

Exxon Valdez Oil Spill
Restoration Project Final Report

Stock Identification of Chum, Sockeye, Chinook, and Coho Salmon
in Prince William Sound

Restoration Projects 93068 and 94137
Final Report

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Study History: This study originated as part of Natural Resource Damage Assessment Fish/Shellfish Study #3 (F/S 3), entitled "Coded Wire Tag Studies on Prince William Sound Salmon, 1989-1991." The study was concerned with the estimation of contributions and survival rates of hatchery-reared fish in the commercial fisheries of Prince William Sound, and with the estimation of survival rates of wild populations of pink and sockeye salmon in contaminated and uncontaminated areas. Work on pink salmon continued under Restoration Projects 60A, 93067, 94320B, respectively entitled "Coded Wire Tag Studies on Prince William Sound Salmon, 1992," "Coded Wire Tag Recoveries from Pink Salmon in Prince William Sound Salmon Fisheries, 1993," and "Coded Wire Tag Recoveries from Pink Salmon in Prince William Sound Salmon Fisheries, 1994". Studies on sockeye, chum, coho, and chinook salmon were continued under studies 93068, 94137 and 95137 (closeout funding), and were a continuation of the work conducted under F/S 3. This document reports the findings of the latter studies and for the sake of completeness includes the pertinent results of F/S 3.

Abstract: Coded wire tags were applied to sockeye, chum, coho, and chinook salmon at three hatcheries in Prince William Sound, and also to three populations of wild sockeye salmon. Two of these populations were situated in contaminated areas of the Sound, while the other was located in an area distant from the trajectory of the oil plume. Contributions of different hatchery and wild release groups to specific harvest-district-week strata were estimated from recoveries of tags in the commercial fishery, and in the escapements of the wild sockeye populations. Tag-specific survival rates were also estimated where possible. As expected, the proportion of fish from wild populations in the commercial catches decreased with increasing releases of hatchery fish. Efforts to enhance natural sockeye salmon populations through remote releases largely failed. Significant relationships between release size and survival rates were detected for sockeye salmon. The comparison between survival rates of sockeye salmon from oiled and unoiled areas was compromised by incomplete scanning of escapements due to lack of funding and problems with enumeration of the sockeye salmon smolt outmigration at Coghill River.

Key Words: Chinook salmon, chum salmon, coded wire tag, coho salmon, hatchery, *Onchorhynchus keta*, *Onchorhynchus kisutch*, *Onchorhynchus nerka*, *Onchorhynchus tshawytscha*, Prince William Sound, sockeye salmon, stock.

Project Data: *Description of data* – the data consists of (1) numbers and origin of coded wire tags recovered from deliveries of chum, sockeye, chinook and coho salmon to Prince William Sound processors by harvest, district and week for 1989 through 1994; (2) associated catch and sample-size data; (3) numbers and origin of coded wire tags recovered

from hatchery brood stocks, and (4) code-specific tagging rates at release. *Format* - tag data: State of Alaska Coded Wire Tag and Otolith Laboratory database; Ancillary data: R:Base 4.5++ database. *Custodians*: Tag data-Karen Crandall, Commercial Fisheries Management and Development Division, State of Alaska Coded Wire Tag and Otolith Laboratory, Juneau (907) 465-3483; Ancillary data: Renate Riffe, Commercial Fisheries Management and Development Division, State of Alaska Department of Fish and Game, Cordova (907) 424-3212. *Availability* - Tag data-TagotoWeb Internet server <http://tagotoweb.adfg.state.ak.us>; Ancillary data - by arrangement.

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EXECUTIVE SUMMARY

This document fulfills the requirements for Restoration Studies 93068, 94137 and 95137 designed to restore the sockeye *Oncorhynchus nerka*, chum *O. keta*, coho *O. kisutch* and chinook salmon *O. tshawytscha* resource of Prince William Sound to its pre-spill status. Coded wire tags applied at the W. Noerenberg, Solomon Gulch and Main Bay facilities and to wild sockeye populations in Prince William Sound were recovered in commercial catches and escapements. Tagging rates were sufficiently high to allow adequate numbers of marks to be recovered in the fishery catches, brood stock, and streams. Coded wire tags were recovered from the commercial and cost-recovery fisheries, from brood stock at the four hatcheries, and from salmon carcasses examined at the streams at which coded wire tags were applied. All tags were decoded at the Coded Wire Tag Processing Laboratory in Juneau.

Postseason analysis of recovered tags from sockeye salmon reared and released at the Main Bay facility revealed that the percentage of the common property catch attributable to the facility increased from 1.8% in 1989 to between 39% in 1993 and 91% in 1991. Survival rates of hatchery-reared and released sockeye salmon were found to be significantly related to release weights. While tagged remote-released sockeye salmon, designed to augment natural populations, returned to the Eshamy and Coghill Rivers, they were late and in poor condition. The ability of these fish to spawn effectively is debatable, and the program was not considered successful. A comparison of adult survival rates for fry stocked at Pass and Esther Pass Lakes showed the latter to be the more suitable disposal site for excess fry production at the Main Bay facility. Survival rates for both lakes were low, however. The ability of the coded wire tag program to estimate the total wild component in the returns of 1991 through 1993 was compromised by the presence of untagged hatchery-reared fish from remote releases at Davis, Esther Pass and Pass Lakes, although specific contributions by the Eshamy system were estimable in certain years. Problems with the enumeration of the outmigration at Coghill River prevented estimation of returns to this system. This was unfortunate given the severe shortfalls in the escapements in 1993 and 1994. The marine survival rates of fish from the Coghill system were substantially lower than those of fish from the Eshamy system. No estimation of the survival rates of fish from the Jackpot system was possible. With respect to chum salmon returns, some evidence was collected to suggest an influence of release size on survival rates, but the relationship was weak. No such relationship was found for coho and chinook salmon.

INTRODUCTION

In the early 1970's, failures of wild runs of pink salmon *Oncorhynchus gorbuscha* in Prince William Sound led to an aggressive enhancement program during which numerous hatcheries were built. By 1986 five facilities were operating (Figure 1): the Solomon Gulch hatchery, producing pink salmon, and later, chum *O. keta*, coho *O. kisutch* and chinook salmon *O. tshawytscha*, the A. F. Koernig hatchery, producing pink salmon, the W. Noerenberg hatchery, producing pink salmon, and later, chum, coho and chinook salmon, the Cannery Creek hatchery, producing pink salmon, and the Main Bay hatchery which produced chum and presently raises sockeye salmon *O. nerka*.

Parent stocks for Prince William Sound hatchery production were selected from native populations in the Sound with the consequence that the migratory timings of adult hatchery and wild returns coincide. Furthermore, virtually all these salmon stocks migrate to their natal streams or hatcheries through corridors in the southwestern and western areas of the Sound. The coincident timing and location of the large hatchery return and the considerably smaller wild returns lead to the danger of over-exploitation of the latter by the commercial fishery. A serious example of this occurs in the Eshamy district (Statistical District 225), which includes a hatchery releasing more than four million smolts annually and a major wild sockeye salmon run in the Eshamy River/Lake system. The district also lies directly in the migration path of wild sockeye salmon returning to the Coghill system. Recent declines in the productivity of the Coghill population, possibly due to overescapement in 1987, latent problems associated with saltwater lenses formed as a result of the 1964 earthquake or to problems associated with fertility of the lake, make commercial interception of fish *en route* to this system all the more undesirable. The sustainability of the wild salmon runs such as those from the Coghill and Eshamy systems must suffer if it is subjected to harvest rates appropriate for returning hatchery fish.

To protect wild stocks in a hatchery-dominated fishery, managers needed information pertaining to the temporal and spatial distributions of hatchery and wild fish. To meet this requirement, a coded wire tagging (CWT) program was initiated in the late 1980's for all five species of salmon released from hatcheries in the Sound. Tag recoveries made in the commercial and cost-recovery fisheries enabled managers to estimate hatchery and wild contributions to catches from different temporal and spatial strata within the fishery. The tagging program was developed for use in Prince William Sound by Peltz and Geiger (1990) and Geiger and Sharr (1990).

The March 24, 1989, *Exxon Valdez* oil spill (Figure 2) exacerbated the problems faced by fishery managers. The spill contaminated intertidal portions of streams in western Prince William Sound where up to 75% of wild chum and pink salmon spawn, and also the marine waters traversed by juvenile salmon on their migration seaward through the Sound. Work by Sharr *et al.* (1994) indicates that for pink salmon, at least, spawning success has been adversely affected by the oil spill, and Willette and Carpenter (1993) found that marine survival of juvenile pink salmon was reduced in areas influenced by the spill. The decisions made by fishery managers suddenly became more critical in as far as they affected the sustainability of wild populations, as did the need for the

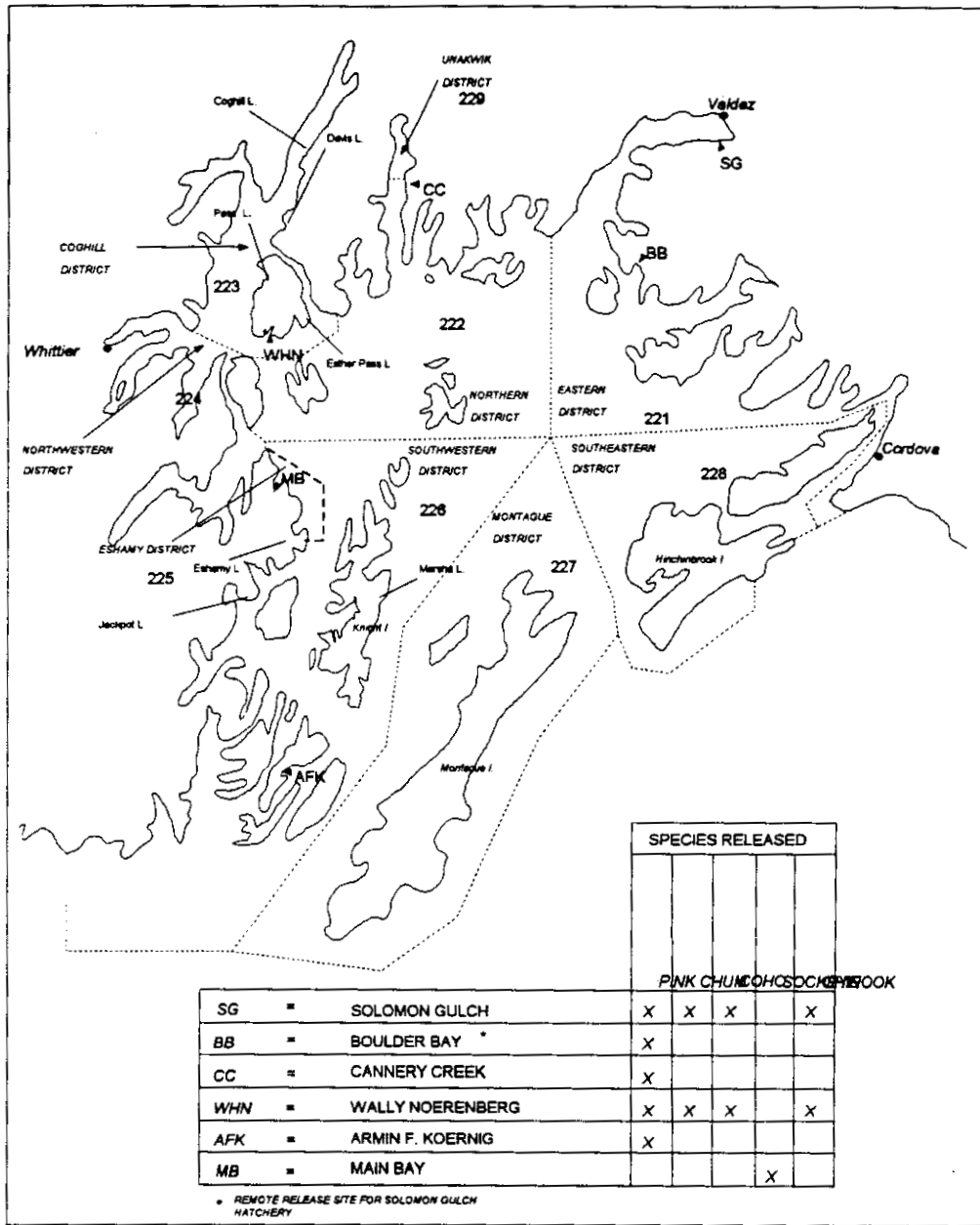


Figure 1. Fishing districts and hatcheries of Prince William Sound, Alaska.

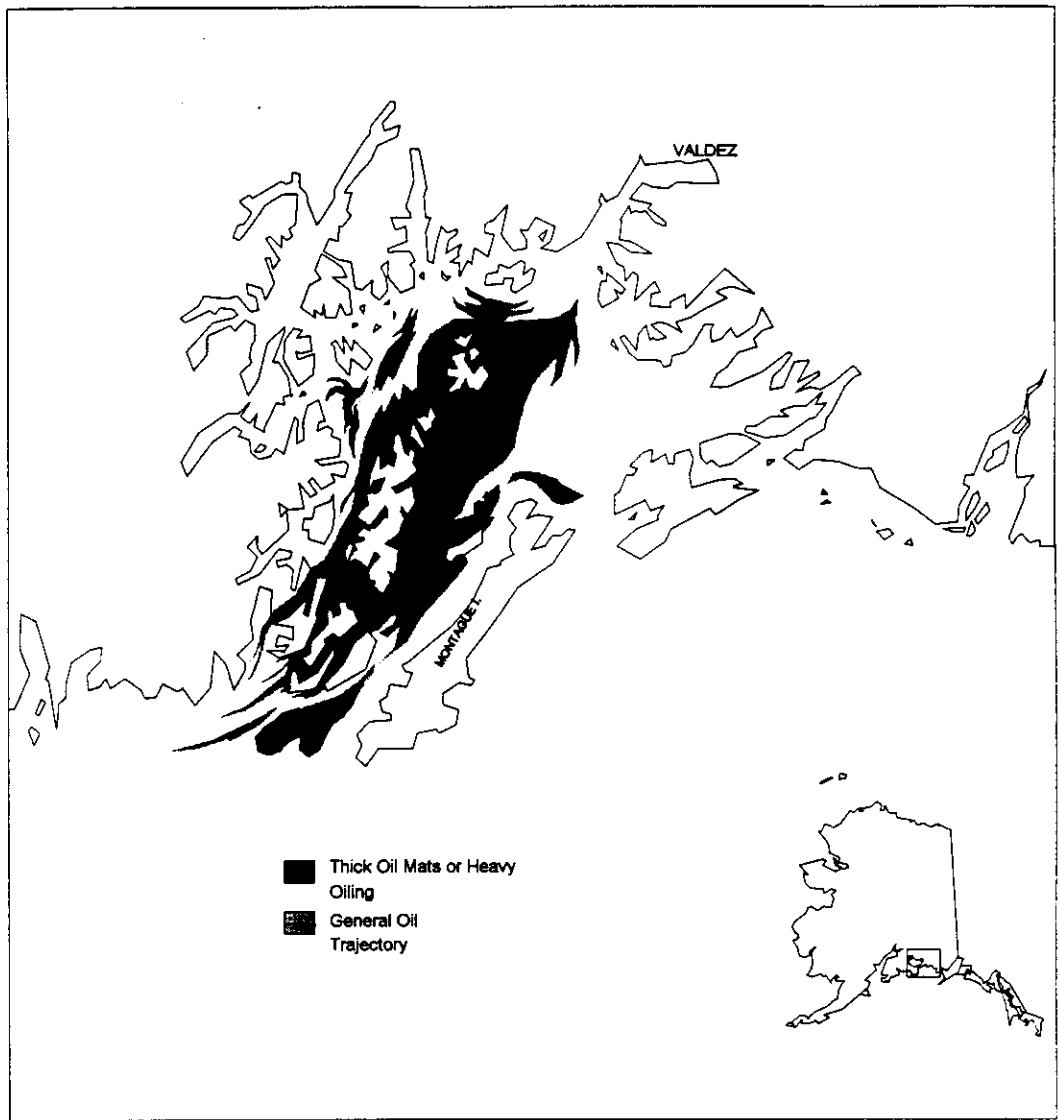


Figure 2. Trajectory of oil plume across Prince William Sound, Alaska, 1989.

CWT program and the catch-composition estimates it provided. Other key roles of the CWT program in the post-spill era were to monitor the success of various strategies designed to remediate the weakened wild sockeye salmon populations (remote releases, lake fertilizations), and to quantify oil-related damages to wild sockeye salmon runs.

The CWT program was funded under the damage assessment study F/S 3 through 1991 and continued to provide information pertaining to the nature of the commercial salmon catch. Also during this period, wild pink and sockeye salmon were tagged at a number of streams in the western portion of the Sound. The intention was to monitor the effects of oiling on the survival rates of specific wild populations, and for sockeye salmon, to determine the impact of the intercept fisheries upon the escapements of the endangered Eshamy and Coghill runs.

This report documents the activities and results of the CWT program from 1989 through 1994, as it pertains to sockeye, chum, coho, and chinook salmon, with emphasis placed on the 1993 and 1994 recovery years. It focuses primarily upon hatchery contributions to the different fisheries, survival rates of different hatchery release groups, contributions of Eshamy and Coghill sockeye salmon to intercept fisheries, survival rates of wild sockeye salmon, and the efficacy of various remediation measures designed to augment the weakened Coghill and Eshamy runs. Although some hatchery contribution data from 1989 through 1991 were reported in F/S 3, they were often comprised of data aggregated over recovery strata, and no access to the component strata was made available. In the current report, contribution data from all district-period strata from 1989 to 1994 are provided in appendices. Aggregated data is presented in the main body of the document. It is believed that such a reporting policy presents the data in a more universally useful way.

OBJECTIVES

1. Use CWT data to estimate contributions of sockeye, coho, chum and chinook salmon from three hatcheries in Prince William Sound to the common property and private-non-profit (cost-recovery) fisheries
2. Use CWT data and release information to estimate survival rates of tagged sockeye, chum, coho and chinook hatchery release groups.
3. Use CWT, smolt outmigration and escapement data to estimate survival rates of tagged groups of wild sockeye salmon originating from the Jackpot, Eshamy (oil-contaminated estuaries) and Coghill systems (uncontaminated estuary).
4. Use CWT data to assess the impact of different intercept fisheries on the weakened Eshamy and Coghill wild sockeye salmon populations, and make such information available to fishery managers on a real-time basis.
5. Use CWT data to determine the efficacy of different strategies designed to remediate the weakened sockeye salmon runs of the Eshamy and Coghill systems. These strategies include remote releases of hatchery fry or smolt into Eshamy Lake and the Coghill and Eshamy River estuaries, and a lake fertilization program at Coghill Lake.

METHODS

Tagging

Hatchery Tagging

Tagging of chum salmon fry occurred at the Prince William Sound Aquaculture Corporation (PWSAC) W. Noerenberg facility and at the Valdez Fisheries Development Association (VFDA) Solomon Gulch facility. Tagging and recovery efforts were such that contribution estimates were sufficiently precise to allow fishery managers to make meaningful inseason decisions and to allow detection of oil-induced effects. Tagging rates were often dependent on available effort, timing of releases, and other hatchery-related factors. They were, however, kept at levels which would allow equal or greater precision than that obtained for the pink salmon studies of Peltz and Miller 1990, Peltz and Geiger 1990, and Geiger and Sharr 1990, given equal or greater sampling rates. A different tag code was given to each release group, a release group representing a batch of fish subjected to a certain feeding regimen (early feeding, late feeding or no feeding) and release timing.

Chum salmon fry to be tagged were randomly selected as they emerged from incubators. Fry were anesthetized in a 1 ppm solution of MS-222 prior to removal of adipose fins and application of tags. Half-length CWTs were applied with a Northwest Marine Technology tag injector (model MKII). Adipose fin-clipped and tagged fish were passed through an electronic quality control device to test for tag retention. Rejected fish were held and retested later. If rejected a second time, they were sacrificed to minimize the number of untagged clipped fish in the release. Fry which retained tags were held overnight to determine short-term mortality and tag-loss. Overnight mortality rates were determined by counting the number of dead fish 24 hours after tagging. An overnight tag-loss rate was estimated by randomly selecting 200 fish and testing them with the quality control device before release into saltwater rearing pens. Tag placement was checked periodically, but not quantified.

The number of fry released with tags of tag code t (Tr_t) was estimated for each release group by deducting both the overnight tagging and saltwater rearing mortalities from the number of fry initially tagged, and then adjusting the result with an overnight tag-loss estimate:

$$\hat{Tr}_t = (T_t - Mo_t - Msw_t)(1 - \hat{Lo}_t) \quad (1)$$

where

- T_t = total number of tagged (t) fish,
- Mo_t = number of deaths during overnight holding period among tagged (t) fish,
- Msw_t = number of deaths during saltwater rearing period among tagged (t) fish, and
- Lo_t = proportion of tagged (t) fish that lost tags during the overnight holding period.

The inclusion of $M_{sw,t}$ is appropriate for those facility/year instances where such a parameter could be estimated/determined. Immediately prior to release, chum salmon fry mortalities were estimated visually, and were applied equally to tagged and untagged fish to obtain final release estimates.

Tagging practices for sockeye, coho and chinook salmon were identical to those of chum salmon except that full length CWTs were used due to the larger size of fish being tagged. After tagging, smolt were returned to freshwater raceways before being transferred to either saltwater pens or remote-release locations.

Tagging of Wild Sockeye Salmon

Wild sockeye salmon populations residing in the Jackpot, Eshamy and Coghill systems (Figure 3) were tagged over the period 1989 through 1991. The intertidal areas adjacent to the Eshamy and Jackpot watersheds were contaminated with oil spilled from the *Exxon Valdez* while those adjacent to the Coghill watershed were not contaminated. Wild fish were tagged at a considerably higher rate than hatchery fish. The tagging rate was a function of the rates at which field crews worked.

An incline plane trap was used to trap smolt at Coghill and Jackpot and a 1.22m x 1.22m fyke net was used at Eshamy. Half-length CWTs were used at Coghill during 1989 and Jackpot during 1990 due to the small size of the outmigrating smolt. A quality control device was used to test all smolt for tag presence immediately after tag application; this test was repeated on 200 smolt after a 24 hour holding period. The number of tagged and clipped fish actually released was estimated using Equation 2. Tag codes referred to stream identity.

The number of wild stock smolts released with tag code t (Trw_t) was estimated as:

$$\hat{Trw}_t = (T_t - Mo_t)(1 - \hat{Lo}_t) \quad (2)$$

where

- T_t = total number of tagged (t) fish,
- Mo_t = number of overnight deaths among tagged (t) fish, and
- Lo_t = proportion of tagged (t) fish that lost tags during the overnight holding period.

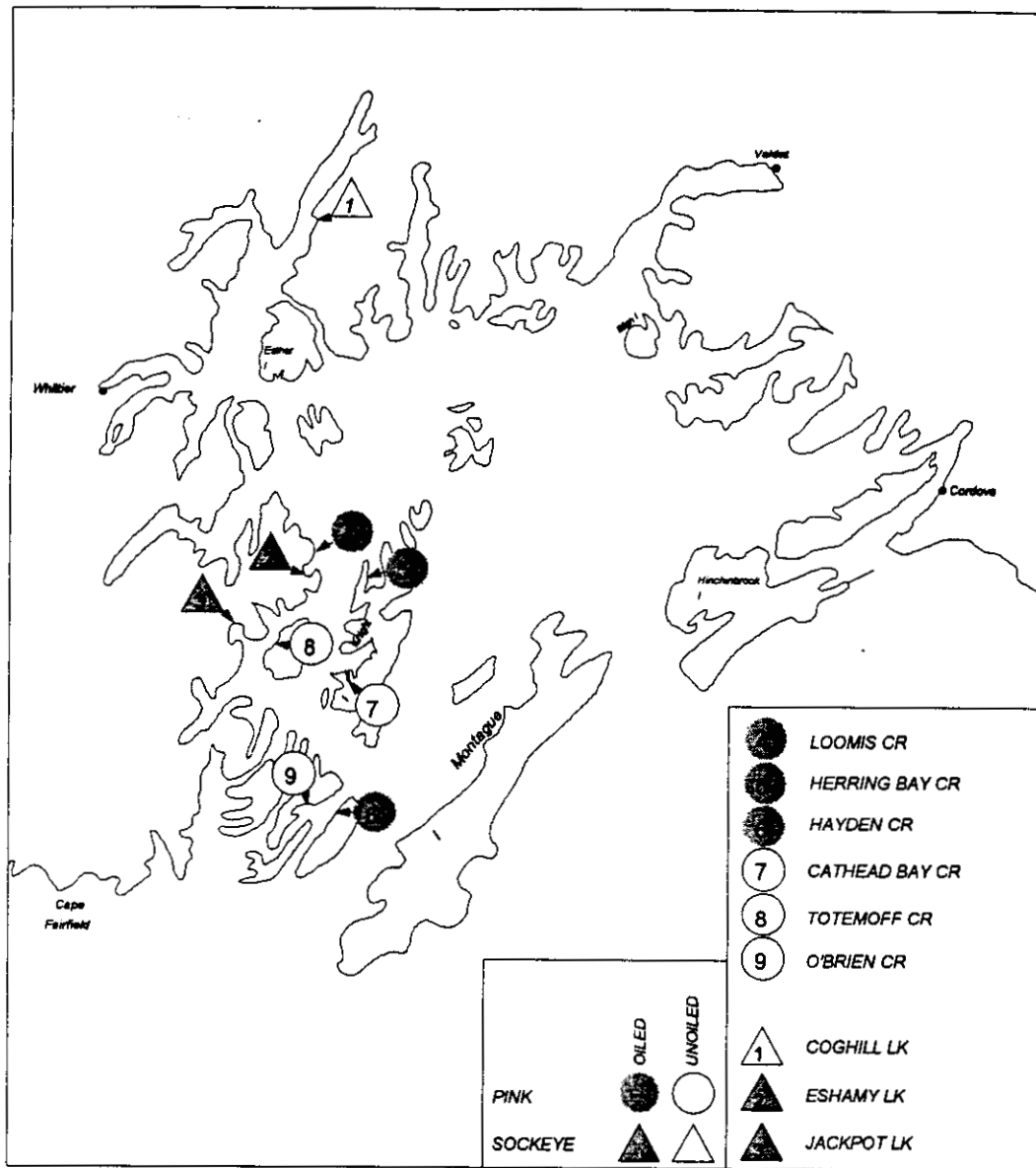


Figure 3. Sockeye (and pink) salmon weir sites, Prince William Sound, Alaska.

Tag Recovery

Commercial and Cost-Recovery Harvests

Tag recoveries for all species were stratified by district, week, and processor. This stratification was chosen as a result of the findings of Peltz and Geiger (1990), who detected significant differences between the proportions of some tag codes among such strata. The differences indicate that processors tend to receive catches from only certain parts of a district. These are believed to be the result of traditional tendering patterns.

Recoveries of tags from commercial and cost-recovery harvests were made after each fishery opening as fish were dumped onto processing tables from totes at land-based processors located in Cordova, Valdez, Seward, Anchorage, Whittier, Kenai, Kodiak, and aboard floating processors. Fish were sampled by one or two technicians standing alongside the table. In the case where two technicians scanned the belt, measures were taken to ensure that fish were not sampled twice. Each sampled fish was subjected to a visual and tactile examination for a missing adipose fin. In most cases technicians were unable to census a complete tender load. A complete census of some tenders was possible, however, and when this occurred, a chi-square test of independence was used to compare the rate of occurrence of adipose fin clips in the census with that observed in a random sample from the load. In this way a technician's bias was assessed.

Data recorded for each tender included harvest type (i.e. commercial or cost-recovery catch), fishing district(s) from which the catch was taken, catch date, processor, and the number of fish examined. Catch data associated with each tender were later obtained from fish tickets. Heads of fin-clipped fish were excised, identified with a uniquely-numbered cinch tag, bagged, frozen and shipped along with sample data to the Alaska Department of Fish and Game, Coded Wire Tag Processing Laboratory (Tag Lab) in Juneau. Tag Lab staff processed the heads and entered tag code and sample data into a database that was accessible to biologists in Cordova.

Brood-Stock Harvests and Escapements

Tag shedding from release to return and differential mortality between tagged and untagged fish can lead to discrepancies between marking rates at release and recovery. Hatchery salmon brood stocks (and escapements in the case of the tagged wild sockeye releases) were scanned for tags in order to estimate adjustment factors which could be used to adjust marking rates at release and hence to account for the loss of tags from the population. For some brood samples, few fish were scanned and/or age-class data needed to account for the presence of untagged release groups were unavailable so that calculation of annual adjustment factors for each hatchery for each species was impossible. The brood data were consequently pooled over years and different adjustment factors were only calculated for each species, and where possible for each site of origin (specific hatchery or wild location). Attempts to account for the possibility that returning fish of different ages have different tendencies to lose tags were also thwarted by scarcity of age-class data for the brood stocks.

Inherent in the assumed utility of the adjustment factors developed herein are the assumptions that a) the brood stock consists solely of fish reared at the hatchery, b) the tendency for a tagged fish to lose a tag is not different for fish of different marine residencies released in the same year from the same hatchery, c) the tendency for a fish to lose its tag is constant for fish released in different years from the same hatchery, and d) for a specific tag code, the marking rate in the commercial fishery is the same as that in the brood stock. For a given species, the adjustment factor estimate \hat{af}_h for hatchery h is calculated as the ratio of number of fish sampled from the brood stock which originate from tagged release groups (estimated from age-class data in the event that untagged release groups are present in the brood stock) to the total contribution of tagged release groups in the brood sample, based on tagging rates at release:

$$\hat{af}_h = \frac{\sum_{i=1}^{N_h} s_{hi} \hat{m}_{hi}}{\sum_{i=1}^{N_h} \sum_{j=1}^{T_{hi}} \frac{x_{hij}}{p_j}} \quad (3)$$

where

- N_h = Number of years for which brood samples were collected from hatchery h ,
- s_{hi} = Number of fish scanned for tags in the i^{th} year in hatchery h ,
- m_{hi} = Proportion of brood stock in i^{th} year at hatchery h which derives from tagged release groups,
- T_{hi} = Number of uniquely tagged release groups which may return to hatchery h in year i ,
- x_{hij} = Number of tags of j^{th} code found in brood sample of i^{th} year at hatchery h , and
- p_j = Tagging rate at release for tag code j (defined as number of tagged fish released with j^{th} code divided by the total number of fish in the j^{th} release group).

The adjustment factor was then used to adjust contribution estimates (Equation 4) if it could be shown that it was significantly greater than 1.0 at the 90% level. Estimated standard errors of \hat{af}_h were derived through simulation (Appendix A).

Brood-stock samples were taken during hatchery egg-take operations, where possible. Approximately 95% of the brood stock was examined through visual and tactile means for missing adipose fins. When these were found, the heads of the fish were removed and shipped to the Tag Lab where detected tags were extracted and decoded. The Eshamy, Coghill and Jackpot escapements were scanned for missing adipose fins at the weirs

Estimation of Contributions and Survival Rates

The contribution of release group t to the sampled common property, cost-recovery, brood stock, escapement and special harvests, C_t , was estimated as:

$$\hat{C}_t = \sum_{i=1}^L x_{it} \left(\frac{N_i \hat{a}f_{h(t)}}{s_i p_t} \right) \quad (4)$$

where

- x_{it} = number of group t tags recovered in i th stratum,
- N_i = total number of fish in i th stratum,
- s_i = number of fish sampled from i th stratum,
- p_t = proportion of group t tagged,
- $\hat{a}f_{h(t)}$ = adjustment factor associated with hatchery or watershed h , and
- L = number of recovery strata associated with common property, cost-recovery, brood stock, special harvests and escapement in which tag code t was found.

The contribution of release group t to unsampled strata, Cu_t , was estimated from contribution rates associated with strata which were sampled from the same district-week openings as the unsampled strata:

$$\hat{C}u_t = \sum_{i=1}^U N_i * \left[\frac{\sum_{j=1}^S \hat{C}_{tj}}{\sum_{j=1}^S N_j} \right] \quad (5)$$

where

- U = number of unsampled strata,
- N_i = number of fish in i th unsampled stratum,
- S = number of strata sampled in the period in which the i th unsampled stratum resides,
- C_{tj} = contribution of release coded with tag t to the sampled stratum j , and
- N_j = number of fish in the j th sampled stratum.

When a district-week opening was not sampled at all (an infrequent occurrence), the catch from that opening was treated as unsampled catch of the subsequent opening in the same district.

For any given year, hatchery-specific contributions were only estimated when all returns to the hatchery in question were tagged. Furthermore, estimates of wild contributions through

calculation of differences between total catches and hatchery contribution estimates were only made when all returning release groups to all hatcheries were tagged.

A variance approximation for $V(\hat{C}_t)$ derived by Clark and Bernard (1987) and simplified by Geiger (1990) was used:

$$\hat{V}(\hat{C}_t) = \sum_{i=1}^L x_{it} \left[\frac{N_i \hat{a}f_{h(t)}}{s_i p_t} \right] \left[\frac{N_i \hat{a}f_{h(t)}}{s_i p_t} - 1 \right] \quad (6)$$

Assuming that covariances between contributions of different release groups to a stratum could be ignored, summation of variance components over all tag codes provided an estimate of the variance of the total hatchery contribution. Inspection of the formula given by Clark and Bernard (1987) for the aforementioned covariances shows them to be negligible for large N and s , and to be consistently negative, so that when ignored, conservative estimates of variance are obtained. Variances associated with contribution estimates made for unsampled strata are believed to be small (Sharr et al., 1995a).

The survival rate of the release group coded with tag t (S_t), was estimated as:

$$\hat{S}_t = \frac{\hat{C}_t + \hat{C}u_t}{R_t}, \quad (7)$$

where

- C_t = contribution of release coded with tag t to sampled strata,
- Cu_t = contribution of release group coded with tag t from unsampled strata, and
- R_t = total number of fish in release group coded with tag t released from hatchery.

Only survival rates of those tagged release groups which had completed their marine residencies were calculated.

Assuming the total release of fish associated with a tag code is known with negligible error, and that the cumulative variance contributions associated with contribution estimation for unsampled strata are small, a suitable variance estimate for \hat{S}_t is given by:

$$\hat{V}(\hat{S}_t) = \frac{\sum_{i=1}^L x_{it} \left[\frac{N_i \hat{a} f_{H(i)}}{s_i P_i} \right] \left[\frac{N_i \hat{a} f_{H(i)}}{s_i P_i} - 1 \right]}{R_t^2} \quad (8)$$

RESULTS

Tagging

Hatchery Tagging Data

Chum salmon fry were released from the W. Noerenberg and Solomon Gulch hatcheries (Table 1). Releases ranged from 1.7 million at the Solomon Gulch facility in 1991 to 108 million at the W. Noerenberg hatchery in 1993, with a median of 17 million. Tagging rates used for chum salmon fry ranged from 0.016 at the Solomon Gulch hatchery in 1992 to 0.002 at the W. Noerenberg hatchery in 1993. The median tagging rate was 0.0023.

Coho salmon smolt were released from the Solomon Gulch and W. Noerenberg hatcheries (Table 1). Releases ranged from 787 thousand from Solomon Gulch in 1990 to 4.3 million from the W. Noerenberg hatchery in 1993, with a median release of 1.48 million. Tagging rates ranged from 0.043 to 0.0078. The median tagging rate was 0.031.

Sockeye salmon smolt were released only from the Main Bay hatchery with releases ranging from 2.7 million in 1990 to 4.8 million in 1994 (Table 1), with a median of 4.2 million. Tagging rates ranged from 0.05 in 1990 to 0.024 in 1992, with a median of 0.029.

Chinook salmon smolt were released from the W. Noerenberg hatchery in 1990 through 1994, and from the Solomon Gulch facility in 1991 and 1992 (Table 1). Releases ranged from 95 thousand to 642 thousand fish, with tagging rates ranging from 0.25 to 0.036. The median tagging rate was 0.053.

Wild-Stock Tagging Data

Seaward migrations of sockeye salmon in 1989 ranged from 245 thousand from the Coghill system to 388 thousand from the Eshamy system (Table 2). Tagging rates were 0.179 and 0.12, respectively. In 1990, the seaward migration from the Eshamy system was 682 thousand, while that from the Jackpot system was 20 thousand. Tagging rates were 0.030 and 0.227, respectively. In 1991, three, one and two tag codes were applied at the Eshamy, Jackpot and Coghill systems, respectively. Tagging rates ranged from 0.37 to 0.066 during 1991.

Table 1. Hatchery-stock tagging data by species, facility and year, Prince William Sound, Alaska^a.

	Release Year	Released	Number Tagged	Tagging Rate ^b
SOCKEYE SALMON				
Main Bay	1989	3,925,026	100,434	0.026
	1990	2,744,595	138,663	0.051
	1991	4,133,421	135,621	0.033
	1992	4,370,557	107,523	0.025
	1993	4,370,252	114,899	0.026
	1994	4,833,612	123,170	0.025
CHUM SALMON				
Solomon Gulch	1989	2,921,414	28,991	0.0010
	1990	3,104,288	35,820	0.0115
	1991	1,736,374	20,720	0.0119
	1992	2,690,414	42,961	0.0161
	1993	17,670,584	36,327	0.0021
	1994	6,088,063	19,378	0.0032
W. Noerenberg	1990	47,495,780	110,543	0.0023
	1991	76,834,313	178,392	0.0023
	1992	98,044,672	205,807	0.0021
	1993	108,026,724	215,474	0.0020
	1994	100,108,198	201,900	0.0020
COHO SALMON				
Solomon Gulch	1989	980,000	30,561	0.031
	1990	787,137	33,957	0.043
	1991	1,006,869	36,379	0.036
	1992	1,226,044	48,785	0.040
	1994	915,087	24,240	0.026
W. Noerenberg	1989	2,599,937	100,529	0.038
	1990	2,460,620	69,783	0.029
	1991	2,223,626	72,588	0.033
	1993	4,303,077	33,387	0.008
	1994	1,484,936	37,447	0.025
CHINOOK SALMON				
Solomon Gulch	1991	192,945	10,326	0.053
	1992	94,748	5,091	0.053
W. Noerenberg	1990	141,939	36,841	0.259
	1991	410,897	40,780	0.100
	1992	478,894	16,975	0.036
	1993	472,431	23,609	0.050
	1994	642,560	32,155	0.050

^a Includes remotely-released fish

^b Average tagging rate: rates for individual tag codes vary considerably

Table 2. Wild-stock tagging data for sockeye salmon by year and watershed system

Tagging Year	System	Date of Release	Seaward Migration	Tag Code	Number Tagged	Tagging Rate
1989	Eshamy	5/12-6/01	388,512	311840	46,771	0.12
	Coghill ^a	5/13-6/03	244,939	1301010403	43,935	0.18
1990	Eshamy	5/12-6/05	682,521	311910	20,794	0.03
	Jackpot	5/18-5/28	20,076	1301010911	4,601	0.23
1991	Eshamy	5/13-7/01	460,816	311951	46,152	0.10
				311957		
				311956		
	Jackpot	5/14-6/15	22,311	311955	8,384	0.37
Coghill ^a	5/14-7/16	110,941	1301020102	7,347	0.07	
				1301020101		

^a Outmigration enumeration was problematic

Tag Recoveries

Sampling Rates of Common Property and Cost-Recovery Fisheries

Sampling rates associated with the sockeye salmon common property fisheries ranged from 0.19 in 1993 to 0.40 in 1991 and from 0.09 in 1993 to 0.90 in 1990 for the cost-recovery fisheries. The only years in which hatchery contributions of chum salmon were estimable were 1993 (Solomon Gulch) and 1994 (Solomon Gulch and W. Noerenberg). Common property fisheries targeting chum salmon were sampled at an average rate of 0.40 in 1993 and 0.48 in 1994. The chum salmon cost-recovery fisheries were sampled at rates of 0.31 and 0.41 for 1993 and 1994, respectively. Sampling rates associated with the coho salmon common property fisheries ranged from 0.20 in 1994 to 0.37 in 1991 and from 0.31 in 1991 to 1.0 in 1989 for the cost-recovery fisheries. The only years in which hatchery contributions of chinook salmon were estimable were 1993 and 1994. Common property fisheries targeting chinook salmon were sampled at an average rate of 0.20 in 1993 and 0.37 in 1994. The chinook salmon cost-recovery fisheries were sampled at rates of 0.34 and 0.32 for 1993 and 1994 respectively. Sampling data are presented in Table 3.

Sampling of the Eshamy, Coghill and Jackpot Escapements

Sampling of the Eshamy and Coghill escapements for missing adipose fins began in 1991 and continued through 1994. The Jackpot escapement was only sampled in 1991.

Adjustment factors

Adjustment factors were estimated for all species and for each facility from which the species originated. For coho salmon, year-specific adjustment factors were generated. Adjustment factors and associated standard errors are presented in Table 4.

Contributions and Survival Rates

Contributions and survival rates of sockeye salmon.

Tags applied at the Main Bay hatchery and at the Eshamy, Coghill and Jackpot Rivers were recovered in the common property, cost-recovery and brood-stock harvests, and also in the escapements of the Eshamy, Coghill and Jackpot systems. Tag recovery data associated with returning tagged wild Coghill fish could only be used for survival estimation, and not contribution estimation due to uncertainties over enumeration of the outmigration at Coghill River. Data pertaining to returning Jackpot tags could not be used because of incomplete sampling of the Jackpot escapement and the short duration of the tagging program (see Discussion). For 1989, 1990 and 1994, all returning sockeye salmon which had been reared at the Main Bay facility belonged to release groups which had been tagged. This permitted an estimation of the

Table 3. Sampling rates of common property and cost-recovery fisheries^a.

Year	Species	Common Property	Cost- Recovery
1989	Sockeye	0.39	b
	Coho	0.27	1.00
1990	Sockeye	0.31	0.90
	Coho	0.35	0.68
1991	Sockeye	0.40	b
	Coho	0.37	0.31
1992	Sockeye	0.33	0.27
	Coho	0.26	0.43
1993	Sockeye	0.19	0.09
	Chum	0.40	0.31
	Coho	0.33	0.72
	Chinook	0.20	0.34
1994	Sockeye	0.32	0.16
	Chum	0.48	0.41
	Coho	0.20	0.36
	Chinook	0.37	0.32

^a Only those rates associated with year/species combinations for which hatchery contributions were estimable are presented.

^b No fishery

Table 4. Estimated adjustment factors for sockeye, chum, coho and chinook salmon by origin and year of return (coho only).

Species	Origin	Adjustment Factor	Standard Error ^f
Sockeye	Main Bay	1.20	0.028
	Wild	1.68	0.051
Chum	Solomon Gulch	2.09	0.166
	W. Noerenberg	1.70	0.146
	Main Bay ^a	1.90	0.111
Chinook	Solomon Gulch ^b	1.22	
	W. Noerenberg	1.22	0.091
Coho	Solomon Gulch ^d		
	1989	0.58	c
	1990	1.01	0.316
	1991	0.94	c
	1992	2.30	0.755
	1993	1.39	0.380
	W. Noerenberg ^e		
	1990	1.01	0.109
	1991	0.71	c
	1992	1.07	0.129

- a Estimated as average of Solomon Gulch and W. Noerenberg factors (appropriate age-class data unavailable).
- b Estimate from W. Noerenberg used (brood-year 1989 and 1990 fish from Solomon Gulch were released remotely, and no suitable brood stock was available from which to estimate an adjustment factor).
- c When the point estimate of the adjustment factor was <1.0, no statistical test was required (p-value >0.5), and a value of 1.0 was used.
- d Releases from Solomon Gulch in 1993 were not tagged and therefore no adjustment factor was calculated for 1994.
- e The first tagged releases from W. Noerenberg occurred in 1989 (first adjustment factor therefore calculated for 1990). In 1992, an outbreak of bacterial kidney disease prevented tagging and in 1993, only one release group was tagged and thus no adjustment factors were estimable for fish returning in 1993 and 1994.
- f See Appendix A.

contributions by wild sockeye salmon populations to the commercial harvests. For 1991 through 1993, untagged returns from five remote releases were likely present, and no estimation of the total wild component of the catches was considered possible. Contributions by wild fish of Eshamy origin were estimated when it was determined that all or some of the Eshamy returns originated from outmigrations which had been tagged. Age-class data collected at the Eshamy weir were used to estimate contributions in instances where some but not all returning fish originated from tagged releases. Contributions of sockeye salmon originating at the Main Bay hatchery to the common property fishery of 1989 through 1994 are presented by release group in Table 5. Wild contributions and specifically, contributions by Eshamy fish, are also estimated where possible. Detailed district-week estimates of contributions by the Main Bay facility and wild populations are given in Appendix C. The majority of the contributions to the common property fishery by sockeye salmon released from the Main Bay facility were made in district 225. Total contributions increased dramatically from about 2,500 in 1989 and 12,000 in 1990 to a maximum of 460,000 in 1991. The contributions for 1992, 1993 and 1994 were all greater than 115,000. In 1993, the first significant Main Bay Eshamy stock returns were observed, which constituted about 11% of the common property catch, compared to 26% for Main Bay fish of Coghill stock. In 1994, the contribution of the Main Bay Eshamy stock to the common property catch had increased to about 44%, while that of the Main Bay Coghill stock had decreased to about 15%. While most of the Main Bay releases contributed to the catch in district 225, there were also significant contributions made to the common property catch in district 223. The proportion of the common property catch in district 223 which consisted of sockeye salmon released from the Main Bay facility ranged from 0 in 1989 to 76% in 1992. Contributions by Eshamy and Coghill stocks reared and released at Main Bay to the common property fisheries of 1989 through 1994 are depicted in Figure 4.

In 1993, the first returns associated with the tagged remote releases were observed. The major contributing remote release group in 1993 was of Eshamy stock which was released into Eshamy River as smolt (23% of the total common property catch). A much smaller contribution was made by the Coghill River remote release group (3% of total common property catch). A similar picture was observed for 1994. About 76% and 54%, respectively, of the contributions by the Eshamy River releases in 1993 and 1994 were observed in district 225, the remainder occurring in districts 223, 226 and 222. Approximately 77% and 81%, respectively, of the contributions by the Coghill River releases in 1993 and 1994 were observed in district 223, the remainder occurring in districts 225, 222, and 226. The geographic distribution of the contributions for the two major remote releases for 1993 and 1994 is depicted in Figure 5. Other tagged remote releases of Eshamy stock sockeye fry into Eshamy, Esther Pass and Pass Lakes contributed only marginally to the common property catches of 1993 and 1994.

Attempts to estimate the total wild contribution to the common property sockeye salmon catch were only made for 1989, 1990 and 1994, when all returning hatchery sockeye release groups were tagged. During 1989, it was estimated that about 134,500 (98.2%) of the common property catch of about 137,000 sockeye salmon were of wild origin. In 1990, the number and proportion of wild fish in the common property catch dropped so that only 45,600 (79%) of the common property catch of 57,500 was of wild origin, and in 1994, the proportion had dropped further

Table 5. Estimated contributions of sockeye salmon by release group to the common property fishery of 1989 through 1994.

Year	Contributor(Stock/Type)	Release Site	District												Total	%
			221		222		223		225		226		229			
				%		%		%		%		%		%		%
1989	Main Bay (Coghill/Smolt)	Main Bay Hatchery	0	0	2,476	60	0	0					0	0	2,476	2
	Wild		3,135	100	1,658	40	108,284	100					21,412	100	134,489	98
	Total Catch		3,135		4,134		108,284						21,412		136,965	
1990	Main Bay (Coghill/Smolt)	Main Bay Hatchery	0	0	47	1	1,824	15	9,665	42	385	2	0	0	11,948	21
	Wild		1,445	100	3,674	99	10,451	85	13,506	58	15,333	98	247	100	45,597	79
	Total Catch		1,445		3,721		12,275		23,171		15,718		247		57,545	
1991	Main Bay (Coghill/Smolt)	Main Bay Hatchery	121	13	131	17	2,369	44	459,844	96	1,165	8	0	0	463,630	91
	Other ^b		800	87	510	64	2,457	57	12,624	3	2,357	16	5,388	100	24,136	5
	Wild(Eshamy/Smolt)		0	0	153	19	624	45	7,907	2	10,897	76	0	0	19,581	4
	Total Catch		921		794		5,450		480,375		14,419		5,388		507,347	
1992	Main Bay (Coghill/Smolt)	Main Bay Hatchery	0	0	124	8	44,068	76	301,909	58	6,974	23	365	16	353,440	58
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	58	4	0	0	123	0	0	0	0	0	181	0
	Total Main Bay		0	0	182	12	44,068	76	302,032	58	6,974	23	365	16	353,621	58
	Remote Release (Coghill/Smolt)	Coghill R. Est.	0	0	0	0	0	0	0	0	113	0	0	0	113	0
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.	0	0	0	0	0	0	0	0	114	0	0	0	114	0
	Remote Release (Eshamy/Fry)	Esther Pass Lake	0	0	0	0	0	0	18	0	0	0	0	0	18	0
	Total Remote Release		0	0	0	0	0	0	18	0	227	1	0	0	245	0
	Other ^b		562	100	1,295	84	11,783	20	190,390	37	10,618	35	1,901	84	216,549	36
	Wild(Eshamy/Smolt)		0	0	67	4	2,232	4	24,864	5	12,240	41	0	0	39,403	6
	Total Catch		562		1,544		58,083		517,304		30,059		2,266		609,818	

Table 5. (Continued)

YEAR	Contributor(Stock/Type)	Release Site	221		222		District 223		225		226		229		Total	%	
				%		%		%		%		%		%			
1993	Main Bay (Coghill/Smolt)	Main Bay Hatchery			0	0	24,642	34	52,622	29	855	3	45	0	78,164	26	
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery			0	0	5,114	7	21,131	12	6,285	22	0	0	32,530	11	
	Main Bay (Eyak/Fry)				0	0	0	0	4,931	3	0	0	0	0	4,931	2	
	Total Main Bay				0	0	29,756	41	78,684	43	7,140	25	45	0	115,625	39	
	Remote Release (Coghill/Smolt)	Coghill R. Est.			0	0	6,004	8	1,778	1	0	0	0	0	7,782	3	
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.			0	0	8,173	11	51,127	28	8,353	30	0	0	67,653	23	
	Remote Release (Eshamy/Fry)	Esther Pass Lake			0	0	131	0	348	0	66	0	0	0	545	0	
	Remote Release (Eshamy/Fry)	Pass Lake			0	0	144	0	516	0	156	1	0	0	816	0	
	Total Remote Release				0	0	14,452	20	53,769	30	8,575	31	0	0	76,796	26	
	Other ^b				154	100	24,891	34	22,062	12	5,156	18	14,725	100	66,988	22	
	Wild(Eshamy/Smolt)				0	0	3,683	5	27,954	15	7,221	26	0	0	38,858	13	
	Total catch				154		72,782		182,469		28,092		14,770		298,267		
	1994	Main Bay (Coghill/Smolt)	Main Bay Hatchery	233	11	1,632	9	3,088	9	28,680	18	3,453	9			37,086	15
		Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	7,033	37	11,076	33	84,717	53	8,404	22			111,230	44
Main Bay (Main Bay/Smolt)		Main Bay Hatchery	0	0	0	0	0	0	277	0	205	1			482	0	
Main Bay (Eyak/Fry)		Main Bay Hatchery	0	0	0	0	29	0	0	0	0	0			29	0	
Total Main Bay			233	11	8,665	46	14,193	42	113,674	72	12,062	31			148,827	59	
Remote Release (Coghill/Smolt)		Coghill R. Est.	0	0	287	2	3,956	12	352	0	284	1			4,879	2	
Remote Release (Eshamy/Smolt)		Eshamy R. Est.	0	0	2,941	16	6,302	19	24,148	15	11,630	30			45,021	18	
Remote Release (Eshamy/Fry)		Eshamy Lake	0	0	121	1	325	0	705	0	189	1			1,340	0	
Remote Release (Eshamy/Fry)		Esther Pass Lake	0	0	0	0	250	1	0	0	0	0			250	0	
Remote Release (Eshamy/Fry)		Pass Lake	0	0	20	0	143	0	0	0	53	0			216	0	
Total Remote Release			0	0	3,369	18	10,976	31	25,205	16	12,156	32			51,706	20	
Total Wild				1,938	90	6,816	36	8,817	27	19,864	13	14,149	37		51,584	21	
Total Catch				2,171		18,850		33,986		158,743		38,367			252,117		

^a Additional contributions to district 224: 406 wild fish in 1989, 93 Main Bay (Coghill/Smolt) and 941 wild fish in 1990. Additional contributions to district 228: 146 wild fish in 1989, 9 wild fish in 1990.

^b Other contributions may contain wild fish and/or untagged releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1999 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

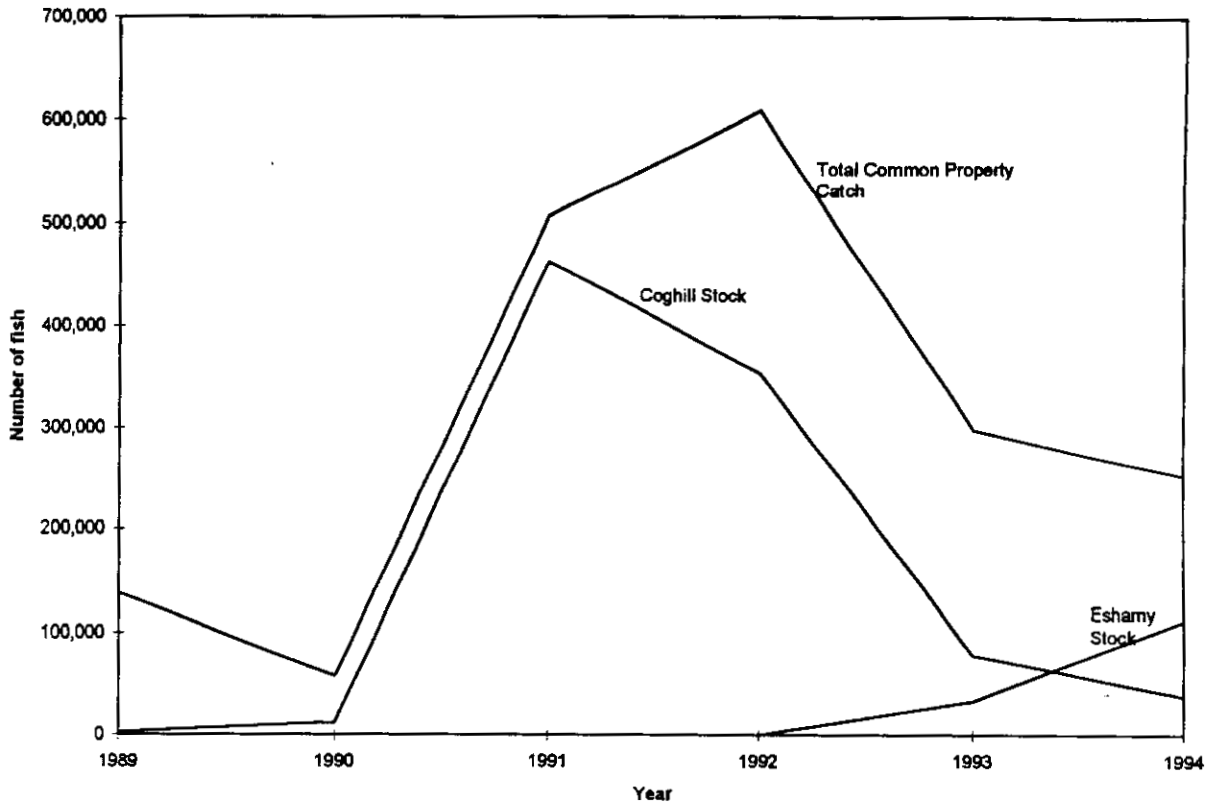


Figure 4. Contributions by Coghill and Eshamy sockeye salmon stocks released from the Main Bay hatchery to the 1989 through 1994 common property catches.

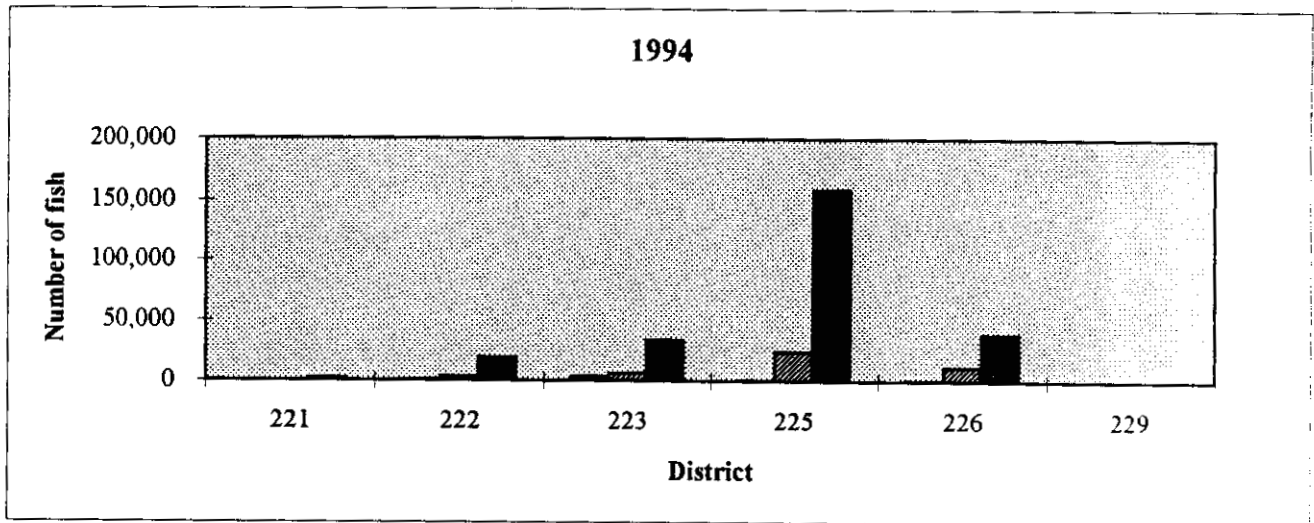
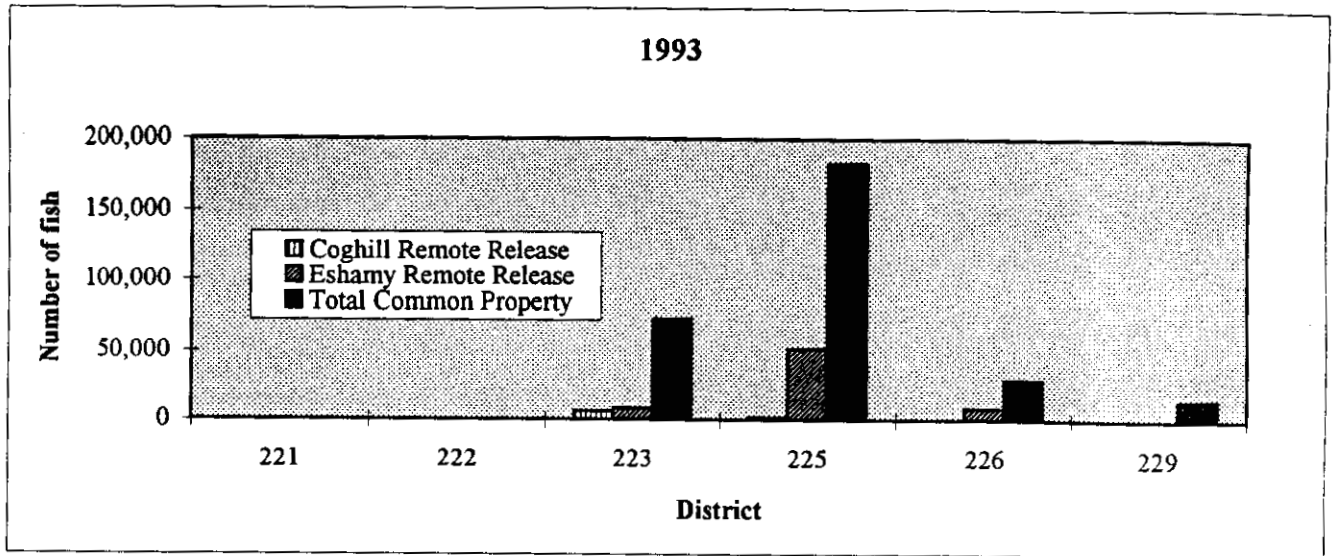


Figure 5. Geographical distribution of the contributions of the major remote release groups to the common property fisheries of 1993 and 1994.

still, so that only 20.5% (51,600) of the common property catch was estimated to be wild. Estimates of wild Eshamy returns were made in 1991, 1992 and 1993, when returns to the Eshamy system were believed to have originated from tagged outmigrations. It was estimated that about 4%, 6.5%, and 13%, respectively, of the total common property catches of 1991 through 1993 originated from the wild Eshamy population. In 1991, it was estimated that about 56% of the Eshamy fish caught in the common property were caught in district 226, with 40% being caught in district 225. In contrast, for 1992 and 1993, only 31% and 19%, respectively, of the Eshamy fish caught in the common property fishery were landed in district 226, the majority being caught in district 225.

A large percentage of the common property catch of 1992 (36%) cannot be accounted for by tagged release groups. It is likely that this group of fish consists of a mixture of non-Eshamy wild fish, including Coghill River-bound fish, and returns of the untagged remote releases.

There were no cost-recovery fisheries on sockeye salmon at the Main Bay facility for 1989 through 1991. Contributions by the Main Bay facility and wild populations to the cost-recoveries of 1992 through 1994 are given in Table 6. The total catch during the cost-recovery effort of 1992 was about 159,000 fish. It was estimated that almost half of these originated from untagged release lots. The returning fish which originated from the Main Bay hatchery were all deemed to be of Coghill stock. Few fish from the wild Eshamy population were found. The total cost-recovery for 1993 was about 109,000 fish. Unlike the situation for 1992, almost all (97%) was accounted for by sockeye salmon that had been released from the Main Bay hatchery. Of these, 81% were estimated to be of Coghill stock, the remainder being of Eshamy stock. In 1994, the cost-recovery catch was about 79,000 fish, and it was estimated that about 20,000 (25%) of these fish originated from wild populations. About 59,400 (75%) were estimated to have been released from the Main Bay hatchery. Of the hatchery fish, 52% were deemed to be of Coghill stock, while 43% were estimated to be of Eshamy stock, the remainder being of Main Bay and Eyak stocks. For all cost-recoveries, there was little contribution from any of the tagged remote release groups.

Contributions of tagged release groups to the escapements of the Coghill and Eshamy systems are presented in Table 7. The Jackpot system was scanned for tags in 1991 only, and none was found. No tags from sockeye salmon released at the Main Bay hatchery or from tagged wild Eshamy populations were found at the Coghill weir (District 223) in 1991. At the Eshamy weir (district 225) 1% of the 46,229 escapement of 1991 was estimated to have originated at the Main Bay hatchery. At the Coghill weir in 1992, no tags of Main Bay or Eshamy River origin were found. At the Eshamy weir in 1992, a small number of sockeye salmon of Main Bay origin were found (<1%). At the Coghill weir in 1993, the majority of sockeye salmon of Main Bay origin (9.6% of escapement) arose from a remote release of smolt in Coghill River. Again, no tags associated with wild Eshamy fish were found at the Coghill weir. At the Eshamy weir in 1993, returns from remote releases of smolt in Eshamy River were evident (6.2 % of escapement), as were significant returns of tagged wild Eshamy fish (81% of escapement). In 1994, while small numbers of sockeye salmon released at Main Bay found their way into both the Coghill and Eshamy systems (0.9 and 0.05% of escapement, respectively), the most significant contributions

Table 6. Estimated contributions of sockeye salmon by group to the cost-recovery fishery of 1992 through 1994.

Year	Contributor(Stock/Type)	Release Site	District 225	%	
1992	Main Bay (Coghill/Smolt)	Main Bay Hatchery	84,925	53.4	
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	
	Total Main Bay		84,925	53.4	
	Remote Release (Coghill/Smolt)	Coghill R. Est.	0	0	
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.	0	0	
	Remote Release (Eshamy/Fry)	Esther Pass Lake	0	0	
	Total Remote Release		0	0	
	Other ^a		73,617	46.3	
	Wild(Eshamy/Smolt)		349	0.2	
	Total Catch		158,891		
	1993	Main Bay (Coghill/Smolt)	Main Bay Hatchery	85,386	78.5
		Main Bay (Eshamy/Smolt)	Main Bay Hatchery	20,169	18.5
Main Bay (Eyak/Fry)			0	0	
Total Main Bay			105,555	97.0	
Remote Release (Coghill/Smolt)		Coghill R. Est.	63	0.1	
Remote Release (Eshamy/Smolt)		Eshamy R. Est.	381	0.4	
Remote Release (Eshamy/Fry)		Esther Pass Lake	0	0	
Remote Release (Eshamy/Fry)		Pass Lake	0	0	
Total Remote Release			444	0.5	
Other ^a			1,208	1.0	
Wild(Eshamy/Smolt)			1,610	1.5	
Total catch			108,817		
1994	Main Bay (Coghill/Smolt)	Main Bay Hatchery	31,106	39.3	
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery	25,681	32.5	
	Main Bay (Main Bay/Smolt)	Main Bay Hatchery	2,316	2.9	
	Main Bay (Eyak/Fry)	Main Bay Hatchery	249	0.3	
	Total Main Bay		59,352	75.0	
	Remote Release (Coghill/Smolt)	Coghill R. Est.	0	0	
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.	0	0	
	Remote Release (Eshamy/Fry)	Eshamy Lake	0	0	
	Remote Release (Eshamy/Fry)	Esther Pass Lake	0	0	
	Remote Release (Eshamy/Fry)	Pass Lake	0	0	
	Total Remote Release		0	0	
	Total Wild		19,779	25.0	
Total Catch		79,131			

^a Other contributions may contain wild fish and/or untagged releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1999 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

Table 7. Estimated contributions of sockeye salmon by group to the escapement of the Eshamy(225) and Coghill(223) systems of 1991 through 1994.

YEAR	Contributor(Stock/Type)	Release Site	District				
			223		225		
				%		%	
1991	Main Bay (Coghill/Smolt)	Main Bay Hatchery	0	0	415	0.9	
	Other ^a		9,752	100	0	5.0	
	Wild(Eshamy/Smolt)		0	0	45,814	94.1	
	Total Escapement		9,752		46,229		
1992	Main Bay (Coghill/Smolt)	Main Bay Hatchery	0	0	113	0.3	
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	0	0	
	Total Main Bay		0	0	113	0.3	
	Remote Release (Coghill/Smolt)	Coghill R. Est.	0	0	0	0	
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.	0	0	132	0.4	
	Remote Release (Eshamy/Fry)	Esther Pass Lake	0	0	0	0	
	Total Remote Release		0	0	132	0.4	
	Other ^a		29,641	100	5,364	14.8	
	Wild(Eshamy/Smolt)		0	0	30,627	84.5	
	Total Escapement		29,641		36,236		
	1993	Main Bay (Coghill/Smolt)	Main Bay Hatchery	134	1.1	102	0.23
		Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	0	0
		Main Bay (Eyak/Fry)		0	0	0	0
Total Main Bay			134	1.1	102	0.23	
Remote Release (Coghill/Smolt)		Coghill R. Est.	1,181	9.6	0	0	
Remote Release (Eshamy/Smolt)		Eshamy R. Est.	0	0	2,643	6.2	
Remote Release (Eshamy/Fry)		Esther Pass Lake	0	0	6	0	
Remote Release (Eshamy/Fry)		Pass Lake	0	0	0	0	
Total Remote Release			1,181	9.6	2,649	6.2	
Other ^a			10,937	89.3	5,485	12.8	
Wild(Eshamy/Smolt)			0	0	34,657	80.8	
Total Escapement			12,252		42,893		
1994		Main Bay (Coghill/Smolt)	Main Bay Hatchery	62	0.9	26	0
	Main Bay (Eshamy/Smolt)	Main Bay Hatchery	0	0	111	0.17	
	Main Bay (Main Bay/Smolt)	Main Bay Hatchery	0	0	0	0	
	Main Bay (Eyak/Fry)	Main Bay Hatchery	0	0	0	0	
	Total Main Bay		62	0.9	137	0.2	
	Remote Release (Coghill/Smolt)	Coghill R. Est.	3,416	47.0	0	0	
	Remote Release (Eshamy/Smolt)	Eshamy R. Est.	0	0	37,293	57.7	
	Remote Release (Eshamy/Fry)	Eshamy Lake	24	0.3	3,320	5.1	
	Remote Release (Eshamy/Fry)	Esther Pass Lake	0	0	0	0	
	Remote Release (Eshamy/Fry)	Pass Lake	0	0	0	0	
	Total Remote Release		3,440	47.3	40,613	62.8	
	Total Wild		3,762	51.7	23,910	37.0	
	Total Escapement		7,264		64,660		

^a Other contributions may contain wild fish and/or untagged releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

by tagged release groups were made by remote releases of smolt into the Coghill (47% of escapement) and Eshamy (62.8% of escapement) rivers, respectively.

Brood-stock harvests were made for 1991 through 1994 at the Main Bay facility. The harvests were 31,961, 4,579, 8,020 and 4,951, respectively.

Survival rates for tagged release groups of sockeye salmon were calculated only for those groups which had completed their marine residencies. The survival rates of the different kinds of hatchery-reared release groups are presented in Table 8. Survival rates were generally highest for groups released directly from the Main Bay facility. The lowest survival rates were associated with sockeye salmon released remotely as fry. Survival rates by tag code are presented in Appendix B. A significant linear relationship was found between survival rate of release group and average weight of fish in the release group at release (Survival rate(%) = 2.22 + 0.84 (Release weight (g)); $p < 0.0001$). A significant relationship persisted when the analysis was performed only on data associated with those groups released from the Main Bay facility as smolts and of Coghill stock, *i.e.* on groups whose release weights were more similar (Survival rate(%) = 7.44 + 0.49 (Release weight (g)); $p = 0.03$). Survival rates of tagged wild populations are presented in Table 9. The estimated survival rates of wild Eshamy fish are of a similar magnitude to those of the fish reared and released at the Main Bay facility. The survival rates of the Coghill wild fish, however, are significantly smaller than those of the wild Eshamy fish and those of any of the groups reared at the Main Bay hatchery.

Contributions and survival rates of chum salmon.

Tags applied at the Main Bay, Solomon Gulch and W. Noerenberg facilities were recovered in common property, cost-recovery and brood-stock harvests. Hatchery contributions to the common property fishery of 1994 are presented in Table 10. Wild contributions are also presented. Detailed district-week estimates of contributions by the Solomon Gulch and W. Noerenberg facilities and by wild populations are given in Appendix C. By far the largest catch of chum salmon in 1994 (approximately half a million) occurred in district 223. About 78% of this catch were estimated to have been reared at the W. Noerenberg facility, the remainder being predominantly of wild origin.

The next largest catch was much smaller (about 42,000) and was made in district 221, and was estimated to consist of 8% fish reared at the W. Noerenberg facility and 12% fish reared at the Solomon Gulch facility, the remainder being of wild origin. Catches of chum salmon were also made in district 225 (about 16,500; 46% of wild origin), 226 (about 9,000; 74% of wild origin) and 222 (about 1500; 58% of wild origin). Cost-recovery harvests of chum salmon were made in 1994 in districts 221 (2,881; estimated 100% wild and incidental to the pink salmon cost-recovery fishery), 223 (374,375; estimated 15% wild), and 225 (2,863; estimated 64% wild and incidental to the sockeye salmon cost-recovery fishery). The Solomon Gulch and W. Noerenberg facilities harvested 2,863 and 111,603 chum salmon as brood stock, respectively.

Significant fully-tagged returns of chum salmon reared at the Main Bay facility were present only in the common property fisheries of 1990 and 1991. Contributions by Main Bay chum salmon to

Table 8. Survival rates of release groups of sockeye salmon reared at the Main Bay hatchery.

Contributor(Stock/Type)	Brood Year	Release Site	Survival Rate %	Standard Error
Main Bay(Coghill/Smolt)	1986	Main Bay	5.3	0.21
	1987	Main Bay	16.0	0.59
	1988	Main Bay	13.9	0.39
	1989	Main Bay	9.4	0.32
Main Bay(Eshamy/Smolt)	1989	Main Bay	6.8	0.57
Remote Release(Coghill L./Smolt)	1989	Coghill R. Estuary	3.7	0.24
Remote Release(Eshamy L./Smolt)	1989	Eshamy R. Estuary	7.9	0.89
Remote Release(Eshamy L./Fry)	1989	Esther Pass Lake	3.4	0.45
Remote Release(Eshamy L./Fry)	1989	Pass Lake	1.1	0.18

Table 9. Survival rates of wild release groups of sockeye salmon.

Population	Release Site	Release Year	Tag code	Survival Rate %	Standard Error
Eshamy Lake	Eshamy weir	1989	311840	15.5	0.51
Eshamy Lake	Eshamy weir	1990	311910	11.1	0.56
Eshamy Lake	Eshamy weir	1991	311951	3.2	0.36
Eshamy Lake	Eshamy weir	1991	311956	20.6	0.91
Eshamy Lake	Eshamy weir	1991	311957	12.6	0.65
Coghill Lake	Coghill weir	1989	1301010403	0.65	0.08
Coghill Lake	Coghill weir	1991	1301020102	0.68	0.16
Coghill Lake	Coghill weir	1991	1301020101	0.09	0.05

Table 10. Contributions of chum salmon to the common property fisheries of 1994.

Contributor	221		222		District 223		225		226		Total	%
		%		%		%		%		%		
Solomon Gulch	4,990	12.0	0	0	335	0	796	4.9	854	9.1	6,975	1.1
W. Noerenberg	3,470	8.3	609	41.7	436,005	78.2	7,992	48.7	1,600	17.1	449,676	69.0
Total Hatchery	8,460	20.3	609	41.7	436,340	78.2	8,788	53.6	2,454	26.2	456,651	70.1
Wild	33,176	79.7	853	58.3	121,446	21.8	7,619	46.4	6,921	73.8	195,196	30.0
Total Catch	41,636		1,462		557,786		16,407		9,375		651,847	

the common property fishery of 1990 were restricted to the Coghill (estimated 44,741 to a catch of 312,400) and Eshamy (estimated 207,600 to a catch of 359,300) districts. Contributions by Main Bay chum salmon to the 1991 common property fishery were restricted to the Eshamy district (estimated 162,960 to a catch of 251,870). As a result of discontinuation of chum salmon production at the Main Bay facility, there were no brood-stock harvests of this species over the period covered by the current study.

Survival rates for tagged release groups of chum salmon were calculated only for those groups which had completed their marine residencies. They are presented by tagcode in Appendix B. Some evidence was found to indicate that survival rates of chum salmon released from the W. Noerenberg facility were related to release weights (Survival Rate = $-0.752 + 4.2 (\text{Release Weight (g)})$; $p=0.103$).

Contributions and survival rates of coho salmon.

Tags applied at the Solomon Gulch and W. Noerenberg facilities were recovered in common property, cost-recovery and brood-stock harvests. The three-year life cycle of coho salmon allows estimation of hatchery contributions for most years. Exceptions are those from the W. Noerenberg facility in 1989 (tagging of coho salmon commenced only in 1989 at this facility) and 1993 (bacterial kidney disease in 1992 prevented tagging) and those from the Solomon Gulch facility in 1994 (fish were not tagged in 1993 at Solomon Gulch). Consequently, wild contribution estimates derived from differences between total catches and estimated hatchery contributions were made only for 1990, 1991 and 1992. Estimated contributions of coho salmon originating from the Solomon Gulch and W. Noerenberg facilities to the common property fisheries of 1990, 1991 and 1992 are presented in Table 11. Wild contributions are also presented. Detailed district-week estimates of contributions by the Solomon Gulch and W. Noerenberg facilities are given in Appendix C. Common property catches of coho salmon ranged from 93,000 in 1991 to 215,000 in 1990. In all years, the vast majority of the catch occurred in district 223, and of this catch by far the most significant contributor was the W. Noerenberg facility. Over the period 1989 through 1994, cost-recovery harvests of coho salmon were made in districts 221 and 223. The Solomon Gulch harvests ranged from 11,201 (estimated 67% Solomon Gulch fish; 25% wild) in 1990 to 55,515 (estimated 60% Solomon Gulch fish) in 1989. The W. Noerenberg harvests ranged from 13,230 (estimated 100% W. Noerenberg fish) in 1991 to 46,700 (estimated 98% W. Noerenberg fish; 2% wild) in 1992. The Solomon Gulch facility harvested 12,231, 1,465 and 1,179 coho salmon for brood-stock purposes in 1990 through 1992, respectively. The W. Noerenberg facility harvested 2,287, 1,635 and 2,986 coho salmon for brood-stock purposes in 1990 through 1992, respectively.

Survival rates for tagged release groups of coho salmon are estimable for all codes released from 1989 through 1993. They are presented by tagcode in Appendix B. An analysis of the effect of release size upon survival rate for the W. Noerenberg and Solomon Gulch facilities revealed no significant relationship ($p=0.23$ for Solomon Gulch; $p=0.35$ for W. Noerenberg).

Contributions and survival rates of chinook salmon

Tags applied at the W. Noerenberg facilities were recovered in the common property, cost-recovery and brood-stock harvests. Only in 1993 and 1994 were all returning hatchery release

Table 11. Estimated contributions of coho salmon to the common property fisheries of 1990 through 1992.

Year	Contributor	221		222		223		224		225		226		Total	%
			%		%		%		%		%		%		
1990	Solomon Gulch	11,340	62.2	1,400	11.3	3,481	2.5	386	19.0	0	0	2,809	6.9	19,416	9.0
	W. Noerenberg	0	0	5,778	46.6	99,637	70.9	935	46.0	0	0	13,884	33.9	120,234	55.8
	Total Hatchery ^a	11,388	62.2	7,401	59.7	107,648	76.6	1355	66.7	0	0	18,222	44.6	146,014	67.8
	Wild	6,832	37.8	4,986	40.3	32,898	23.4	677	33.3	1,278	100	22,651	55.4	69,322	32.2
	Total Catch	18,220		12,387		140,546		2,032		1,278		40,873		215,336	
1991	Solomon Gulch	1,340	29.1	0	0	501	0.6			428	40.0	460	5.8	2,729	2.9
	W. Noerenberg	0	0	0	0	72,722	92.1			0	0	1,017	12.9	73,739	79.5
	Total Hatchery ^a	1,417	30.8	0	0	74,814	94.7			428	40.0	1,843	23.3	78,502	84.6
	Wild	3,187	69.2	207	100	4,170	5.3			641	59.9	6,062	76.7	14,267	15.4
	Total Catch	4,604		207		78,984		0		1,069		7905		92,769	
1992	Solomon Gulch	17	7.1	0	0	1,599	1.4			12	0.5			1628	1.4
	W. Noerenberg	0	0	1,744	76.3	111,712	97.8			1,939	85.8			115,395	96.9
	Total Hatchery ^a	17	7.1	1,744	76.3	113,311	99.1			1,951	86.4			117,023	98.3
	Wild	222	92.9	542	23.7	965	0.8			308	13.6			2,037	1.7
	Total Catch	239		2,286		114,276		0		2,259		0		119,060	

^a Includes estimated contributions from the Fort Richardson hatchery

groups tagged. Consequently, wild contribution estimates derived from differences between total catches and estimated hatchery contributions were made only for 1993 and 1994. Contributions of chinook salmon originating from the W. Noerenberg facility to the common property fishery of 1993 and 1994 are presented in Table 12. Wild contributions are also presented. Detailed district-week estimates of contributions by the W. Noerenberg facilities and by wild populations are given in Appendix C. The only hatchery contributor for 1993 and 1994 was the W. Noerenberg facility. The largest catches of chinook salmon were made in district 223. Of the 727 chinook salmon caught in 1993 in district 223, 349 (48%) were estimated to be of hatchery origin, while 137 (29%) of the 478 chinook salmon caught in 1994 were estimated to be of hatchery origin. Cost-recovery harvests of chinook salmon made in 1993 and 1994 in district 223 were 1460 (estimated 30% wild; incidental to the chum salmon cost-recovery fishery) and 835 (estimated 82% wild; incidental to the chum salmon cost-recovery fishery), respectively. The W. Noerenberg facility harvested 573 and 284 chinook salmon as brood stock in 1993 and 1994, respectively.

Survival rates for tagged release groups of chinook salmon were calculated only for those groups which had completed their marine residencies and only for those groups which were fully sampled upon their return, i.e. no survival rates were computed for releases designed to provide sport fisheries where much of the return was not sampled for tags. Survival rates by tagcode are presented in Appendix B.

Table 12. Estimated contributions of chinook salmon to the common property fisheries of 1993 and 1994.

Contributor	Year	District				Total	%
		221	223	225			
W. Noerenberg	1993		349	31	349	48.0	48.0
Wild			378	36	378	52.0	52.0
Total Catch		0	727	67			
W. Noerenberg	1994	0	137		137	28.7	24.3
Wild		85	341		426	71.3	75.7
Total Catch		85	478	0	563	0	

DISCUSSION

Contributions and Survival Rates

Sockeye Salmon

Main Bay Releases

The influence of hatchery production of sockeye salmon on the common property fishery on this species is immediately evident upon inspection of the data in Table 5. In 1989, only three year-old fish from the first hatchery releases in 1988 had returned, and the majority of the catch was consequently of wild origin. In the following years, total catches increased dramatically because of returning hatchery fish. The composition of the returns to the Main Bay facility has also changed over time. When the Main Bay facility began operation, its brood stocks were taken from the Coghill River/Lake system. As the sockeye salmon fishery in district 225 developed, and the first signs that the Coghill sockeye population may be in danger were observed, a conscious effort was made to change the composition of the Main Bay releases. In an attempt to avoid interception of the declining Coghill stocks, the facility began using brood stock from the Eyak and Eshamy systems, whose runs are generally earlier and later, respectively, than that of the Coghill system. The influence of this action on the returns to the Main Bay hatchery was first noticed in 1993, when the first returns of the Eshamy stock were observed (Figure 4). With respect to contributions to the cost-recovery harvests, the lion's share was made by Main Bay releases, although in 1992 and 1994, there were significant other components. Reassuringly, there was little contamination of the escapements of the Eshamy and Coghill systems with sockeye salmon released from the Main Bay facility.

Survival rates of sockeye salmon released from the Main Bay facility were quite variable (Table 8, Appendix B). While year and other experimental factors confounded the analysis to some extent, a regression of survival rate on release weight yielded a significantly positive slope of between 0.49 and 0.84 percentage points per g of release weight. The practical significance of this result is unknown.

Remote Releases

In 1990 and 1991, only 15% of the escapement goal for sockeye salmon returning to the Coghill Lake system was satisfied. Further, partially enumerated smolt outmigrations in 1989, 1990 and 1991 were well below expected levels, as were hydroacoustic estimates of fry rearing in the lake. The reason for this decline is unknown, although some hypotheses have been formulated. It is possible that the system experienced an overescapement in 1985 and 1987, when more than three times the desired number of fish entered the river. Another hypothesis is that the 1964 earthquake caused the formation of a saltwater lens in the lake which disrupted nutrient flow, plankton populations, and ultimately the carrying capacity of the lake. Limnological evidence supports the contention that the nutrient cycle and plankton populations have been disrupted, and a Forest Service project is underway to fertilize the lake and reverse some of the trends in the lake's nutrient status. The development in the mid-1980's by the State of Alaska and PWSAC of new

hatchery sockeye and chum salmon fisheries which coincided both spatially and temporally with returning Coghill sockeye stocks is also probably a contributing factor to the declining run.

The low returns in 1990 and 1991, and the low numbers of smolt detected leaving Coghill river in 1989 through 1991 suggested that few sockeye salmon would return to this system in 1992, 1993 and 1994. A number of measures were taken to improve the chances that wild Coghill sockeye salmon would successfully run the gauntlet of the intensively-fished migratory corridors. In 1992, a scale-pattern discrimination study was conducted in which wild Coghill fish were distinguished from Main Bay hatchery fish in the commercial catch. Fishery managers used this information to decide whether opening certain areas to fishing would likely result in significant numbers of wild fish being caught. In an attempt to bolster the returns of 1993 and 1994, a remote release program was implemented, whereby smolt reared at the Main Bay hatchery were released into the Coghill River Estuary. The idea was that the smolt would imprint on the water at the release site, and would thus manage to navigate back to the river to spawn and contribute to the escapement. While returns to the Eshamy system had been relatively healthy, the newly developed hatchery chum and sockeye fisheries posed an interception threat to the run, and a remote release program was also initiated for this system. Hatchery-reared smolt were released into the Coghill and Eshamy Rivers in 1991, 1992 and 1993. Hatchery-reared fry were also released into Eshamy Lake in 1991, in an attempt to compare different methods of remote releases.

In general, returns of the Coghill remote releases were lower than those of the Eshamy releases. This was because fewer fish were released into the Coghill River as remote releases, and also because the survival rate of the Coghill releases (1989 brood year) was about half that of the Eshamy releases (Table 8). The reason for the large difference in survival rates is unknown. Both remote release groups were reared in the same hatchery and were released on the same day, removing timing and fish-husbandry practices as explanatory factors. Neither can the difference be explained in terms of the size of fish at release. The Eshamy releases were in fact smaller than the Coghill releases. Significant contributions by both Coghill and Eshamy remote release groups were made to the common property fishery in 1993 and 1994 (Fig.5, Table 5).

The contribution of the Eshamy remote release group to the escapement at the Eshamy weir in 1993 was minimal. It became evident during the season that the escapement goal would be met by late August, and the Eshamy Lagoon was opened to harvest late-arriving sockeye salmon. Coded wire tag data indicated that the large majority of the escapement consisted of lake-reared fish (Table 7). The late-arriving sockeye salmon are thought to have originated predominantly from the remote release groups and their harvest by the commercial fleet is reflected in the large remote release contribution to district 225 in 1993 (Table 5). Since most of the remote released fish were caught by the fleet, it is difficult to determine whether these fish would have eventually ventured up the river. The catch was reported to contain large numbers of darkened fish, and it is speculated that even if the remote releases had passed through the weir, they may have been poor substitutes for their (usually) ocean-bright wild counterparts.

The return to the Eshamy system in 1994 was skewed, and was extremely late, with 50% of the run having passed the weir on September 23, as compared to the historic mean date of August 13. From daily weir counts and CWT tag data obtained from sampling the escapement, it was

apparent that remote-released fish dominated the return after September 22, and were therefore responsible for the late mean return date. While high water temperatures and low stream discharge were believed to have been responsible for slowing entry of lake-reared fish into Eshamy River, the late entry of the remote-released fish was more a consequence of their late arrival into the area. By the time the remote releases had appeared, the commercial fleet had largely ceased to operate, and were unlikely to renew their efforts to harvest fish which were darkened and of poor quality. Consequently, the lateness of the remote releases removed the ability of fishery managers to control the escapement into the river, with the consequence that 66,000 fish escaped, about 25,000 fish over the goal. Whether the remote-release members of the escapement spawned successfully is debatable, however, as many of the fish which passed through the weir were lethargic and in poor condition. Since 40,600 fish in the escapement were estimated to be of remote-release origin, it is possible that in the extreme case where none of the remote release fish spawned successfully, that the effective escapement was 19,400, far short of the 40,000 goal.

The contribution by Coghill remote releases to the Coghill River escapement in 1993 was small (13% of escapement). In 1994, the contribution constituted 47% of the escapement. As with the Eshamy remote releases, the remote-released fish were late, and displayed an imprecise homing ability.

In summary, the remote release program has not achieved its objectives, *i.e.* that remotely-released salmon would contribute to escapements in a manner akin to wild fish. The delayed run-timing, the darkened nature of the fish, and the imprecise homing seen at both the Eshamy and Coghill Rivers, have conspired to create more problems for management than they have solved. Fisheries managers do not know whether sockeye salmon found in the vicinities of these systems will migrate up the river, and if they do, whether they will be effective spawners. Even if the returning remote releases were known quantities, with respect to their homing and spawning abilities, the late nature of the returns coincidental with cessation of fleet activities, effectively removed the ability of the manager to control escapement levels.

In addition to the program designed to enhance escapements at the Coghill and Eshamy Rivers, another remote release program concerned the assimilation of excess fry and/or pre-smolt production at the Main Bay facility. The idea behind the releases was to use various barriered lakes in the Sound as natural incubators, so that the only consequence of the program was the augmentation of the commercial fishery, and not the establishment or rehabilitation of any populations. A release of fry at Marsha Lake on Knight Island in the South Western district was tagged, but has not yet begun contributing to the commercial fishery. At Pass and Esther Pass Lakes, releases of tagged fry were a part of a study designed to compare the suitability of the lakes as receptors of excess fry production. Adult survival rates associated with both lakes were low (Table 8), with that pertaining to Esther Pass (3.4%) lake surpassing that of Pass Lake (1.1%). From growth measurements taken from outmigrating smolts, it appears that some of the difference in adult survival rates, at least, occurred at the pre-smolt to smolt stage (Carpenter, pers. comm.).

Wild Returns

Total wild contributions are routinely calculated as the difference between estimated hatchery contributions and the total catch. As a result of incomplete tagging of releases of excess production of fry and/or presmolt at Pass, Esther Pass and Davis Lakes, estimation of total wild contributions during 1991 through 1993, in which the untagged releases returned, was not possible. The change in the importance of the wild component to the sockeye salmon fishery can still be seen, however, in that 98% of the total common property catch in 1989 was of wild origin, whereas in 1990 and 1994, this percentage fell to 79% and 21%, respectively.

For 1991 through 1993, returns of fish reared in Eshamy Lake to the Eshamy River were estimable from CWT recoveries and the dominance of the hatchery contributions to the common property fishery over those made by the Eshamy system is evident from Table 5. As a result of problems with the enumeration of the outmigration at Coghill River during the tagging process in 1989 and 1991, and the fact that the outmigration was not tagged in 1990, direct estimation of the returns of wild Coghill fish from tag-recovery data was not possible. This was to be unfortunate, given the severe shortfalls in the escapement levels at the Coghill weir in 1993 and 1994. The information would have been useful to fishery managers in determining the impact of the commercial fisheries in the Eshamy and Esther subdistricts upon the Coghill returns. This is especially true when considering the common property fishery in the Esther subdistrict in 1993, when contributions of wild and/or untagged remote releases, were about 25,000 fish. Similarly, the wild component of the common property fishery in 1994 in the same district was about 9,000 fish. These numbers are of sufficient magnitude that were they to represent wild Coghill fish, the Coghill escapement goals could have been achieved had the fishery in the Esther subdistrict not occurred.

Marine survival rates of tagged wild stocks varied widely within a watershed both between and within years. That fish migrating from the Coghill system did not survive as well as those migrating from the Eshamy system is evident, however (Table 9). It therefore appears that Coghill sockeye stock may not only be suffering at the lake-rearing stage, but that they also suffer reduced marine survival.

One of the original objectives of this study was to compare survival rates of sockeye salmon native to watersheds that lay in the path of the *Exxon Valdez* (Eshamy, Jackpot) to that of one that was distant from the oil trajectory. While the ability to calculate survival rates of fish migrating out of Jackpot River was lost because the escapement at this site was only scanned for tags in 1991, the direction of the Eshamy-Coghill survival rate difference is opposite to that expected under the hypothesis that oiling would reduce marine survival rates. In hindsight, the comparison is not a good one, because of the potential existence of confounding factors, such as the possible problem associated with the fertility of the lake.

Chum Salmon

Only in 1994 were all returning hatchery release groups tagged. This was a consequence of the relatively late start the W. Noerenberg facility experienced in tagging their chum salmon releases

(first chum salmon releases tagged in 1990) and of a 1988 release from the Solomon Gulch facility which was not tagged. Consequently, wild contribution estimates derived from differences between total catches and estimated hatchery contributions were made only for 1994. For some years data pertaining to the age-class structure of the hatchery brood stock was available and attempts were made to use this information to estimate the contribution of untagged hatchery returns. The variability of the resulting contribution estimates were so large, however, that they were of dubious value, and the practice was terminated. In addition, for unbiased estimation on a stratum by stratum basis, an inherent assumption is that within a certain stratum, the fish returning to a given hatchery have the same age composition as those fish in the brood stock. This is improbable, with the result that such estimates will likely be biased. Another method of calculating wild contributions would have been to obtain an estimate of the overall marking rate in the brood stock of the hatchery in question, and use it for all tags recovered for that hatchery in the given year. This would have allowed estimation of the total wild return for a year in which tags of at least one release group were present in the return. Unbiased estimation on a stratum by stratum basis requires, however, that the within-stratum tag composition of fish returning to a given hatchery is the same as that in the brood stock. This is improbable, and biased estimation would again be the likely result.

The large production by the W. Noerenberg facility is clearly seen from Table 10. Almost half a million chum salmon were harvested in the Esther subdistrict common property fishery in 1994. As noted previously, a significant number of sockeye salmon were caught in this fishery, and it is possible that they were members of the depressed Coghill return. In an attempt to alleviate this potential problem, moves are afoot to relocate at least some of the W. Noerenberg chum salmon return, and hence the chum salmon common property fishery, to Port Chalmers on Montague Island through a remote release program. It is hoped that this will relieve some of the pressure from the migratory corridor of the Coghill sockeye stock. The cost-recovery fishery at W. Noerenberg harvested few wild chum salmon (12%).

The chum salmon return to the Solomon Gulch facility in 1994 was significantly smaller than that to the W. Noerenberg facility. This difference is mainly a consequence of the much larger releases at the W. Noerenberg facility. The W. Noerenberg hatchery released 124.2 million fry, while the Solomon Gulch facility only released 4.8 million fry from the brood years which contributed to the 1994 common property fishery as four and five year-olds. Another less significant factor is the lower marine survival of chum salmon reared at the Solomon Gulch hatchery (Appendix B). The reason for the latter is unknown.

An analysis of the relationship between release weight and survival rate of chum salmon released from the W. Noerenberg hatchery revealed some evidence ($p=0.1$) that higher survival rates were correlated with higher release weights although it was weaker than those obtained for the sockeye releases. The smaller range in the independent variable (release weight) associated with the chum salmon released from the W. Noerenberg facility in 1990, combined with fewer data points (Appendix B) contrived to make the statistical test of the slope of the regression less powerful.

Coho Salmon

The difference in the sheer capacity of the W. Noerenberg facility to produce fish over that of the Solomon Gulch facility is again reflected by its contribution of coho salmon to the common property fisheries of 1990 through 1992. Survival rates (Appendix B) were variable both within facility and year and between facility and year. There were no obvious differences in rates between facilities, however, and the greater contributions by the W. Noerenberg facility are believed to originate from the greater number of fish released from the hatchery. Unlike the situation for sockeye and chum salmon releases, there was no discernible effect of release size on survival rate ($p=0.23$ for Solomon Gulch; $p=0.35$ for W. Noerenberg). For the analysis of the data pertaining to the Solomon Gulch facility at least, the lack of ability to detect a relationship cannot be attributed to a low sample size, or to a small range of the independent variable. No hypothesis is offered to explain why a relationship between release weight and survival rate appears to exist for sockeye and chum salmon, but not for coho salmon.

Chinook Salmon

The chinook salmon component of the Prince William Sound salmon fishery is very small, and catches were made incidentally in the fishery which targeted the large W. Noerenberg hatchery chum salmon returns. In a manner similar to the returns of chum salmon, the presence of untagged hatchery chinook salmon compromised the ability of the CWT program to estimate contributions for certain years. The chinook salmon caught in 1993 and 1994 were found to consist of significant numbers of wild fish. There is little data at this time for assessment of the effect of release weight on survival rate.

Adjustment Factors

Estimation of the combined effects of tag loss and differential mortality of tagged fish upon the marking rates in returning fish is difficult even for pink salmon (Sharr et al, 1995b), which have a strict two-year life cycle. The main problem with pink salmon appears to be related to the assumption that the brood stock consists solely of hatchery-reared fish, although only circumstantial evidence exists to support this contention. Another possible problem is the effect of the magnetic steel tag upon homing fidelity, leading to an underrepresentation of hatchery fish in the brood stock, and inflated adjustment factors. With multiple age-class species, there is the added question of whether the influence of tag loss and differential mortality is different for fish of different marine residencies. Questions relating to the purity of the pink salmon brood stock and the homing ability of returning tagged pink salmon may be answered with the coincidental operation of the CWT and otolith-marking programs. In the latter program, all hatchery-reared fish will have specifically-marked otoliths so that the wild component in the brood stock will be estimable, and a comparison of the CWT and otolith estimates of hatchery fish in the brood stock will be possible. An assessment of homing ability of CWT-marked fish could be conducted through a comparison of the ratio of tagged to untagged hatchery-released fish (determined through otolith marks) in streams near to the facility in question to that found in the brood stock. While the relevance of these findings to other species may be questionable, the tendency of pink

salmon to stray to a greater extent (Horrall, 1981) could be used to establish an argument that the degree of straying by wild pink salmon into a brood stock is a maximum. Further, since the potential damage to pink salmon fry by a CWT is probably much greater than to a smolt, any tag-induced straying could also probably be considered a maximum.

Recommendations for future studies

Some parts of this program could have been performed more effectively had there been more communication between Divisions within the Department. A major example was the release of untagged sockeye fry at Pass, Esther Pass and Davis Lakes. These fish returned over a period of the study when estimation of the total wild component of the catches and escapements was desirable. In the presence of the untagged hatchery-reared fish, it was impossible to estimate wild fish from the difference between total catches or escapement, and estimates of hatchery contributions from returning tagged hatchery-reared fish. Further, the inability to estimate total wild contributions prevented an indirect estimation of the return to the Coghill system. In the event where an estimate of the Eshamy return was available, the Coghill return could have been estimated as the difference between the total wild return and the estimate of the Eshamy return.

Another factor that contributed to the failure of some experiments was a lack of forward funding. This is required when studies are anticipated to extend over several years. One example is the attempt to estimate the survival rates of fish migrating from the Jackpot watershed. Smolt were tagged at this system in 1990 and 1991, and yet the escapement was only scanned for tags in 1991, thus recovering tags from part of the return associated with the release of 1990, and none from the release of 1991. Consequently, estimation of survival rates for this system was impossible. Another example is the discontinuous nature of the tagging program at the Coghill weir, where the outmigration of 1990 was not tagged. This meant that during those years in which fish from the tagged years returned, fish from the untagged year were also present. Any estimation of the total contribution by the Coghill system to any stratum would then have required use of age-class data. As well as adding variability to the estimate, use of age-class data would have meant that the estimate would not have been available inseason.

Finally, improved co-ordination between tag application and tag recovery personnel would alleviate some of the problems stemming from differential tagging rates among releases, such as that associated with estimation of contributions when untagged release groups of chum and chinook salmon returned with tagged release groups.

CONCLUSIONS

As expected, the proportion of fish from wild populations in the commercial catches decreased with increasing releases of hatchery fish. Postseason analysis of recovered tags from sockeye salmon reared and released at the Main Bay facility revealed that the percentage of the common property catch attributable to the facility increased from 1.8% in 1989 to between 39% in 1993 and 91% in 1991. Significant relationships between release size and survival rates were detected for sockeye salmon. Efforts to enhance natural sockeye salmon populations through remote releases largely failed. While tagged remote-released sockeye salmon, designed to augment natural populations, returned to the Eshamy and Coghill Rivers, they were late and in poor condition. The ability of these fish to spawn effectively is debatable, and the program was not considered successful. A comparison of adult survival rates for fry stocked at Pass and Esther Pass Lakes showed the latter to be the more suitable disposal site for excess fry production at the Main Bay facility. The comparison between survival rates of sockeye salmon from oiled and unoiled areas was compromised by incomplete scanning of escapements due to lack of funding and problems with enumeration of the sockeye salmon smolt outmigration at Coghill River. The ability of the coded wire tag program to estimate the total wild component in the sockeye salmon returns of 1991 through 1993 was compromised by the presence of untagged hatchery-reared fish from remote releases at Davis, Esther Pass and Pass Lakes, although specific contributions by the Eshamy system were estimable in certain years. The marine survival rates of fish from the Coghill system were substantially lower than those of fish from the Eshamy system. With respect to chum salmon returns, some evidence was collected to suggest an influence of release size on survival rates. No such relationship was detected for coho and chinook salmon

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APPENDICES

Appendix A. Derivation of standard errors of adjustment factor estimates

The adjustment factor for hatchery h for a given species is calculated by (Equation 3, Methods):

$$\hat{a}f_h = \frac{\sum_{i=1}^{N_h} s_{hi} \hat{m}_{hi}}{\sum_{i=1}^{N_h} \sum_{j=1}^{T_{hi}} \frac{x_{hij}}{p_j}}$$

where

- N_h = Number of years for which brood samples were collected from hatchery h ,
- s_{hi} = Number of fish scanned for tags in the i^{th} year in hatchery h ,
- m_{hi} = Proportion of brood stock in i^{th} year at hatchery h which derives from tagged release groups,
- T_{hi} = Number of uniquely tagged release groups which may return to hatchery h in year i ,
- x_{hij} = Number of tags of j^{th} code found in brood sample of i^{th} year at hatchery h , and
- p_j = Tagging rate at release for tag code j (defined as number of tagged fish released with j^{th} code divided by the total number of fish in the j^{th} release group).

The derivation of an approximate standard error for the adjustment factor estimate for chum salmon released from the W. Noerenberg facility is described to demonstrate general methods. Data from the 1993 and 1994 brood stock sampling program at the W. Noerenberg facility were available to estimate the adjustment factor ($N_{WN}=2$, $s_{WN1}=107030$, $s_{WN2}=106383$,

$\sum_{j=1}^{T_{WN1}} \frac{x_{WN1j}}{p_j} = 22091$, $\sum_{j=1}^{T_{WN2}} \frac{x_{WN2j}}{p_j} = 45814$). Chum salmon have been released from the W. Noerenberg facility since 1984, but have only been tagged since 1990 (1989 brood year). Since chum salmon return to the facility as three, four, five and six year-olds, only three and four year-olds in the 1993 brood stock and only three, four and five year-olds in the 1994 brood stock originate from tagged release groups. Data pertaining to the age-class composition of the brood stock were therefore required to partition the sampled fish into those arising from the tagged and untagged release ($m_{WN1}=0.165$, $m_{WN2}=0.92$).

The adjustment factor estimate for chum salmon originating at the W. Noerenberg facility (\hat{a}_{WN}) is then:

$$a\hat{f}_{WN} = \frac{\left[\begin{array}{l} 107030 \text{ \# sampled} \\ \text{in '93 brood} \end{array} * 0.165 \text{ Estimated Proportion of} \right.}{\left[\begin{array}{l} 22091 \\ \text{Estimated contribution by} \\ \text{3 and 4 year-olds in '93} \end{array} \right]_C} + \frac{\left[\begin{array}{l} 106383 \text{ \# sampled} \\ \text{in '94 brood} \end{array} * 0.92 \text{ Estimated Proportion of} \right.}{\left[\begin{array}{l} 45814 \\ \text{Estimated contribution by} \\ \text{3, 4 and 5 year-olds in '94} \end{array} \right]_D} = 1.7$$

In order to derive an approximate standard error for $a\hat{f}_{WN}$ through simulation, the nature of the four random components A, B, C and D must be specified. Once this has been done, an appropriate algorithm can be formulated which will mimic the processes involved in the generation of $a\hat{f}_{WN}$. By examining the variation of many estimates generated by the algorithm, an approximate standard error can be obtained.

For component A, the estimated proportion of 3 and 4 year-olds in the 1993 W. Noerenberg brood stock is calculated from a realization of a hypergeometric random process, *i.e.* the number of 3 and 4 year-old fish found in an age-class sample taken without replacement from the brood stock. The sample taken was small compared to the size of the brood stock, and a binomial approximation to the hypergeometric is considered valid. The random nature of component B is similar to that of A.

Component C, the estimated contribution of three and four year-olds to the 1993 W. Noerenberg brood stock, is calculated from a realization of a compound multinomial-hypergeometric random process. The realization consists of the numbers of tags of different tag codes found in a sample taken without replacement from the brood stock. There is a hypergeometric quality in that there is sampling without replacement from the brood stock. The multinomial nature derives from the fact that the total number of tags of different codes in the brood stock is the result of a multinomial process, whereby the brood stock is seen as a random sample (taken effectively with replacement) from all the fish returning to the W. Noerenberg hatchery, with the multinomial parameters being the proportions of the various codes in the returning fish. Greater than 95% of the brood stock is routinely scanned for tags, and for the purposes of this simulation, it is assumed that all of the brood stock is sampled, so removing the hypergeometric sampling component. The tags in the brood stock are therefore assumed to be generated by a multinomial process. The origin of the random nature of component D is similar to that of C.

To simulate $a\hat{f}_{WN}$, values for the parameters of the above distributions are required. For the binomial approximations associated with components A and B, the proportions calculated from the age-class samples are taken as the binomial parameters. For the multinomial distributions associated with components C and D, the parameters are taken as the proportions of different tagcodes found in the scanned brood stock. The simulation is described below.

For each of 1000 iterations, the following was performed:

1) A simulated component-A, A', was generated according to :

$$A' = 107030 \underset{\substack{\# \text{ scanned in '93} \\ \text{brood for tags}}}{*} \frac{x_A}{407 \underset{\substack{\# \text{ sampled in age-class} \\ \text{determination of '93}}}{*}}$$

where

x_A = Simulated number of three and four year-old fish in age-class sample
 \sim Binomial(407, p_{34}), where $p_{34}=0.165$ is the estimated proportion of three and four year-old fish in the age-class sample from the 1993 brood stock.

2) A simulated component-B, B', was generated according to:

$$B' = 106383 \underset{\substack{\# \text{ scanned in '94} \\ \text{brood for tags}}}{*} \frac{x_B}{796 \underset{\substack{\# \text{ sampled in age-class} \\ \text{determination of '94}}}{*}}$$

where

x_B = Simulated number of three and four year-old fish in age-class sample
 \sim Binomial(796, p_{345}), where $p_{345}=0.92$ is the estimated proportion of three, four and five year-old fish in the age-class sample from the 1994 brood stock.

3) A simulated component-C, C', was generated according to:

$$C' = \sum_{i=1}^4 x_{Ci} t_{Ci}$$

where

x_{Ci} = The i^{th} element of the vector \underline{x} which is generated from a multinomial(107030, \underline{p}_c). The parameter vector \underline{p}_c consists of the proportions of the different tag codes found in the scanned brood sample codes (four in 1993), concatenated by the compliment: $[0.196 \times 10^{-3}, 0.224 \times 10^{-3}, 0.0187 \times 10^{-3}, 0.037 \times 10^{-3}, 1 - (0.475 \times 10^{-3})]$.

t_{Ci} = The i^{th} element of the vector \underline{t}_C , which contains the expansion factors corresponding to the four found tag codes [444, 436, 387, 385].

4) A simulated component-D, D' , was generated according to:

$$D' = \sum_{i=1}^{10} x_{Di} t_{Di}$$

where

- x_{Di} = The i^{th} element of the vector \underline{x} which is generated from a multinomial(107030, \underline{p}_c). The parameter vector \underline{p}_c consists of the proportions of the different tag codes found in the scanned brood sample (ten in 1994), concatenated by the compliment: $[0.27 \times 10^{-3}, 0.32 \times 10^{-3}, 0.094 \times 10^{-3}, 0.085 \times 10^{-3}, 0.047 \times 10^{-3}, 0.038 \times 10^{-3}, 0.019 \times 10^{-3}, 0.056 \times 10^{-3}, 0.038 \times 10^{-3}, 0.009 \times 10^{-3}, 1-(0.976 \times 10^{-3})]$.
- t_{Di} = The i^{th} element of the vector \underline{t}_D , which contains the expansion factors corresponding to the ten found tag codes: [444, 436, 387, 385, 679, 438, 411, 424, 447, 487].

5) A simulated $\hat{afc}_{WN}, \hat{afc}'_{WN}$ was calculated:

$$\hat{afc}'_{WN} = \frac{A'+B'}{C'+D'}$$

6) A simulated standard error, $se(\hat{afc}'_{WN})$ was calculated:

$$se(\hat{afc}'_{WN}) = \sqrt{\sum_{i=1}^{1000} (\hat{afc}'_{WNi} - \bar{\hat{afc}'_{WN}})^2 * \frac{1}{999}}$$

Appendix B. Tagcode-specific survival rates

Survival rates by tagcode of sockeye salmon reared at the Main bay facility.

Contributor(Stock/Type)	Brood Year	Release Year	Release Site	Tag code	Release Weight(g)	Survival Rate %	Standard Error
Main Bay(Coghill/Smolt)	1986	1988	MainBay	311763	NA	2.9	0.33
Main Bay(Coghill/Smolt)	1986	1988	MainBay	311801	NA	7.5	0.49
Main Bay(Coghill/Smolt)	1986	1988	MainBay	311802	NA	3.0	0.30
Main Bay(Coghill/Smolt)	1986	1988	MainBay	311803	NA	10.7	0.66
Main Bay(Coghill/Smolt)	1987	1989	MainBay	311812	13.84	16.4	1.34
Main Bay(Coghill/Smolt)	1987	1989	MainBay	311813	10.13	16.8	1.17
Main Bay(Coghill/Smolt)	1987	1989	MainBay	311814	9.80	15.9	1.15
Main Bay(Coghill/Smolt)	1987	1989	MainBay	311815	7.85	15.4	1.13
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311841	13.35	14.4	0.80
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311842	15.60	15.9	0.88
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311843	13.50	12.8	0.88
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311844	16.96	12.3	0.80
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311845	15.05	13.0	0.87
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311846	16.85	16.1	0.93
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311847	16.50	16.1	0.89
Main Bay(Coghill/Smolt)	1988	1990	MainBay	311848	16.10	16.9	1.01
Main Bay(Coghill/Smolt)	1989	1991	MainBay	311922	7.80	6.6	0.47
Main Bay(Coghill/Smolt)	1989	1991	MainBay	311923	6.10	6.0	0.43
Main Bay(Coghill/Smolt)	1989	1991	MainBay	311924	11.30	13.4	0.73
Main Bay(Coghill/Smolt)	1989	1991	MainBay	311925	14.30	12.9	0.87
Main Bay(Eshamy/Smolt)	1989	1991	MainBay	311920	7.54	6.8	0.57
Remote Release(Coghill L./Smolt)	1989	1991	Coghill River	311921	10.30	3.7	0.24
Remote Release(Eshamy L./Smolt)	1989	1991	Eshamy River	311919	7.20	7.9	0.91
Remote Release(Eshamy L./Fry)	1989	1990	Esther Pass Lake	311927	1.99	3.4	0.45
Remote Release(Eshamy L./Fry)	1989	1990	Pass Lake	311926	1.99	1.1	0.19

Appendix B (Continued)

Survival rates by tagcode of chum salmon reared at the Main Bay, Solomon Gulch and W. Noerenberg facilities.

Contributor	Brood Year	Release Site	Tag code	Release Weight	Survival Rate %	Standard Error
Main Bay	1986	Main Bay	B31503	NA	0.87	0.076
Main Bay	1986	Main Bay	B31504	NA	0.21	0.033
Solomon Gulch	1986	Port Valdez	B30107*2	1.60	0	
Solomon Gulch	1986	Port Valdez	B30200	1.60	0.12	
Solomon Gulch	1988	Solomon Gulch	1301010401	1.04	1.26	0.111
Solomon Gulch	1989	Solomon Gulch	1301010505	2.00	0.14	0.0154
W. Noerenberg	1989	Lake Bay	1301010703	0.77	3.83	0.224
W. Noerenberg	1989	Lake Bay	1301010704	1.23	4.04	0.237
W. Noerenberg	1989	Lake Bay	1301010705	0.56	1.14	0.143
W. Noerenberg	1989	Lake Bay	1301010706	0.62	1.05	0.118
W. Noerenberg	1989	Lake Bay	1301010910	0.64	2.26	0.273

Appendix B (Continued)

Survival rates by tag code of chinook salmon reared at the W. Noerenberg facility.

Contributor	Brood Year	Tag code	Survival Rate %	Standard Error
W. Noerenberg	1988	311905	1.44	0.127
W. Noerenberg	1989	311947	0.04	0.023

Appendix B (Continued)

Survival rates by tag code of coho salmon reared at the W. Noerenberg and Solomon Gulch facilities.

Contributor	Brood Year	Release Year	Release Site	Tag code	Release Weight	Survival Rate %	Standard Error
Solomon Gulch	1986	1987	Solomon Gulch	311750	5.20	0	-
Solomon Gulch	1986	1988	Solomon Gulch	311809	15.40	5.66	0.46
Solomon Gulch	1986	1988	Solomon Gulch	311810	15.40	6.64	0.39
Solomon Gulch	1987	1989	Solomon Gulch	311833	23.18	3.19	0.16
Solomon Gulch	1987	1989	Solomon Gulch	311835	23.20	2.55	0.36
Solomon Gulch	1988	1990	Solomon Gulch	311908	18.37	5.17	0.75
Solomon Gulch	1989	1991	Solomon Gulch	311949	18.76	4.54	1.06
Solomon Gulch	1989	1991	Solomon Gulch	311950	15.51	0.84	0.24
Solomon Gulch	1990	1992	Solomon Gulch	312054	14.50	0.05	0.02
Solomon Gulch	1990	1992	Solomon Gulch	312055	19.30	1.69	1.01
W. Noerenberg	1987	1989	Lake Bay	311839	13.90	4.79	0.23
W. Noerenberg	1988	1990	Lake Bay	311903	7.40	1.28	0.24
W. Noerenberg	1988	1990	Lake Bay	311906	13.00	4.56	0.65
W. Noerenberg	1989	1991	Lake Bay	311961	10.16	0.67	0.08
W. Noerenberg	1989	1991	Lake Bay	311945	11.80	9.09	0.69
W. Noerenberg	1989	1991	Lake Bay	311946	11.80	4.98	0.34

*Appendix C. Contributions to the sockeye, chum, coho and chinook salmon common property
and cost-recovery harvests of 1989 through 1994*

Appendix C 1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1989 by period and district

Week	Contributor	District												Total	% *
		221		222		223		224		228		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
18-24 Jun	MB Hatchery (Coghill Lake/Smolt)					0	0					0	0	0	0
	Wild					32846	0					7212	0	40058	100
	Sampled Catch	0		0		32846		0		0		0			
	Total Catch	0		0		32846		0		0		7212		40058	
25 Jun-01 Jul	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0					0	0	0	0
	Wild	920	0	358	0	43873	0					10785	0	55936	100
	Sampled Catch	0		0		43873		0		0		10785			
	Total Catch	920		358		43873		0		0		10785		55936	
02-08 Jul	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0					0	0	0	0
	Wild	1013	0	308	0	25637	0					3202	0	30160	100
	Sampled Catch	1013		0		25637		0		0		3202			
	Total Catch	1013		308		25637		0		0		3202		30160	
09-15 Jul	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0					0	0			0	0
	Wild	1055	0	14	0					8	0			1077	100
	Sampled Catch	1055		0		0		0		0		0			
	Total Catch	1055		14		0		0		8		0		1077	
16-22 Jul	MB Hatchery (Coghill Lake/Smolt)													0	
	Wild													0	
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		0		0		0		0		0	
23-29 Jul	MB Hatchery (Coghill Lake/Smolt)			2397	4187	0	0	0	0	0	0			2397	34
	Wild			0	0	4167	0	359	0	124	0			4650	66
	Sampled Catch	0		2397		0		0		0		0			
	Total Catch	0		2397		4167		359		124		0		7047	
30 Jul-05 Aug	MB Hatchery (Coghill Lake/Smolt)			79	0									79	50
	Wild			79	0									79	50
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		158		0		0		0		0		158	

* As % total catch over all districts.

-Continued-

Appendix C 1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1989 by period and district

Week	Contributor	District												Total	% *	
		221		222		223		224		228		229				
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
06-12 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0					0	0	0	0	0	0	100
	Wild	85	0	212	0					14	0	181	0	492		
	Sampled Catch	85		212		0		0		0		0		492		
	Total Catch	85		212		0		0		14		181		492		
13-19 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0	0	0			0	0	0	0	100
	Wild	41	0	514	0	666	0	1	0			32	0	1254		
	Sampled Catch	41		514		0		0		0		0		1254		
	Total Catch	41		514		666		1		0		32		1254		
20-26 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0	0	0					0	0	100
	Wild	21	0	173	0	959	0	46	0					1199		
	Sampled Catch	0		173		0		0		0		0		1199		
	Total Catch	21		173		959		46		0		0		1199		
27 Aug-02 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0							0	0	100
	Wild					78	0							78		
	Sampled Catch	0		0		78		0		0		0		78		
	Total Catch	0		0		78		0		0		0		78		
03-09 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0							0	0	100
	Wild					45	0							45		
	Sampled Catch	0		0		0		0		0		0		45		
	Total Catch	0		0		45		0		0		0		45		
10-16 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0							0	0	100
	Wild					13	0							13		
	Sampled Catch	0		0		0		0		0		0		13		
	Total Catch	0		0		13		0		0		0		13		
TOTAL HATCHERY		0		2476		0		0		0		0		2476	2	
TOTAL WILD		3135		1658		108284		406		146		21412		135041	98	
TOTAL CATCH		3135		4134		108284		406		146		21412		137517		

* As % of total catch over all districts.

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Appendix C 1.2.1 Estimates of hatchery contributions (Contrib.) to the coho salmon common property fishery of 1989 by period and district.

Week	Contributor	District												Total	% *
		221		222		223		224		228		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
18-24 Jun	Solomon G.					0	0							0	0
	Sampled Catch	0		0		15		0		0		0			
	Total Catch	0		0		15		0		0		0		15	
25 Jun-01 Jul	Solomon G.	12	0	0	0	0	0							12	54
	Sampled Catch	15		0		0		0		0		0			
	Total Catch	15		2		6		0		0		0		23	
02-08 Jul	Solomon G.	43	106	0	0	0	0							43	15
	Sampled Catch	60		0		183		0		0		0			
	Total Catch	60		36		183		0		0		0		279	
09-15 Jul	Solomon G.	28	2											28	67
	Sampled Catch	42		0		0		0		0		0			
	Total Catch	42		0		0		0		0		0		42	
16-22 Jul	Solomon G.													0	
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		0		0		0		0		0	
23-29 Jul	Solomon G.			0	0	2475	47961	0	0	0	0			2475	81
	Sampled Catch	0		497		2475		0		0		0			
	Total Catch	0		497		2475		78		15		0		3065	
30 Jul-05 Aug	Solomon G.			0	0									0	0
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		15		0		0		0		0		15	
06-12 Aug	Solomon G.	1695	97422	0	0					0	0	0	0	1695	56
	Sampled Catch	2576		128		0		0		0		0			
	Total Catch	2576		128		0		0		307		7		3018	

* As % of total catch over all districts.

-Continued-

Appendix C 1.2.1 Estimates of hatchery contributions (Contrib.) to the coho salmon common property fishery of 1989 by period and district (Continued)

Week	Contributor	District												Total	% *
		221		222		223		224		228		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		

Appendix C 1.2.1 Continued.

Week	Contributor	District												Total	% *
		221		222		223		224		228		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
13-19 Aug	Solomon G.	4369	552854	0	0	0	0	0	0	0	0	0	0	4369	21
	Sampled Catch	5768		0		10495		0		0		0			
	Total Catch	5768		4529		10495		24		0		20		20836	
20-26 Aug	Solomon G.	7771	796487	649	24866	2092	2872007	0	0					10512	18
	Sampled Catch	12342		1837		43336		1582		0		0			
	Total Catch	12342		1837		43336		1582		0		0		59097	
27 Aug-02 Sept	Solomon G.	0	0			0	0							0	0
	Sampled Catch	99		0		26317		0		0		0			
	Total Catch	99		0		26317		0		0		0		26416	
03-09 Sept	Solomon G.					0	0							0	0
	Sampled Catch	0		0		23178		0		0		0			
	Total Catch	0		0		23178		0		0		0		23178	
10-16 Sept	Solomon G.					0	0							0	0
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		13424		0		0		0		13424	
17-23 Sept	Solomon G.					0	0							0	0
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		761		0		0		0		761	
24-30 Sept	Solomon G.					0	0							0	0
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		100		0		0		0		100	
TOTAL SOLOMON G.		13918		649		4567		0		0		0		19134	13
TOTAL CATCH		20902		7044		120290		1684		322		27		150269	

* As % of total catch over all districts.

Appendix C 1.2.2 Estimates of hatchery contribution (Contrib.) to the coho salmon cost recovery fishery of 1989 by period and district.

Week	Contributor	District		% ^a
		Contrib.	Var.	
		221		
13-19 Aug	Solomon G.	187	11488	0
	Sampled Catch	265		
	Total Catch	265		0
20-26 Aug	Solomon G.	1595	76578	3
	Sampled Catch	1595		
	Total Catch	1595		3
27Aug-02 Sept	Solomon G.	1130	55090	2
	Sampled Catch	2322		
	Total Catch	2322		4
03-09 Sept	Solomon G.	2801	173474	5
	Sampled Catch	9718		
	Total Catch	9718		18
10-16 Sept	Solomon G.	11694	950547	21
	Sampled Catch	16211		
	Total Catch	16211		29
17-23 Sept	Solomon G.	11293	769849	20
	Sampled Catch	16520		
	Total Catch	16520		30
24-30 Sept	Solomon G.	4325	264630	8
	Sampled Catch	8884		
	Total Catch	8884		16
	TOTAL SOLOMON G.	33025		
	TOTAL CATCH	55515		

^a As % of total catch over all districts.

Appendix C 2.1. Estimates of hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1990 by period and district.

Week	Contributor	District																Total	% *	
		221		222		223		224		225		226		228		229				
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
10-16 Jun	MB Hatchery (Coghill Lake/Smok)					0	0			0	0							0	0	
	Wild					312	0			651	0							963	100	
	Sampled Catch	0		0		0		0		651		0		0		0				
	Total Catch	0		0		312		0		651		0		0		0		963		
17-23 Jun	MB Hatchery (Coghill Lake/Smok)					0	0			129	880							129	3	
	Wild					1818	0			2330	880							4148	97	
	Sampled Catch	0		0		1818		0		2459		0		0		0				
	Total Catch	0		0		1818		0		2459		0		0		0		4277		
24-30 Jun	MB Hatchery (Coghill Lake/Smok)	0	0	0	0	115	7640			469	6025							584	8	
	Wild	167	0	110	0	3314	7640			2995	6025							6586	92	
	Sampled Catch	167		110		3429		0		3464		0		0		0				
	Total Catch	167		110		3429		0		3464		0		0		0		7170		
01-07 Jul	MB Hatchery (Coghill Lake/Smok)	0	0	0	0	108	246			895	52115							1003	23	
	Wild	286	0	55	0	1201	246			1896	52115							3438	77	
	Sampled Catch	286		0		1309		0		2791		0		0		0				
	Total Catch	286		55		1309		0		2791		0		0		0		4441		
08-14 Jul	MB Hatchery (Coghill Lake/Smok)	0	0	0	0					1363	95401							1363	24	
	Wild	294	0	88	0					3839	95401							4221	76	
	Sampled Catch	294		88		0		0		5202		0		0		0				
	Total Catch	294		88		0		0		5202		0		0		0		5584		
15-21 Jul	MB Hatchery (Coghill Lake/Smok)	0	0							447	3784							447	82	
	Wild	100	0							0	3784							100	18	
	Sampled Catch	100		0		0		0		447		0		0		0				
	Total Catch	100		0		0		0		447		0		0		0		547		
22-28 Jul	MB Hatchery (Coghill Lake/Smok)	0	0	0	0	1060	39564					0	0				0	0	1060	35
	Wild	80	0	532	0	1010	39564					280	0				74	0	1976	65
	Sampled Catch	80		532		2070		0		0		280		0		0				
	Total Catch	80		532		2070		0		0		280		0		74		3036		
29 Jul-04 Aug	MB Hatchery (Coghill Lake/Smok)	0	0	0	0	481	4556	40	0	3954	0	385	7890				0	0	4860	36
	Wild	119	0	841	0	1347	4556	335	0	0	0	6058	7890				34	0	8754	64
	Sampled Catch	119		841		1828		0		0		6443		0		0				
	Total Catch	119		841		1828		395		3954		6443		0		34		13614		

* As % of total catch over all districts.

-Continued-

Appendix C 2.1. Estimates of hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1990 by period and district (Continued)

Week	Contributor	District																Total	% *
		221		222		223		224		225		226		228		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
05-11 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	47	222	60	623	53	145	2408	0	0	0	0	0	0	0	2568	26
	Wild	180	0	1639	222	1071	625	466	145	0	0	4048	0			97	0	7501	74
	Sampled Catch	180		1686		1131		519		0		4048		0		0			
	Total Catch	180		1686		1131		519		2408		4048		0		97		10069	
12-18 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Wild	47	0	294	0	273	0	112	0	1235	0	2270	0	9	0	26	0	4266	100
	Sampled Catch	47		294		0		112		1235		2270		0		0			
	Total Catch	47		294		273		112		1235		2270		9		26		4266	
19-25 Aug	MB Hatchery (Coghill Lake/Smolt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Wild	172	0	115	0	282	0	8	0	364	0	2503	0			16	0	3462	100
	Sampled Catch	172		115		0		0		0		2503		0		0			
	Total Catch	172		115		282		8		364		2503		0		16		3462	
26 Aug-01 Sep	MB Hatchery (Coghill Lake/Smolt)					0	0			0	0	0	0					0	0
	Wild					182	0			196	0	172	0					550	100
	Sampled Catch	0		0		0		0		0		0		0		0			
	Total Catch	0		0		182		0		196		172		0		0		550	
02-08 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0											0	0
	Wild					178	0											178	100
	Sampled Catch	0		0		0		0		0		0		0		0			
	Total Catch	0		0		178		0		0		0		0		0		178	
07-08 Sept	MB Hatchery (Coghill Lake/Smolt)																	0	0
	Wild																	0	0
	Sampled Catch	0		0		0		0		0		0		0		0			
	Total Catch	0		0		0		0		0		0		0		0		0	
09-15 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0											0	0
	Wild					12	0											12	100
	Sampled Catch	0		0		0		0		0		0		0		0			
	Total Catch	0		0		12		0		0		0		0		0		12	
16-22 Sept	MB Hatchery (Coghill Lake/Smolt)					0	0											0	0
	Wild					21	0											21	100
	Sampled Catch	0		0		0		0		0		0		0		0			
	Total Catch	0		0		21		0		0		0		0		0		21	
TOTAL HATCHERY		0		47		1824		93		9665		385		0		0		12014	21
TOTAL WILD		1445		3674		11021		941		13506		15333		9		247		46176	79
TOTAL CATCH		1445		3721		12845		1034		23171		15718		9		247		58190	

* As % of total catch over all districts.

Appendix C 2.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1990 by period and district.

Week	Contributor	Facility	District																Total	% ^a		
			221		222		223		224		225		226		227		228				229	
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.
10-16 Jun	Hatchery	Wally N.								0	0									0	0	
		Solomon G.								0	0									0	0	
		F. Richardson ^b									0	0									0	0
		Total									0	0									0	0
		Wild									8	0									8	100
		Sampled Catch	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8			
		Total Catch	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8			
17-23 Jun	Hatchery	Wally N.					0	0		0	0									0	0	
		Solomon G.					0	0		0	0									0	0	
		F. Richardson ^b					0	0		0	0									0	0	
		Total					0	0		0	0									0	0	
		Wild					3	0			14	0									17	100
		Sampled Catch	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	17			
		Total Catch	0	0	0	0	3	0	14	0	0	0	0	0	0	0	0	0	17			
24-30 Jun	Hatchery	Wally N.	0	0	0	0	0	0		0	0									0	0	
		Solomon G.	0	0	0	0	0	0		0	0									0	0	
		F. Richardson ^b	0	0	0	0	0	0		0	0									0	0	
		Total	0	0	0	0	0	0		0	0									0	0	
		Wild					16	0	2	0	30	0									57	100
		Sampled Catch	16	0	2	0	30	0	0	0	0	0	0	0	0	0	0	0	57			
		Total Catch	16	0	2	0	30	0	0	0	0	0	0	0	0	0	0	0	57			
01-07 Jul	Hatchery	Wally N.	0	0	0	0	0	0		0	0									0	0	
		Solomon G.	0	0	0	0	0	0		0	0									0	0	
		F. Richardson ^b	0	0	0	0	0	0		0	0									0	0	
		Total	0	0	0	0	0	0		0	0									0	0	
		Wild					58	0	1	0	13	0									235	100
		Sampled Catch	58	0	1	0	13	0	163	0	0	0	0	0	0	0	0	0	235			
		Total Catch	58	0	1	0	13	0	163	0	0	0	0	0	0	0	0	0	235			

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour

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Appendix C 2.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1990 by period and district (Continued)

Week	Contributor	Facility	District																Total	% ^a		
			221		222		223		224		225		226		227		228				229	
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.
08-14 Jul	Hatchery	Wally N.	0	0	0	0					0	0									0	0
		Solomon G.	88	552	0	0					0	0									88	39
		F. Richardson ^b	0	0	0	0					0	0									0	0
		Total	88	552	0	0					0	0									88	39
	Wild		60	552	14	0					63	0									137	61
		Sampled Catch	148		0		0		0		63		0		0		0		0			
	Total Catch	148		14		0		0		63		0		0		0		0			225	
15-21 Jul	Hatchery	Wally N.	0	0						0	0										0	0
		Solomon G.	0	0							0	0									0	0
		F. Richardson ^b	0	0							0	0									0	0
		Total	0	0							0	0									0	0
	Wild		47	0							15	0									62	100
		Sampled Catch	47		0		0		0		15		0		0		0		0			
	Total Catch	47		0		0		0		15		0		0		0		0			62	
22-28 Jul	Hatchery	Wally N.	0	0	0	0	0	0					0	0							0	0
		Solomon G.	387	10066	0	0	0	0					58	196							445	28
		F. Richardson ^b	0	0	0	0	0	0					0	0							0	0
		Total	387	10066	0	0	0	0					58	196							445	28
	Wild		814	10066	109	0	175	0					26	196							1124	72
		Sampled Catch	1201		109		175		0		0		84		0		0		0			
	Total Catch	1201		109		175		0		0		84		0		0		0			1569	
29 Jul-04 Aug	Hatchery	Wally N.	0	0	33	643	136	2485	68	0	0	0	95	4537							332	8
		Solomon G.	0	0	43	1096	149	5756	22	0	0	0	0	0							214	5
		F. Richardson ^b	0	0	4	7	5	7	0	0	0	0	0	0							9	0
		Total	0	0	80	1747	290	8248	90	0	0	0	95	4537							555	13
	Wild		317	0	628	1747	464	8248	108	0	110	0	2145	4537							3772	87
		Sampled Catch	317		708		754		0		0		2240		0		0		0			
	Total Catch	317		708		754		198		110		2240		0		0		0			4327	

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour

-Continued-

Appendix C 2.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1990 by period and district. (Continued)

Week	Contributor	Facility	District																		Total	%		
			221		222		223		224		225		226		227		228		229					
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
03-11 Aug	Hatchery	Wally N.	0	0	222	13592	1918	45372	249	11490	0	0	927	60286	10	0			5	0	3331	21		
		Solomon G.	574	29107	886	73207	546	12994	81	1285	0	0	665	87177	7	0			21	0	2780	17		
		F. Richardson *	0	0	15	134	47	89	0	0	0	0	0	0	0	0	0			0	0	62	0	
		Total	574	29107	1123	86933	2511	58455	330	12775	0	0	1592	147463	17	0			27	0	6174	39		
	Wild		1555	29107	2501	86933	2031	58455	396	12775	238	0	3028	147463	33	0			59	0	9841	61		
		Sampled Catch	2129		3624		4542		726		0		4620		0		0		0					
		Total Catch	2129		3624		4542		726		238		4620		50		0		86				16015	
12-18 Aug	Hatchery	Wally N.	0	0	3166	342994	4867	404251	401	22650	0	0	2848	200056			1	0	22	0	11305	43		
		Solomon G.	2651	107010	0	0	0	0	0	0	0	0	1064	75416			0	0	0	0	3715	14		
		F. Richardson *	11	64	174	194	109	1152	7	12	0	0	698	181331			0	0	1	0	1000	4		
		Total	2662	107074	3340	343188	4976	405403	408	22662	0	0	4610	456803			2	0	23	0	16021	62		
	Wild		1078	107074	7	343188	2448	405403	60	22662	328	0	6048	456803			2	0	0	0	9971	38		
		Sampled Catch	3740		3347		7424		468		0		10658		0		0		0					
		Total Catch	3740		3347		7424		468		328		10658		0		4		23				25992	
19-25 Aug	Hatchery	Wally N.	0	0	2357	124449	14161	2110873	217	17661	0	0	10595	5127651					9	0	27339	39		
		Solomon G.	7640	1113558	471	6578	746	48376	283	29889	0	0	1687	199984					2	0	10829	16		
		F. Richardson *	37	562	30	30	519	3686	27	269	0	0	757	31518					0	0	1370	2		
		Total	7677	1116120	2858	131057	15426	2162935	527	47819	0	0	13039	5359152					11	0	39538	57		
	Wild		2887	1116120	1724	131057	10799	2162935	113	47819	214	0	14158	5359152					7	0	29902	43		
		Sampled Catch	10564		4582		26225		640		0		27197		0		0		0					
		Total Catch	10564		4582		26225		640		214		27197		0		0		18				69440	
26 Aug-01 Sept Hatchery	Hatchery	Wally N.					20634	6623453			68	4568	346	9395							21048	62		
		Solomon G.					837	55878			0	0	0	0							837	2		
		F. Richardson *					1358	10598			0	24	24	74							1382	4		
		Total					22829	6689929			68	4592	370	9469								23267	68	
	Wild						10561	6689929			61	4592	324	9469									10946	32
		Sampled Catch	0		0		33390		0		129		694		0		0		0					
		Total Catch	0		0		33390		0		129		694		0		0		0					34213

* As % of total catch over all districts.

† Sport-fish releases at Fleming Spit and Whittier Harbour

-Continued-

Appendix C 2.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1990 by period and district (Continued)

Week	Contributor	Facility	District																		Total	%
			221		222		223		224		225		226		227		228		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
02-08 Sept	Hatchery	Wally N.			10677	13144330															10677	88
		Solomon G.			414	6077															414	1
		F. Richardson ^a			1882	24309															1882	5
		Total			32973	13174715															32973	86
	Wild				5254	13174715															5254	14
		Sampled Catch	0	0	38227		0	0	0	0	0	0	0	0	0	0	0	0	0	0	38227	
	Total Catch	0	0	38227		0	0	0	0	0	0	0	0	0	0	0	0	0	0	38227		
09-15 Sept	Hatchery	Wally N.			21116	6921209														21116	95	
		Solomon G.			629	7704														629	3	
		F. Richardson ^a			491	4683														491	2	
		Total			22236	6933596															22236	100
	Wild				1	6933596															1	0
		Sampled Catch	0	0	22237		0	0	0	0	0	0	0	0	0	0	0	0	0	0	22237	
	Total Catch	0	0	22237		0	0	0	0	0	0	0	0	0	0	0	0	0	0	22237		
16-22 Sept	Hatchery	Wally N.			5806	253997														5806	81	
		Solomon G.			152	9696														152	2	
		F. Richardson ^a			113	565														113	2	
		Total			6071	264258															6071	85
	Wild				1060	264258															1060	15
		Sampled Catch	0	0	7131		0	0	0	0	0	0	0	0	0	0	0	0	0	0	7131	
	Total Catch	0	0	7131		0	0	0	0	0	0	0	0	0	0	0	0	0	0	7131		
23-29 Sept	Hatchery	Wally N.			170	0														170	81	
		Solomon G.			4	0														4	2	
		F. Richardson ^a			3	0														3	2	
		Total			178	0															178	85
	Wild				31	0															31	15
		Sampled Catch	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total Catch	0	0	209		0	0	0	0	0	0	0	0	0	0	0	0	0	0	209		

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour

-Continued-

Appendix C 2.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1990 by period and district. (Continued)

Week	Contributor	Facility	District																		Total	% ^a
			221		222		223		224		225		226		227		228		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
30 Sept-06 Oct	Hatchery	Wally N.					151	0													151	81
		Solomon G.					4	0													4	2
		F. Richardson ^b					3	0													3	2
		Total					158	0													158	85
	Wild						28	0													28	15
		Sampled Catch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		Total Catch	0	0	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186	
	TOTAL HATCHERY		11388	7401	107648		1355	68	19764		17	2	61	147704	67							
	TOTAL WILD		6832	4986	32898		677	1223	25729		33	2	66	72446	33							
	TOTAL CATCH		18220	12387	140546		2032	1291	45493		50	4	127	220150								

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour

Appendix C 2.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1990
by period and district.

Week	Contributor	Facility	District				Total	% ^a	
			221		223				
			Contrib.	Var.	Contrib.	Var.			
05-11 Aug	Hatchery	Wally N.	0	0	19	90	19	100	
		Solomon G.			0	0	0	0	
		F. Richardson ^b			0	0	0	0	
		Total			19	90	19	100	
	Wild					0	90	0	0
		Sampled Catch	0		19				
		Total Catch	0		19		19		
12-18 Aug	Hatchery	Wally N.	0	0	8	16	8	7	
		Solomon G.			0	0	0	0	
		F. Richardson ^b			0	0	0	0	
		Total			8	16	8	7	
	Wild					107	16	107	93
		Sampled Catch	0		115				
		Total Catch	0		115		115		
19-25 Aug	Hatchery	Wally N.			70	775	70	76	
		Solomon G.			0	0	0	0	
		F. Richardson ^b			0	0	0	0	
		Total			70	775	70	76	
	Wild					22	775	22	24
		Sampled Catch	0		92				
		Total Catch	0		92		92		

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 2.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1990
by period and district (Continued)

Week	Contributor	Facility	District				Total	% ^a
			221		223			
			Contrib.	Var.	Contrib.	Var.		
26 Aug-01 Sept	Hatchery	Wally N.	0	0	1202	110	1202	64
		Solomon G.	371	20715	0	0	371	20
		F. Richardson ^b	0	0	0	0	0	0
		Total	371	20715	1202	110	1573	83
	Wild		315	20715	0	110	315	17
	Sampled Catch		686		1202			
	Total Catch		686		1202		1888	
02-08 Sept	Hatchery	Wally N.	104	2620	0	0	104	2
		Solomon G.	2380	78162	0	0	2380	43
		F. Richardson ^b	13	30	0	0	13	0
		Total	2497	80812	0	0	2497	45
	Wild		1635	80812	1385	0	3020	55
	Sampled Catch		4132		1385			
	Total Catch		4132		1385		5517	
09-15 Sept	Hatchery	Wally N.	0	0			0	0
		Solomon G.	1508	56599			1508	71
		F. Richardson ^b	0	0			0	0
		Total	1508	56599			1508	71
	Wild		630	56599			630	29
	Sampled Catch		2138		0			
	Total Catch		2138		0		2138	

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 2.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1990
by period and district (Continued)

Week	Contributor	Facility	District				Total	% ^a
			221		223			
			Contrib.	Var.	Contrib.	Var.		
16-22 Sept	Hatchery	Wally N.	0	0			0	0
		Solomon G.	2955	136372			2955	77
		F. Richardson ^b	0	0			0	0
		Total	2955	136372			2955	77
	Wild		878	136372			878	23
		Sampled Catch	3833		0			
		Total Catch	3833		0		3833	
23-29 Sept	Hatchery	Wally N.	0	0			0	0
		Solomon G.	198	12906			198	85
		F. Richardson ^b	0	0			0	0
		Total	198	12906			198	85
	Wild		34	12906			34	15
		Sampled Catch	232		0			
		Total Catch	232		0		232	
30 Sept-06 Oct	Hatchery	Wally N.	5	0			5	3
		Solomon G.	104	0			104	58
		F. Richardson ^b	1	0			1	0
		Total	109	0			109	60
	Wild		71	0			71	40
		Sampled Catch	0		0			
		Total Catch	180		0		180	
TOTAL HATCHERY			7638		1299		8937	64
TOTAL WILD			3563		1514		5077	36
TOTAL CATCH			11201		2813		14014	

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

Appendix C 3.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1991 by period and district.

Week	Contributor (Stock/Type)	District										Total	% *		
		221		222		223		225		226				229	
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
09-15 Jun	MB Hatchery (Coghill Lake/Smolt)					0	0	503	0					503	37
	Other ^b					375	0	494	0					869	63
	Sampled Catch	0		0		375		997		0		0			
	Total Catch	0		0		375		997		0		0		1372	
16-22 Jun	MB Hatchery (Coghill Lake/Smolt)							16219	3408423			0	0	16219	91
	Other ^b							960	3408423			666	0	1626	9
	Sampled Catch	0		0		0		17179		0		666			
	Total Catch	0		0		0		17179		0		666		17845	
23-29 Jun	MB Hatchery (Coghill Lake/Smolt)							68614	2.615+E7			0	0	68614	92
	Other ^b							5571	2.615+E7			758	0	6329	8
	Sampled Catch	0		0		0		74185		0		758			
	Total Catch	0		0		0		74185		0		758		74943	
30 Jun-06 Jul	MB Hatchery (Coghill Lake/Smolt)	106	1225					91195	5.101+E7			0	0	91301	96
	Other ^b	200	1225					2713	5.101+E7			618	0	3531	4
	Sampled Catch	306		0		0		93908		0		0			
	Total Catch	306		0		0		93908		0		618		94832	
07 -13 Jul	MB Hatchery (Coghill Lake/Smolt)	0	0					143748	3.081+E8			0	0	143748	98
	Other ^b	99	0					741	3.081+E8			2309	0	3149	2
	Sampled Catch	99		0		0		144489		0		0			
	Total Catch	99		0		0		144489		0		2309		146897	
14-20 Jul	MB Hatchery (Coghill Lake/Smolt)	121	2857					57438	3.138+E7			0	0	57559	97
	Other ^b	267	2857					1350	3.138+E7			357	0	1974	3
	Sampled Catch	388		0		0		58788		0		0			
	Total Catch	388		0		0		58788		0		357		59533	

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 3.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor (Stock/Type)	District										Total	% *		
		221		222		223		225		226				229	
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.
21-27 Jul	MB Hatchery (Coghill Lake/Smolt)	0	0			2002	115751	57212	6.911+E7			0	0	59214	94
	Other ^b	128	0			1065	115751	2627	6.911+E7			97	0	3917	6
	Sampled Catch	128		0		3067		59839		0		0			
	Total Catch	128		0		3067		59839		0		97		63131	
28 Jul-03 Aug	MB Hatchery (Coghill Lake/Smolt)							21690	1.258+E7			0	0	21690	95
	Other ^b							1176	1.258+E7			21	0	1197	5
	Sampled Catch	0		0		0		22866		0		0			
	Total Catch	0		0		0		22866		0		21		22887	
04-10 Aug	MB Hatchery (Coghill Lake/Smolt)			131	784	313	5212	3225	378582	558	5019	0	0	4227	48
	Other ^b			663	784	399	5212	1842	378582	1097	5019	538	0	4539	52
	Sampled Catch	0		794		712		5067		1655		538			
	Total Catch	0		794		712		5067		1655		538		8766	
11-17 Aug	MB Hatchery (Coghill Lake/Smolt)			0	0	54	273	0	0	607	36055	0	0	661	7
	Other ^b			140	0	555	273	2506	0	6004	36055	24	0	9229	93
	Sampled Catch	0		140		609		2506		6611		0			
	Total Catch	0		140		609		2506		6611		24		9890	
18-24 Aug	MB Hatchery (Coghill Lake/Smolt)			0	0	0	0			0	0			0	0
	Other ^b			43	0	187	0			4977	0			5207	100
	Sampled Catch	0		43		187		0		4977		0			
	Total Catch	0		43		187		0		4977		0		5207	
25-31 Aug	MB Hatchery (Coghill Lake/Smolt)			0	0	0	0			0	0			0	0
	Other ^b			1	0	192	0			1176	0			1369	100
	Sampled Catch	0		0		192		0		1176		0			
	Total Catch	0		1		192		0		1176		0		1369	

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 3.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor (Stock/Type)	District												Total	% *
		221		222		223		225		226		229			
		Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
01-07 Sept.	MB Hatchery (Coghill Lake/Smolt)					0	0	0	0					0	0
	Other ^b					284	0	381	0					665	100
	Sampled Catch	0		0		284		0		0		0			
	Total Catch	0		0		284		381		0		0		665	
08-14 Sept.	MB Hatchery (Coghill Lake/Smolt)					0	0	0	0					0	0
	Other ^b					20	0	107	0					127	100
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		20		107		0		0		127	
15-21 Sept.	MB Hatchery (Coghill Lake/Smolt)					0	0	0	0					0	0
	Other ^b					3	0	63	0					66	100
	Sampled Catch	0		0		3		0		0		0			
	Total Catch	0		0		3		63		0		0		66	
22-28 Sept.	MB Hatchery (Coghill Lake/Smolt)					0	0							0	0
	Other ^b					1	0							1	100
	Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		1		0		0		0		1	
	TOTAL HATCHERY	227		131		2369		459844		1165		0		463736	91
	TOTAL OTHER	694		847		3081		20531		13254		5388		43795	9
	TOTAL CATCH	921		978		5450		480375		14419		5388		507531	

* As a % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

Appendix C 3.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1991 by period and district.

Week	Contributor	Facility	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
09-15 Jun	Hatchery	Wally N.							0	0					0	0
		Solomon G.							0	0					0	0
		F. Richardson ^b							0	0					0	0
		Total							0	0					0	0
	Wild								1	0					1	100
		Total Catch	0		0		0		1		0		0		1	
16-22 Jun	Hatchery	Wally N.							0	0					0	0
		Solomon G.							0	0					0	0
		F. Richardson ^b							0	0					0	0
		Total							0	0					0	0
	Wild								9	0					4	0
		Total Catch	0		0		0		9		0		4		13	100
23-29 Jun	Hatchery	Wally N.							0	0					0	0
		Solomon G.							0	0					0	0
		F. Richardson ^b							0	0					0	0
		Total							0	0					0	0
	Wild								57	0					57	100
		Total Catch	0		0		0		57		0		0		57	
30 Jun-06 Jul	Hatchery	Wally N.	0	0					0	0					0	0
		Solomon G.	0	0					0	0					0	0
		F. Richardson ^b	0	0					0	0					0	0
		Total	0	0					0	0					0	0
	Wild								57	0					42	0
		Total Catch	57		0		0		57		42		0		99	100

* As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
07-13 Jul	Hatchery	Wally N.	0	0					0	0					0	0
		Solomon G.	0	0					0	0					0	0
		F. Richardson *	0	0					0	0					0	0
		Total	0	0					0	0					0	0
	Wild							137	0					143	100	
		Sampled Catch	6		0		0		137		0		0			
	Total Catch	6		0		0		137		0		0		143		
14-20 Jul	Hatchery	Wally N.	0	0					0	0					0	0
		Solomon G.	0	0					0	0					0	0
		F. Richardson *	0	0					0	0					0	0
		Total	0	0					0	0					0	0
	Wild							353	0					392	100	
		Sampled Catch	39		0		0		353		0		0			
	Total Catch	39		0		0		353		0		0		392		
21-27 Jul	Hatchery	Wally N.	0	0			0	0	0	0					0	0
		Solomon G.	0	0			136	8679	0	0					136	34
		F. Richardson *	0	0			0	0	0	0					0	0
		Total	0	0			136	8679	0	0					136	34
	Wild					219	8679	14	0					259	66	
		Sampled Catch	26		0		355		14		0		0			
	Total Catch	26		0		355		14		0		0		395		
28 Jul-03 Aug	Hatchery	Wally N.							0	0					0	0
		Solomon G.							0	0					0	0
		F. Richardson *							0	0					0	0
		Total							0	0					0	0
	Wild							14	0					14	100	
		Sampled Catch	0		0		0		14		0		0			
	Total Catch	0		0		0		14		0		0		14		

* As % of total catch over all districts.

* Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District												Total	% *	
			221		222		223		225		226		229				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
04-10 Aug	Hatchery	Wally N.			0	0	0	0	0	0	0	0	0	0	0	0	0
		Solomon G.			0	0	289	826	0	0	0	0	0	0	0	289	29
		F. Richardson †			0	0	0	0	0	0	0	0	0	0	0	0	0
		Total			0	0	289	826	0	0	0	0	0	0	0	289	29
	Wild					116	0	315	826	14	0	258	0	2	0	705	71
		Sampled Catch	0		116		604		14		258		0				
	Total Catch	0		116		604		14		258		2			994		
11-17 Aug	Hatchery	Wally N.			0	0	0	0	0	0	0	0	0	0	0	0	0
		Solomon G.			0	0	0	0	174	4970	292	13745	0	0	466	18	
		F. Richardson †			0	0	0	0	0	0	195	19820	0	0	195	8	
		Total			0	0	0	0	174	4970	487	33565	0	0	661	26	
	Wild					63	0	572	0	0	4970	1244	33565	12	0	1891	74
		Sampled Catch	0		63		572		174		1731		0				
	Total Catch	0		63		572		174		1731		12			2552		
18-24 Aug	Hatchery	Wally N.			0	0	536	78458			240	10425			776	14	
		Solomon G.			0	0	76	1122			168	5893			244	5	
		F. Richardson †			0	0	24	125			136	844			160	3	
		Total			0	0	636	79705			544	17163			1180	22	
	Wild					28	0	466	79705			3709	17163			4203	78
		Sampled Catch	0		0		1102		0		4253		0				
	Total Catch	0		28		1102		0		4253		0			5383		
25-31 Aug	Hatchery	Wally N.	0	0			8926	5484507			777	101919			9703	79	
		Solomon G.	0	0			0	0			0	0			0	0	
		F. Richardson †	0	0			145	3673			35	797			180	1	
		Total	0	0			9071	5488180			812	102716			9883	81	
	Wild			1472	0			1	5488180			851	102716			2324	19
		Sampled Catch	0		0		9072		0		1663		0				
	Total Catch	1472		0		9072		0		1663		0			12207		

* As % of total catch over all districts.

† Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
01-07 Sept	Hatchery	Wally N.	0	0			16000	1420558	0	0					16000	79
		Solomon G.	1340	87986			0	0	190	0					1530	8
		F. Richardson †	77	1130			646	7708	0	0					723	4
		Total	1417	89116			16646	1428266	190	0					18253	90
	Wild					524	1428266	0	0					2111	10	
			Sampled Catch	3004		0		17170		0		0		0		
		Total Catch	3004		0		17170		190		0		0		20364	
08-14 Sept	Hatchery	Wally N.					15710	38311816	0	0					15710	89
		Solomon G.					0	0	60	0					60	0
		F. Richardson †					262	14263	0	0					262	1
		Total					15972	38326079	60	0					16032	91
	Wild					1678	38326079	0	0					1678	9	
			Sampled Catch	0		0		17650		0		0		0		
		Total Catch	0		0		17650		60		0		0		17710	
15-21 Sept	Hatchery	Wally N.					15377	21906334	0	0					15377	97
		Solomon G.					0	0	4	0					4	0
		F. Richardson †					465	21906	0	0					465	3
		Total					15842	21928240	4	0					15846	100
	Wild					1	21928240	0	0					1	0	
			Sampled Catch	0		0		15843		0		0		0		
		Total Catch	0		0		15843		4		0		0		15847	
22-28 Sept	Hatchery	Wally N.					16173	55265624							16173	100
		Solomon G.					0	0							0	0
		F. Richardson †					49	462							49	0
		Total					16222	55266086							16222	100
	Wild					1	55266086							1	0	
			Sampled Catch	0		0		16223		0		0		0		
		Total Catch	0		0		16223		0		0		0		16223	

* As % of total catch over all districts.

† Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
29 Sept-05 Oct	Hatchery	Wally N.					0	0							0	0
		Solomon G.					0	0							0	0
		F. Richardson *					0	0							0	0
		Total					0	0							0	0
		Wild					393	0							393	100
			Sampled Catch	0	0	0	0	0	0	0	0	0	0	0		
			Total Catch	0	0	393	0	0	0	0	0	0	0	393		
			TOTAL HATCHERY	1417	0	74814	428	1843	0	78502	85					
			TOTAL WILD	3187	207	4170	641	6062	18	14285	15					
			TOTAL CATCH	4604	207	78984	1069	7905	18	92787						

* As % of total catch over all districts.

* Sport-fish releases at Fleming Spit and Whittier Harbour.

Appendix C 3.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1991 by period and district.

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
07 -13 Jul	Hatchery	Wally N.	0	0			0	0
		Solomon G.	0				0	0
		F. Richardson ^b	0	0			0	0
		Total	0	0			0	0
	Wild		3	0			3	100
	Sampled Catch		3		0			
	Total Catch		3		0		3	
04-10 Aug	Hatchery	Wally N.	0	0			0	0
		Solomon G.	115				115	31
		F. Richardson ^b	0	0			0	0
		Total	115	0			115	31
	Wild		251	0			251	69
	Sampled Catch		0		0			
	Total Catch		366		0		366	
11-17 Aug	Hatchery	Wally N.	0	0			0	0
		Solomon G.	80	514			80	63
		F. Richardson ^b	0	0			0	0
		Total	80	514			80	63
	Wild		47	514			47	37
	Sampled Catch		127		0			
	Total Catch		127		0		127	

* As % total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
18-24 Aug	Hatchery	Wally N.	0	0			0	0
		Solomon G.	10017	2.49+E7			10017	100
		F. Richardson ^b	0	0			0	0
		Total	10017	0			10017	100
	Wild		0	0			0	0
		Sampled Catch	10017		0			
		Total Catch	10017		0		10017	
25-31 Aug	Hatchery	Wally N.	0	0	724	0	724	7
		Solomon G.	9806	8580685	0		9806	93
		F. Richardson ^b	0	0	17	0	17	0
		Total	9806	8580685	741	0	10547	100
	Wild		0	8580685	0	0	0	0
		Sampled Catch	9806		0			
		Total Catch	9806		741		10547	
01-07 Sept	Hatchery	Wally N.	0	0	6621	4906335	6621	40
		Solomon G.	9527	602655	0		9527	57
		F. Richardson ^b	0	0	153	3969	153	1
		Total	9527	602655	6774	4910304	16301	98
	Wild		411	602655	1	4910304	412	2
		Sampled Catch	9938		6775			
		Total Catch	9938		6775		16713	

* As % total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

-Continued-

Appendix C 3.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1991 by period and district (Continued)

Week	Contributor	Facility	District				Total	% ^a
			221		223			
			Contrib.	Var.	Contrib.	Var.		
08-14 Sept	Hatchery	Wally N.	0	0	5339	1446619	5339	41
		Solomon G.	5882	280717	0		5882	45
		F. Richardson ^b	0	0	74	347	74	1
		Total	5882	280717	5413	1446966	11295	87
	Wild		1746	280717	1	1446966	1747	13
		Sampled Catch	7628		5414			
		Total Catch	7628		5414		13042	
15-21 Sept	Hatchery	Wally N.	0	0	300	14665	300	19
		Solomon G.	993	12294	0		993	62
		F. Richardson ^b	0	0	0	0	0	0
		Total	993	12294	300	14665	1293	81
	Wild		308	12294	0	14665	308	19
		Sampled Catch	1301		300			
		Total Catch	1301		300		1601	
22-28 Sept	Hatchery	Wally N.	0	0			0	0
		Solomon G.	211	3085			211	100
		F. Richardson ^b	0	0			0	0
		Total	211	3085			211	100
	Wild		0	3085			0	0
		Sampled Catch	211		0			
		Total Catch	211		0		211	
TOTAL HATCHERY			36631		13228	49859	95	
TOTAL WILD			2766		2	2768	5	
TOTAL CATCH			39397		13230	52627		

^a As % of total catch over all districts.

^b Sport-fish releases at Fleming Spit and Whittier Harbour.

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district.

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	%
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
14-26 Jun	MB Hatchery (Coghill Lake/Smolt)							5022	107017					5022	84	
	MB Hatchery (Eahamy Lake/Smolt)							0	0					0	0	
	Total Hatchery							5022	107017					5022	84	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary						0	0					0	0	
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary						0	0					0	0	
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake						0	0					0	0	
	Total Remote Release							0	0					0	0	
	Other ^a							851	107511							
	Wild (Eahamy Lake/Smolt)							104	494					104	2	
	Sampled Catch							0	0					0	0	
Total Catch							0	0					0	0		
21-27 Jun	MB Hatchery (Coghill Lake/Smolt)							54459	5425231					54467	85	
	MB Hatchery (Eahamy Lake/Smolt)							0	0					0	0	
	Total Hatchery							54459	5425231					54467	85	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary						0	0					0	0	
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary						0	0					0	0	
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake						0	0					0	0	
	Total Remote Release							0	0					0	0	
	Other ^b							871	5468722			39	0			
	Wild (Eahamy Lake/Smolt)							877	43491			0	0	877	1	
	Sampled Catch							0	0			0	0	0	0	
Total Catch							0	0			0	47	63754			

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Eather Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	% ^a
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
28 Jun-04 Jul	MB Hatchery (Coghill Lake/Smok)						16481	5205325	105454	3.956+E7			196	0	122131	82
	MB Hatchery (Eahamy Lake/Smok)						0	0	0	0			0	0	0	0
	Total Hatchery						16481	5205325	105454	3.956+E7			196	0	122131	82
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary					0	0	0	0			0	0	0	0
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary					0	0	0	0			0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake					0	0	0	0			0	0	0	0
	Total Remote Release						0	0	0	0			0	0	0	0
	Other ^b						9287	5205325	15301	106619			998	0		
	Wild (Eahamy Lake/Smok)						0	0	647	106619			0	0	647	0
	Sampled Catch						0	0	25768	121402			0	1194		
Total Catch						0	0	25768	121402			0	1194	148364		
05-11 Jul	MB Hatchery (Coghill Lake/Smok)		0	0			13275	296374	64206	2.269+E7					77481	44
	MB Hatchery (Eahamy Lake/Smok)		0	0			0	0	0	0					0	0
	Total Hatchery		0	0			13275	296374	64206	2.269+E7					77481	44
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary	0	0			0	0	0	0					0	0
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary	0	0			0	0	0	0					0	0
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake	0	0			0	0	0	0					0	0
	Total Remote Release		0	0			0	0	0	0					0	0
	Other ^b		69	0			0	296374	95682	259228						
	Wild (Eahamy Lake/Smok)		0	0			0	0	1597	259228					1597	1
	Sampled Catch		69	0			13275		161485		0		0			
Total Catch		69	0			13275		161485		0		0		174829		

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Eaher Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	% ^a
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
12-18 Jul	MB Hatchery (Coghill Lake/Smolt)		0	0			10735	113370	53231	2.568+E7			24	0	63990	61
	MB Hatchery (Eahamy Lake/Smolt)		0	0			0	0	0	0			0	0	0	0
	Total Hatchery		0	0			10735	113370	53231	2.568+E7			24	0	63990	61
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0			0	0	0	0			0	0	0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R.Estuary	0	0			0	0	0	0			0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake	0	0			0	0	0	0			0	0	0	0
	Total Remote Release		0	0			0	0	0	0			0	0	0	0
	Other ^b		313	0			839	113370	39351	93514			123	0		
	Wild (Eahamy Lake/Smolt)		0	0			0	0	774	93514			0	0	774	1
	Sampled Catch		313		0		11574		93356		0		147			
Total Catch		313		0		11574		93356		0		147		105390		
19-25 Jul	MB Hatchery (Coghill Lake/Smolt)		0	0					5244	233646			78	0	5322	73
	MB Hatchery (Eahamy Lake/Smolt)		0	0					0	0			0	0	0	0
	Total Hatchery		0	0					5244	233646			78	0	5322	73
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0					0	0			0	0	0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R.Estuary	0	0					0	0			0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake	0	0					0	0			0	0	0	0
	Total Remote Release		0	0					0	0			0	0	0	0
	Other ^b		180	0					927	256701			396	0		
	Wild (Eahamy Lake/Smolt)		0	0					443	23055			0	0	443	6
	Sampled Catch		180		0		0		6614		0		474			
Total Catch		180		0		0		6614		0		474		7268		

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
26 Jul-01 Aug	MB Hatchery (Coghill Lake/Smok)			66	3138	3435	248080	4730	398468	5133	833965	49	0	13413	32	
	MB Hatchery (Eahamy Lake/Smok)			58	1525	0	0	0	0	0	0	0	0	58	0	
	Total Hatchery			124	4663	3435	248080	4730	398468	5133	833965	49	0	13471	32	
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary		0	0	0	0	0	0	113	1908	0	0	113	0	
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary		0	0	0	0	0	0	0	0	0	0	0	0	
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake		0	0	0	0	0	0	0	0	0	0	0	0	
	Total Remote Release			0	0	0	0	0	0	113	1908	0	0	113	0	
	Other ^b				278	4663	125	390922	20736	414033	2371	2213459	247	0		
	Wild (Eahamy Lake/Smok)				0	0	876	142842	174	15565	3459	1377586	0	0	4309	11
	Sampled Catch			0	402		4436		25640		11076		296			
Total Catch			0	402		4436		25640		11076		296		41850		
02-08 Aug	MB Hatchery (Coghill Lake/Smok)			58	1525	142	226	3948	439644	1289	63025	7	0	5444	19	
	MB Hatchery (Eahamy Lake/Smok)			0	0	0	0	123	2668	0	0	0	0	123	0	
	Total Hatchery			58	1525	142	226	4071	442312	1289	63025	7	0	5567	19	
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary		0	0	0	0	0	0	0	0	0	0	0	0	
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary		0	0	0	0	0	0	114	6951	0	0	114	0	
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake		0	0	0	0	0	0	0	0	0	0	0	0	
	Total Remote Release			0	0	0	0	0	0	114	6951	0	0	114	0	
	Other ^b				824	1525	421	13217	8007	901845	5125	1035043	37	0		
	Wild (Eahamy Lake/Smok)				0	0	1118	12891	3008	459533	4494	965067	0	0	8620	30
	Sampled Catch			0	882		1681		15086		11022		44			
Total Catch			0	882		1681		15086		11022		44		28715		

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Eather Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district. (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	% ^a
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
09-15 Aug	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0	2975	516483	408	41225	10	0	3393	17		
	MB Hatchery (Eahamy Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0		
	Total Hatchery		0	0	0	0	2975	516483	408	41225	10	0	3393	17		
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0	0	0	0	0	0	0	0	0		
	Remote Release(Eahamy Lake/Smolt)	Eahamy R.Estuary	0	0	0	0	0	0	0	0	0	0	0	0		
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake	0	0	0	0	0	0	0	0	0	0	0	0		
	Total Remote Release		0	0	0	0	0	0	0	0	0	0	0	0		
	Other ^b			193	0	752	0	699	2530233	1687	425414	53	0			
	Wild (Eahamy Lake/Smolt)			0	0	0	0	9591	2013750	3534	384189	0	0	13125	66	
	Sampled Catch		0	193	752		13265		5629		63					
Total Catch		0	193	752		13265		5629		63			19902			
16-22 Aug	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0	0	0	144	1721	0	0	144	1		
	MB Hatchery (Eahamy Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0		
	Total Hatchery		0	0	0	0	0	0	144	1721	0	0	144	1		
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0	0	0	0	0	0	0	0	0		
	Remote Release(Eahamy Lake/Smolt)	Eahamy R.Estuary	0	0	0	0	0	0	0	0	0	0	0	0		
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake	0	0	0	0	0	0	0	0	0	0	0	0		
	Total Remote Release		0	0	0	0	0	0	0	0	0	0	0	0		
	Other ^b			0	0	267	0	2050	2581334	1184	28495	1	0			
	Wild (Eahamy Lake/Smolt)			67	0	0	0	6052	2581334	753	26774	0	0	6872	65	
	Sampled Catch		0	67	267		8102		2081		0					
Total Catch		0	67	267		8102		2081		1			10518			

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Eather Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

Appendix C 4.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
23-29 Aug	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MB Hatchery (Eahamy Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Hatchery		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			0	0	0	0	0	0	0	0	0	0	0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R.Estuary			0	0	0	0	0	0	0	0	0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake			0	0	18	280	0	0	0	0	0	0	18	1
	Total Remote Release				0	0	18	280	0	0	0	0	0	0	18	1
	Other ^b				92	0	1054	156350	251	0						
	Wild (Eahamy Lake/Smolt)				238	0	1598	156070	0	0					1836	56
	Sampled Catch		0	0			330	2670		0		0				
	Total Catch		0	0			330	2670		251		0			3251	
	TOTAL HATCHERY		0	182			44068	299392		6974		372			350988	57.56
	TOTAL R. RELEASE		0	0			0	18		227		0			245	0.04
	TOTAL WILD ESHAMY		0	67			2232	24865		12240		0			39404	6.462
	TOTAL CATCH		562	1544			58083	517304		30059		2266			609818	

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Eather Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

Appendix C 4.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1992
by period and district.

Week	Contributor (Stock/Type)	Remote Release Site	District		% *
			225	Contrib.	
21-27 Jun	MB Hatchery (Coghill Lake/Smolt)		8427	1568268	100
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		8427	1568268	100
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		0	1568268	
	Wild (Eshamy Lake/Smolt)		0	0	0
		Sampled Catch		8427	
	Total Catch		8427		
28 Jun-04 Jul	MB Hatchery (Coghill Lake/Smolt)		34728	2.465+E7	100
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		34728	2.465+E7	100
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		1	4002	
	Wild (Eshamy Lake/Smolt)		126	4002	0
		Sampled Catch		34855	
	Total Catch		34855		

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1992
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		% ^a
			225		
			Contrib.	Var.	
05-11 Jul	MB Hatchery (Coghill Lake/Smolt)		3042	131947	9
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		3042	131947	9
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		30464	131947	
	Wild (Eshamy Lake/Smolt)		0	0	0
		Sampled Catch		33506	
	Total Catch		33506		
12-18 Jul	MB Hatchery (Coghill Lake/Smolt)		21484	6944873	39
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		21484	6944873	39
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		33019	6978632	
	Wild (Eshamy Lake/Smolt)		223	33759	0
		Sampled Catch		54726	
	Total Catch		54726		

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 4.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1992
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		% ^a
			225	Var.	
19-25 Jul	MB Hatchery (Coghill Lake/Smolt)		16135	2212178	63
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		16135	2212178	63
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		9481	2212178	
	Wild (Eshamy Lake/Smolt)		0	0	0
	Sampled Catch		25616		
Total Catch		25616			
26 Jul-01 Aug	MB Hatchery (Coghill Lake/Smolt)		1109	2212178	63
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	Total Hatchery		1109	2212178	63
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		652	2212178	
	Wild (Eshamy Lake/Smolt)		0	0	0
	Sampled Catch		0		
Total Catch		1761			
TOTAL HATCHERY			84925		
TOTAL R. RELEASE			0		
TOTAL WILD ESHAMY			349		
TOTAL CATCH			158891		

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 and Davis Lake (1988 release of 657,287 fry).

Appendix C 4.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1992 by period and district.

Week	Contributor	Facility	District												Total	% *	
			221		222		223		225		228		229				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
14-20 Jun	Hatchery	Wally N.						0	0						0	0	
		Solomon G.						0							0	0	
		Total						0	0						0	0	
	Wild							6	0						6	100	
		Sampled Catch	0		0		0		6		0		0				
		Total Catch	0		0		0		6		0		0		6		
21-27 Jun	Hatchery	Wally N.						0	0						0	0	
		Solomon G.						12							12	60	
		Total						12	0						12	60	
	Wild							8	0						8	40	
		Sampled Catch	0		0		0		20		0		0				
		Total Catch	0		0		0		20		0		0		20		
28 Jun-04 Jul	Hatchery	Wally N.					0	0	21	0					21	54	
		Solomon G.					0		0						0	0	
		Total					0	0	21	0					21	54	
	Wild						12	0	6	0					18	46	
		Sampled Catch	0		0		12		27		0		0				
		Total Catch	0		0		12		27		0		0		39		
05-11 Jul	Hatchery	Wally N.	0	0			0	0	0	0					0	0	
		Solomon G.	0	0			0	0	0	0					0	0	
		Total	0	0			0	0	0	0					0	0	
	Wild		17	0			18	0	110	0					145	100	
		Sampled Catch	17		0		0		110		0		0				
		Total Catch	17		0		18		110		0		0		145		
12-18 Jul	Hatchery	Wally N.	0	0			0	0	143	930					143	57	
		Solomon G.	17	2			0		0						17	7	
		Total	17	2			0	0	143	930					160	64	
	Wild		10	2			69	0	12	930					91	36	
		Sampled Catch	27		0		69		155		0		0				
		Total Catch	27		0		69		155		0		0		251		

* As % of total catch over all districts.

-Continued-

Appendix C 4.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor	Facility	District										Total	% *		
			221		222		223		225		228				229	
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.
19-25 Jul	Hatchery	Wally N.	0	0					1	0			0	0	1	1
		Solomon G.	0						0				0		0	0
		Total	0	0					1	0			0	0	1	1
	Wild		73	0					0	0			5	0	78	99
		Total Catch	73		0		0		0		0		5		79	
26 Jul-01 Aug	Hatchery	Wally N.			0	0	177	6	0	0			0	0	177	81
		Solomon G.			0		0		0				0		0	0
		Total			0	0	177	6	0	0			0	0	177	81
	Wild			9	0	0	0	6	30	0			2	0	41	19
		Total Catch	0		9		177		30		0		2		218	
02-08 Aug	Hatchery	Wally N.			0	0	0	0	0	0					0	0
		Solomon G.			0		0		0						0	0
		Total			0	0	0	0	0	0					0	0
	Wild			198	0	683	0	147	0						1028	100
		Total Catch	0		198		683		147		0		0		1028	
09-15 Aug	Hatchery	Wally N.			0	0	3435	100866	536	8921			0	0	3971	73
		Solomon G.			0		1325	182294	0				0		1325	24
		Total			0	0	4760	283160	536	8921					5296	
	Wild			146	0	1	283160	0	8921					0	147	3
		Total Catch	0		146		4761		536		0		0		5451	
16-22 Aug	Hatchery	Wally N.			1744	22087	12733	1993792	667	9294					15144	96
		Solomon G.			0		274	9302	0						274	2
		Total			1744	22087	13007	2003094	667	9294					15418	98
	Wild			189	22087	182	2003094	0	9294						371	2
		Total Catch	0		1933		13189		667		0		0		15789	

* As % of total catch over all districts.

-Continued-

Appendix C 4.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1992 by period and district (Continued)

Week	Contributor	Facility	District												Total	% ^a
			221		222		223		225		228		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
23-29 Aug	Hatchery	Wally N.					30894	35009816	394	9246					31288	100
		Solomon G.					0		0					0	0	
		Total					30894	35009816	394	9246					31288	100
	Wild						0	35009816	0	9246					0	0
		Sampled Catch	0		0		30894		394		0		0			
	Total Catch	0		0		30894		394		0		0		31288		
30 Aug-05 Sept	Hatchery	Wally N.	0	0			45514	55850004	144	0					45658	100
		Solomon G.	0				0		0						0	0
		Total	0	0			45514	55850004	144	0					45658	100
	Wild		122	0			0	55850004	0	0					122	0
		Sampled Catch	0		0		45514		0		0		0			
	Total Catch	122		0		45514		144		0		0		45780		
06-12 Sept	Hatchery	Wally N.					16900	34624	30	0					16930	100
		Solomon G.					0		0						0	0
		Total					16900	34624	30	0					16930	100
	Wild						0	34624	0	0					0	0
		Sampled Catch	0		0		16900		0		0		0			
	Total Catch	0		0		16900		30		0		0		16930		
13-19 Sept	Hatchery	Wally N.					1687	0	3	0					1690	100
		Solomon G.					0		0						0	0
		Total					1687	0	3	0					1690	100
	Wild						0	0	0	0					0	0
		Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		1687		3		0		0		1690		
20-26 Sept	Hatchery	Wally N.					372	0							372	100
		Solomon G.					0								0	0
		Total					372	0							372	100
	Wild						0	0							0	0
		Sampled Catch	0		0		0		0		0		0			
	Total Catch	0		0		372		0		0		0		372		
	TOTAL HATCHERY	17		1744		113311		1415		0		0		117023	98	
	TOTAL WILD	222		542		965		855		0		15		2063	2	
	TOTAL CATCH	239		2286		114276		2270		0		15		119086		

^a As % of total catch over all districts.

Appendix C 4.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1992 by period and district.

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
21-27 Jun	Hatchery	Wally N.	0	0			0	0
		Solomon G.	0	0			0	0
		Total	0	0			0	0
	Wild		18	0			18	100
		Sampled Catch	18		0			
		Total Catch	18		0		18	
28 Jun-04 Jul	Hatchery	Wally N.	0	0			0	0
		Solomon G.	0	0			0	0
		Total	0	0			0	0
	Wild		2	0			2	100
		Sampled Catch	2		0			
		Total Catch	2		0		2	
05-11 Jul	Hatchery	Wally N.	0	0			0	0
		Solomon G.	0	0			0	0
		Total	0	0			0	0
	Wild		4	0			4	
		Sampled Catch	4		0			
		Total Catch	4		0		4	
12-18 Jul	Hatchery	Wally N.					0	
		Solomon G.					0	
		Total					0	
	Wild						0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	
19-25 Jul	Hatchery	Wally N.					0	
		Solomon G.					0	
		Total					0	
	Wild						0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	

* As % of total catch over all districts.

-Continued-

Appendix C 4.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1992 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
26 Jul-01 Aug	Hatchery	Wally N.			67	0	67	100
		Solomon G.			0	0	0	0
		Total			67	0	67	100
	Wild	Sampled Catch	0		0		0	0
		Total Catch	0		67		67	
02-08 Aug	Hatchery	Wally N.			3612	388519	3612	100
		Solomon G.			0	0	0	0
		Total			3612	388519	3612	100
	Wild	Sampled Catch	0		0		0	0
		Total Catch	0		3612		3612	
09-15 Aug	Hatchery	Wally N.			5238	279392	5238	100
		Solomon G.			0	0	0	0
		Total			5238	279392	5238	100
	Wild	Sampled Catch	0		0		0	0
		Total Catch	0		5238		5238	
16-22 Aug	Hatchery	Wally N.	0	0	11752	5114810	11752	87
		Solomon G.	1797	455389	0	0	1797	13
		Total	1797	455389	11752	5114810	13549	100
	Wild	Sampled Catch	0		0		0	0
		Total Catch	0		11752		11752	
23-29 Aug	Hatchery	Wally N.	0	0	15397	4572011	15397	78
		Solomon G.	4278	2760660	0	0	4278	22
		Total	4278	2760660	15397	4572011	19675	100
	Wild	Sampled Catch	0		0		0	0
		Total Catch	0		15397		15397	

* As % of total catch over all districts.

-Continued-

Appendix C 4.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1992 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
30 Aug-05 Sept	Hatchery	Wally N.	0	0	1158	0	1158	10
		Solomon G.	10236	1.577+E7	0	0	10236	90
		Total	10236	0	1158	0	11394	100
	Wild		0	0	0	0	0	0
		Sampled Catch	10236		0			
		Total Catch	10236		1158		11394	
06-12 Sept	Hatchery	Wally N.	0	0	6106	201760	6106	45
		Solomon G.	6680	7548621	0	0	6680	49
		Total	6680	7548621	6106	201760	12786	94
	Wild		0	7548621	869	201760	869	6
		Sampled Catch	6680		6975			
		Total Catch	6680		6975		13655	
13-19 Sept	Hatchery	Wally N.	0	0	2501	1286188	2501	52
		Solomon G.	2339	1346239	0	0	2339	48
		Total	2339	1346239	2501	1286188	4840	100
	Wild		0	1346239	0	1286188	0	0
		Sampled Catch	2339		2501			
		Total Catch	2339		2501		4840	
20-26 Sept	Hatchery	Wally N.	0	0			0	0
		Solomon G.	236	12595			236	100
		Total	236	12595			236	100
	Wild		0	12595			0	0
		Sampled Catch	236		0			
		Total Catch	236		0		236	
27 Sept-03 Oct	Hatchery	Wally N.					0	
		Solomon G.					0	
		Total					0	
	Wild						0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	

* As % of total catch over all districts.

-Continued-

Appendix C 4.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1992 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
04-10 Oct	Hatchery	Wally N.					0	
		Solomon G.					0	
		Total					0	
	Wild	Sampled Catch	0		0			
		Total Catch	0		0		0	
11-17 Oct	Hatchery	Wally N.					0	
		Solomon G.					0	
		Total					0	
	Wild	Sampled Catch	0		0			
		Total Catch	0		0		0	0
18-24 Oct	Hatchery	Wally N.	0	0			0	0
		Solomon G.	1824	0			1824	100
		Total	1824	0			1824	100
	Wild	Sampled Catch	0		0			
		Total Catch	1824		0		1824	
TOTAL HATCHERY			27390		45831		73221	99
TOTAL WILD			24		869		893	1
TOTAL CATCH			27414		46700		74114	

* As % of total catch over all districts.

Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district.

Week	Contributor (Stock/Type)	Remote Release Site	District								Total	% ^a			
			222		223		225		226				229		
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.	
06-12 Jun	MB Hatchery (Coghill Lake/Smolt)				0	0							0	0	
	MB Hatchery (Eahamy Lake/Smolt)				0	0							0	0	
	MB Hatchery (Eyak/Fry)				0	0							0	0	
	Total Hatchery				0	0							0	0	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			0	0							0	0	
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary			0	0							0	0	
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake			0	0							0	0	
	Remote Release(Eahamy Lake/Fry)	Pass Lake			0	0							0	0	
	Total Remote Release				0	0							0	0	
	Other ^b				338	0									
	Wild (Eahamy Lake/Smolt)				0	0							0	0	
	Sampled Catch			0	0		0		0		0				
Total Catch			0	338		0		0		0		338			
13-19 Jun	MB Hatchery (Coghill Lake/Smolt)				71	1712	147	607			1	0	219	14	
	MB Hatchery (Eahamy Lake/Smolt)				0	0	0	0			0	0	0	0	
	MB Hatchery (Eyak/Fry)				0	0	0	0			0	0	0	0	
	Total Hatchery				71	1712	147	607			1	0	219	14	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			0	0	0	0			0	0	0	0	
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary			0	0	0	0			0	0	0	0	
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake			0	0	0	0			0	0	0	0	
	Remote Release(Eahamy Lake/Fry)	Pass Lake			0	0	0	0			0	0	0	0	
	Total Remote Release				0	0	0	0			0	0	0	0	
	Other ^b				1025	1712	211	607			155	0			
	Wild (Eahamy Lake/Smolt)				0	0	0	0			0	0	0	0	
	Sampled Catch			0	1096		358		0		0				
Total Catch			0	1096		358		0		156		1610			

^a As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
20 -26 Jun	MB Hatchery (Coghill Lake/Smolt)			841	29128	2326	129460			16	0	3183	31	
	MB Hatchery (Eahamy Lake/Smolt)			0	0	0	0			0	0	0	0	
	MB Hatchery (Eyak/Fry)			0	0	0	0			0	0	0	0	
	Total Hatchery			841	29128	2326	129460			16	0	3183	31	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary		91	2676	0	0			0	0	91	1	
	Remote Release (Eahamy Lake/Smolt)	Eahamy R. Estuary		0	0	0	0			0	0	0	0	
	Remote Release (Eahamy Lake/Fry)	Esther Pass Lake		0	0	0	0			0	0	0	0	
	Remote Release (Eahamy Lake/Fry)	Pass Lake		0	0	0	0			0	0	0	0	
	Total Remote Release			91	2676	0	0			0	0	91	1	
	Other †				2053	31804	541	129460			4159	0		
	Wild (Eahamy Lake/Smolt)				0	0	233	0			0	0	233	2
	Sampled Catch			0	2985		3100		0		0			
Total Catch			0	2985		3100		0		4175		10260		
27 Jun-03 Jul	MB Hatchery (Coghill Lake/Smolt)			7917	796446	18198	3088506			14	0	26129	55	
	MB Hatchery (Eahamy Lake/Smolt)			0	0	0	0			0	0	0	0	
	MB Hatchery (Eyak/Fry)			0	0	0	0			0	0	0	0	
	Total Hatchery			7917	796446	18198	3088506			14	0	26129	55	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary		1336	15842	819	118015			0	0	2155	5	
	Remote Release (Eahamy Lake/Smolt)	Eahamy R. Estuary		175	17370	463	170905			0	0	638	1	
	Remote Release (Eahamy Lake/Fry)	Esther Pass Lake		0	0	0	0			0	0	0	0	
	Remote Release (Eahamy Lake/Fry)	Pass Lake		0	0	0	0			0	0	0	0	
	Total Remote Release			1511	33212	1282	288920			0	0	2793	6	
	Other †				8925	832643	5211	3429938			3795	0		
	Wild (Eahamy Lake/Smolt)				90	2985	383	32512			0	0	473	1
	Sampled Catch			0	18443		25074		0		0			
Total Catch			0	18443		25074		0		3809		47326		

* As % of total catch over all districts.

† Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
04-10 Jul	MB Hatchery (Coghill Lake/Smolt)				7715	556684	15728	3475385			14	134	23437	52
	MB Hatchery (Eshamy Lake/Smolt)				0	0	227	8275			0	0	227	1
	MB Hatchery (Eyak/Fry)				0	0	0	0			0	0	0	0
	Total Hatchery				7715	556684	15955	3483660			14	134	23684	53
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			1363	79187	842	141415			0	0	2205	5
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary			98	4318	1946	1168997			0	0	2044	5
	Remote Release(Eshamy Lake/Fry)	Erther Pass Lake			0	0	0	0			0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake			0	0	0	0			0	0	0	0
	Total Remote Release				1461	83505	2788	1310412			0	0	4249	9
	Other ^b				6300	645492	5975	4903755			3995	134		
	Wild (Eshamy Lake/Smolt)				337	5303	668	109683			0	0	805	2
	Sampled Catch			0	15613		25386		0		4009			
Total Catch			0	15613		25386		0		4009		45008		
11-17 Jul	MB Hatchery (Coghill Lake/Smolt)				4534	265737	7626	1300752			0	0	12160	60
	MB Hatchery (Eshamy Lake/Smolt)				0	0	290	20691			0	0	290	1
	MB Hatchery (Eyak/Fry)				0	0	0	0			0	0	0	0
	Total Hatchery				4534	265737	7916	1321443			0	0	12450	61
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			2388	239663	0	0			0	0	2388	12
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary			101	337	510	51376			0	0	611	3
	Remote Release(Eshamy Lake/Fry)	Erther Pass Lake			0	0	0	0			0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake			0	0	0	0			0	0	0	0
	Total Remote Release				2489	240000	510	51376			0	0	2999	15
	Other ^b				2406	507956	482	1396078			1456	0		
	Wild (Eshamy Lake/Smolt)				117	2219	368	23259			0	0	485	2
	Sampled Catch			0	9546		9276		0		1456			
Total Catch			0	9546		9276		0		1456		20278		

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Erther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

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Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
18-24 Jul	MB Hatchery (Coghill Lake/Smolt)										0	0	0	0
	MB Hatchery (Eahamy Lake/Smolt)										0	0	0	0
	MB Hatchery (Eyak/Fry)										0	0	0	0
	Total Hatchery										0	0	0	0
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary									0	0	0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary									0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake									0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake									0	0	0	0
	Total Remote Release										0	0	0	0
	Other ^b										458	0		
Wild (Eahamy Lake/Smolt)										0	0	0	0	
	Sampled Catch		0	0	0	0	0	0	0	458				
	Total Catch		0	0	0	0	0	0	0	458		458		
25-31 Jul	MB Hatchery (Coghill Lake/Smolt)					4647	22490				0	0	4647	44
	MB Hatchery (Eahamy Lake/Smolt)					3245	842443				0	0	3245	31
	MB Hatchery (Eyak/Fry)					0	0				0	0	0	0
	Total Hatchery					7892	864933				0	0	7892	75
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary				69	904				0	0	69	1
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary				1204	279094				0	0	1204	11
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake				31	153				0	0	31	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake				12	19				0	0	12	0
	Total Remote Release					1316	280170				0	0	1316	13
	Other ^b						2	1245322			109	0		
Wild (Eahamy Lake/Smolt)						1200	100219			0	0	1200	11	
	Sampled Catch		0	0	0	10410		0		0				
	Total Catch		0	0	0	10410		0		109		10519		

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Ether Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 637,287 fry).

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Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *	
			222		223		225		226		229				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
01-07 Aug	MB Hatchery (Coghill Lake/Smolt)		1733	42987	3831	288575	26	111	0	0	5590	20			
	MB Hatchery (Eahamy Lake/Smolt)		1293	89931	5641	2946118	797	28170	0	0	7731	28			
	MB Hatchery (Eyak/Fry)		0	0	0	0	0	0	0	0	0	0			
	Total Hatchery		3026	132918	9472	3234693	823	28281	0	0	13321	49			
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary		921	34839	48	2246	0	0	0	0	969	4		
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary		2287	284448	3194	1242002	269	4196	0	0	5750	21		
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake		19	98	29	169	0	0	0	0	48	0		
	Remote Release(Eahamy Lake/Fry)	Pass Lake		40	506	0	0	0	0	0	0	40	0		
	Total Remote Release			3267	319891	3271	1244417	269	4196	0	0	6807	25		
	Other ^b			740	462886	1754	4610078	1911	33469	338	0				
	Wild (Eahamy Lake/Smolt)			500	10077	1848	130968	184	992	0	0	2532	9		
	Sampled Catch			0	7533	16345	3187	0							
	Total Catch			0	7533	16345	3187	338				27403			
	08-14 Aug	MB Hatchery (Coghill Lake/Smolt)		1276	57692	0	0	547	22768	0	0	1823	6		
MB Hatchery (Eahamy Lake/Smolt)			1801	220659	829	61119	1603	140684	0	0	4233	15			
MB Hatchery (Eyak/Fry)			0	0	4931	2546145	0	0	0	0	4931	17			
Total Hatchery			3077	278351	5760	2607264	2150	163452	0	0	10987	38			
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary		826	77216	0	0	0	0	0	0	826	3		
Remote Release(Eahamy Lake/Smolt)		Eahamy R. Estuary		4018	913460	2194	635839	2815	270880	0	0	9027	31		
Remote Release(Eahamy Lake/Fry)		Esther Pass Lake		78	1271	0	0	0	0	0	78	0			
Remote Release(Eahamy Lake/Fry)		Pass Lake		31	197	0	0	130	2433	0	0	161	1		
Total Remote Release				4953	992144	2194	635839	2945	273313	0	0	10092	35		
Other ^b				703	1437553	1124	3472427	285	545416	214	0				
Wild (Eahamy Lake/Smolt)				1578	167058	2063	229324	1981	108651	0	0	5622	19		
Sampled Catch				0	10311	11141	7361	0							
Total Catch				0	10311	11141	7361	214				29027			

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

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Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
15-21 Aug	MB Hatchery (Coghill Lake/Smolt)		0	0	555	36405	119	7445	282	22540	0	0	956	2
	MB Hatchery (Eshamy Lake/Smolt)		0	0	179	27455	7252	6419581	1804	340281	0	0	9235	18
	MB Hatchery (Eyak/Fry)		0	0	0	0	0	0	0	0	0	0	0	0
	Total Hatchery		0	0	734	63860	7371	6427026	2086	362821	0	0	10191	20
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0	0	0	0	0	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	1002	91247	14494	5370407	3470	605224	0	0	18966	38
	Remote Release(Eshamy Lake/Fry)	Ether Pass Lake	0	0	0	0	114	2525	52	621	0	0	166	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0	172	7248	26	437	0	0	198	0
	Total Remote Release		0	0	1002	91247	14780	5380180	3548	606282	0	0	19330	39
	Other ^b		120	0	269	168370	6343	13941242	2788	#####	46	0		
	Wild (Eshamy Lake/Smolt)		0	0	337	13263	7844	2134036	2818	154216	0	0	10999	22
	Sampled Catch		0		2342		36338		11240		0			
	Total Catch		120		2342		36338		11240		46		50086	
22-28 Aug	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0
	MB Hatchery (Eshamy Lake/Smolt)		0	0	625	49238	1307	254420	2081	162143			4013	10
	MB Hatchery (Eyak/Fry)		0	0	0	0	0	0	0	0			0	0
	Total Hatchery		0	0	625	49238	1307	254420	2081	162143			4013	10
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0	0	0	0	0			0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	200	14845	22704	50580000	1504	79211			24408	58
	Remote Release(Eshamy Lake/Fry)	Ether Pass Lake	0	0	0	0	111	1287	0	0			111	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	73	938	332	20756	0	0			405	1
	Total Remote Release		0	0	273	15783	23147	50602043	1504	79211			24924	60
	Other ^b		34	0	628	78121	409	53335336	171	308958				
	Wild (Eshamy Lake/Smolt)		0	0	498	13100	9043	2478873	2066	67604			11607	28
	Sampled Catch		0		2024		33906		5822		0			
	Total Catch		34		2024		33906		5822		0		41786	

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 394,210 fry; 1989 release of 603,219 fry), Ether Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District										Total	% *		
			222		223		225		226		229					
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
29 Aug-04 Sep	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0	0	
	MB Hatchery (Eshamy Lake/Smolt)				1085	292102	1832	230964	0	0					2917	26
	MB Hatchery (Eyak/Fry)				0	0	0	0	0	0					0	0
	Total Hatchery				1085	292102	1832	230964	0	0					2917	26
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			0	0	0	0	0	0					0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary			163	19839	3459	1267680	295	582					3917	33
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake			34	1000	49	286	14	3					97	1
	Remote Release(Eshamy Lake/Fry)	Pass Lake			0	0	0	0	0	0					0	0
	Total Remote Release				197	20839	3508	1267966	309	585					4014	36
	Other ^b				395	327950	8	2094744	1	771						
	Wild (Eshamy Lake/Smolt)				423	15009	3369	595814	172	186					3964	33
	Sampled Catch			0	2100		8717		482			0				
Total Catch			0	2100		8717		482			0			11299		
05-11 Sept	MB Hatchery (Coghill Lake/Smolt)				0	0	0	0						0	0	
	MB Hatchery (Eshamy Lake/Smolt)				86	493	438	0						524	22	
	MB Hatchery (Eyak/Fry)				0	0	0	0						0	0	
	Total Hatchery				86	493	438	0						524	22	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary			0	0	0	0						0	0	
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary			85	493	827	0						912	38	
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake			0	0	12	0						12	1	
	Remote Release(Eshamy Lake/Fry)	Pass Lake			0	0	0	0						0	0	
	Total Remote Release				85	493	839	0						924	39	
	Other ^b				126	986	2	0								
	Wild (Eshamy Lake/Smolt)				0	0	806	0						806	34	
	Sampled Catch			0	297		0		0		0					
Total Catch			0	297		2085		0		0				2382		

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry, 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry, 1989 release of 154,644 fry), and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 3.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District								Total	% *			
			222		223		225		226				229		
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.	
12-18 Sept	MB Hatchery (Coghill Lake/Smolt)				0	0	0	0					0	0	
	MB Hatchery (Eshamy Lake/Smolt)					45	0	70	0				115	24	
	MB Hatchery (Eyak/Fry)					0	0	0	0				0	0	
	Total Hatchery					45	0	70	0				115	24	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary					0	0	0	0				0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary					44	0	132	0				176	36
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake					0	0	2	0				2	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake					0	0	0	0				0	0
	Total Remote Release						44	0	134	0				178	37
	Other ^b						62	0	0	0					
	Wild (Eshamy Lake/Smolt)						3	0	129	0				132	27
		Sampled Catch					0		154				0		487
	Total Catch					0		154				0		487	
19-25 Sept	MB Hatchery (Coghill Lake/Smolt)													0	
	MB Hatchery (Eshamy Lake/Smolt)													0	
	MB Hatchery (Eyak/Fry)													0	
	Total Hatchery													0	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary												0	
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary												0	
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake												0	
	Remote Release(Eshamy Lake/Fry)	Pass Lake												0	
	Total Remote Release													0	
	Other ^b														0
	Wild (Eshamy Lake/Smolt)														0
		Sampled Catch					0		0				0		0
	Total Catch					0		0				0		0	
	TOTAL HATCHERY					0		29756				7140		45	
	TOTAL R. RELEASE					0		15373				8575		0	
	TOTAL WILD ESHAMY					0		3683				7221		0	
	TOTAL CATCH					154		72782				28092		14770	
														298267	

* As % of total catch over all districts.

^b Other contrib. may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 394,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry), and Davis Lake (1988 release of 637,287 fry).

Appendix C 5.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1993 by period and district.

Week	Contributor (Stock/Type)	Remote Release Site	District		% *
			225	Var.	
27 Jun-03 Jul	MB Hatchery (Coghill Lake/Smolt)		4330	0	99
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	MB Hatchery(Eyak/Fry)		0	0	0
	Total Hatchery		4330	0	99
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		33	0	
Wild (Eshamy Lake/Smolt)		0	0	0	
	Sampled Catch		0		
	Total Catch		4363		
04-10 Jul	MB Hatchery (Coghill Lake/Smolt)		12737	1330077	99
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0
	MB Hatchery (Eyak/Fry)		0	0	0
	Total Hatchery		12737	1330077	99
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		87	1330077	
Wild (Eshamy Lake/Smolt)		0	0	0	
	Sampled Catch		12824		
	Total Catch		12824		

* As % of total catch over all districts.

^b Other contributions may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1993 by
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District			
			215			
			Contrib.	Var.	% *	
11-17 Jul	MB Hatchery (Coghill Lake/Smolt)		9898	264265	100	
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0	
	MB Hatchery (Eyak/Fry)		0	0	0	
	Total Hatchery		9898	264265	100	
	Remote Release (Coghill Lake/Smolt)	Coghull R. Estuary	0	0	0	
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	
	Total Remote Release		0	0	0	
	Other *		0	264265		
	Wild (Eshamy Lake/Smolt)		0	0	0	
	Sampled Catch		9898			
	Total Catch		9898			
	18-24 Jul	MB Hatchery (Coghill Lake/Smolt)		22632	6086455	100
		MB Hatchery (Eshamy Lake/Smolt)		0	0	0
MB Hatchery (Eyak/Fry)			0	0	0	
Total Hatchery			22632	6086455	100	
Remote Release (Coghill Lake/Smolt)		Coghull R. Estuary	0	0	0	
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0	
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0	
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0	
Total Remote Release			0	0	0	
Other *			0	6086455		
Wild (Eshamy Lake/Smolt)			0	0	0	
Sampled Catch			22632			
Total Catch			22632			

* As % of total catch over all districts.

* Other contributions may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1993 by
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		% *
			225	225	
			Contrib.	Var.	
25-31 Jul	MB Hatchery (Coghill Lake/Smolt)		18994	144149	83
	MB Hatchery (Eshamy Lake/Smolt)		3414	296981	15
	MB Hatchery (Eyak/Fry)		0	0	0
	Total Hatchery		22408	441130	98
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0
	Total Remote Release		0	0	0
	Other ^b		2	445334	
	Wild (Eshamy Lake/Smolt)		406	4204	2
	Sampled Catch		22816		
	Total Catch		22816		
	01-07 Aug	MB Hatchery (Coghill Lake/Smolt)		14065	6644871
MB Hatchery (Eshamy Lake/Smolt)			6100	5753287	29
MB Hatchery (Eyak/Fry)			0	0	0
Total Hatchery			20165	12398158	97
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary	0	0	0
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0
Total Remote Release			0	0	0
Other ^b			2	12424622	
Wild (Eshamy Lake/Smolt)			583	26464	3
Sampled Catch			20750		
Total Catch			20750		

* As % of total catch over all districts.

^b Other contributions may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake(1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 5.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1993 by
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		
			225		
			Contrib.	Var.	% *
06-14 Aug	MB Hatchery (Coghill Lake/Smolt)		1832	252026	27
	MB Hatchery (Eshamy Lake/Smolt)		3816	1219677	56
	MB Hatchery (Eyak/Fry)		0	0	0
	Total Hatchery		5648	1471703	83
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	63	993	1
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	381	36374	6
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0
	Total Remote Release		444	37367	7
	Other ^b		241	1547432	
	Wild (Eshamy Lake/Smolt)		496	38362	7
	Sampled Catch		6829		
	Total Catch		6829		
	15-21 Aug	MB Hatchery (Coghill Lake/Smolt)		578	5291
MB Hatchery (Eshamy Lake/Smolt)			3276	566007	85
MB Hatchery (Eyak/Fry)			0	0	0
Total Hatchery			3854	571298	100
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary	0	0	0
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0
Total Remote Release			0	0	0
Other ^b			1	571298	
Wild (Eshamy Lake/Smolt)			0	0	0
Sampled Catch			3855		
Total Catch			3855		

* As % of total catch over all districts.

^b Other contributions may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

-Continued-

Appendix C 3.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1993 by
by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		% *	
			Contrib.	Var.		
22-28 Aug	MB Hatchery (Coghill Lake/Smolt)		115	3312	3	
	MB Hatchery (Eshamy Lake/Smolt)		2913	880657	73	
	MB Hatchery (Eyak/Fry)		0	0	0	
	Total Hatchery		3028	883969	76	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	
	Total Remote Release		0	0	0	
	Other ^b		841	887919		
	Wild (Eshamy Lake/Smolt)		125	3950	3	
	Sampled Catch		3994			
	Total Catch		3994			
	29 Aug-04 Sept	MB Hatchery (Coghill Lake/Smolt)		205	10518	24
		MB Hatchery (Eshamy Lake/Smolt)		650	53041	76
MB Hatchery (Eyak/Fry)			0	0	0	
Total Hatchery			855	63559	100	
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary	0	0	0	
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0	
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0	
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0	
Total Remote Release			0	0	0	
Other ^b			1	63559		
Wild (Eshamy Lake/Smolt)			0	0	0	
Sampled Catch			856			
Total Catch			856			
TOTAL HATCHERY			105555			
TOTAL R. RELEASE			444			
TOTAL WILD ESHAMY		1610				
TOTAL CATCH		108817				

* As % of total catch over all districts.

^b Other contributions may contain wild fish and/or fish from untagged remote releases at Pass Lake (1988 release of 594,210 fry; 1989 release of 603,219 fry), Esther Pass Lake (1988 release of 153,031 fry; 1989 release of 154,644 fry) and Davis Lake (1988 release of 657,287 fry).

Appendix C 5.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1993 by period and district.

Week	Contributor	Facility	District										Total	% ^a	
			222		223		225		226		229				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
06-12 Jun	Hatchery	Solomon Gulch												0	
		Sampled Catch	0		0		0		0		0				
		Total Catch	0		0		0		0		0			0	
13-19 Jun	Hatchery	Solomon Gulch			0	0								0	0
		Sampled Catch	0		15		0		0		0				
		Total Catch	0		15		0		0		0			15	
20-26 Jun	Hatchery	Solomon Gulch			0	0								0	0
		Sampled Catch	0		32		0		0		0				
		Total Catch	0		32		0		0		0			32	
27 Jun-03 Jul	Hatchery	Solomon Gulch			0	0	0	0						0	0
		Sampled Catch	0		159		98		0		0				
		Total Catch	0		159		98		0		0			257	
04-10 Jul	Hatchery	Solomon Gulch			0	0	0	0						0	0
		Sampled Catch	0		312		287		0		0				
		Total Catch	0		312		287		0		0			599	
11-17 Jul	Hatchery	Solomon Gulch			0	0	0	0						0	0
		Sampled Catch	0		91		12		0		0				
		Total Catch	0		91		12		0		0			103	
18-24 Jul	Hatchery	Solomon Gulch									0	0	0	0	0
		Sampled Catch	0		0		0		0		0				
		Total Catch	0		0		0		0		4			4	
25-31 Jul	Hatchery	Solomon Gulch					0	0						0	0
		Sampled Catch	0		0		10		0		0				
		Total Catch	0		0		10		0		0			10	

^a As % of total catch over all districts.

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Appendix C 5.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District										Total	% ^a
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
01-07 Aug	Hatchery	Solomon Gulch			100	5265	11	34	0	0			111	10
		Sampled Catch	0		604			36		528		0		
		Total Catch	0		604			36		528		0	1168	
08-14 Aug	Hatchery	Solomon Gulch			0	0	0	0	0	0			0	0
		Sampled Catch	0		1194			134		1359		0		
		Total Catch	0		1194			134		1359		0	2687	
15-21 Aug	Hatchery	Solomon Gulch	0	0	0	0	0	0	0	0			0	0
		Sampled Catch	17		441			117		1205		0		
		Total Catch	17		441			117		1205		0	1780	
22-28 Aug	Hatchery	Solomon Gulch	0	0	0	0	0	0	0	0			0	0
		Sampled Catch	1		2605			634		515		0		
		Total Catch	1		2605			634		515		0	3755	
29 Aug-04 Sep	Hatchery	Solomon Gulch			69	4239	0	0	0	0			69	1
		Sampled Catch	0		8399			300		0		0		
		Total Catch	0		8399			300		52		0	8751	
05-11 Sept	Hatchery	Solomon Gulch			0	0	0	0					0	0
		Sampled Catch	0		10536			0		0		0		
		Total Catch	0		10536			147		0		0	10683	
12-18 Sept	Hatchery	Solomon Gulch			0	0	0	0					0	0
		Sampled Catch	0		0			0		0		0		
		Total Catch	0		9319			20		0		0	9339	
19-25 Sept	Hatchery	Solomon Gulch			0	0							0	0
		Sampled Catch	0		0			0		0		0		
		Total Catch	0		5876			0		0		0	5876	

^a As % of total catch over all districts.

-Continued-

Appendix C 5.2.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District										Total	% ^a
			222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
26 Sept-02 Oct	Hatchery	Solomon Gulch			0	0							0	0
		Sampled Catch	0		0		0		0		0			
		Total Catch	0		484		0		0		0		484	
		TOTAL SOLOMON G.	0		169		11		0		0		180	0
		TOTAL CATCH	18		40067		1795		3659		4		45543	

^a As % of total catch over all districts.

Appendix C 5.2.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1993
by period and district.

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
22-28 Aug	Hatchery	Solomon G.			0	0	0	0
		Sampled Catch	0		193			
		Total Catch	0		193		193	
29 Aug-04 Sept	Hatchery	Solomon G.			0	0	0	0
		Sampled Catch	0		0			
		Total Catch	0		1339		1339	
05-11 Sept	Hatchery	Solomon G.					0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	
12-18 Sept	Hatchery	Solomon G.	1614	58056			1614	81
		Sampled Catch	1985		0			
		Total Catch	1985		0		1985	
19-25 Sept	Hatchery	Solomon G.	132	4278			132	66
		Sampled Catch	201		0			
		Total Catch	201		0		201	
		TOTAL SOLOMON G.	1746		0		1746	47
		TOTAL CATCH	2186		1532		3718	

* As % of total catch over all districts.

Appendix C 5.3.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1993 by period and district.

Week	Contributor	Facility	District								Total	% *
			223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
06-12 Jun	Hatchery	Wally N.	156	2017							156	60
		Solomon G.	0	0							0	0
		Total	156	2017							156	60
	Wild		106	2017							106	40
		Sampled Catch	262		0		0		0			
		Total Catch	262		0		0		0		262	
13-19 Jun	Hatchery	Wally N.	80	0	15	6					95	65
		Solomon G.	0	0	0	0					0	0
		Total	80	0	15	6					95	65
	Wild		51	0	0	6					51	35
		Sampled Catch	131		15		0		0			
		Total Catch	131		15		0		0		146	
20-26 Jun	Hatchery	Wally N.	46	154	9	34			0	0	55	62
		Solomon G.	0	0	0	0			0	0	0	0
		Total	46	154	9	34			0	0	55	62
	Wild		25	154	8	34			1	0	34	38
		Sampled Catch	71		17		0		0			
		Total Catch	71		17		0		1		89	
27 Jun-03 Jul	Hatchery	Wally N.	34	368	7	0			0	0	41	53
		Solomon G.	0	0	0	0			0	0	0	0
		Total	34	368	7	0			0	0	41	53
	Wild		28	368	6	0			2	0	36	47
		Sampled Catch	62		13		0		0			
		Total Catch	62		13		0		2		77	

* As % of total catch over all districts.

-Continued-

Appendix C 5.3.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District								Total	% *
			223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
04-10 Jul	Hatchery	Wally N.	17	50	0	0			0	0	17	55
		Solomon G.	0	0	0	0			0	0	0	
		Total	17	50	0	0			0	0	17	55
	Wild		3	50	8	0			3	0	14	45
		Sampled Catch	20		8		0		3			
		Total Catch	20		8		0		3		31	
11-17 Jul	Hatchery	Wally N.	16	45	0	0			0	0	16	70
		Solomon G.	0	0	0	0			0	0	0	
		Total	16	45	0	0			0	0	16	70
	Wild		2	45	3	0			2	0	7	30
		Sampled Catch	18		3		0		2			
		Total Catch	18		3		0		2		23	
18-24 Jul	Hatchery	Wally N.							0	0	0	
		Solomon G.							0	0	0	
		Total							0	0	0	
	Wild								6	0	6	100
		Sampled Catch	0		0		0		6			
		Total Catch	0		0		0		6		6	
25-31 Jul	Hatchery	Wally N.			0	0					0	
		Solomon G.			0	0					0	
		Total			0	0					0	
	Wild				1	0					1	100
		Sampled Catch	0		1		0		0			
		Total Catch	0		1		0		0		1	

* As % of total catch over all districts.

-Continued-

Appendix C 5.3.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District								Total	% ^a
			223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
01-07 Aug	Hatchery	Wally N.	0	0			0	0			0	
		Solomon G.	0	0			0	0			0	
		Total	0	0			0	0			0	
	Wild		30	0			2	0			32	100
	Total Catch		30		0		2		0		32	
08-14 Aug	Hatchery	Wally N.	0	0	0	0	0	0			0	
		Solomon G.	0	0	0	0	0	0			0	
		Total	0	0	0	0	0	0			0	
	Wild		120	0	1	0	6	0			127	100
	Total Catch		120		1		6		0		127	
15-21 Aug	Hatchery	Wally N.	0	0	0	0	0	0			0	
		Solomon G.	0	0	0	0	0	0			0	
		Total	0	0	0	0	0	0			0	
	Wild		3	0	3	0	2	0			8	100
	Total Catch		3		3		2		0		8	
22-28 Aug	Hatchery	Wally N.	0	0	0	0	0	0			0	0
		Solomon G.	0	0	0	0	0	0			0	0
		Total	0	0	0	0	0	0			0	0
	Wild		5	0	1	0	1	0			7	100
	Total Catch		5		1		1		0		7	

^a As % of total catch over all districts.

-Continued-

Appendix C 5.3.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District								Total	% *
			223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
29 Aug-04 Sep	Hatchery	Wally N.	0	0	0	0					0	
		Solomon G.	0	0	0	0					0	
		Total	0	0	0	0					0	
	Wild		3	0	5	0					8	100
		Sampled Catch	3		0		0		0			
		Total Catch	3		5		0		0		8	
05-11 Sept	Hatchery	Wally N.	0	0							0	
		Solomon G.	0	0							0	
		Total	0	0							0	
	Wild		2	0							2	100
		Sampled Catch	2		0		0		0			
		Total Catch	2		0		0		0		2	
12-18 Sept	Hatchery	Wally N.									0	
		Solomon G.									0	
		Total									0	
	Wild										0	
		Sampled Catch	0		0		0		0			
		Total Catch	0		0		0		0		0	
TOTAL HATCHERY			349		31		0		0		380	46
TOTAL WILD			378		36		11		14		439	54
TOTAL CATCH			727		67		11		14		819	

* As % of total catch over all districts.

Appendix C 3.3.2 Estimated hatchery contributions (Contrib.) to the chinook salmon cost recovery fishery of 1993 by period and district

Week	Contributor	Facility	District		% *
			223		
			Contrib.	Var.	
23-29 May	Hatchery	Wally N.	11	0	30
			25	0	70
		Sampled Catch	0		
		Total Catch	36		
30 May-05 Jun	Hatchery	Wally N.	78	1504	30
			183	1504	70
		Sampled Catch	261		
		Total Catch	261		
06-12 Jun	Hatchery	Wally N.	353	13063	100
			0	13063	
		Sampled Catch	353		
		Total Catch	353		
13-19 Jun	Hatchery	Wally N.	256	2213	64
			145	2213	36
		Sampled Catch	401		
		Total Catch	401		
20-26 Jun	Hatchery	Wally N.	286	703	79
			75	703	21
		Sampled Catch	361		
		Total Catch	361		

* As % of total catch over all districts.

-Continued-

Appendix C 5.3.2 Estimated hatchery contributions (Contrib.) to the chinook
salmon cost recovery fishery of 1993 by period and district (Continued)

Week	Contributor	Facility	District		% *
			223	Var.	
27 Jun-03 Jul	Hatchery	Wally N.	0	0	
	Wild		8	0	100
		Sampled Catch	8		
		Total Catch	8		
04-10 Jul	Hatchery	Wally N.	3	1	50
	Wild		3	1	50
		Sampled Catch	6		
		Total Catch	6		
11-17 Jul	Hatchery	Wally N.	20	5	100
	Wild		0	5	
		Sampled Catch	20		
		Total Catch	20		
18-24 Jul	Hatchery	Wally N.	0	0	
	Wild		7	0	175
		Sampled Catch	7		
		Total Catch	7		
25-31 Jul	Hatchery	Wally N.	4	17	57
	Wild		3	17	0
		Sampled Catch	7		
		Total Catch	7		
		TOTAL HATCHERY	1011		
		TOTAL WILD	449		
		TOTAL CATCH	1460		

* As % of total catch over all districts.

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district.

WEEK	Contributor (Stock/Type)	Remote Release Site	District								Total	% *				
			221		222		223		224				226			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.		
12-18 Jun	MB Hatchery (Coghill Lake/Smolt)							0	0					0	0	
	MB Hatchery (Eahamy Lake/Smolt)							0	0					0	0	
	MB Hatchery (Main Bay/Smolt)							0	0					0	0	
	MB Hatchery (Eyak/Fry)							29	110					29	35	
	Total Hatchery							29	110					29	35	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary							0	0					0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary							0	0					0	0
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake							0	0					0	0
	Remote Release(Eahamy Lake/Fry)	Eahar Pass Lake							0	0					0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake							0	0					0	0
	Total Remote Release								0	0					0	0
	Total Wild								54	110					54	65
	Sampled Catch			0	0				83			0		0	83	
	Total Catch			0	0				83			0		0	83	
19-25 Jun	MB Hatchery (Coghill Lake/Smolt)							0	0					0	0	
	MB Hatchery (Eahamy Lake/Smolt)							0	0					0	0	
	MB Hatchery (Main Bay/Smolt)							0	0					0	0	
	MB Hatchery (Eyak/Fry)							0	0					0	0	
	Total Hatchery							0	0					0	0	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary							0	0					0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary							0	0					0	0
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake							0	0					0	0
	Remote Release(Eahamy Lake/Fry)	Eahar Pass Lake							0	0					0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake							0	0					0	0
	Total Remote Release								0	0					0	0
	Total Wild								47	0					47	100
	Sampled Catch			0	0				47			0		0	47	
	Total Catch			0	0				47			0		0	47	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District												Total	% *
			221		222		223		225		226					
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
24 Jun-02 Jul	MB Hatchery (Coghill Lake/Smok)		4	0			45	427					49	5		
	MB Hatchery (Eahamy Lake/Smok)		0	0			0	0					0	0		
	MB Hatchery (Main Bay/Smok)		0	0			0	0					0	0		
	MB Hatchery (Eyak/Fry)		0	0			0	0					0	0		
	Total Hatchery		4	0			45	427					49	5		
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary	0	0			308	13119					308	29		
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary	0	0			0	0					0	0		
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0			0	0					0	0		
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake	0	0			0	0					0	0		
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0			0	0					0	0		
	Total Remote Release		0	0			308	13119					308	29		
	Total Wild		29	0			667	13546					696	66		
	Sampled Catch		0		0		1020		0		0					
	Total Catch		33		0		1020		0		0			1053		
03-09 Jul	MB Hatchery (Coghill Lake/Smok)		35	0			633	34960	2773	390009			3441	64		
	MB Hatchery (Eahamy Lake/Smok)		0	0			0	0	0	0			0	0		
	MB Hatchery (Main Bay/Smok)		0	0			0	0	0	0			0	0		
	MB Hatchery (Eyak/Fry)		0	0			0	0	0	0			0	0		
	Total Hatchery		35	0			633	34960	2773	390009			3441	64		
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary	0	0			497	38746	0	0			497	9		
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary	0	0			0	0	0	0			0	0		
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0			0	0	0	0			0	0		
	Remote Release(Eahamy Lake/Fry)	Eather Pass Lake	0	0			0	0	0	0			0	0		
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0			0	0	0	0			0	0		
	Total Remote Release		0	0			497	38746	0	0			497	9		
	Total Wild		293	0			879	73706	231	390009			1403	26		
	Sampled Catch		0		0		2009		3004		0					
	Total Catch		328		0		2009		3004		0			5341		

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District												Total	% *
			221		222		223		225		226					
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
10-16 Jul	MB Hatchery (Coghill Lake/Smolt)		18	0			1247	76263	5573	917348			6838	56		
	MB Hatchery (Eahamy Lake/Smolt)		0	0			111	6021	74	5443			185	2		
	MB Hatchery (Main Bay/Smolt)		0	0			0	0	0	0			0	0		
	MB Hatchery (Eysk/Fry)		0	0			0	0	0	0			0	0		
	Total Hatchery		18	0			1358	82284	5647	922783			7023	57		
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0			893	48440	0	0			893	7		
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary	0	0			131	16901	575	138430			706	6		
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0			0	0	0	0			0	0		
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake	0	0			0	0	0	0			0	0		
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0			0	0	0	0			0	0		
	Total Remote Release		0	0			1024	65341	575	138430			1599	13		
	Total Wild		149	0			522	147625	2948	1061213			3619	30		
	Sampled Catch		0		0		2904		9170		0					
	Total Catch		167		0		2904		9170		0			12241		
17-23 Jul	MB Hatchery (Coghill Lake/Smolt)		59	0	0	0	119	113987	13280	1418489			13458	56		
	MB Hatchery (Eahamy Lake/Smolt)		0	0	0	0	0	0	2968	501513			2968	12		
	MB Hatchery (Main Bay/Smolt)		0	0	0	0	0	0	277	40071			277	1		
	MB Hatchery (Eysk/Fry)		0	0	0	0	0	0	0	0			0	0		
	Total Hatchery		59	0	0	0	119	113987	16525	1960073			16783	70		
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0	185	16371	234	27231			419	2		
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary	0	0	0	0	0	0	1154	188441			1154	5		
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0	0	0	0	0	133	7473			133	1		
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake	0	0	0	0	17	273	0	0			17	0		
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0	0	0	34	1071	0	0			34	0		
	Total Remote Release		0	0	0	0	236	17715	1521	223345			1757	7		
	Total Wild		489	0	53	0	1596	131702	3314	2183418			5452	23		
	Sampled Catch		0		53		1951		21360		0					
	Total Catch		548		53		1951		21360		0			23912		

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District										Total	% *
			221		222		223		225		226			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
24-30 Jul	MB Hatchery (Coghill Lake/Smolt)		60	0	262	989	411	21237	2004	222757	2053	67602	4790	24
	MB Hatchery (Eahamy Lake/Smolt)		0	0	483	3374	0	0	3915	628429	1771	111008	6169	30
	MB Hatchery (Main Bay/Smolt)		0	0	0	0	0	0	0	0	0	0	0	0
	MB Hatchery (Eyak/Fry)		0	0	0	0	0	0	0	0	0	0	0	0
	Total Hatchery		60	0	745	4363	411	21237	5919	851186	3824	178610	10959	54
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	287	1186	257	14590	118	12281	0	0	662	3
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary	0	0	0	0	54	715	1430	215864	3473	512588	4957	24
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0	0	0	0	0	171	12809	0	0	171	1
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake	0	0	0	0	0	0	0	0	0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0	0	0	0	0	0	0	0	0	0	0
	Total Remote Release		0	0	287	1186	311	15305	1719	240954	3473	512588	5790	29
	Total Wild		500	0	1	5549	26	36542	2119	1092140	848	691198	3494	17
	Sampled Catch		560		1033		748		9757		8145			
	Total Catch		560		1033		748		9757		8145		20243	
31 Jul-06 Aug	MB Hatchery (Coghill Lake/Smolt)		57	0	237	948			3962	448466	1400	181248	5656	10
	MB Hatchery (Eahamy Lake/Smolt)		0	0	431	3181			14770	12097613	6633	1143388	21834	40
	MB Hatchery (Main Bay/Smolt)		0	0	0	0			0	0	205	9184	205	0
	MB Hatchery (Eyak/Fry)		0	0	0	0			0	0	0	0	0	0
	Total Hatchery		57	0	668	4129			18732	12546079	8238	1333820	27695	51
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0			0	0	284	15421	284	1
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary	0	0	467	6183			3599	1420603	8157	2092878	12223	22
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake	0	0	0	0			77	1502	189	9461	264	0
	Remote Release(Eahamy Lake/Fry)	Eaher Pass Lake	0	0	0	0			0	0	0	0	0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake	0	0	0	0			0	0	53	1110	53	0
	Total Remote Release		0	0	467	6183			3676	1422105	8683	2118870	12826	23
	Total Wild		478	0	410	10312			27	13968184	13301	3452690	14216	26
	Sampled Catch		0		1545		0		22435		30222			
	Total Catch		535		1545		0		22435		30222		54737	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District												Total	%
			221		222		223		225		226					
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
07-13 Aug	MB Hatchery (Coghill Lake/Smok)				1083	90374	360	11586	271	23994			1719	4		
	MB Hatchery (Eahamy Lake/Smok)			3759	1189683	838	117992	19548	5884348			24145	57			
	MB Hatchery (Main Bay/Smok)			0	0	0	0	0	0			0	0			
	MB Hatcher (Eyak/Fry)			0	0	0	0	0	0			0	0			
	Total Hatchery			4842	1280057	1198	129578	19819	5988342			25859	61			
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary		0	0	415	9884	0	0			415	1			
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary		1579	30931	1635	78434	7907	2601282			11101	26			
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake		0	0	135	4954	287	20023			422	1			
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake		0	0	176	4457	0	0			176	0			
	Remote Release(Eahamy Lake/Fry)	Pass Lake		0	0	0	0	0	0			0	0			
	Total Remote Release			1579	30931	2341	97729	8194	2621305			12114	29			
	Total Wild				366	1310988	1653	227307	2133	8529647			4152	10		
	Sampled Catch			0	6787		5192		30146		0					
Total Catch			0	6787		5192		30146		0		42123				
14-20 Aug	MB Hatchery (Coghill Lake/Smok)			50	249	273	3120	726	221698			1049	3			
	MB Hatchery (Eahamy Lake/Smok)			2081	751068	2547	37902	12031	7255553			16659	47			
	MB Hatchery (Main Bay/Smok)			0	0	0	0	0	0			0	0			
	MB Hatcher (Eyak/Fry)			0	0	0	0	0	0			0	0			
	Total Hatchery			2131	751317	2820	40122	12757	7477251			17708	50			
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary		0	0	696	10370	0	0			696	2			
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary		805	36646	2480	42153	7757	4603085			11042	31			
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake		121	1406	0	0	0	0			121	0			
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake		0	0	57	38	0	0			57	0			
	Remote Release(Eahamy Lake/Fry)	Pass Lake		20	39	109	485	0	0			129	0			
	Total Remote Release			946	38091	3342	53046	7757	4603085			12045	34			
	Total Wild				4145	789408	1194	93168	411	12080336			5750	16		
	Sampled Catch			0	7222		7356		20925		0					
Total Catch			0	7222		7356		20925		0		35503				

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District								Total	% *		
			221		222		223		225				226	
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			Contrib.	Var.
21-27 Aug	MB Hatchery (Coghill Lake/Smok)			0	0	0	0	91	8248			91	0	
	MB Hatchery (Eahamy Lake/Smok)			279	3486	3236	116903	16613	19119934			20128	65	
	MB Hatchery (Main Bay/Smok)			0	0	0	0	0	0			0	0	
	MB Hatcher (Eyak/Fry)			0	0	0	0	0	0			0	0	
	Total Hatchery			279	3486	3236	116903	16704	19128182			20219	65	
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary		0	0	705	8794	0	0			705	2	
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary		90	272	1209	82654	0	4768			1299	4	
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake		0	0	0	0	37	1315			37	0	
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake		0	0	0	0	0	0			0	0	
	Remote Release(Eahamy Lake/Fry)	Pass Lake		0	0	0	0	0	0			0	0	
	Total Remote Release			90	272	1914	91448	37	6083			2041	7	
	Total Wild				1841	3758	1674	208351	5404	19134265			8919	29
	Sampled Catch			0			6824		22145		0			
Total Catch			0		2210		6824		22145		0		31179	
28 Aug-03 Sept	MB Hatchery (Coghill Lake/Smok)					0	0	0	0			0	0	
	MB Hatchery (Eahamy Lake/Smok)					3521	1445527	13060	8491378			16581	85	
	MB Hatchery (Main Bay/Smok)					0	0	0	0			0	0	
	MB Hatcher (Eyak/Fry)					0	0	0	0			0	0	
	Total Hatchery					3521	1445527	13060	8491378			16581	85	
	Remote Release (Coghill Lake/Smok)	Coghill R. Estuary				0	0	0	0			0	0	
	Remote Release(Eahamy Lake/Smok)	Eahamy R. Estuary				674	106836	1726	0			2460	12	
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake				190	8511	0	271485			190	1	
	Remote Release(Eahamy Lake/Fry)	Ether Pass Lake				0	0	0	0			0	0	
	Remote Release(Eahamy Lake/Fry)	Pass Lake				0	0	0	0			0	0	
	Total Remote Release					864	115347	1726	271485			2590	13	
	Total Wild						445	1560874	1	8762863			446	2
	Sampled Catch			0		0	4830		14787		0			
Total Catch			0		0	4830		14787		0		19617		

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.1 Estimated hatchery contributions (Contrib.) to the sockeye salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor (Stock/Type)	Remote Release Site	District								Total	%			
			221		222		223		225				226		
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
04-10 Sept	MB Hatchery (Coghill Lake/Smolt)						0	0	0	0			0	0	
	MB Hatchery (Eahamy Lake/Smolt)					632	57999	1738	429959				2370	41	
	MB Hatchery (Main Bay/Smolt)					0	0	0	0				0	0	
	MB Hatchery (Eyak/Fry)					0	0	0	0				0	0	
	Total Hatchery					632	57999	1738	429959				2370	41	
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary					107	2304	0	0				107	2
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake					0	0	0	0				0	0
	Total Remote Release						107	2304	0	0				107	2
	Total Wild						45	60303	3276	429959				3321	57
	Sampled Catch			0		0		784		5014			0		
	Total Catch			0		0		784		5014			0		5798
11-17 Sept	MB Hatchery (Coghill Lake/Smolt)						0	0	0	0				0	0
	MB Hatchery (Eahamy Lake/Smolt)					191	0	276	0					467	45
	MB Hatchery (Main Bay/Smolt)					0	0	0	0					0	0
	MB Hatchery (Eyak/Fry)					0	0	0	0					0	0
	Total Hatchery					191	0	276	0					467	45
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Smolt)	Eahamy R. Estuary					32	0	0	0				32	3
	Remote Release (Eahamy Lake/Fry)	Eahamy Lake					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Fry)	Esther Pass Lake					0	0	0	0				0	0
	Remote Release(Eahamy Lake/Fry)	Pass Lake					0	0	0	0				0	0
	Total Remote Release						32	0	0	0				32	3
	Total Wild						15	0	521	0				536	52
	Sampled Catch			0		0		0		0			0		
	Total Catch			0		0		238		797			0		1035
TOTAL HATCHERY			233	11	8665	46	14193	42	113950	71	12062	31	149103	59	
TOTAL R. RELEASE			0	0	3369	18	10976	32	25203	16	12156	32	31706	20	
TOTAL WILD			1938	89	6816	36	8817	26	20385	13	14148	37	52105	21	
TOTAL CATCH			2171		18850		33986		159540		38367		252914		

* As % of total catch over all districts.

Appendix C 6.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1994 by period and district.

Week	Contributor (Stock/Type)	Remote Release Site	District		Total	% *
			Contrib.	Ver.		
19-25 Jun	MB Hatchery (Coghill Lake/Smolt)		0	0	0	0
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0	0
	MB Hatchery (Main Bay/Smolt)		0	0	0	0
	MB Hatchery (Eyak/Fry)		220	0	220	66
	Total Hatchery		220	0	220	66
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		115	0	115	34
	Sampled Catch		335			
	Total Catch		335		335	
	26 Jun-02 Jul	MB Hatchery (Coghill Lake/Smolt)		2535	235434	2535
MB Hatchery (Eshamy Lake/Smolt)			0	0	0	0
MB Hatchery (Main Bay/Smolt)			131	17105	131	4
MB Hatchery (Eyak/Fry)			29	817	29	1
Total Hatchery			2695	253356	2695	84
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary	0	0	0	0
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0	0
Remote Release (Eshamy Lake/Fry)		Eshamy Lake	0	0	0	0
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0	0
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0	0
Total Remote Release			0	0	0	0
Total Wild			499	253356	499	16
Sampled Catch			3194			
Total Catch			3194		3194	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1994 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		Total	% *
			225			
			Contrib.	Var.		
03-09 Jul	MB Hatchery (Coghill Lake/Smolt)		5309	2181671	5309	78
	MB Hatchery (Eshamy Lake/Smolt)		783	153240	783	12
	MB Hatchery (Main Bay/Smolt)		671	112677	671	10
	MB Hatchery (Eyak/Fry)		0	0	0	0
	Total Hatchery		6763	2447588	6763	100
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		1	2447588	1	0
	Sampled Catch		6764			
	Total Catch		6764		6764	
10-16 Jul	MB Hatchery (Coghill Lake/Smolt)		2720	1397535	2720	23
	MB Hatchery (Eshamy Lake/Smolt)		0	0	0	0
	MB Hatchery (Main Bay/Smolt)		0	0	0	0
	MB Hatchery (Eyak/Fry)		0	0	0	0
	Total Hatchery		2720	1397535	2720	23
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		8942	1397535	8942	77
	Sampled Catch		11662			
	Total Catch		11662		11662	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon coast recovery fishery of 1994 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		Total	% *
			Contrib.	Var.		
24-30 Jul	MB Hatchery (Coghill Lake/Smolt)		10169	1560376	10169	49
	MB Hatchery (Eshamy Lake/Smolt)		5201	190728	5201	25
	MB Hatchery (Main Bay/Smolt)		1038	133807	1038	5
	MB Hatchery (Eyak/Fry)		0	0	0	0
	Total Hatchery		16408	1884911	16408	80
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		4215	1884911	4215	20
	Sampled Catch		20623			
	Total Catch		20623		20623	
	31 Jul-06 Aug	MB Hatchery (Coghill Lake/Smolt)		4279	437446	4279
MB Hatchery (Eshamy Lake/Smolt)			8121	1381985	8121	54
MB Hatchery (Main Bay/Smolt)			196	17403	196	1
MB Hatchery(Eyak/Fry)			0	0	0	0
Total Hatchery			12596	1836834	12596	84
Remote Release (Coghill Lake/Smolt)		Coghill R. Estuary	0	0	0	0
Remote Release(Eshamy Lake/Smolt)		Eshamy R. Estuary	0	0	0	0
Remote Release (Eshamy Lake/Fry)		Eshamy Lake	0	0	0	0
Remote Release(Eshamy Lake/Fry)		Esther Pass Lake	0	0	0	0
Remote Release(Eshamy Lake/Fry)		Pass Lake	0	0	0	0
Total Remote Release			0	0	0	0
Total Wild			2479	1836834	2479	16
Sampled Catch			15075			
Total Catch			15075		15075	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1994 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		Total	% *
			Contrib.	Var.		
07-13 Aug	MB Hatchery (Coghill Lake/Smolt)		988	0	988	28
	MB Hatchery (Eshamy Lake/Smolt)		1875	0	1875	54
	MB Hatchery (Main Bay/Smolt)		45	0	45	1
	MB Hatchery (Eyak/Fry)		0	0	0	0
	<i>Total Hatchery</i>		2908	0	2908	84
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	<i>Total Remote Release</i>		0	0	0	0
	<i>Total Wild</i>		574	0	574	16
	<i>Sampled Catch</i>		0			
	<i>Total Catch</i>		3482		3482	
14-20 Aug	MB Hatchery (Coghill Lake/Smolt)		1197	0	1197	28
	MB Hatchery (Eshamy Lake/Smolt)		2273	0	2273	54
	MB Hatchery (Main Bay/Smolt)		55	0	55	1
	MB Hatchery (Eyak/Fry)		0	0	0	0
	<i>Total Hatchery</i>		3525	0	3525	84
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	<i>Total Remote Release</i>		0	0	0	0
	<i>Total Wild</i>		693	0	693	16
	<i>Sampled Catch</i>		0			
	<i>Total Catch</i>		4218		4218	

* As % of total catch over all districts.

-Continued-

Appendix C 6.1.2 Estimated hatchery contributions (Contrib.) to the sockeye salmon cost recovery fishery of 1994 by period and district (Continued)

Week	Contributor (Stock/Type)	Remote Release Site	District		Total	% *
			225	Var.		
21-27 Aug	MB Hatchery (Coghill Lake/Smolt)		3194	0	3194	28
	MB Hatchery (Eshamy Lake/Smolt)		6069	0	6069	54
	MB Hatchery (Main Bay/Smolt)		147	0	147	1
	MB Hatchery (Eyak/Fry)		0	0	0	0
	Total Hatchery		9410	0	9410	84
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		1847	0	1847	16
	Sampled Catch		0			
	Total Catch		11257		11257	
28 Aug-03 Sept	MB Hatchery (Coghill Lake/Smolt)		715	0	715	28
	MB Hatchery (Eshamy Lake/Smolt)		1359	0	1359	54
	MB Hatchery (Main Bay/Smolt)		33	0	33	1
	MB Hatchery (Eyak/Fry)		0	0	0	0
	Total Hatchery		2107	0	2107	84
	Remote Release (Coghill Lake/Smolt)	Coghill R. Estuary	0	0	0	0
	Remote Release(Eshamy Lake/Smolt)	Eshamy R. Estuary	0	0	0	0
	Remote Release (Eshamy Lake/Fry)	Eshamy Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Esther Pass Lake	0	0	0	0
	Remote Release(Eshamy Lake/Fry)	Pass Lake	0	0	0	0
	Total Remote Release		0	0	0	0
	Total Wild		414	0	414	16
	Sampled Catch		0			
	Total Catch		2521		2521	
TOTAL HATCHERY			59352	75	59352	75
TOTAL R. RELEASE			0	0	0	0
TOTAL WILD			19779	25	19779	25
TOTAL CATCH			79131		79131	

* As % of total catch over all districts.

Appendix C 6.2.1 Estimate hatchery contributions (Contrib.) to the chum salmon common property fishery of 1994 by period and district

Week	Contributor	Facility	District										Total	% *
			221		222		223		225		226			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
12-18 Jun	Hatchery	Wally N.					114210	1.405+E8					114210	74
		Solomon G.					0	0					0	0
		Total					114210	0					114210	74
	Wild					40547	0					40547	26	
			Sampled Catch	0	0	0	0	154757	0	0	0	0	154757	
		Total Catch	0	0	0	0	154757	0	0	0	0	154757		
19-25 Jun	Hatchery	Wally N.					25943	2.307+E7					25943	79
		Solomon G.					0	0					0	0
		Total					25943	0					25943	79
	Wild					6901	0					6901	21	
			Sampled Catch	0	0	0	0	32844	0	0	0	0	32844	
		Total Catch	0	0	0	0	32844	0	0	0	0	32844		
26 Jun-02 Jul	Hatchery	Wally N.	0	0			95570	1.405+E8					95570	74
		Solomon G.	0	0			0	0					0	0
		Total	0	0			95570	0					95570	74
	Wild			2033	0			31194	0				33227	26
			Sampled Catch	2033	0	0	0	126764	0	0	0	0	128797	
		Total Catch	2033	0	0	0	126764	0	0	0	0	128797		
03-09 Jul	Hatchery	Wally N.	0	0			120766	1.667+E8	1815	719952			122581	92
		Solomon G.	0	0			0	0	0	0			0	0
		Total	0	0			120766	0	1815	719952			122581	92
	Wild			4729	0			5859	0	0	719952		10588	8
			Sampled Catch	4729	0	0	0	126625	1815	0	0	0	133169	
		Total Catch	4729	0	0	0	126625	1815	0	0	0	133169		
10-16 Jul	Hatchery	Wally N.	730	35742			54493	7.877+E7	819	670021			56042	72
		Solomon G.	165	2647			0	0	0	0			165	0
		Total	895	38389			54493	0	819	670021			56207	72
	Wild			2734	38389			13440	0	5355	670021		21529	28
			Sampled Catch	3629	0	0	0	67933	6174	0	0	0	77736	
		Total Catch	3629	0	0	0	67933	6174	0	0	0	77736		

* As % of total catch over all districts.

-Continued-

Appendix C 6.2.1 Estimate hatchery contributions (Contrib.) to the chum salmon common property fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District										Total	% *
			221		222		223		225		226			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
17-23 Jul	Hatchery	Wally N.	2740	1116491	0	0	17892	2.414+E7	5358	2671405			25990	35
		Solomon G.	704	82958	0	0	335	109774	796	106799			1835	2
		Total	3444	1199449	0	0	18227	109774	6154	2778204			27825	38
	Wild		15118	1199449	15231	0	15886	109774	1	2778204			46236	62
		Sampled Catch	18562		15231		34113		6155		0			
	Total Catch	18562		15231		34113		6155		0		74061		
24-30 Jul	Hatchery	Wally N.	0	0	0	0	7131	1.106+E7	0	0	1293	2550	8424	30
		Solomon G.	3615	745544	0	0	0	0	0	0	854	325361	4469	16
		Total	3615	745544	0	0	7131	0	0	0	2147	327911	12893	45
	Wild		6546	745544	2278	0	3622	0	647	0	2381	327911	15474	55
		Sampled Catch	10161		2278		10753		647		4528			
	Total Catch	10161		2278		10753		647		4528		28367		
31 Jul-06 Aug	Hatchery	Wally N.	0	0	0	0			0	0	307	1560	307	2
		Solomon G.	503	105333	0	0			0	0	0	0	503	4
		Total	503	105333	0	0			0	0	307	1560	810	7
	Wild		2005	105333	4072	0			883	0	4540	1560	11500	93
		Sampled Catch	2508		4072		0		883		4847			
	Total Catch	2508		4072		0		883		4847		12310		
07-13 Aug	Hatchery	Wally N.			0	0	0	0	0	0	0		0	
		Solomon G.			0	0	0	0	0	0	0		0	
		Total			0	0	0	0	0	0	0		0	
	Wild			3133	0	1764	0	447	0			5344	100	
		Sampled Catch	0		3133		1764		447		0			
	Total Catch	0		3133		1764		447		0		5344		
14-20 Aug	Hatchery	Wally N.			609	37636	0	0	0	0	0		609	19
		Solomon G.			0	0	0	0	0	0	0		0	0
		Total			609	37636	0	0	0	0	0		609	19
	Wild			853	37636	1527	0	156	0			2536	81	
		Sampled Catch	0		1462		1527		156		0			
	Total Catch	0		1462		1527		156		0		3145		

* As % of total catch over all districts.

-Continued-

Appendix C 6.2.1 Estimate hatchery contributions (Contrib.) to the chum salmon common property fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District										Total	% *	
			221		222		223		225		226				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
21-27 Aug	Hatchery	Wally N.			0	0	0	0	0	0	0	0	0		
		Solomon G.			0	0	0	0	0	0	0	0	0		
		Total			0	0	0	0	0	0	0	0	0		
	Wild			467	0	444	0	83	0				994	100	
		Sampled Catch	0		467		444		83		0				
	Total Catch	0		467		444		83		0			994		
28 Aug-03 Sept	Hatchery	Wally N.					0	0	0	0	0	0	0		
		Solomon G.					0	0	0	0	0	0	0		
		Total					0	0	0	0	0	0	0		
	Wild					232	0	43	0				275	100	
		Sampled Catch	0		0		232		43		0				
	Total Catch	0		0		232		43		0			275		
04-10 Sept	Hatchery	Wally N.	0	0			0	0	0	0	0	0	0		
		Solomon G.	3	0			0	0	0	0	0	0	0	3	6
		Total	3	0			0	0	0	0	0	0	0	3	6
	Wild			11	0			30	0	4	0		45	94	
		Sampled Catch	0		0		30		4		0				
	Total Catch	14		0		30		4		0			48		
11-17 Sept	Hatchery	Wally N.												0	
		Solomon G.												0	
		Total												0	
	Wild												0		
		Sampled Catch	0		0		0		0		0				
	Total Catch	0		0		0		0		0			0		
	TOTAL HATCHERY	8460		609		436340		8788		2454			456651	70	
	TOTAL WILD	33176		26034		121446		7619		6921			195196	30	
	TOTAL CATCH	41636		26643		557786		16407		9375			651847		

* As % of total catch over all districts.

Appendix C 6.2.2 Estimated hatchery contributions (Contrib.) to the chum salmon cost recovery fishery of 1994 by period and district

Week	Contributor	Facility	District								Total	% *
			221		223		225		Total	% *		
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.				
05-11 Jun	Hatchery	Wally N.			24048	6.74E+07			24048	66		
		Solomon G.			0	0			0	0		
		Total			24048	6.74E+07			24048	66		
	Wild			12513	6.74E+07	0		12513	34			
		Sampled Catch	0		36561		0					
	Total Catch	0		36561		0		36561				
12-18 Jun	Hatchery	Wally N.			10754	2.09E+06			10754	100		
		Solomon G.			0	0			0	0		
		Total			10754	2.09E+06			10754	100		
	Wild			0	2.09E+06			0	0			
		Sampled Catch	0		10754		0					
	Total Catch	0		10754		0		10754				
19-25 Jun	Hatchery	Wally N.	0	0	31346	5.54E+07	0	0	31346	77		
		Solomon G.	0	0	0	0	0	0	0	0		
		Total	0	0	31346	5.54E+07	0	0	31346	77		
	Wild	1177	0	7957	5.54E+07	297	0	9431	23			
		Sampled Catch	1177		39303		297					
	Total Catch	1177		39303		297		40777				
26 Jun-02 Jul	Hatchery	Wally N.	0	0	89602	9.65E+07	318	25281	89920	81		
		Solomon G.	0	0	0	0	0	154056	0	0		
		Total	0	0	89602	9.65E+07	318	179337	89920	81		
	Wild	1276	0	19475	9.65E+07	502	179337	21253	19			
		Sampled Catch	1276		109077		820					
	Total Catch	1276		109077		820		111173				
03-09 Jul	Hatchery	Wally N.	0	0	58164	8.18E+07	785	154056	58949	99		
		Solomon G.	0	0	0	0	0	0	0	0		
		Total	0	0	58164	8.18E+07	785	154056	58949	99		
	Wild	372	0	0	8.18E+07	0	154056	372	1			
		Sampled Catch	372		58164		785					
	Total Catch	372		58164		785		59321				

* As % of total catch over all districts.

-Continued-

Appendix C 6.2.2 Estimated hatchery contributions (Contrib.) to the chum salmon coast recovery fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District						Total	% ^a
			221		223		225			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
10-16 Jul	Hatchery	Wally N.	0	0	68868	2.04E+08	0	0	68868	97
		Solomon G.	0	0	0	0	0	0	0	0
		Total	0	0	68868	2.04E+08	0	0	68868	97
	Wild		43	0	1711	2.04E+08	241	0	1995	3
		Sampled Catch	43		70579		241			
		Total Catch	43		70579		241		70863	
17-23 Jul	Hatchery	Wally N.	0	0	25186	2.62E+07			25186	100
		Solomon G.	0	0	0	0			0	0
		Total	0	0	25186	2.62E+07			25186	100
	Wild		13	0	0	2.62E+07			13	0
		Sampled Catch	13		25186		0			
		Total Catch	13		25186		0		25199	
24-30 Jul	Hatchery	Wally N.			9415	3.61E+06	0	0	9415	73
		Solomon G.			0	0	0	0	0	0
		Total			9415	3.61E+06	0	0	9415	73
	Wild				2818	3.61E+06	687	0	3505	27
		Sampled Catch	0		12233		687			
		Total Catch	0		12233		687		12920	
31 Jul-06 Aug	Hatchery	Wally N.			11948	9.00E+06	0	0	11948	98
		Solomon G.			0	0	0	0	0	0
		Total			11948	9.00E+06	0	0	11948	98
	Wild				0	9.00E+06	248	0	248	2
		Sampled Catch	0		11948		248			
		Total Catch	0		11948		248		12196	
07-13 Aug	Hatchery	Wally N.			0	0	0	0	0	0
		Solomon G.			0	0	0	0	0	0
		Total			0	0	0	0	0	0
	Wild				570	0	17	0	587	100
		Sampled Catch	0		570		17			
		Total Catch	0		570		17		587	
TOTAL HATCHERY			0		329331		1103		330434	87
TOTAL WILD			2881		45044		1992		49917	13
TOTAL CATCH			2881		374375		3095		380351	

^a As % of total catch over all districts.

Appendix C 6.3.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1994 by period and district.

WEEK	Contributor	Facility	District												Total	% *	
			221		222		223		225		226		229				
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.			
12-18 Jun	Hatchery	Wally N.					0	0								0	0
		Sampled Catch	0		0		30		0		0		0				
		Total Catch	0		0		30		0		0		0			30	
19-25 Jun	Hatchery	Wally N.					0	0								0	0
		Sampled Catch	0		0		18		0		0		0				
		Total Catch	0		0		18		0		0		0			18	
26 Jun-02 Jul	Hatchery	Wally N.	0	0			0	0								0	0
		Sampled Catch	3		0		91		0		0		0				
		Total Catch	3		0		91		0		0		0			94	
03-09 Jul	Hatchery	Wally N.	0	0			0	0	0	0						0	0
		Sampled Catch	38		0		9		1		0		0				
		Total Catch	38		0		9		1		0		0			48	
10-16 Jul	Hatchery	Wally N.	0	0			0	0	0	0						0	0
		Sampled Catch	73		0		29		16		0		0				
		Total Catch	73		0		29		16		0		0			118	
17-23 Jul	Hatchery	Wally N.	0	0	0	0	0	0	0	0						0	0
		Sampled Catch	286		23		83		19		0		0				
		Total Catch	286		23		83		19		0		0			411	
24-30 Jul	Hatchery	Wally N.	0	0	0	0	0	0	0	0			0			0	0
		Sampled Catch	3928		135		86		114		1348		0				
		Total Catch	3928		135		86		114		1348		0			5611	
31 Jul-06 Aug	Hatchery	Wally N.	0	0	0	0			0	0	400	139839				400	11
		Sampled Catch	555		219		0		82		2753		0				
		Total Catch	555		219		0		82		2753		0			3609	

* As % of total catch over all districts.

Appendix C 6.3.1 Estimated hatchery contributions (Contrib.) to the coho salmon common property fishery of 1994 by period and district (Continued)

WEEK	Contributor	Facility	District												Total	% *
			221		222		223		225		226		229			
			Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.	Contrib.	Var.		
07-13 Aug	Hatchery	Wally N.			150	3762	0	0	0	0					138	9
		Sampled Catch	0		826			771		121		0		0		
		Total Catch	0		826			771		121		0		0		1718
14-28 Aug	Hatchery	Wally N.			197	9342	1963	26768	0	0			18	0	2170	63
		Sampled Catch	0		891			2274		128		0		0		
		Total Catch	0		891			2274		128		0		44		3337
21-27 Aug	Hatchery	Wally N.			0	0	4653	233433	87	1892			13	0	4755	44
		Sampled Catch	0		690			9561		400		0		0		
		Total Catch	0		690			9561		400		0		58		10789
28 Aug-03 Sept	Hatchery	Wally N.					18613	#####	233	5476					18846	66
		Sampled Catch	0		0		28117		233		0		0			
		Total Catch	0		0		28117		233		0		0			28350
04-10 Sept	Hatchery	Wally N.	0	0			20364	#####	0	0					20364	71
		Sampled Catch	0		0		24408		141		0		0			
		Total Catch	4357		0		24408		141		0		0			28906
11-17 Sept	Hatchery	Wally N.	0	0			9429	0	0	0					9429	82
		Sampled Catch	0		0		0		0		0		0			
		Total Catch	242		0		11192		6		0		0			11440
18-24 Sept	Hatchery	Wally N.					4020	0							4020	84
		Sampled Catch	0		0		0		0		0		0			
		Total Catch	0		0		4772		0		0		0			4772
		TOTAL WALLY N.	0		347		59245		320		400		23			60334
		TOTAL CATCH	9482		2784		81441		1261		4101		192			99171

* As % of total catch over all districts.

Appendix C 6.3.2 Estimated hatchery contributions (Contrib.) to the coho salmon coast recovery fishery of 1994 by period and district.

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
26 Jun-02 Jul	Hatchery	Wally N.	0	0			0	0
		Sampled Catch	0		0			
		Total Catch	2		0		2	
03-09 Jul	Hatchery	Wally N.	0	0			0	0
		Sampled Catch	15		0			
		Total Catch	15		0		15	
10-16 Jul	Hatchery	Wally N.	0	0			0	0
		Sampled Catch	2		0			
		Total Catch	2		0		2	
17-23 Jul	Hatchery	Wally N.					0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	
24-30 Jul	Hatchery	Wally N.			0	0	0	0
		Sampled Catch	0		2			
		Total Catch	0		2		2	
31 Jul-06 Aug	Hatchery	Wally N.			0	0	0	0
		Sampled Catch	0		2			
		Total Catch	0		2		2	

* As % of total catch over all districts.

-Continued-

Appendix C 6.3.2 Estimated hatchery contributions (Contrib.) to the coho salmon cost recovery fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
07-13 Aug	Hatchery	Wally N.			0	0	0	0
		Sampled Catch	0		10			
		Total Catch	0		10		10	
14-20 Aug	Hatchery	Wally N.			0	0	0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	
21-27 Aug	Hatchery	Wally N.			0		0	0
		Sampled Catch	0		4182			
		Total Catch	0		4182		4182	
28 Aug-03 Sept	Hatchery	Wally N.			0		0	
		Sampled Catch	0		0			
		Total Catch	0		0		0	
04-10 Sept	Hatchery	Wally N.	0	0	0		0	0
		Sampled Catch	13019		0			
		Total Catch	13019		874		13893	
11-17 Sept	Hatchery	Wally N.			0	0	0	0
		Sampled Catch	0		0			
		Total Catch	0		4374		4374	
		TOTAL WALLY N.	0	0	0	0	0	0
		TOTAL CATCH	13038		9444		22482	

* As % of total catch over all districts.

Appendix C 6.4.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1994 by period and district.

Week	Contributor	Facility	District				Total	% *	
			221		223				
			Contrib.	Var.	Contrib.	Var.			
12-18 Jun	Hatchery	Wally N.			38	1243	38	18	
		Solomon G.			0	0	0	0	
		Total			38	1243	38	18	
	Wild					175	1243	175	82
		Sampled Catch	0		213				
		Total Catch	0		213		213		
19-25 Jun	Hatchery	Wally N.			0	0	0	0	
		Solomon G.			0	0	0	0	
		Total			0	0	0	0	
	Wild					26	0	26	100
		Sampled Catch	0		26				
		Total Catch	0		26		26		
26 Jun-02 Jul	Hatchery	Wally N.	0	0	0	0	0	0	
		Solomon G.	0	0	0	0	0	0	
		Total	0	0	0	0	0	0	
	Wild			15	0	26	0	41	100
		Sampled Catch	15		26				
		Total Catch	15		26		41		
03-09 Jul	Hatchery	Wally N.	0	0	70	343	70	82	
		Solomon G.	0	0	0	0	0	0	
		Total	0	0	70	343	70	82	
	Wild			15	0	0	343	15	18
		Sampled Catch	15		70				
		Total Catch	15		70		85		

* As a % of total catch over all districts.

-Continued-

Appendix C 6.4.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *
			221		223			
			Contrib.	Var.	Contrib.	Var.		
10-16 Jul	Hatchery	Wally N.	0	0	13	42	13	20
		Solomon G.	0	0	0	0	0	0
		Total	0	0	13	42	13	20
	Wild		10	0	41	42	51	80
		Sampled Catch	10		54			
		Total Catch	10		54		64	
17-23 Jul	Hatchery	Wally N.	0	0	15	56	15	38
		Solomon G.	0	0	0	0	0	0
		Total	0	0	15	56	15	38
	Wild		16	0	9	56	25	63
		Sampled Catch	16		24			
		Total Catch	16		24		40	
24-30 Jul	Hatchery	Wally N.	0	0	0	0	0	0
		Solomon G.	0	0	0	0	0	0
		Total	0	0	0	0	0	0
	Wild		26	0	6	0	32	100
		Sampled Catch	26		6			
		Total Catch	26		6		32	
31 Jul-06 Aug	Hatchery	Wally N.	0	0			0	0
		Solomon G.	0	0			0	0
		Total	0	0			0	0
	Wild		3	0			3	100
		Sampled Catch	3		0		3	
		Total Catch	3		0		3	

* As a % of total catch over all districts.

-Continued-

Appendix C 6.4.1 Estimated hatchery contributions (Contrib.) to the chinook salmon common property fishery of 1994 by period and district (Continued)

Week	Contributor	Facility	District				Total	% *	
			221		223				
			Contrib.	Var.	Contrib.	Var.			
07-13 Aug	Hatchery	Wally N.			0	0	0	0	
		Solomon G.			0	0	0	0	
		Total			0	0	0	0	
	Wild					17	0	17	100
		Sampled Catch	0		17				
		Total Catch	0		17		17		
14-20 Aug	Hatchery	Wally N.			0	0	0	0	
		Solomon G.			0	0	0	0	
		Total			0	0	0	0	
	Wild					35	0	35	100
		Sampled Catch	0		35				
		Total Catch	0		35		35		
21-27 Aug	Hatchery	Wally N.			0	0	0	0	
		Solomon G.			0	0	0	0	
		Total			0	0	0	0	
	Wild					7	0	7	100
		Sampled Catch	0		7				
		Total Catch	0		7		7		
TOTAL HATCHERY			0		136		136	24	
TOTAL WILD			85		342		427	76	
TOTAL CATCH			85		478		563		

* As a % of total catch over all districts.

Appendix C 6.4.2 Estimated hatchery contributions (Contrib.) to the chinook salmon cost recovery fishery of 1994 by period and district.

Week	Contributor	Facility	District		Total	% *
			Contrib.	Var.		
			223			
05-11 Jun	Hatchery	Wally N.	149	7364	149	25
		Solomon G.	0	0	0	
		Total	149	7364	149	25
	Wild		453	7364	453	75
		Sampled Catch	602			
		Total Catch	602		602	
12-18 Jun	Hatchery	Wally N.	0	0	0	
		Solomon G.	0	0	0	
		Total	0	0	0	
	Wild		222	0	222	100
		Sampled Catch	222			
		Total Catch	222		222	
19-25 Jun	Hatchery	Wally N.	3	0	3	25
		Solomon G.	0	0	0	
		Total	3	0	3	25
	Wild		8	0	8	75
		Sampled Catch	0			
		Total Catch	11		11	
		TOTAL HATCHERY	152		152	18
		TOTAL WILD	683		683	82
		TOTAL CATCH	835		835	

* As a % of total catch over all districts.