030976	262232	R	TROLL	7/21/2004	30	3	NW	113	40820
HOONAH	4110182	273735	R	TROLL	7/21/2004	30	3	NW	113	40820
HOONAH	4110182	273749	R	TROLL	7/21/2004	30	3	NW	113	40821
CRAIG	4070090	283874	R	TROLL	7/21/2004	30	3	SE	105	40821
KETCHIKAN	4060282	258446	R	TROLL	7/21/2004	30	3	SW		40822
PORT ALEXANDER	4080045	265091	R	TROLL	7/22/2004	30	3	NW	113	40820

-continued-

## Appendix B2.–Page 3 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	4030981	263825	R	TROLL	7/22/2004	30	3	NW	113	40820
SITKA	4030981	263820	R	TROLL	7/22/2004	30	3	NW	113	40820
SITKA	4030979	263814	R	TROLL	7/22/2004	30	3	NW	113	40820
ELFIN COVE	4020067	519285	R	TROLL	7/22/2004	30	3	NW	113	40821
PELICAN	4010034	266488	R	TROLL	7/22/2004	30	3	NW	116	40821
PELICAN	4010034	266491	R	TROLL	7/22/2004	30	3	NW	116	40821
CRAIG	4070094	283884	R	TROLL	7/22/2004	30	3	SE	105	40820
PORT ALEXANDER	4080043	265079	R	TROLL	7/22/2004	30	3			40820
PORT ALEXANDER	4080044	265081	R	TROLL	7/22/2004	30	3			40820
PORT ALEXANDER	4080043	265074	R	TROLL	7/22/2004	30	3			40821
PORT ALEXANDER	4080044	265084	R	TROLL	7/22/2004	30	3			40821
PORT ALEXANDER	4080044	265082	R	TROLL	7/22/2004	30	3			40822
SITKA	4030981	263825	R	TROLL	7/22/2004	30	3	NW	113	40820
PETERSBURG	4050493	534619	R	TROLL	7/23/2004	30	3	NE	109	40820
PETERSBURG	4050493	534613	R	TROLL	7/23/2004	30	3	NE	109	40821
PETERSBURG	4050493	534609	R	TROLL	7/23/2004	30	3	NE	109	40821
PETERSBURG	4050493	534616	R	TROLL	7/23/2004	30	3	NE	109	40822
CRAIG	4070105	286898	R	TROLL	7/23/2004	30	3	SE	105	40820
PORT ALEXANDER	4080048	265106	R	TROLL	7/24/2004	30	3	NE	109	40820
PORT ALEXANDER	4080049	265108	R	TROLL	7/24/2004	30	3	NE	109	40820
PORT ALEXANDER	4080051	265135	R	TROLL	7/24/2004	30	3	NE	109	40821
PORT ALEXANDER	4080051	265136	R	TROLL	7/24/2004	30	3	NE	109	40821
PORT ALEXANDER	4080049	265115	R	TROLL	7/24/2004	30	3	NE	109	40821
PORT ALEXANDER	4080047	265099	R	TROLL	7/24/2004	30	3	NW	113	40820
SITKA	4030987	263831	R	TROLL	7/24/2004	30	3	NW	113	40820
SITKA	4030990	263843	R	TROLL	7/24/2004	30	3	NW	113	40820
SITKA	4030987	263830	R	TROLL	7/24/2004	30	3	NW	113	40820
SITKA	4030987	263832	R	TROLL	7/24/2004	30	3	NW	113	40821
SITKA	4030989	263842	R	TROLL	7/24/2004	30	3	NW	113	40821
SITKA	4031000	262611	R	TROLL	7/25/2004	31	3	NW	113	40820
SITKA	4030997	262580	R	TROLL	7/25/2004	31	3	NW	154	40820
SITKA	4030997	262570	R	TROLL	7/25/2004	31	3	NW	154	40820
SITKA	4030997	262571	R	TROLL	7/25/2004	31	3	NW	154	40820
SITKA	4030999	262606	R	TROLL	7/25/2004	31	3	SE	106	40820
PETERSBURG	4050514	534566	R	PURSE	7/26/2004	31		NE	109	40821
PORT ALEXANDER	4080055	265144	R	TROLL	7/26/2004	31	3	NE	109	40821
SITKA	4031009	263877	R	TROLL	7/26/2004	31	3	NW	113	40820
SITKA	4031010	262618	R	TROLL	7/26/2004	31	3	NW	113	40820
SITKA	4031006	263865	R	TROLL	7/26/2004	31	3	NW	113	40820

-continued-

Appendix B2.–Page 4 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	4031013	262254	R	TROLL	7/26/2004	31	3	NW	113	40820
SITKA	4031005	263858	R	TROLL	7/26/2004	31	3	NW	113	40820
SITKA	4031009	263884	R	TROLL	7/26/2004	31	3	NW	113	40821
SITKA	4031013	262252	R	TROLL	7/26/2004	31	3	NW	113	40821
HOONAH	4110188	273783	R	TROLL	7/26/2004	31	3	NW		40821
HOONAH	4110188	273776	R	TROLL	7/26/2004	31	3	NW		40822
SITKA	4031013	262254	R	TROLL	7/26/2004	31	3	NW	113	40820
SITKA	4031016	262625	R	TROLL	7/27/2004	31	3	NE	109	40820
SITKA	4031016	262622	R	TROLL	7/27/2004	31	3	NE	109	40821
SITKA	4031019	262645	R	TROLL	7/27/2004	31	3	NE	109	40821
CRAIG	4070123	283623	R	TROLL	7/27/2004	31	3	SE	105	40821
PETERSBURG	4050553	535202	R	PURSE	7/28/2004	31		NE	109	40820
PORT ALEXANDER	4080059	265156	R	TROLL	7/28/2004	31	3	NE	109	40820
PORT ALEXANDER	4080060	265160	R	TROLL	7/28/2004	31	3	NE	109	40820
PORT ALEXANDER	4080060	265162	R	TROLL	7/28/2004	31	3	NE	109	40820
PETERSBURG	4050539	534772	R	TROLL	7/28/2004	31	3	NE	110	40820
PETERSBURG	4050541	535111	R	PURSE	7/28/2004	31		NE		40821
PETERSBURG	4050553	535206	R	PURSE	7/28/2004	31		NE	109	40822
PETERSBURG	4050550	535213	R	PURSE	7/28/2004	31		NE	109	40822
HOONAH	4110195	273834	R	TROLL	7/28/2004	31	3	NW		40820
HOONAH	4110195	273806	R	TROLL	7/28/2004	31	3	NW		40820
CRAIG	4070130	283630	R	TROLL	7/28/2004	31	3	SW	104	40820
PORT ALEXANDER	4080062	265165	R	TROLL	7/29/2004	31	3	NE	109	40820
PORT ALEXANDER	4080063	265167	R	TROLL	7/29/2004	31	3	NE	109	40820
SITKA	4031024	262274	R	TROLL	7/29/2004	31	3	NE	109	40821
PORT ALEXANDER	4080063	265166	R	TROLL	7/29/2004	31	3	NE	109	40822
SITKA	4031027	262302	R	TROLL	7/29/2004	31	3	NW	113	40820
SITKA	4031025	263887	R	TROLL	7/29/2004	31	3	NW	113	40821
SITKA	4031025	263886	R	TROLL	7/29/2004	31	3	NW	113	40821
PORT ALEXANDER	4080065	265173	R	TROLL	7/30/2004	31	3	NE	109	40820
PORT ALEXANDER	4080065	265172	R	TROLL	7/30/2004	31	3	NE	109	40820
PORT ALEXANDER	4080064	265171	R	TROLL	7/30/2004	31	3	NE	109	40820
PETERSBURG	4050569	535226	R	PURSE	7/30/2004	31		NE	109	40821
PORT ALEXANDER	4080067	265175	R	TROLL	7/30/2004	31	3	NE	109	40821
SITKA	4031123	262277	R	TROLL	7/30/2004	31	3	NW	154	40820
SITKA	4031123	262283	R	TROLL	7/30/2004	31	3	NW	154	40820
SITKA	4031123	262281	R	TROLL	7/30/2004	31	3	NW	154	40821
SITKA	4035314	259660	R	SPORT	7/30/2004	31		NW	113	40821
SITKA	4031030	262305	R	TROLL	7/30/2004	31	3	NW	113	40822

-continued-

Appendix B2.–Page 5 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
CRAIG	4070141	283218	R	TROLL	7/30/2004	31	3	SW	104	40821
CRAIG	4070141	283218	R	TROLL	7/30/2004	31	3	SW	104	40821
PORT ALEXANDER	4080070	265181	R	TROLL	7/31/2004	31	3	NE	109	40820
PORT ALEXANDER	4080072	265184	R	TROLL	7/31/2004	31	3	NE	109	40821
PORT ALEXANDER	4080074	265197	R	TROLL	7/31/2004	31	3	NE	109	40821
PETERSBURG	4050570	535241	R	PURSE	7/31/2004	31		NE		40822
SITKA	4031039	262680	R	TROLL	7/31/2004	31	3	NW	113	40820
SITKA	4031041	262684	R	TROLL	7/31/2004	31	3	NW	113	40820
SITKA	4031036	262331	R	TROLL	7/31/2004	31	3	NW	113	40820
SITKA	4031041	262686	R	TROLL	7/31/2004	31	3	NW	113	40821
SITKA	4031034	262324	R	TROLL	7/31/2004	31	3	NW	113	40821
SITKA	4031043	262700	R	TROLL	7/31/2004	31	3	NW	113	40821
SITKA	4031042	262693	R	TROLL	7/31/2004	31	3	NW	113	40821
SITKA	4031034	262317	R	TROLL	7/31/2004	31	3	NW	113	40822
PETERSBURG	4050573	534780	R	TROLL	8/1/2004	32	3	NE	109	40820
PETERSBURG	4050573	534778	R	TROLL	8/1/2004	32	3	NE	109	40822
SITKA	4031052	262926	R	TROLL	8/1/2004	32	3	NW	113	40820
SITKA	4031055	262343	R	TROLL	8/1/2004	32	3	NW	113	40820
SITKA	4031055	262344	R	TROLL	8/1/2004	32	3	NW	113	40821
SITKA	4031055	262347	R	TROLL	8/1/2004	32	3	NW	113	40821
SITKA	4031051	262921	R	TROLL	8/1/2004	32	3	NW	113	40821
HOONAH	4110205	273863	R	TROLL	8/1/2004	32	3	NW		40822
PETERSBURG	4050577	535125	R	PURSE	8/1/2004	32				40820
SITKA	4031060	262944	R	TROLL	8/2/2004	32	3	NW	113	40820
SITKA	4031060	262941	R	TROLL	8/2/2004	32	3	NW	113	40820
SITKA	4031061	262948	R	TROLL	8/2/2004	32	3	NW	113	40820
SITKA	4031061	262947	R	TROLL	8/2/2004	32	3	NW	113	40820
SITKA	4031056	262353	R	TROLL	8/2/2004	32	3	NW	113	40820
PORT ALEXANDER	4080077	265207	R	TROLL	8/2/2004	32	3	NW	113	40820
HOONAH	4110197	273842	R	TROLL	8/2/2004	32	3	NW	116	40820
HOONAH	4110209	273891	R	TROLL	8/2/2004	32	3	NW		40820
SITKA	4031056	262356	R	TROLL	8/2/2004	32	3	NW	113	40821
PORT ALEXANDER	4080077	265206	R	TROLL	8/2/2004	32	3	NW	113	40821
SITKA	4031061	262951	R	TROLL	8/2/2004	32	3	NW	113	40822
CRAIG	4070153	283671	R	TROLL	8/2/2004	32	3	SE	105	40820
CRAIG	4070153	283665	R	TROLL	8/2/2004	32	3	SE	105	40821
PETERSBURG	4050578	534570	R	TROLL	8/2/2004	32	3	SE	105	40822
PETERSBURG	4050585	534647	R	PURSE	8/3/2004	32		NE	109	40820
PETERSBURG	4050597	535129	R	PURSE	8/3/2004	32		NE	109	40820

-continued-

## Appendix B2.–Page 6 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	4050597	535127	R	PURSE	8/3/2004	32		NE	109	40820
PETERSBURG	4050587	535139	R	PURSE	8/3/2004	32		NE	109	40820
PETERSBURG	4050589	534577	R	TROLL	8/3/2004	32	3	NE	112	40820
PETERSBURG	4050598	534649	R	PURSE	8/3/2004	32		NE	109	40821
PETERSBURG	4050597	535126	R	PURSE	8/3/2004	32		NE	109	40821
PETERSBURG	4050586	534645	R	PURSE	8/3/2004	32		NE	109	40821
PETERSBURG	4050581	535144	R	PURSE	8/3/2004	32		NE	112	40821
PORT ALEXANDER	4080082	265228	R	TROLL	8/3/2004	32	3	NE	109	40821
PETERSBURG	4050599	534643	R	PURSE	8/3/2004	32		NE	109	40822
SITKA	4031069	262982	R	TROLL	8/3/2004	32	3	NW	113	40820
SITKA	4031066	262967	R	TROLL	8/3/2004	32	3	NW	113	40820
SITKA	4031065	262963	R	TROLL	8/3/2004	32	3	NW	113	40820
SITKA	4035352	256939	R	SPORT	8/3/2004	32		NW	113	40820
PORT ALEXANDER	4080083	265233	R	TROLL	8/3/2004	32	3	NW	113	40821
SITKA	4031066	262971	R	TROLL	8/3/2004	32	3	NW	113	40821
SITKA	4031065	262964	R	TROLL	8/3/2004	32	3	NW	113	40821
SITKA	4035343	259665	R	SPORT	8/3/2004	32		NW	113	40822
CRAIG	4070160	283236	R	TROLL	8/3/2004	32	3	SE	105	40820
CRAIG	4070160	283245	R	TROLL	8/3/2004	32	3	SE	105	40820
WRANGELL	4120108	517741	R	TROLL	8/3/2004	32	3	SE	105	40821
PORT ALEXANDER	4080085	265243	R	TROLL	8/3/2004	32	3			40820
PORT ALEXANDER	4080087	265254	R	TROLL	8/3/2004	32	3			40821
PORT ALEXANDER	4080085	265245	R	TROLL	8/3/2004	32	3			40821
PETERSBURG	4050597	535127	R	PURSE	8/3/2004	32		NE	109	40820
PORT ALEXANDER	4080088	265256	R	TROLL	8/4/2004	32	3	NE	109	40821
PORT ALEXANDER	4080093	265286	R	TROLL	8/4/2004	32	3	NW	113	40820
SITKA	4031070	262990	R	TROLL	8/4/2004	32	3	NW	113	40820
PORT ALEXANDER	4080093	265279	R	TROLL	8/4/2004	32	3	NW	113	40821
SITKA	4031070	262991	R	TROLL	8/4/2004	32	3	NW	113	40822
CRAIG	4070163	286630	R	TROLL	8/4/2004	32	3	SE	105	40820
CRAIG	4070161	283259	R	TROLL	8/4/2004	32	3	SW	104	40820
PORT ALEXANDER	4080091	265269	R	TROLL	8/4/2004	32	3			40820
PORT ALEXANDER	4080091	265265	R	TROLL	8/4/2004	32	3			40820
SITKA	4031078	262383	R	TROLL	8/5/2004	32	3	NE	109	40820
SITKA	4035357	259782	R	SPORT	8/5/2004	32		NW	113	40820
SITKA	4031075	262287	R	TROLL	8/5/2004	32	3	NW	154	40821
CRAIG	4070171	283271	R	TROLL	8/5/2004	32	3	SW	104	40821
PETERSBURG	4050634	534794	R	PURSE	8/6/2004	32		NE	109	40820
PORT ALEXANDER	4080097	265295	R	TROLL	8/6/2004	32	3	NE	109	40820

-continued-



Appendix B2–Page 7 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PORT ALEXANDER	4080097	265300	R	TROLL	8/6/2004	32	3	NE	109	40821
PORT ALEXANDER	4080097	265307	R	TROLL	8/6/2004	32	3	NE	109	40822
CRAIG	4070176	283905	R	TROLL	8/6/2004	32	3	SE	105	40821
PORT ALEXANDER	4080097	265300	R	TROLL	8/6/2004	32	3	NE	109	40821
SITKA	4031093	262815	R	TROLL	8/7/2004	32	3	NW	113	40820
PELICAN	4010047	266331	R	TROLL	8/7/2004	32	3	NW	116	40820
SITKA	4031087	249727	R	TROLL	8/7/2004	32	3	NW	113	40821
EXCURSION INLET	4100068	538274	R	TROLL	8/7/2004	32	3	NW		40821
SITKA	4031093	262816	R	TROLL	8/7/2004	32	3	NW	113	40822
SITKA	4031085	249717	R	TROLL	8/7/2004	32	3	NW	113	40822
PETERSBURG	4050646	534592	R	PURSE	8/8/2004	33		NE	109	40820
PETERSBURG	4050650	534791	R	PURSE	8/8/2004	33		NE	109	40820
PETERSBURG	4050639	534987	R	PURSE	8/8/2004	33		NE	109	40820
PORT ALEXANDER	4080100	265317	R	TROLL	8/8/2004	33	4	NE	109	40820
PETERSBURG	4050646	534593	R	PURSE	8/8/2004	33		NE	109	40821
PORT ALEXANDER	4080102	265322	R	TROLL	8/8/2004	33	4	NW	113	40820
SITKA	4031107	262860	R	TROLL	8/8/2004	33	4	NW	113	40820
SITKA	4031100	249744	R	TROLL	8/8/2004	33	4	NW	113	40821
SITKA	4031106	262852	R	TROLL	8/8/2004	33	4	NW	113	40821
SITKA	4031100	249741	R	TROLL	8/8/2004	33	4	NW	113	40822
SITKA	4031101	249747	R	TROLL	8/8/2004	33	4	NW	113	40822
PORT ALEXANDER	4080101	265319	R	TROLL	8/8/2004	33	4			40820
HOONAH	4110222	273964	R	TROLL	8/9/2004	33	4	NE	109	40820
HOONAH	4110222	273967	R	TROLL	8/9/2004	33	4	NE	109	40820
HOONAH	4110222	273957	R	TROLL	8/9/2004	33	4	NE	109	40820
PETERSBURG	4050658	534910	R	TROLL	8/9/2004	33	4	NE	109	40820
HOONAH	4110222	273959	R	TROLL	8/9/2004	33	4	NE	109	40821
HOONAH	4110222	273956	R	TROLL	8/9/2004	33	4	NE	109	40821
HOONAH	4110222	273961	R	TROLL	8/9/2004	33	4	NE	109	40821
HOONAH	4110222	273963	R	TROLL	8/9/2004	33	4	NE	109	40821
HOONAH	4110222	273960	R	TROLL	8/9/2004	33	4	NE	109	40821
PETERSBURG	4050658	534907	R	TROLL	8/9/2004	33	4	NE	109	40821
HOONAH	4110222	273966	R	TROLL	8/9/2004	33	4	NE	109	40822
PETERSBURG	4050658	534908	R	TROLL	8/9/2004	33	4	NE	109	40822
SITKA	4031109	249768	R	TROLL	8/9/2004	33	4	NW	113	40820
SITKA	4031115	260008	R	TROLL	8/9/2004	33	4	NW	113	40820
PELICAN	4010050	266339	R	TROLL	8/9/2004	33	4	NW	116	40820
SITKA	4031114	262297	R	TROLL	8/9/2004	33	4	NW	154	40820
HOONAH	4110240	274040	R	TROLL	8/9/2004	33	4	NW		40820

-continued-

## Appendix B2.–Page 8 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	4031113	249790	R	TROLL	8/9/2004	33	4	NW	113	40821
SITKA	4031115	260005	R	TROLL	8/9/2004	33	4	NW	113	40821
PELICAN	4010050	266337	R	TROLL	8/9/2004	33	4	NW	116	40821
SITKA	4031114	262295	R	TROLL	8/9/2004	33	4	NW	154	40821
PORT ALEXANDER	4080103	265323	R	TROLL	8/9/2004	33	4			40821
SITKA	4031113	249790	R	TROLL	8/9/2004	33	4	NW	113	40821
PELICAN	4010051	266352	R	TROLL	8/10/2004	33	4	NW	116	40822
SITKA	4031207	260052	R	TROLL	8/11/2004	33	4	NE	109	40820
SITKA	4031207	260038	R	TROLL	8/11/2004	33	4	NE	109	40820
SITKA	4031207	260034	R	TROLL	8/11/2004	33	4	NE	109	40820
PETERSBURG	4050686	534922	R	PURSE	8/11/2004	33		NE	112	40821
SITKA	4031207	260033	R	TROLL	8/11/2004	33	4	NE	109	40821
PETERSBURG	4050679	535163	R	PURSE	8/11/2004	33		NE	112	40822
EXCURSION INLET	4100082	538319	R	PURSE	8/12/2004	33		NW	114	40821
PETERSBURG	4050711	535174	R	PURSE	8/13/2004	33		NE	109	40820
PORT ALEXANDER	4080105	265327	R	TROLL	8/13/2004	33	4	NE	109	40820
PETERSBURG	4050707	534932	R	PURSE	8/13/2004	33		NE	109	40822
SITKA	4031126	262897	R	TROLL	8/13/2004	33	4	NW	113	40820
PORT ALEXANDER	4080108	265336	R	TROLL	8/14/2004	33	4	NW	113	40820
PORT ALEXANDER	4080108	265335	R	TROLL	8/14/2004	33	4	NW	113	40820
SITKA	4031140	249535	R	TROLL	8/15/2004	34	4	NW	113	40821
SITKA	4031151	260131	R	TROLL	8/15/2004	34	4	NW	113	40821
PETERSBURG	4050727	535018	R	TROLL	8/15/2004	34	4			40820
PETERSBURG	4050732	534934	R	PURSE	8/16/2004	34		NE	109	40820
SITKA	4031162	260190	R	TROLL	8/16/2004	34	4	NW	113	40820
SITKA	4031161	260188	R	TROLL	8/16/2004	34	4	NW	113	40820
SITKA	4031164	260416	R	TROLL	8/16/2004	34	4	NW	113	40820
SITKA	4031163	260408	R	TROLL	8/16/2004	34	4	NW	113	40820
SITKA	4031169	260208	R	TROLL	8/16/2004	34	4	NW	113	40820
PELICAN	4010057	266373	R	TROLL	8/16/2004	34	4	NW	113	40821
PELICAN	4010061	266617	R	TROLL	8/16/2004	34	4	NW	113	40822
HOONAH	4110264	274236	R	TROLL	8/16/2004	34	4	NW	114	40822
CRAIG	4070253	286417	R	TROLL	8/16/2004	34	4	SW	152	40821
CRAIG	4070253	286415	R	TROLL	8/16/2004	34	4	SW	152	40821
PETERSBURG	4050748	535258	R	PURSE	8/17/2004	34		NE	109	40820
PORT ALEXANDER	4080115	265372	R	TROLL	8/17/2004	34	4	NE	109	40820
PORT ALEXANDER	4080117	265373	R	TROLL	8/17/2004	34	4	NE	109	40820
PETERSBURG	4050738	535059	R	TROLL	8/17/2004	34	4	NE	109	40820
PETERSBURG	4050734	535251	R	PURSE	8/17/2004	34		NE	112	40821

-continued-

Appendix B2.–Page 9 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PORT ALEXANDER	4080118	265374	R	TROLL	8/17/2004	34	4	NW	113	40820
SITKA	4031181	260994	R	TROLL	8/17/2004	34	4	NW	113	40820
SITKA	4031194	260739	R	TROLL	8/17/2004	34	4	NW	113	40821
SITKA	4031193	260726	R	TROLL	8/17/2004	34	4	NW	113	40821
SITKA	4031186	260858	R	TROLL	8/17/2004	34	4	NW	113	40821
PORT ALEXANDER	4080118	265374	R	TROLL	8/17/2004	34	4	NW	113	40820
PETERSBURG	4050755	535184	R	PURSE	8/18/2004	34		NE	109	40820
PETERSBURG	4050753	535253	R	PURSE	8/18/2004	34		NE	112	40820
PETERSBURG	4050756	535186	R	PURSE	8/18/2004	34		NE	112	40820
EXCURSION INLET	4100101	538388	R	PURSE	8/20/2004	34		NE	112	40820
PETERSBURG	4050784	535304	R	TROLL	8/20/2004	34	4	NE	109	40820
PETERSBURG	4050784	535305	R	TROLL	8/20/2004	34	4	NE	109	40821
PETERSBURG	4050784	535306	R	TROLL	8/20/2004	34	4	NE	109	40821
PETERSBURG	4050784	535308	R	TROLL	8/20/2004	34	4	NE	109	40822
PORT ALEXANDER	4080122	265386	R	TROLL	8/20/2004	34	4	NW	113	40820
PORT ALEXANDER	4080122	265382	R	TROLL	8/20/2004	34	4	NW	113	40820
EXCURSION INLET	4100102	538390	R	PURSE	8/20/2004	34		NW	113	40821
PETERSBURG	4050802	535298	R	PURSE	8/21/2004	34		NE	112	40820
PORT ALEXANDER	4080125	265405	R	TROLL	8/21/2004	34	4	NE	109	40820
PORT ALEXANDER	4080125	265401	R	TROLL	8/21/2004	34	4	NE	109	40820
PORT ALEXANDER	4080125	265397	R	TROLL	8/21/2004	34	4	NE	109	40821
PETERSBURG	4050803	535196	R	PURSE	8/22/2004	35		NE		40820
JUNEAU	4045325	294106	R	SPORT	8/22/2004	35		NE		40820
PORT ALEXANDER	4080131	265430	R	TROLL	8/23/2004	35	4	NE	109	40820
PETERSBURG	4050823	535084	R	PURSE	8/23/2004	35		NE	109	40821
PETERSBURG	4050823	535083	R	PURSE	8/23/2004	35		NE	109	40821
PETERSBURG	4050813	535077	R	PURSE	8/23/2004	35		NE		40821
PORT ALEXANDER	4080130	265422	R	TROLL	8/23/2004	35	4	NE	109	40821
SITKA	4031204	260786	R	TROLL	8/23/2004	35	4	NW	113	40821
CRAIG	4070290	286398	R	TROLL	8/23/2004	35	4	SE	105	40821
CRAIG	4070298	284114	R	TROLL	8/23/2004	35	4	SE	105	40821
CRAIG	4070290	286397	R	TROLL	8/23/2004	35	4	SE	105	40821
WRANGELL	4120120	519967	R	TROLL	8/23/2004	35	4			40822
SITKA	4031211	261005	R	TROLL	8/24/2004	35	4	NW	154	40820
CRAIG	4070308	284144	R	TROLL	8/24/2004	35	4	SW	152	40821
SITKA	4031217	261041	R	TROLL	8/25/2004	35	4	NE	109	40820
CRAIG	4070313	286237	R	TROLL	8/25/2004	35	4	SE	105	40820
PORT ALEXANDER	4080142	265489	R	TROLL	8/26/2004	35	4	NE	109	40820
PORT ALEXANDER	4080142	265493	R	TROLL	8/26/2004	35	4	NE	109	40820

-continued-

## Appendix B2.–Page 10 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	4050843	535325	R	TROLL	8/26/2004	35	4	NE	109	40820
PETERSBURG	4050843	535321	R	TROLL	8/26/2004	35	4	NE	109	40820
PORT ALEXANDER	4080145	264109	R	TROLL	8/26/2004	35	4	NE	109	40820
PORT ALEXANDER	4080141	265483	R	TROLL	8/26/2004	35	4	NE	109	40821
PORT ALEXANDER	4080142	265491	R	TROLL	8/26/2004	35	4	NE	109	40821
PORT ALEXANDER	4080143	265498	R	TROLL	8/26/2004	35	4	NE	109	40821
PORT ALEXANDER	4080142	265488	R	TROLL	8/26/2004	35	4	NE	109	40821
PETERSBURG	4050843	535323	R	TROLL	8/26/2004	35	4	NE	109	40821
PETERSBURG	4050836	535402	R	TROLL	8/26/2004	35	4	NE	109	40821
PORT ALEXANDER	4080145	264110	R	TROLL	8/26/2004	35	4	NE	109	40821
SITKA	4031226	260327	R	TROLL	8/26/2004	35	4	NW		40822
CRAIG	4070320	284165	R	TROLL	8/26/2004	35	4	SE	105	40822
PORT ALEXANDER	4080144	264106	R	TROLL	8/26/2004	35	4			40820
PORT ALEXANDER	4080144	264104	R	TROLL	8/26/2004	35	4			40822
PETERSBURG	4050843	535325	R	TROLL	8/26/2004	35	4	NE	109	40820
PETERSBURG	4050856	535333	R	TROLL	8/27/2004	35	4	NE	109	40820
PETERSBURG	4050856	535338	R	TROLL	8/27/2004	35	4	NE	109	40821
SITKA	4031224	260318	R	TROLL	8/27/2004	35	4	NW	113	40821
CRAIG	4070327	286260	R	TROLL	8/27/2004	35	4	SE	105	40822
PORT ALEXANDER	4080151	264129	R	TROLL	8/29/2004	36	4	NE	109	40822
PORT ALEXANDER	4080153	264143	R	TROLL	8/29/2004	36	4	NW	113	40820
SITKA	4031233	261094	R	TROLL	8/29/2004	36	4	NW	113	40820
PORT ALEXANDER	4080154	264152	R	TROLL	8/29/2004	36	4	NW	113	40821
PORT ALEXANDER	4080153	264145	R	TROLL	8/29/2004	36	4	NW	113	40821
PORT ALEXANDER	4080154	264154	R	TROLL	8/29/2004	36	4	NW	113	40822
CRAIG	4070336	284198	R	TROLL	8/29/2004	36	4	SE	105	40820
PORT ALEXANDER	4080158	264162	R	TROLL	8/30/2004	36	4	NW	113	40821
HOONAH	4110316	274380	R	TROLL	8/30/2004	36	4	NW	154	40822
CRAIG	4070344	286156	R	TROLL	8/31/2004	36	4	NE	109	40820
PORT ALEXANDER	4080160	264183	R	TROLL	8/31/2004	36	4	NE	109	40820
PORT ALEXANDER	4080160	264176	R	TROLL	8/31/2004	36	4	NE	109	40820
CRAIG	4070344	286145	R	TROLL	8/31/2004	36	4	NE	109	40821
PORT ALEXANDER	4080163	264194	R	TROLL	8/31/2004	36	4	NW	113	40820
PORT ALEXANDER	4080165	264211	R	TROLL	9/1/2004	36	4	NE	109	40821
SITKA	4031244	260380	R	TROLL	9/1/2004	36	4	NW	113	40820
PORT ALEXANDER	4080164	264199	R	TROLL	9/1/2004	36	4			40822
SITKA	4031245	260382	R	TROLL	9/2/2004	36	4	NW	113	40820
WRANGELL	4120129	519982	R	TROLL	9/3/2004	36	4	NE	109	40820
WRANGELL	4120129	519980	R	TROLL	9/3/2004	36	4	NE	109	40820

-continued-

## Appendix B2.–Page 11 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	4031251	261130	R	TROLL	9/3/2004	36	4	NW	113	40822
SITKA	4031251	261130	R	TROLL	9/3/2004	36	4	NW	113	40822
PETERSBURG	4050890	535417	R	TROLL	9/4/2004	36	4	NE	109	40820
PORT ALEXANDER	4080172	264244	R	TROLL	9/4/2004	36	4	NW	113	40820
SITKA	4031260	261184	R	TROLL	9/4/2004	36	4	NW	113	40820
PORT ALEXANDER	4080171	264238	R	TROLL	9/4/2004	36	4	NW	113	40822
PETERSBURG	4050894	535420	R	TROLL	9/5/2004	37	4	NE	109	40821
PETERSBURG	4050894	535424	R	TROLL	9/5/2004	37	4	NE	109	40822
PETERSBURG	4050919	535504	R	TROLL	9/8/2004	37	4	NE	109	40820
PETERSBURG	4050919	535505	R	TROLL	9/8/2004	37	4	NE	109	40821
PORT ALEXANDER	4080177	264277	R	TROLL	9/8/2004	37	4	NW	113	40821
PORT ALEXANDER	4080178	264293	R	TROLL	9/9/2004	37	4	NE	109	40820
PETERSBURG	4050928	535451	R	TROLL	9/9/2004	37	4	NE	109	40820
PETERSBURG	4050926	535523	R	TROLL	9/9/2004	37	4	NE	109	40820
PETERSBURG	4050926	535519	R	TROLL	9/9/2004	37	4	NE	109	40821
CRAIG	4070382	286197	R	TROLL	9/10/2004	37	4	NE	109	40820
PETERSBURG	4050929	535464	R	TROLL	9/11/2004	37	4	NE	109	40820
PETERSBURG	4050929	535467	R	TROLL	9/11/2004	37	4	NE	109	40820
PETERSBURG	4050929	535457	R	TROLL	9/11/2004	37	4	NE	109	40820
PETERSBURG	4050929	535466	R	TROLL	9/11/2004	37	4	NE	109	40820
PETERSBURG	4050929	535465	R	TROLL	9/11/2004	37	4	NE	109	40820
PETERSBURG	4050929	535459	R	TROLL	9/11/2004	37	4	NE	109	40821
PETERSBURG	4050929	535463	R	TROLL	9/11/2004	37	4	NE	109	40821
PETERSBURG	4050929	535455	R	TROLL	9/11/2004	37	4	NE	109	40821
PETERSBURG	4050929	535454	R	TROLL	9/11/2004	37	4	NE	109	40821
PETERSBURG	4050929	535453	R	TROLL	9/11/2004	37	4	NE	109	40821
PETERSBURG	4050929	535456	R	TROLL	9/11/2004	37	4	NE	109	40822
PETERSBURG	4050929	535461	R	TROLL	9/11/2004	37	4	NE	109	40822
PETERSBURG	4050929	535462	R	TROLL	9/11/2004	37	4	NE	109	40822
PETERSBURG	4050929	535460	R	TROLL	9/11/2004	37	4	NE	109	40822
PETERSBURG	4050929	535458	R	TROLL	9/11/2004	37	4	NE	109	40822
SITKA	4031278	261268	R	TROLL	9/11/2004	37	4	NW	113	40820
SITKA	4031277	261254	R	TROLL	9/11/2004	37	4	NW	113	40821
SITKA	4031283	262730	R	TROLL	9/11/2004	37	4	NW	113	40822
SITKA	4031278	261272	R	TROLL	9/11/2004	37	4	NW	113	40822
PETERSBURG	4050936	535472	R	TROLL	9/12/2004	38	4	NE	109	40820
PETERSBURG	4050935	535470	R	TROLL	9/12/2004	38	4	NE	109	40820
SITKA	4031289	262768	R	TROLL	9/12/2004	38	4	NW	113	40820
PETERSBURG	4050940	535475	R	TROLL	9/13/2004	38	4	NE	109	40820

-continued-

Appendix B2.–Page 12 of 12.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	4050940	535474	R	TROLL	9/13/2004	38	4	NE	109	40820
PETERSBURG	4050938	535480	R	TROLL	9/13/2004	38	4	NE	109	40822
PELICAN	4010123	266896	R	TROLL	9/16/2004	38	4	NW	113	40820
SITKA	4031304	261322	R	TROLL	9/19/2004	39	4	NW	113	40820
SITKA	4031306	261327	R	TROLL	9/19/2004	39	4	NW		40820

Appendix B3.–Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, 19 August through 16 October, 2004.

<i>Date</i>	Daily count of large coho <sup>a</sup>	Cumulative count of large coho <sup>a</sup>	Daily adipose fin clips	Cumulative adipose fin clips	Percent adipose clipped
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
30-Aug	0	0	0	0	0
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0
3-Sep	0	0	0	0	0
4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	130	130	69	69	53.1%
14-Sep	169	299	106	175	58.5%
15-Sep	101	400	62	237	59.3%
16-Sep	62	462	42	279	60.4%
17-Sep	14	476	9	288	60.5%
18-Sep	1	477	1	289	60.6%
19-Sep	1	478	1	290	60.7%
20-Sep	49	527	30	320	60.7%
21-Sep	112 <sup>b</sup>	639	69	389	60.9%
22-Sep	220	859	148	537	62.5%
23-Sep	288	1,147	196	733	63.9%
24-Sep	85	1,232	58	791	64.2%
25-Sep	5	1,237	3	794	64.2%
26-Sep	14	1,251	10	804	64.3%
27-Sep	312	1,563	218	1,022	65.4%
28-Sep	29	1,592	20	1,042	65.5%
29-Sep	8	1,600	5	1,047	65.4%
30-Sep	2	1,602	1	1,048	65.4%
1-Oct	0	1,602	0	1,048	65.4%
2-Oct	0	1,602	0	1,048	65.4%
3-Oct	0	1,602	0	1,048	65.4%
4-Oct	19	1,621	17	1,065	65.7%
5-Oct	356	1,977	236	1,301	65.8%

-continued-

Appendix B3.–Page 2 of 2.

<i>Date</i>	Daily count of large coho <sup>a</sup>	Cumulative count of large coho <sup>a</sup>	Daily adipose fin clips	Cumulative adipose fin clips	Percent adipose clipped
6-Oct	59	2,036	42	1,343	66.0%
7-Oct	8	2,044	3	1,346	65.9%
8-Oct	39	2,083	23	1,369	65.7%
9-Oct	14	2,097	10	1,379	65.8%
10-Oct	17	2,114	11	1,390	65.8%
11-Oct	3	2,117	2	1,392	65.8%
12-Oct	0	2,117	0	1,392	65.8%
13-Oct	76	2,193	42	1,434	65.4%
14-Oct	2	2,195	1	1,435	65.4%
15-Oct	0	2,195	0	1,435	65.4%
16-Oct	0	2,195	0	1,435	65.4%
<i>Project End</i>					

<sup>a</sup> >16 inches total length.

<sup>b</sup> Weir counts incomplete on this day as high flow breach occurred for approximately 6 hrs between midnight and 0600 hrs.



## **APPENDIX C**

Appendix C1.–Daily counts of coho salmon smolt caught and tagged at the Slippery Creek smolt trap during 2004.

Date	Total captured	Total tagged	Overnight mortality	Live tagged	Retention rate	Valid tags	Date	Total captured	Total tagged	Overnight mortality	Live tagged	Retention rate	Valid tags
15-Apr	<i>Install</i>	<i>Trap</i>					10-May	900	898	6	892	100%	892
16-Apr	7	7	0	7	100%	7	11-May	1,029	1,027	45	982	100%	982
17-Apr	5	5	0	5	100%	5	12-May	1,160	1,159	23	1136	100%	1136
18-Apr	1	1	1	0	100%	0	13-May	1,358	1,357	27	1330	100%	1330
19-Apr	4	4	0	4	100%	4	14-May	1,395	1,392	64	1328	100%	1328
20-Apr	13	13	0	13	100%	13	15-May	999	997	27	970	99%	960
21-Apr	23	23	0	23	100%	23	16-May	462	462	10	452	100%	452
22-Apr	26	26	1	25	100%	25	17-May	431	431	29	402	100%	402
23-Apr	263	206	42	164	100%	164	18-May	279	277	27	250	100%	250
24-Apr	127	127	31	96	100%	96	19-May	293	291	7	284	100%	284
25-Apr <sup>a</sup>	508	118	32	86	100%	86	20-May	268	268	11	257	100%	257
26-Apr <sup>a</sup>	84	52	1	51	100%	51	21-May	293	292	8	284	100%	284
27-Apr	486	452	21	431	100%	431	22-May	218	218	28	190	100%	190
28-Apr	287	279	7	272	100%	272	23-May	239	238	8	230	100%	230
29-Apr	176	172	9	163	100%	163	24-May	255	255	0	255	100%	255
30-Apr	298	297	7	290	100%	290	25-May	194	194	1	193	100%	193
1-May	377	377	5	372	100%	372	26-May	134	134	1	133	100%	133
2-May	419	417	14	403	100%	403	27-May	96	96	1	95	100%	95
3-May	615	610	9	601	100%	601	28-May	85	85	2	83	100%	83
4-May <sup>b</sup>	2,709	1,747	116	1631	100%	1631	29-May	109	109	0	109	100%	109
5-May	2,198	2,172	25	2147	100%	2147	30-May	112	112	2	110	100%	110
6-May	720	719	9	710	100%	710	31-May	112	112	3	109	100%	109
7-May	1,430	1,427	16	1411	100%	1411	1-June	145	145	5	140	100%	140
8-May	1,369	1,347	81	1266	100%	1266	<i>Project End</i>						
9-May	1,517	1,516	14	1502	100%	1502	<b>Total</b>	<b>24,228</b>	<b>22,663</b>	<b>776</b>	<b>21,885</b>	<b>99.96%</b>	<b>21,877</b>

<sup>a</sup> High water event topped panels and trap was not fishing effectively on these two days.

<sup>b</sup> High number of capture mortalities (962) and overnight mortality (116) may have been influenced by presence of 9 adult steelhead in separator box, possibly blocking smolt from passing through and causing physical trauma.

Appendix C2.—Random recoveries of coded wire tagged coho salmon bound for Slippery Creek by date sampled in 2005.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	5035165	254954	R	SPORT	6/14/2005	25		NW	113	41017
SITKA	5030613	243466	R	TROLL	6/15/2005	25	2	NW	113	41017
SITKA	5035255	259427	R	SPORT	6/21/2005	26		NW	113	41017
EXCURSION INLET	5109999	12564	R	PURSE	6/27/2005	27		NE	112	41018
HOONAH	5110091	295063	R	TROLL	6/29/2005	27	3	NE	109	41017
SITKA	5030784	296271	R	TROLL	7/3/2005	28	3	NW	113	41017
SITKA	5030784	296274	R	TROLL	7/3/2005	28	3	NW	113	41017
PELICAN	5010003	56091	R	TROLL	7/3/2005	28	3	NW	113	41017
SITKA	5030768	297044	R	TROLL	7/3/2005	28	3	NW	113	41018
SITKA	5030764	297022	R	TROLL	7/3/2005	28	3	NW	113	41018
PELICAN	5010003	54692	R	TROLL	7/3/2005	28	3	NW	113	41018
SITKA	5030783	296265	R	TROLL	7/3/2005	28	3	NW		41018
SITKA	5030801	297131	R	TROLL	7/4/2005	28	3	NE	109	41017
SITKA	5030801	297130	R	TROLL	7/4/2005	28	3	NE	109	41018
SITKA	5030787	297077	R	TROLL	7/4/2005	28	3	NW	113	41017
EXCURSION INLET	5100013	90267	R	TROLL	7/4/2005	28	3	NW		41017
SITKA	5030799	264740	R	TROLL	7/4/2005	28	3	NW	113	41018
SITKA	5030793	264703	R	TROLL	7/4/2005	28	3	NW	113	41018
SITKA	5030788	297080	R	TROLL	7/4/2005	28	3	NW	113	41019
HOONAH	5110103	295091	R	TROLL	7/5/2005	28	3	NW	114	41018
SITKA	5030841	296664	R	TROLL	7/6/2005	28	3	NW	113	41017
SITKA	5030835	296428	R	TROLL	7/6/2005	28	3	NW	113	41018
SITKA	5030852	264924	R	TROLL	7/7/2005	28	3	NW	113	41017
SITKA	5030877	296912	R	TROLL	7/7/2005	28	3	NW		41017
SITKA	5030849	296391	R	TROLL	7/7/2005	28	3	NW	113	41019
SITKA	5030851	264903	R	TROLL	7/7/2005	28	3	NW	113	41019
SITKA	5030851	264911	R	TROLL	7/7/2005	28	3	NW	113	41019
SITKA	5030869	296818	R	TROLL	7/8/2005	28	3	NW	113	41017
SITKA	5030878	296923	R	TROLL	7/8/2005	28	3	NW	113	41018
SITKA	5030889	296854	R	TROLL	7/9/2005	28	3	NW	113	41018
SITKA	5030890	296866	R	TROLL	7/9/2005	28	3	NW	113	41019
SITKA	5030895	264993	R	TROLL	7/10/2005	29	3	NW	113	41018
SITKA	5030906	303153	R	TROLL	7/11/2005	29	3	NW	113	41017
HOONAH	5110135	295273	R	TROLL	7/11/2005	29	3	NW		41017
SITKA	5030901	296528	R	TROLL	7/11/2005	29	3	NW	113	41018
SITKA	5030913	303166	R	TROLL	7/12/2005	29	3	NW	113	41017
SITKA	5030912	269301	R	TROLL	7/12/2005	29	3	NW	113	41017
EXCURSION INLET	5100034	90531	R	TROLL	7/12/2005	29	3	NW		41017

-continued-

Appendix C2.–Page 2 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	5030919	296561	R	TROLL	7/12/2005	29	3	NW	113	41018
SITKA	5030907	296939	R	TROLL	7/12/2005	29	3	NW	113	41018
ELFIN COVE	5020126	27390	R	TROLL	7/12/2005	29	3	NW	114	41018
EXCURSION INLET	5100034	90539	R	TROLL	7/12/2005	29	3	NW		41018
HOONAH	5110126	295220	R	TROLL	7/12/2005	29	3	NW		41019
SITKA	5030919	296561	R	TROLL	7/12/2005	29	3	NW	113	41018
PETERSBURG	5050649	536610	R	TROLL	7/13/2005	29	3	NE	109	41017
SITKA	5030940	302953	R	TROLL	7/13/2005	29	3	NW	113	41017
SITKA	5030924	303020	R	TROLL	7/13/2005	29	3	NW	113	41017
SITKA	5030936	302936	R	TROLL	7/13/2005	29	3	NW	113	41017
SITKA	5030940	302945	R	TROLL	7/13/2005	29	3	NW	113	41018
SITKA	5030945	302010	R	TROLL	7/14/2005	29	3	NW	113	41017
HOONAH	5110122	295236	R	TROLL	7/14/2005	29	3	NW	114	41017
SITKA	5030942	303081	R	TROLL	7/14/2005	29	3	NW	113	41018
HOONAH	5110121	295235	R	TROLL	7/14/2005	29	3	NW	114	41018
SITKA	5030951	302982	R	TROLL	7/14/2005	29	3			41019
SITKA	5030956	302842	R	TROLL	7/15/2005	29	3	NW	113	41017
SITKA	5030960	302018	R	TROLL	7/15/2005	29	3	NW	113	41017
SITKA	5030956	302849	R	TROLL	7/15/2005	29	3	NW	113	41017
SITKA	5030960	302026	R	TROLL	7/15/2005	29	3	NW	113	41017
SITKA	5030956	302841	R	TROLL	7/15/2005	29	3	NW	113	41017
SITKA	5030961	302034	R	TROLL	7/15/2005	29	3			41018
PORT ALEXANDER	5080001	234646	R	TROLL	7/16/2005	29	3	NE	109	41017
PETERSBURG	5050724	536562	R	TROLL	7/17/2005	30	3	NE	110	41017
PORT ALEXANDER	5080005	234874	R	TROLL	7/17/2005	30	3	NE	109	41018
PORT ALEXANDER	5080007	234885	R	TROLL	7/17/2005	30	3	NE	109	41018
SITKA	5030981	302329	R	TROLL	7/18/2005	30	3	NW	113	41017
HOONAH	5110138	295330	R	TROLL	7/18/2005	30	3	NW		41017
HOONAH	5110137	295287	R	TROLL	7/18/2005	30	3	NW		41018
PORT ALEXANDER	5080013	166082	R	TROLL	7/18/2005	30	3	SE	105	41017
WRANGELL	5120460	49918	R	TROLL	7/18/2005	30	3			41018
HOONAH	5110136	295282	R	TROLL	7/19/2005	30	3	NE	109	41017
EXCURSION INLET	5100069	93233	R	TROLL	7/19/2005	30	3	NW		41017
EXCURSION INLET	5100069	93227	R	TROLL	7/19/2005	30	3	NW		41017
EXCURSION INLET	5100069	93223	R	TROLL	7/19/2005	30	3	NW		41018
PETERSBURG	5050760	535685	R	PURSE	7/20/2005	30		NE	112	41017
HOONAH	5110139	295301	R	TROLL	7/20/2005	30	3	NE	109	41018
HOONAH	5110143	295386	R	TROLL	7/21/2005	30	3	NW	114	41017
EXCURSION INLET	5100070	93241	R	PURSE	7/21/2005	30		NW	114	41018

-continued-

Appendix C2.–Page 3 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	5031016	302442	R	TROLL	7/22/2005	30	3	NW	113	41018
HOONAH	5110145	295388	R	TROLL	7/22/2005	30	3	NW	114	41018
HOONAH	5110159	295437	R	TROLL	7/22/2005	30	3	NW		41018
HOONAH	5110151	295404	R	TROLL	7/22/2005	30	3	NW		41019
SITKA	5031016	302442	R	TROLL	7/22/2005	30	3	NW	113	41018
PORT ALEXANDER	5080024	241454	R	TROLL	7/24/2005	31	3	NE	109	41017
PORT ALEXANDER	5080023	234799	R	TROLL	7/24/2005	31	3	NE	109	41017
PORT ALEXANDER	5080023	234793	R	TROLL	7/24/2005	31	3	NE	109	41018
PORT ALEXANDER	5080022	234789	R	TROLL	7/24/2005	31	3	NE	109	41018
SITKA	5031029	302116	R	TROLL	7/24/2005	31	3	NW	113	41017
SITKA	5031036	302480	R	TROLL	7/24/2005	31	3			41017
SITKA	5031048	302137	R	TROLL	7/25/2005	31	3	NW	113	41017
EXCURSION INLET	5100087	93260	R	PURSE	7/26/2005	31		NE	112	41017
PORT ALEXANDER	5080030	241466	R	TROLL	7/26/2005	31	3	NE	109	41017
PETERSBURG	5050847	535698	R	PURSE	7/26/2005	31		NE	109	41018
PORT ALEXANDER	5080029	241462	R	TROLL	7/26/2005	31	3	NW	113	41017
PORT ALEXANDER	5080033	241486	R	TROLL	7/27/2005	31	3	NE	109	41017
PORT ALEXANDER	5080037	241496	R	TROLL	7/27/2005	31	3	NE	109	41017
PORT ALEXANDER	5080035	241491	R	TROLL	7/27/2005	31	3	NE	109	41018
PETERSBURG	5050848	12954	R	PURSE	7/27/2005	31		NE		41019
HOONAH	5110160	295456	R	TROLL	7/27/2005	31	3	NW		41018
HOONAH	5110160	295458	R	TROLL	7/27/2005	31	3	NW		41018
PORT ALEXANDER	5080040	239535	R	TROLL	7/28/2005	31	3	NW	113	41017
PELICAN	5010084	90995	R	TROLL	7/29/2005	31	3	NW	113	41019
PORT ALEXANDER	5080049	239555	R	TROLL	7/30/2005	31	3	NE	109	41017
PORT ALEXANDER	5080050	239559	R	TROLL	7/30/2005	31	3	NE	109	41018
SITKA	5031065	302242	R	TROLL	7/30/2005	31	3	NW	113	41019
PETERSBURG	5050869	536426	R	TROLL	7/31/2005	32	3	NE	109	41017
PORT ALEXANDER	5080045	239566	R	TROLL	7/31/2005	32	3	NE	109	41017
PETERSBURG	5050870	536419	R	TROLL	7/31/2005	32	3	NE	109	41018
PETERSBURG	5050870	536416	R	TROLL	7/31/2005	32	3	NE	109	41018
PETERSBURG	5050869	536423	R	TROLL	7/31/2005	32	3	NE	109	41018
HOONAH	5110178	295552	R	TROLL	7/31/2005	32	3	NW		41017
EXCURSION INLET	5100098	93286	R	PURSE	8/1/2005	32		NE	112	41017
PETERSBURG	5050884	12970	R	PURSE	8/1/2005	32		NE	112	41017
EXCURSION INLET	5100098	93285	R	PURSE	8/1/2005	32		NE	112	41018
SITKA	5035486	254999	R	SPORT	8/1/2005	32		NW	113	41017
SITKA	5031083	302284	R	TROLL	8/1/2005	32	3	NW	113	41018
EXCURSION INLET	5100102	93288	R	DRIFT	8/2/2005	32		NE	111	41018

-continued-

## Appendix C2.–Page 4 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	5050913	536653	R	PURSE	8/2/2005	32		NE	109	41018
CRAIG	5070235	290857	R	TROLL	8/2/2005	32	3	SW	103	41017
PETERSBURG	5050913	536653	R	PURSE	8/2/2005	32		NE	109	41018
PETERSBURG	5050925	536704	R	PURSE	8/3/2005	32		NE	112	41017
PETERSBURG	5050927	536706	R	PURSE	8/3/2005	32		NE	109	41018
HOONAH	5110177	295534	R	TROLL	8/3/2005	32	3	NW		41017
SITKA	5035485	259255	R	SPORT	8/3/2005	32		NW	113	41017
HOONAH	5110177	295531	R	TROLL	8/3/2005	32	3	NW		41018
PETERSBURG	5050939	536708	R	PURSE	8/4/2005	32		NE	109	41019
PETERSBURG	5050937	536758	R	TROLL	8/5/2005	32	3	NE	109	41019
EXCURSION INLET	5100115	90620	R	PURSE	8/7/2005	33		NE	112	41018
SITKA	5031115	301007	R	TROLL	8/7/2005	33	3	NW	113	41018
PETERSBURG	5050962	536762	R	TROLL	8/8/2005	33	3	NE	109	41017
PETERSBURG	5050957	13000	R	PURSE	8/8/2005	33		NE	109	41018
SITKA	5031127	301031	R	TROLL	8/8/2005	33	3	NW	113	41017
SITKA	5031124	301026	R	TROLL	8/8/2005	33	3	NW	113	41019
PORT ALEXANDER	5080052	239593	R	TROLL	8/9/2005	33	3	NE	109	41017
PETERSBURG	5050983	536781	R	TROLL	8/9/2005	33	3	NE	109	41017
PORT ALEXANDER	5080052	239589	R	TROLL	8/9/2005	33	3	NE	109	41018
PETERSBURG	5050983	536784	R	TROLL	8/9/2005	33	3	NE	109	41018
PETERSBURG	5050983	536785	R	TROLL	8/9/2005	33	3	NE	109	41018
SITKA	5031147	303337	R	TROLL	8/9/2005	33	3	NW	113	41017
JUNEAU	5040164	252788	R	TROLL	8/9/2005	33	3	NW	114	41017
YAKUTAT	5140124	288707	R	TROLL	8/9/2005	33	3	NW	183	41017
SITKA	5035521	259262	R	SPORT	8/9/2005	33		NW	113	41017
SITKA	5031141	301043	R	TROLL	8/9/2005	33	3	NW	113	41019
CRAIG	5070255	290928	R	TROLL	8/9/2005	33	3			41017
PETERSBURG	5050996	536793	R	TROLL	8/10/2005	33	3	NE	109	41017
PETERSBURG	5050996	536795	R	TROLL	8/10/2005	33	3	NE	109	41017
PETERSBURG	5050996	536792	R	TROLL	8/10/2005	33	3	NE	109	41017
PORT ALEXANDER	5080054	239625	R	TROLL	8/10/2005	33	3	NE	109	41017
PETERSBURG	5050990	536791	R	TROLL	8/10/2005	33	3	NE	109	41017
PETERSBURG	5050997	536814	R	TROLL	8/10/2005	33	3	NE	109	41018
PORT ALEXANDER	5080054	239600	R	TROLL	8/10/2005	33	3	NE	109	41018
PORT ALEXANDER	5080054	239597	R	TROLL	8/10/2005	33	3	NE	109	41018
PETERSBURG	5050999	536800	R	TROLL	8/10/2005	33	3	NE	109	41018
PETERSBURG	5050984	536803	R	TROLL	8/10/2005	33	3	NE	109	41018
PETERSBURG	5050984	536804	R	TROLL	8/10/2005	33	3	NE	109	41018
PETERSBURG	5051005	536684	R	PURSE	8/10/2005	33		NE	109	41019

-continued-

## Appendix C2.–Page 5 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	5050999	536820	R	TROLL	8/10/2005	33	3	NE	109	41019
SITKA	5031156	303369	R	TROLL	8/10/2005	33	3	NW	113	41018
SITKA	5031155	303364	R	TROLL	8/10/2005	33	3	NW	113	41018
PELICAN	5010118	98326	R	TROLL	8/10/2005	33	3	NW	114	41019
HOONAH	5110207	295653	R	TROLL	8/10/2005	33	3	NW	114	41019
PETERSBURG	5051010	536716	R	PURSE	8/10/2005	33		SW	103	41018
PETERSBURG	5050989	536809	R	TROLL	8/10/2005	33	3			41017
SITKA	5031154	303359	R	TROLL	8/10/2005	33	3			41018
PETERSBURG	5050999	536820	R	TROLL	8/10/2005	33	3	NE	109	41019
PETERSBURG	5051023	536736	R	PURSE	8/11/2005	33		NE		41017
EXCURSION INLET	5100124	90637	R	PURSE	8/11/2005	33		NE	112	41018
EXCURSION INLET	5100126	90644	R	PURSE	8/11/2005	33		NW	113	41017
PETERSBURG	5051018	536732	R	PURSE	8/12/2005	33		NE	109	40822
EXCURSION INLET	5100128	90646	R	PURSE	8/12/2005	33		NW	114	41018
PETERSBURG	5051039	536698	R	PURSE	8/14/2005	34		NE	112	41017
SITKA	5031162	301202	R	TROLL	8/14/2005	34	4	NW	113	41017
PETERSBURG	5051059	536855	R	PURSE	8/15/2005	34		NE		41018
HOONAH	5110227	295709	R	TROLL	8/15/2005	34	4	NW	113	41017
EXCURSION INLET	5100137	90737	R	TROLL	8/15/2005	34	4	NW		41017
SITKA	5031178	301075	R	TROLL	8/16/2005	34	4	NE	109	41017
SITKA	5031178	301078	R	TROLL	8/16/2005	34	4	NE	109	41018
SITKA	5031178	301080	R	TROLL	8/16/2005	34	4	NE	109	41018
SITKA	5031178	301076	R	TROLL	8/16/2005	34	4	NE	109	41018
SITKA	5031177	301067	R	TROLL	8/16/2005	34	4	NW	113	41017
SITKA	5031175	301055	R	TROLL	8/16/2005	34	4	NW	113	41019
PETERSBURG	5051074	536977	R	TROLL	8/17/2005	34	4	NE		41017
PETERSBURG	5051074	536976	R	TROLL	8/17/2005	34	4	NE		41017
PETERSBURG	5051094	536941	R	TROLL	8/18/2005	34	4	NE		41017
PELICAN	5010137	98433	R	TROLL	8/18/2005	34	4	NW	113	41018
YAKUTAT	5140152	288755	R	TROLL	8/18/2005	34	4	NW		41018
SITKA	5035555	259173	R	SPORT	8/18/2005	34		NW	113	41019
SITKA	5031234	303448	R	TROLL	8/19/2005	34	4	NW	113	41017
SITKA	5031234	303446	R	TROLL	8/19/2005	34	4	NW	113	41017
PETERSBURG	5051112	536997	R	PURSE	8/20/2005	34		NE	109	41018
SITKA	5031242	303938	R	TROLL	8/20/2005	34	4	NW	113	41017
SITKA	5035565	81644	R	SPORT	8/21/2005	35		NW	113	41017
JUNEAU	5040177	539540	R	TROLL	8/22/2005	35	4	NW	113	41017
JUNEAU	5040177	539648	R	TROLL	8/22/2005	35	4	NW	113	41017
PETERSBURG	5051130	536943	R	TROLL	8/23/2005	35	4	NE	109	41018

-continued-

Appendix C2.–Page 6 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
PETERSBURG	5051129	536945	R	TROLL	8/23/2005	35	4	NE		41018
SITKA	5031264	303515	R	TROLL	8/23/2005	35	4	NW	113	41017
PETERSBURG	5051129	536945	R	TROLL	8/23/2005	35	4	NE		41018
PORT ALEXANDER	5080082	241033	R	TROLL	8/24/2005	35	4	NE	109	41017
PORT ALEXANDER	5080085	174464	R	TROLL	8/24/2005	35	4	NE		41017
PORT ALEXANDER	5080085	174466	R	TROLL	8/24/2005	35	4	NE		41018
PETERSBURG	5051139	10852	R	TROLL	8/24/2005	35	4	NE	109	41019
PETERSBURG	5051139	10857	R	TROLL	8/24/2005	35	4	NE	109	41019
PETERSBURG	5051154	10869	R	TROLL	8/25/2005	35	4	NE	109	41017
PETERSBURG	5051154	10871	R	TROLL	8/25/2005	35	4	NE	109	41017
PETERSBURG	5051149	10878	R	TROLL	8/25/2005	35	4	NE	109	41017
PETERSBURG	5051149	10875	R	TROLL	8/25/2005	35	4	NE	109	41018
PETERSBURG	5051149	10876	R	TROLL	8/25/2005	35	4	NE	109	41018
PETERSBURG	5051149	10877	R	TROLL	8/25/2005	35	4	NE	109	41018
PETERSBURG	5051154	10868	R	TROLL	8/25/2005	35	4	NE	109	41018
SITKA	5031267	269032	R	TROLL	8/25/2005	35	4	NW	113	41017
SITKA	5031268	269042	R	TROLL	8/25/2005	35	4	NW	154	41017
HOONAH	5110255	295867	R	TROLL	8/25/2005	35	4	NW	114	41018
CRAIG	5070317	290040	R	TROLL	8/25/2005	35	4	SW	104	41018
EXCURSION INLET	5100156	91875	R	TROLL	8/25/2005	35	4			41018
EXCURSION INLET	5100158	91888	R	PURSE	8/26/2005	35		NE	112	41017
PETERSBURG	5051161	10884	R	TROLL	8/26/2005	35	4	NE	109	41017
SITKA	5031271	303999	R	TROLL	8/26/2005	35	4	NW	113	41017
SITKA	5031277	301460	R	TROLL	8/26/2005	35	4			41019
PORT ALEXANDER	5080089	174484	R	TROLL	8/27/2005	35	4	NE	109	41017
PETERSBURG	5051163	10890	R	TROLL	8/27/2005	35	4	NE	109	41017
PETERSBURG	5051163	10893	R	TROLL	8/27/2005	35	4	NE	109	41017
PORT ALEXANDER	5080090	174488	R	TROLL	8/27/2005	35	4	NE	109	41017
PORT ALEXANDER	5080087	174476	R	TROLL	8/27/2005	35	4	NE	109	41018
PETERSBURG	5051164	10889	R	TROLL	8/27/2005	35	4	NE	109	41018
PETERSBURG	5051164	10888	R	TROLL	8/27/2005	35	4	NE	109	41018
PORT ALEXANDER	5080091	174499	R	TROLL	8/27/2005	35	4	NE	109	41019
SITKA	5031289	303564	R	TROLL	8/29/2005	36	4	NW	113	41017
SITKA	5031291	303574	R	TROLL	8/29/2005	36	4	NW	113	41017
SITKA	5031287	303557	R	TROLL	8/29/2005	36	4	NW	113	41017
SITKA	5031292	303583	R	TROLL	8/29/2005	36	4	NW	113	41017
SITKA	5031300	303593	R	TROLL	8/30/2005	36	4	NW		41017
SITKA	5031309	300016	R	TROLL	8/30/2005	36	4			41017
SITKA	5031309	300022	R	TROLL	8/30/2005	36	4			41017

-continued-



Appendix C2.-Page 7 of 7.

Survey site	Sample	Head	Sampling type code	Gear class	Date (CWT)	Stat Week (CWT)	Period	Quadrant	District	Tag code
SITKA	5031309	300025	R	TROLL	8/30/2005	36	4			41017
SITKA	5031309	300018	R	TROLL	8/30/2005	36	4			41018
PETERSBURG	5051196	10606	R	TROLL	8/31/2005	36	4	NE	109	41018
SITKA	5031317	303609	R	TROLL	8/31/2005	36	4	NW	113	41017
HOONAH	5110287	295960	R	TROLL	9/1/2005	36	4	NW	114	41017
HOONAH	5110298	299002	R	TROLL	9/2/2005	36	4	NE	112	41017
ELFIN COVE	5020300	27589	R	TROLL	9/2/2005	36	4	NW	114	41018
PETERSBURG	5051204	10632	R	TROLL	9/3/2005	36	4	NE	109	41017
EXCURSION INLET	5100167	91920	R	DRIFT	9/5/2005	37		NE	115	41017
JUNEAU	5040184	539868	R	TROLL	9/6/2005	37	4	NW	113	41017
JUNEAU	5040184	539858	R	TROLL	9/6/2005	37	4	NW	113	41018
ELFIN COVE	5020333	27629	R	TROLL	9/8/2005	37	4	NW	114	41018
YAKUTAT	5140225	288901	R	TROLL	9/10/2005	37	4	NW	189	41017
HOONAH	5110321	299158	R	TROLL	9/12/2005	38	5	NW		41017
SITKA	5031376	300823	R	TROLL	9/16/2005	38	5	NW	113	41017
SITKA	5031378	300836	R	TROLL	9/16/2005	38	5	NW	113	41017
SITKA	5031378	300829	R	TROLL	9/16/2005	38	5	NW	113	41018

Appendix C3.– Daily and cumulative counts of adult coho salmon and those bearing adipose fin clips passing the Slippery Creek coho salmon adult escapement weir, August 18 through October 13, 2005.

<i>Date</i>	Daily count of large coho <sup>a</sup>	Cumulative count of large coho <sup>a</sup>	Daily adipose fin clips	Cumulative adipose fin clips	Percent adipose clipped
18-Aug	0	0	0	0	0.0%
19-Aug	0	0	0	0	0.0%
20-Aug	23	23	14	14	60.9%
21-Aug	13	36	7	21	58.3%
22-Aug	26	62	11	32	51.6%
23-Aug	13	75	9	41	54.7%
24-Aug	4	79	3	44	55.7%
25-Aug	102	181	62	106	58.6%
26-Aug	28	209	20	126	60.3%
27-Aug	20	229	11	137	59.8%
28-Aug	12	241	8	145	60.2%
29-Aug	3	244	2	147	60.2%
30-Aug	0	244	0	147	60.2%
31-Aug	20	264	10	157	59.5%
1-Sep	24	288	17	174	60.4%
2-Sep	1	289	1	175	60.6%
3-Sep	7	296	4	179	60.5%
4-Sep	2	298	1	180	60.4%
5-Sep	0	298	0	180	60.4%
6-Sep	227	525	140	320	61.0%
7-Sep	106	631	60	380	60.2%
8-Sep	45	676	25	405	59.9%
9-Sep	10	686	6	411	59.9%
10-Sep	1	687	1	412	60.0%
11-Sep	0	687	0	412	60.0%
12-Sep	1	688	0	412	59.9%
13-Sep	1	689	1	413	59.9%
14-Sep	16	705	9	422	59.9%
15-Sep	0	705	0	422	59.9%
16-Sep	1	706	0	422	59.8%
17-Sep	32	738	15	437	59.2%
18-Sep	386	1,124	218	655	58.3%
19-Sep	125	1,249	65	720	57.6%
20-Sep	63	1,312	41	761	58.0%
21-Sep	31	1,343	14	775	57.7%
22-Sep	0	1,343	0	775	57.7%
23-Sep	0	1,343	0	775	57.7%
24-Sep	1	1,344	0	775	57.7%
25-Sep	1	1,345	0	775	57.6%
26-Sep	0	1,345	0	775	57.6%
27-Sep	0	1,345	0	775	57.6%
28-Sep	145	1,490	92	867	58.2%
29-Sep	46	1,536	30	897	58.4%
30-Sep	3	1,539	0	897	58.3%
1-Oct	0	1,539	0	897	58.3%
2-Oct	3	1,542	1	898	58.2%
3-Oct	0	1,542	0	898	58.2%
4-Oct	2	1,544	2	900	58.3%
5-Oct	17	1,561	6	906	58.0%
6-Oct	34	1,595	18	924	57.9%
7-Oct	1	1,596	0	924	57.9%
8-Oct	0	1,596	0	924	57.9%
9-Oct	88	1,684	57	981	58.3%
10-Oct	79	1,763	38	1,019	57.8%
11-Oct	170	1,933	97	1,116	57.7%
12-Oct	100	2,033	64	1,180	58.0%
13-Oct	1	2,034	0	1,180	58.0%

*Project end*

<sup>a</sup> >16 inches total length.

## **APPENDIX D**

Appendix D1.–Computer data files for Slippery Creek coho salmon smolt (2002, 2003, and 2004), returning adults (2003, 2004, and 2005), and files used to generate parameter estimates associated with smolt production, harvest, exploitation, escapement, and marine survival.

File name	Description
2002 SMOLT AWL DATA.XLS	Excel worksheet data set including age, weights, and lengths of sampled 2002 emigrating coho smolt.
2003 SMOLT AWL DATA.XLS	Excel worksheet data set including age, weights, and lengths of sampled 2003 emigrating coho smolt.
2004 SMOLT AWL COMP.XLS	Excel worksheet data set including age, weights, and lengths of sampled 2004 emigrating coho smolt.
ADULT COHO_ASL_2003.XLS	Excel worksheet data set including age, sex, and lengths of sampled 2003 returning adult coho.
ADULT_COHO_2004 ASL.XLS	Excel worksheet data set including age, sex, and lengths of sampled 2004 returning adult coho.
ADULT 2005 ASL.XLS	Excel worksheet data set including age, sex, and lengths of sampled 2005 returning adult coho.
2002 TO 2003 DATA ANALYSIS FOR BIAS.XLS	Excel worksheet used to examine assumptions associated with mark-recapture estimation of 2002 smolt abundance.
2003 TO 2004 DATA ANALYSIS FOR BIAS.XLS	Excel worksheet used to examine assumptions associated with mark-recapture estimation of 2003 smolt abundance.
2004 TO 2005 DATA ANALYSIS FOR BIAS.XLS	Excel worksheet used to examine assumptions associated with mark-recapture estimation of 2004 smolt abundance.
2002-2004 PRODUCTION AND 2003-2005 HARVEST.XLS	Excel workbook including linked worksheets used to compute estimates of smolt production, marine harvest, exploitation, and marine survival.
SLIP WEIR ADULT CATCHES AND MR.XLS	Excel workbook including weir adult catches and mark-recapture sampling data for escapement estimates.