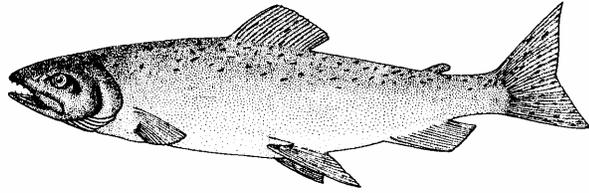


**2000
ANNEX**



**CHINOOK SALMON PLAN
FOR SOUTHEAST ALASKA**



By

Regional Information Report No. RIR 1J00-30

Alaska Department of Fish and Game
Division of Commercial Fisheries

Juneau, Alaska

September 2000

2000 ANNEX

CHINOOK SALMON PLAN FOR SOUTHEAST ALASKA



By
Carol Denton
Steve McGee
Steve Reifenhohl
Gary Freitag
Mark Stopha
Rocky Holmes
and
Frank Thrower

Regional Information Report No. RIR¹ 1J00-30

Alaska Department of Fish and Game
Division of Commercial Fisheries
P.O. Box 240020
Douglas, AK 99824-0020

September 2000

¹ The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data, this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

AUTHORS

Carol Denton is a fishery biologist with the Alaska Department of Fish and Game, Commercial Fisheries Division, 2030 Sea Level Drive, Suite 205, Ketchikan, Alaska 99901.

Steve McGee is a fishery biologist with the Alaska Department of Fish and Game, Commercial Fisheries Division, Private Nonprofit Hatchery Program, P.O. Box 25526, Juneau, Alaska 99802-5526.

Steve Reifentuhl is the operations manager for Northern Southeast Regional Aquaculture Association, 1308 Sawmill Creek Road, Sitka, Alaska 99835.

Gary Freitag is a fishery biologist with the Southern Southeast Regional Aquaculture Association, 2721 Tongass Avenue, Ketchikan, Alaska 99901.

Mark Stopha is a fishery biologist with the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 240020, Douglas, Alaska 99824-0020.

Rocky Holmes is the Southeast regional supervisor with the Alaska Department of Fish and Game, Sport Fish Division, P.O. Box 240020, Douglas, Alaska 99824-0020.

Frank Thrower is a fishery biologist with the National Marine fisheries Service, Auke Bay Laboratory, 11305 Glacier Highway, Juneau, Alaska 99801.

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| LIST OF TABLES | 4 |
| LIST OF FIGURES | 5 |
| I. INTRODUCTION | 6 |
| II. SUMMARY OF CHINOOK SALMON PRODUCTION, HARVEST, AND ENHANCEMENT IN SOUTHEAST ALASKA | 6 |
| A. WILD STOCK PRODUCTION | 6 |
| B. CHINOOK SALMON HARVESTS IN SOUTHEAST ALASKA FISHERIES, 1999 | 7 |
| Troll Fishery: | 8 |
| Winter Season | 8 |
| Summer Season | 8 |
| Net Fisheries: | 9 |
| Recreational Fisheries: | 10 |
| Summary of the 1999 Harvest: | 10 |
| C. ENHANCED PRODUCTION | 11 |
| Hatchery Releases: | 11 |
| Smolt Capacity: | 11 |
| Harvest of Hatchery Fish: | 12 |
| Disposition of BY '99 Eggs: | 12 |
| III. BROODSTOCK ALLOCATION | 13 |
| A. BROODSTOCK DEVELOPMENT AND DIVERSITY | 13 |
| B. EGG ALLOCATION CRITERIA AND PLAN FOR 2000 | 13 |
| Little Port Walter: | 13 |
| Deer Mountain Tribal Hatchery: | 14 |
| Whitman Lake Hatchery: | 14 |
| Crystal Lake Hatchery: | 14 |
| Burro Creek Hatchery: | 14 |
| IV. HATCHERY RETURN PREDICTIVE MODELS | 15 |
| A. LITTLE PORT WALTER | 15 |
| B. CRYSTAL LAKE HATCHERY | 15 |
| C. DEER MOUNTAIN TRIBAL HATCHERY | 15 |
| D. SSRAA HATCHERIES | 15 |
| E. NSRAA HATCHERIES | 16 |
| V. THE 2000 CHINOOK PLANNING TEAM MEETING | 16 |
| Tahini River Broodstock Development | 16 |
| Status of the Southern Southeast Chinook Cooperative Agreement | 16 |
| Little Port Walter Chinook Production | 17 |
| NSRAA Zero-Check Chinook Release | 17 |
| Federal Funding | 17 |
| VI. EFFECT OF THE SOUTHEAST ALASKA CHINOOK SALMON HATCHERY PROGRAM ON WILD STOCKS | 18 |
| A. SITE AND STOCK SELECTION | 18 |
| B. STRAYING | 18 |
| C. GENETIC STUDIES | 19 |
| D. DOMESTICATION EFFECTS STUDIES | 19 |
| VII. BROODSTOCK PERFORMANCE | 20 |
| LITERATURE CITED | 21 |

LIST OF TABLES

| | <u>Page</u> |
|--|-------------|
| Table 1. Estimates of total escapements of chinook salmon to escapement indicator systems and to Southeast Alaska and transboundary (T) rivers, 1975-1999. | 22 |
| Table 2. Southeast Alaska winter troll fishery chinook salmon catches, vessel landings, and catch per landing, by troll accounting year (October - September), years ending 1980 - 1999. | 23 |
| Table 3. The number of salmon harvested and permits fished in the 1999 spring (Experimental and Terminal) troll fisheries. | 24 |
| Table 4. Number of days, effort (boat days) and dates the Southeast Alaska troll fishery was open [chinook retention (CR)], closed to chinook salmon fishing [chinook non-retention (CNR)], and closed to all species (all) during the general summer season, April 15 - September 30, 1978 - 1999. | 30 |
| Table 5. Chinook salmon catch per fleet day (rounded to nearest hundred) in the Southeast Alaska troll fishery during the general summer season, April 15 - September 30, 1984 -1999. | 32 |
| Table 6. Contribution in numbers and percent of Alaska hatchery chinook salmon in the winter, experimental, terminal, hatchery access, and general summer troll fisheries, 1989-1999. | 34 |
| Table 7. Estimated harvest and Alaska hatchery add-on of chinook salmon by commercial and sport fisheries in Southeast Alaska, 1999. | 36 |
| Table 8. Minimum estimated contribution of hatchery chinook salmon to sampled marine boat sport fisheries of Southeast Alaska, 1999. | 37 |
| Table 9. Annual Southeast Alaska commercial and recreational chinook salmon harvests and Alaska hatchery contributions, in thousands of fish, 1965-1999. | 38 |
| Table 10. Actual and projected releases of chinook salmon by brood year. | 39 |
| Table 11. Chinook smolt capacity of Southeast Alaska hatcheries, 1996 - 1999. | 41 |
| Table 12. Estimated harvest and escapement of chinook salmon from Southeast Alaska enhancement sites in 1999. | 42 |
| Table 13. Estimated harvest and escapement of Alaska hatchery-produced chinook salmon in Southeast Alaska, 1980-1999. | 43 |
| Table 14. Percent distribution of troll catch of hatchery chinook salmon by PSMFC area, 1980-1999. | 44 |
| Table 15. Total return of chinook salmon released from various enhancement sites in Southeast Alaska, by return year. | 47 |
| Table 16. Common property exploitation rate (%) of chinook salmon returning to various enhancement sites in Southeast Alaska, by return year. | 48 |
| Table 17. Chinook salmon egg takes in Southeast Alaska in 1999 (numbers in thousands). | 49 |
| Table 18. Rearing strategies and release sites of 1999 brood chinook salmon eggs in enhancement programs (numbers in thousands). | 50 |
| Table 19. Incidence of hatchery strays in ten wild stock streams in Southeast Alaska. | 51 |

LIST OF FIGURES

| | <u>Page</u> |
|---|-------------|
| Figure 1. Ketchikan area spring troll fisheries, 1999..... | 52 |
| Figure 2. Wrangell area spring troll fisheries, 1999. | 53 |
| Figure 3. Lower Chatham area spring troll fisheries, 1999. | 54 |
| Figure 4. Upper Chatham area spring troll fisheries, 1999..... | 55 |
| Figure 5. Sitka area spring troll fisheries, 1999..... | 56 |
| Figure 6. Number of days and percent of annual harvests taken in experimental fisheries, 1989-1999..... | 57 |
| Figure 7. Southeast Alaska areas closed to trolling for all species following the initial chinook salmon opening in the Southeast Alaska summer troll season. | 58 |
| Figure 8. Percent of active troll permits fished by season, 1980-1999..... | 59 |
| Figure 9. Number of chinook salmon harvested under the Pacific Salmon Treaty quota, 1985-1999..... | 60 |
| Figure 10. Location of chinook salmon hatcheries, remote release sites, and primary ancestral stock rivers in Southeast Alaska..... | 61 |
| Figure 11. Actual and projected releases of hatchery-produced chinook salmon in Southeast Alaska by brood year, 1978-1998. | 63 |
| Figure 12. Actual and projected releases of hatchery-produced chinook salmon in Southeast Alaska by calendar year, 1979-2001. | 64 |
| Figure 13. Percentages of Alaska hatchery-produced chinook salmon harvested in common property fisheries and utilized by hatchery operators for cost recovery or broodstock and escapement, 1985-1999. | 65 |
| Figure 14. Pacific States Marine Fisheries Commission areas in Southeast Alaska..... | 66 |
| Figure 15. Number of chinook salmon released by Southeast Alaska hatcheries, by ancestral stock, brood years 1976-1997. | 67 |
| Figure 16. Chinook salmon sensitive and non-sensitive areas in Southeast Alaska..... | 68 |
| Figure 17. Troll harvest rate and marine survival of chinook salmon released from Southeast Alaska enhancement sites..... | 69 |

I. INTRODUCTION

The Chinook Salmon Plan for Southeast Alaska (Holland et al. 1983) was developed by the Chinook Planning Team (CPT), under the direction of the commissioner of the Alaska Department of Fish and Game (ADF&G). The CPT was formed to address chinook salmon enhancement in Southeast Alaska from a regional stock rebuilding perspective. The team's members represent chinook salmon producers, harvest managers, and ADF&G Planning and Permitting staff. The Chinook Salmon Plan is part of a larger effort in regionwide comprehensive salmon planning conducted by the Northern and Southern Southeast Regional Planning Teams (RPTs). The annual update (Annex) to the Chinook Salmon Plan serves as a single source of current information on enhanced chinook salmon production and harvest in Southeast Alaska. Each Annex describes actions taken to implement the policies and achieve the goals described in the Chinook Salmon Plan. Annexes also contain broodstock allocation plans and recommendations for the current year, and summarize current issues in chinook salmon enhancement discussed at the Chinook Planning Team meeting each spring. This publication is the 18th Annex to the Chinook Salmon Plan.

One of the original objectives stated in both the *Comprehensive Salmon Plan*² and the Chinook Salmon Plan was to increase the chinook salmon harvest in Southeast Alaska to 537,000 fish annually, from all sources. However, in 1985, the Pacific Salmon Treaty (PST) was signed, and the United States and Canada agreed to begin a coast-wide, wild chinook salmon stock rebuilding program. Since then, annual harvest limits have been imposed on the Alaska catch of PST or 'treaty' fish, defined as any chinook salmon *not* of Alaska hatchery origin. The range in these annual limits has fluctuated between 146,000 fish in 1996 to 302,000 fish in 1990 and 1997. Alaska hatchery chinook salmon production beyond a pre-existing level of 5,000 fish is exempt from the treaty's harvest limits. Therefore, hatchery production that can be harvested in discrete areas, where the interception rate of non-Alaskan fish is low, has become important to the fishing industry, particularly to the troll and recreational fleets. The compilation of data in each Annex assists chinook salmon producers and managers with plans to maximize benefit to the Alaskan user groups while staying within the annual quota.

II. SUMMARY OF CHINOOK SALMON PRODUCTION, HARVEST, AND ENHANCEMENT IN SOUTHEAST ALASKA

A. Wild Stock Production

The department has estimated chinook salmon escapement in 11 indicator river systems since 1981. Escapement goals for these rivers were set originally as the largest escapement recorded prior to 1981. Recently, coded wire tag (CWT) data, improved estimates of total escapement, and age and sex data have been used to establish maximum sustained yield (MSY) escapement goals. The escapement goals for the Taku and Stikine Rivers were revised in 1999, based on a comprehensive review of existing data. The revised Taku River escapement goal range is 30,000 to 55,000 large fish (age .3 and older), which is similar to the previous goal of 53,000. The Stikine goal was revised to a range of 14,000 to 28,000, which also encompasses the previous goal of 21,000 large fish. In 1998, a revised stock-recruitment analysis by

² ADF&G 1981. The primary operating document of the Regional Planning Teams

ADF&G and DFO staff estimated the escapement goal for the Klukshu River³ should range between 1,100-2,300 spawners. The Andrew Creek escapement goal was also revised in 1998 to a range of 650 to 1,500 total large spawners.

The estimated total chinook salmon escapement to wild systems in 1999 was 68,841 large chinook, a 17% decrease from the 1998 estimate (Table 1). A 34% drop in escapement to the Taku River (from 31,039 to 20,545), the largest system in Southeast, exerted the greatest influence on this statistic. Escapement to the Taku was below the escapement goal range for the first time since 1987.

Escapement indices for seven of the eleven monitored chinook salmon systems increased in 1999, and only the Taku and Blossom rivers were below goal. However, the 1999 estimated regionwide total was the lowest since 1983, and only 59% of the 1991–1995 average of 125,026.

In 1999, mark-recapture programs were conducted on the Asek, Chilkat, Taku, Stikine, Unuk, and Keta Rivers. Surveys will continue on the other systems, with some increased on-ground presence in King Salmon River, Andrew Creek, and Blossom River to collect age, sex, and size data, and to look for CWTs. Because of problems encountered in 1998, the Andrew Creek weir was not operated in 1999.

Wild chinook salmon smolt tagging continued in 1999 on the Taku and Unuk Rivers, and new programs were started again on the Chilkat and Stikine rivers.

B. Chinook Salmon Harvests in Southeast Alaska Fisheries, 1999

The 1999 chinook salmon harvest was managed under a new set of Pacific Salmon Treaty Agreements (PSTA). The new chinook salmon agreement replaced, and was similar to, the abundance-based management implemented in 1997 – 1998, under the “Letter of Agreement Regarding an Abundance-Based Approach to Managing Chinook Salmon Fisheries in Southeast Alaska” (LOA). However, under the PSTA, Alaska agreed to harvest even fewer chinook salmon at lower abundance levels than had been harvested under either the PST or the LOA. In addition to complying with the new PSTA, the 1999 chinook salmon fisheries were managed to: 1) continue the Southeast Alaska wild chinook salmon conservation program; 2) provide maximum opportunity to harvest Alaska hatchery-produced chinook salmon; and 3) minimize incidental mortality during chinook salmon non-retention periods by closing areas of high chinook salmon abundance.

The initial quota for the 1999 fishery was 192,750 treaty fish, based on a pre-season abundance index of 1.15. Following the first summer troll opening in early July, the abundance index increased to 1.16 and the treaty quota was increased to 195,600 treaty fish.

Under the current Alaska Board of Fisheries (BOF) plan, 4.3% of the annual quota for chinook salmon is allocated to the seine fisheries, 7,600 fish are allocated to the drift gillnet fisheries, and 1,000 fish to the set gillnet fisheries. Eighty percent of the remainder is allocated to the troll fishery and 20% to the sport fishery.

³ The Klukshu River is the main spawning tributary of the Tatshenshini River, which is the most productive fork of the Asek River.

Troll Fishery:

Management of the troll harvest is critical to achieving the PST quota each year because the troll fleet harvests the majority of chinook salmon in Southeast Alaska. The baseline troll quota in 1999 was 143,000 treaty chinook salmon. Just before the summer season, the troll quota is adjusted by deducting the catch in the winter and spring troll fisheries, and by applying any projected overage or underage from the net and sport fisheries. The first summer troll opening is managed to harvest 70% of the remaining quota of treaty fish, and if necessary, a second opening is used to harvest the last remaining increment of the troll quota. Before the second summer opening in 1999, all inseason adjustments were taken into account and the adjusted annual troll harvest objective was reduced to a total of 136,000 treaty chinook salmon.

Winter Season

The 1999 winter troll season opened on October 11, 1998 and continued through April 14, 1999. By regulation, the winter fishery occurs in those areas of Southeast Alaska east of the surfline, south of Cape Spencer, and including the waters of Yakutat Bay. All outer coastal areas, including the Exclusive Economic Zone (EEZ), are closed during the winter season. A catch ceiling of 45,000-fish is mandated in regulation for the winter fishery. The 1999 winter troll fishery harvested 29,000 treaty fish from October 11, 1998 through April 14, 1999 (Table 2). The winter catch was 21% of the 1999 troll harvest.

Summer Season

The summer troll season extends from April 15 through September 30, and in recent years has been divided into two fisheries: the spring and general summer fisheries.

Two categories of fisheries occur during the spring fishery, 'experimental' and 'terminal'. Both fisheries target Alaska hatchery-produced chinook salmon. Experimental fisheries occur mostly during May and June, primarily in the inside waters near hatchery release sites or along migration routes of returning hatchery fish. Terminal fisheries occur in Terminal Harvest Areas associated with hatchery release sites where fisheries are opened in accordance with schedules developed by each hatchery corporation's board of directors. Spring fishery areas open in 1999 are shown in Figures 1 through 5.

Opportunity in the experimental fisheries has been increasing each year since their inception in 1989. From early May through the end of June 1999, 25 areas were open for varying lengths of time for a combined total of 876 area-days. This represents a substantial increase from 509 area-days in 1998. Four new fishing areas were added in 1999: West Rock (101-21) and Pt. Alava Shore (101-53) in southern southeast (Figure 1), Lisianski Inlet (113-95) in the upper Chatham area (Figure 4), and Inner Silver Bay (113-37) in the Sitka area (Figure 5). Two other areas were expanded: Pt. Sophia (114-27) in the upper Chatham area (Figure 4), and Eastern Channel (113-35) in the Sitka area (Figure 5).

Total experimental fishery chinook salmon harvest in 1999 was 18,099 fish, of which 48% were Alaska hatchery fish. The most productive experimental fishery areas were Silver Bay (4,493 fish), Chatham Strait (1,970 fish), Tebenkof Bay (1,941 fish), and Middle Island (1,374 fish) (Table 3). Of these areas, only the catch in Tebenkof Bay contained less than 50% Alaska hatchery chinook. Experimental fisheries took 12.4% of the total troll chinook salmon harvest in 1999, compared to 10% in 1998 (Figure 6).

Five terminal area fisheries were opened in 1999. The terminal area fisheries yielded 2,367 chinook, all of which are counted as Alaska hatchery fish. Hidden Falls was the most productive terminal area, contributing 87% of the total terminal harvest.

The spring fishery combined total harvest of 20,466 chinook salmon contained 54% Alaska hatchery fish. A slightly higher percentage of the annual troll catch was taken in the spring fisheries in 1999 (14%) compared to 1998 (11%). Spring fisheries harvested 11,700 treaty fish in 1999.

The first general summer troll opening occurred July 1 through July 6, with a harvest 75,840 treaty fish. Following the first opening, the areas of high chinook salmon abundance were closed (Figure 7). The season finished with a second opening August 18 through August 22, in which 15,880 treaty fish were harvested. An additional 3,700 Alaska hatchery chinook salmon were harvested in the general summer fishery. The total 1999 treaty chinook salmon troll harvest was 132,825 fish. Boat days of effort during the summer chinook salmon retention period were the second lowest since 1978 (Table 4). Chinook catch per fleet day was 13,000 fish in 1999, compared to 9,400 fish in 1998 (Table 5). The Alaska hatchery contribution (16,865 fish) to the troll fishery was 12% in 1999, approximately double that of 1998 (Tables 6 and 7).

Overall, troll fishery participation in 1999 was relatively stable when compared with the previous year. Seventy-five percent of power troll permits were actually fished in 1999 (724 out of 965), compared with 76% in 1998; and 24% of hand troll permits were fished, compared with 22% in 1998. The total number of active hand troll permits continued to decline, as non transferable permits lapsed, from 1,409 in 1998 to 1,370 in 1999. Active power troll permits declined from 967 to 965 during the same period. Participation by fishery in 1999, in terms of per cent of active permits fished, was nearly identical to 1998 (Figure 8), and the majority of effort continued to be directed toward the summer fishery.

Net Fisheries:

Based on the 1999 annual harvest limit of 195,600 treaty chinook salmon 28 inches or larger, the purse seine quota was 8,400 chinook salmon. The drift gillnet chinook salmon quota was 7,600 fish, and the set gillnet quota was 1,000 fish. Chinook salmon less than 21 inches in length may not be retained in the purse seine fishery; chinook salmon between 21 and 28 inches may be retained but not sold. These restrictions do not apply to the gillnet fisheries. As in the troll fishery, chinook salmon produced by Alaska hatcheries, minus adjustments for pre-treaty hatchery production and estimation error, do not count against the annual quota for treaty fish.

In order to stay within the harvest guideline for treaty fish, periods of non-retention of chinook salmon are established each year for the purse seine fishery. In 1999, non-retention was in effect from the start of the season until August 6 in all fisheries except the Hidden Falls Terminal Harvest Area, where nearly all harvested chinook salmon are of Alaska hatchery origin. The total 1999 purse seine harvest of chinook salmon was approximately 20,850 fish, including 17,832 fish that were 28 inches or larger and 2,960 that were less than 28 inches. Of the large chinook salmon, 11,750 were hatchery-produced and nearly all of these (11,746) were harvested in hatchery terminal area fisheries – primarily at Hidden Falls. At the end of the season, total purse seine harvest of treaty fish was approximately 2,300 fish below the 8,400 chinook salmon harvest guideline.

The 1999 drift gillnet fishery was conducted in weekly openings from June 20 through August 27 (summer season), and August 29 through October 13 (fall season). Total drift gillnet harvest of chinook salmon was 8,898, of which 5,048 were from Alaskan hatcheries (3,148 harvested in hatchery terminal

areas and 1,900 harvested in traditional districts). As a result, total drift gillnet harvest of treaty fish was 4,347, or roughly 3,250 fish below the 7,600 harvest guideline. Crystal Lake hatchery contributed 1,200 chinook salmon to the drift gillnet fisheries (mostly in Earl West Cove) as the largest hatchery contribution to this gear group.

Recreational Fisheries:

The sport fishery is allocated 20% of the quota of treaty chinook salmon remaining after the deduction of the net fishery allocation. Under the present system, once the preseason abundance index is determined, the department sets an initial sport fish bag limit that will achieve the 20% allocation. Additional management measures are taken inseason if the sport harvest appears to be deviating more than 7.5% from the target. In 1999, the sport quota was 42,800 chinook salmon. The preseason abundance index was not obtained until late June and a two-fish bag limit had been in effect for the spring months. The bag limit for the remainder of the year was reduced to one fish on July 3. The harvest of treaty chinook salmon was 47,200, and exceeded the upper management target ($42,800 \pm 7.5\%$) by 1,190 fish.

The preliminary estimate for the total 1999 sport harvest of chinook salmon is 60,600 fish (Table 7). This represents an increase of approximately 5,000 fish over the previous year. The Alaska hatchery contribution is estimated to be 16,100 chinook salmon, a 70% increase over the 1998 hatchery contribution. Most of the Alaska hatchery harvest occurred in the general fisheries (11,800 fish) with the remainder harvested in hatchery terminal areas (4,300 fish). The calculated add-on of 13,014 chinook salmon was 21% of the total catch in 1999, up from 14% in 1998. Preliminary estimates of hatchery contributions are raw expansions based on CWT recoveries in the sampled marine boat sport fisheries (Table 8). Sport harvest estimates will be adjusted with data collected in the annual Statewide Harvest Survey, which is a random postal survey of sport fishing license holders.

The sport harvest in the Ketchikan area contained the highest percentage of hatchery chinook salmon (48%) of all sampled areas, and the largest contributor to the Ketchikan area was Whitman Lake Hatchery with 1,531 out of 2,306 Alaska hatchery chinook salmon harvested. Gastineau Hatchery contributed the highest number of chinook salmon to Southeast's sport fisheries. Returns to its four Juneau-area release sites resulted in a sport harvest of 1,527 chinook salmon in the marine boat sport fishery, plus another estimated 1,000 taken in the terminal area fishery. Medvejie Hatchery contributed more than 2,000 chinook salmon to the Sitka area sport fishery. The Blind Slough fishery, near Crystal Lake Hatchery, produced the highest terminal area chinook salmon sport harvest at 2,000 fish.

Summary of the 1999 Harvest:

The total 1999 chinook salmon harvest by all gear types was 239,075 fish (Table 7). Of these, 193,396 were treaty fish, only 1% below the adjusted quota of 195,600. The remainder of the actual harvest, an estimated 53,120 Alaska hatchery chinook salmon, translated into a 45,679-fish quota add-on, to give the total harvest number. Contribution of Alaska hatchery chinook salmon to the total catch was 22% in 1999, a substantial increase over last year's 12% (Table 9, Figure 9).

C. Enhanced Production

The locations of all hatcheries that produce chinook salmon in Southeast Alaska, the location of significant remote release sites, and the ancestral rivers of the major hatchery stocks in the region are shown in Figure 10. The map key associated with Figure 10 lists the stream numbers for all past and present release sites, and stream numbers of ancestral chinook salmon stocks used in the southeast region.

Hatchery Releases:

Table 10, actual and projected releases of chinook salmon by brood year, has been revised from previous Chinook Annexes. The table has been reorganized by age at release, and expanded to show release sites. Also, release numbers have been edited where necessary to match the ADF&G Coded Wire Tag and Otolith Processing Laboratory on-line database, and therefore the PSMFC database. Revised total numbers are shown in Figure 11, release by brood year, and Figure 12, release by calendar year.

A total of 6,588,000 juvenile chinook salmon were released from Southeast hatcheries in 1999. This was the largest release since 1993 and an increase of 851,000 fish over the previous year. All releases were age-1 smolts with the exception of 273,600 fry released by SSRAA into Long Lake, above Neets Bay. The 1999 Long Lake release accounted for approximately one-third of the increased total production. The other large component of the increase was an additional 520,000 yearling smolts released from Medvejie hatchery as a result of the Green Lake rearing project. Both of these innovative projects involve a lake rearing phase. In the Long Lake project, fingerlings are pen-reared through the summer months, released into the lake to overwinter, and outmigrate volitionally the following spring. In the Green Lake project, fingerlings are pen-reared through the summer, then transported to saltwater net pens for overwintering and smoltification. Both projects are expected to add significant numbers of adults to Southeast's chinook salmon fisheries in the coming years.

Gastineau Hatchery released a total of 578,300 chinook salmon smolts at three sites in the Juneau area in 1999. This was an increase of 112,000 over the previous year's release and DIPAC's largest chinook salmon release ever. Whitman Lake's release into Herring Cove was also the largest ever, at 742,000, and near the 750,000 goal. Sheldon Jackson Hatchery's release declined from 41,000 the previous year to 11,000 in 1999 due to gas bubble disease in the 1997 brood chinook. Changes in release numbers at other facilities were minor and reflected the usual year-to-year variation.

No age-0 chinook salmon smolts were released from Southeast hatcheries in 1999.

Smolt Capacity:

One increment of chinook salmon production was added to Southeast's total smolt capacity in 1999. Prince of Wales Hatchery Association (POWHA) received a permit alteration allowing them to produce 250,000 yearling smolts annually for a release in Coffman Cove. The project is still in the planning phase, and in late 1999 was undergoing a thorough revamping by new hatchery staff. Expected date of implementation is uncertain. The community of Coffman Cove is still solidly behind the project.

Table 11 tracks chinook salmon smolt capacity by hatchery for the past four years.

Harvest of Hatchery Fish:

Hatchery operators reported a total return of 83,420 chinook salmon in 1999 based on recoveries of coded wire tags in sampled fisheries, estimates of contribution to unsampled fisheries, and totals of broodstock and escapement (Table 12). Of this total, 47,502 fish were harvested in common property fisheries, 15,855 fish were harvested by hatchery operators for cost recovery, and 15,850 fish were used for broodstock or were considered surplus and given away to the public. Ten Alaskan tags were recovered in Canadian waters, but a total contribution estimate is not available and therefore Canadian recoveries are expanded by marking fraction only. The 1999 return was the sixth highest since 1980 (Table 13).

Common property fisheries took 60% of Alaska hatchery chinook salmon accounted for in 1999, compared to 50% in 1998⁴ (Figure 13, combined troll, net, and sport categories). In comparison with 1998, the 1999 the troll harvest increased from 20% to 22%, and the harvest by net gear increased from 17% to 24%. Much of the increase in seine catch came from the Hidden Falls Hatchery Terminal Area. Conversely, the cost recovery harvest dropped from 31% in 1998 to 20% in 1999. Sport harvest of enhanced chinook salmon remained stable at 14%.

Historically, the northernmost hatcheries contribute primarily to the central and southern intermediate PSMFC areas (Figure 14), while the southernmost hatcheries contribute more to the southern inside areas (Table 14).

Total returns in 1999 increased to 11 sites and decreased to 7 sites, compared to 1998 returns (Table 15). Exploitation rates of chinook, by release site, are in Table 16.

Disposition of BY '99 Eggs:

Southeast Alaska hatchery operators took 11,230,000 chinook salmon eggs in 1999. After discarding fertilized eggs from BKD positive parents and making other adjustments in numbers, a total of 9,811,000 chinook salmon eggs were incubated (Table 17). Regionwide, total incubation survival to the eyed stage was 89%.

Two transfers of BY '99 chinook salmon eggs occurred within the region:

- Gastineau Hatchery received 788,000 green eggs from Crystal Lake Hatchery. This allows Gastineau to produce its full permitted capacity of chinook salmon smolts without taking eggs on site. Adults of both Andrew Creek and King Salmon River ancestral stocks returned to Gastineau in 1999, and hybridization of the two stocks would not be consistent with the Genetics Policy.
- Crystal Lake Hatchery received 602,400 eggs from Whitman Lake Hatchery as part of the ongoing SSRAA/ADF&G Cooperative Agreement for Chinook Salmon Production in the Ketchikan Area. Resultant smolts will be transferred back to SSRAA for release at Neets Bay in 2001.

A projected total release of 5,050,000 from BY 1999 is nearly identical to the projected release from BY 1998; but unlike BY 1998, two groups of age-0 smolts will be released, at Medvejie and Tamgas Creek Hatcheries (Table 18).

⁴Although 1- and 2-ocean jacks in the escapement are included in total return numbers, they are excluded from percent utilization calculations.

III. BROODSTOCK ALLOCATION

A. Broodstock Development and Diversity

Five chinook salmon broodstocks are presently used in hatchery production in Southeast Alaska. However, two of these stocks, Andrew Creek and Chickamin River, have accounted for the majority of releases since the 1988 brood year (Figure 15). The Tahini River chinook salmon stock is presently the least-utilized stock and its development would provide an opportunity to increase the genetic diversity of hatchery chinook salmon stocks in Southeast. Gastineau Hatchery is geographically the closest major facility to the Tahini River, and therefore the logical site for rearing and release of this stock. A broodstock development program that calls for a series of smolt releases at Skagway will eventually result in enough adults to provide gametes for DIPAC's Gastineau Hatchery chinook salmon program. This program was set back in 1999 when Tahini River returns to Burro Creek Hatchery (the only hatchery source for this stock) were less than expected and only 30,000 eggs were taken toward a goal of 100,000. DIPAC staff have recalculated the development schedule and now estimate it will take 10-15 years to achieve the goal of converting DIPAC's production to the Tahini stock. The schedule can be accelerated if wild egg takes supplement the return of enhanced fish. A cooperative agreement (COOP-00-084) has been approved by DIPAC, ADF&G Sport Fish Division, Burro Creek Hatchery, and the City of Skagway to describe what each party will accomplish toward the common goals of improving sport fishing and establishing a significant hatchery broodstock.

NMFS has advised the Chinook Planning Team of its intention to discontinue the chinook salmon broodstock maintenance program at Little Port Walter. The LPW Unuk River broodstock is one of the two remaining hatchery stocks derived from the Unuk River. The other one, at Deer Mountain Tribal Hatchery, is in jeopardy also because of financial difficulties of maintaining the hatchery operation. The Coffman Cove chinook salmon project will utilize Unuk River stock but that project is still in the planning stages. At this time there is a possibility the Unuk River hatchery broodstock will be lost. One of the policies for enhanced chinook salmon production in the Chinook Salmon Plan states, "Genetic variability in enhancement stocks is to be maximized i.e., as many different hatchery stocks as feasible should be developed..." Losing a hatchery stock would be contrary to the policy.

B. Egg Allocation Criteria and Plan for 2000

Allocation criteria, first formulated in 1987, are relevant only in cases where chinook salmon eggs or smolts are transferred either between hatcheries or from the wild to hatcheries. Allocation criteria for chinook salmon eggs can be found in McGee et al. 1996.

The following planned or potential egg transfers are noted for 2000:

Little Port Walter:

| Stock | Total Eggs Expected | Needed for LPW | Potential Transfer |
|-----------|---------------------|----------------|--------------------|
| Unuk | 1,000,000 | 0 | 1,000,000 |
| Chickamin | 500,000 | 0 | 500,000 |

All BY 2000 gametes are available for other programs due to discontinuation of the LPW broodstock maintenance program. In addition to the eggs listed above, an estimated 25,000 King Salmon River chinook salmon eggs are also expected; at the present time there is no intention to continue culture of this stock at any facility.

Deer Mountain Tribal Hatchery:

| Stock | Total Eyed Eggs Expected | Needed for DMTH | Potential Transfer |
|--------------|---------------------------------|------------------------|---------------------------|
| Unuk | 157,500 | 110,000 | 47,500 |

In the next few years DMTH will be maintaining the only hatchery stock of Unuk River chinook. Klawock River Hatchery has received a permit alteration to use this stock for the Coffman Cove project, but the project will not begin in 2000.

Whitman Lake Hatchery:

| Stock | Total Eyed Eggs Expected | Needed for WLH | Planned Transfer |
|--------------|---------------------------------|-----------------------|-------------------------|
| Chickamin | 1,650,000 | 1,150,000 | 500,000 |

All expected 2000 brood year eggs are fully allocated under the SSRAA/ADF&G Cooperative Agreement for Chinook Salmon Production. According to the agreement, 500,000 eyed Chickamin chinook salmon eggs (or the equivalent number of green eggs) will be transferred to Crystal Lake Hatchery, and the resultant smolt will be transported to SSRAA's Neets Bay hatchery for imprinting and release in 2002.

Crystal Lake Hatchery:

| Stock | Total eyed eggs expected | Needed for CLH | Planned Transfer |
|--------------|---------------------------------|-----------------------|-------------------------|
| Andrew Cr | 1,920,000 | 1,350,000 | 570,000 |

Crystal Lake Hatchery plans to transfer all excess BY 2000 Andrew Creek chinook salmon eggs to Gastineau Hatchery. No chinook salmon eggs will be taken at Gastineau until King Salmon River returns are complete and returning adults are once again exclusively Andrew Creek stock.

Burro Creek Hatchery:

| Stock | Total Eggs Expected | Needed for Burro Cr | Planned Transfer |
|--------------|----------------------------|----------------------------|-------------------------|
| Tahini R | 100,000 | 0 | 100,000 |

Burro Creek Hatchery plans to transfer its permitted maximum of 100,000 Tahini River chinook salmon eggs to Gastineau Hatchery for incubation and rearing (Cooperative Agreement COOP-00-084). Resultant smolts will be transported to Pullen Creek pond for imprinting and release in 2002.

IV. HATCHERY RETURN PREDICTIVE MODELS

Each year hatchery operators are asked to predict the number of chinook salmon expected to return to hatchery facilities in Southeast Alaska. These preseason projections include total return, number of fish expected to be harvested in traditional and terminal fisheries, and number needed for brood stock. There are no standardized procedures for making such projections, and the inaccuracy inherent in predicting future events has resulted, in some years, in substantial differences between the prediction and actual returns.

Some of the techniques used to predict future chinook salmon returns are described below; most remain the same as those used in 1999.

A. Little Port Walter

The Little Port Walter facility uses a dual-model approach for predicting year-class strength of chinook salmon in fisheries and in returns to the hatchery. The first model is an overall survival estimator for each brood year based on a linear-regression prediction using the square root-transformed percent survival of recoveries of zero-ocean-age mini-jacks at the Sashin Creek weir as an independent predictor variable (mini-jack survival is not included in the total). No other predictor variables are used with the model.

The second model is a synthesis of previous years' returns, age distributions, and sex ratios at the weir. This analysis predicts percent returns for a given cohort in a given year based on the previous year's data combined with the historic ratios between age classes.

B. Crystal Lake Hatchery

During the year preceding the target year, the initial prediction for chinook salmon returns in the target year is based on historic age-class fractions of each brood year. Survival rates of age-1.2 and age-1.3 fish returning in the year preceding the target year are used as predictors.

C. Deer Mountain Tribal Hatchery

Predictions are based on the same technique used for predicting the Crystal Lake Hatchery return, with the exception that information from the winter fishery is not used.

D. SSRAA Hatcheries

SSRAA employs a synthesis of previous year's return and distribution information similar to that for Little Port Walter to predict returns for the subsequent year at the Whitman Lake and Neets Bay Hatcheries. The analysis predicts percent return for a given cohort in a given year based on the previous year's data combined with the historic ratios among age classes. The distribution between fishery and rack components of the run is based on the most recent three-year average.

E. NSRAA Hatcheries

A great deal of effort goes into regular sampling of the chinook salmon return each year to NSRAA facilities to be able to generate accurate estimates of age-at-return. These estimates are used to examine historic relationships between age classes for each hatchery. Returns of age 1.2 fish are predicted using historic averages. Return predictions for age 1.3 and 1.4 fish are based on regression analysis of the previous year's age 1.2 and 1.3 returns, respectively. Size-at-age information is also analyzed. Predictions may be adjusted if size data suggests a shift from normal age-at-return ratios.

V. THE 2000 CHINOOK PLANNING TEAM MEETING

The Chinook Planning Team met on April 20 in the ADF&G Southeast Regional Office. Major topics of discussion are summarized below:

Tahini River Broodstock Development

A plan to develop the Tahini River chinook salmon stock for increased use in the enhancement program has been discussed and refined during the past year (see 'Broodstock Development and Diversity'). As of April 20, discussion between the four signatory parties of the draft Cooperative Agreement was continuing, with the hope of resolving the few remaining issues. It appears that wild egg takes will be feasible, under certain conditions, increasing the likelihood of achieving the program goals within a reasonable time.

Status of the Southern Southeast Chinook Cooperative Agreement

A cooperative agreement between ADF&G Sport Fish Division and SSRAA, in effect for the past four years, has been successful in linking appropriate funding sources to various chinook salmon releases, thus allowing for increased chinook salmon production. The Chinook Planning Team discussed the following changes and potential changes to the cooperative agreement:

1. Full production from Long Lake. SSRAA will be rearing 250,000 chinook salmon fingerlings in Long Lake beginning with the 1999 brood. This moves the entire SSRAA component of the Neets Bay chinook salmon production out of the saltwater net pen complex and into the lake-rearing mode. The move is expected to result in better survival to smolt and better smolt quality. Long Lake chinook salmon production constitutes SSRAA's part of the Neets Bay release described in the ADF&G/SSRAA Cooperative Agreement for chinook salmon production in southern Southeast.⁵

2. Continued operation of Crystal Lake Hatchery. SSRAA will assume operation of Crystal Lake Hatchery on July 1, 2000. Funding for the operation of Crystal Lake Hatchery in FY 2001 has been identified. It will include money from ADF&G Sport Fish Division, money from the ADF&G/SSRAA cooperative agreement for chinook salmon production, and some of the new Federal Salmon Recovery

⁵ See McGee et al., 1997, for a description of the cooperative agreement.

money. ADF&G has committed its portion of the funding for FY 2002 and 2003, but the Salmon Recovery funding beyond FY 2001 will have to be approved by the stakeholders, when the process to decide how this money will be spent is developed.

3. *Move the Earl West Cove release to Burnett Inlet.* SSRAA submitted a Permit Alteration Request (PAR) to imprint and release 400 K chinook, reared at Crystal Lake Hatchery, from a site adjacent to Burnett Inlet Hatchery, beginning with the 2001 release. The Southern Southeast Regional Planning Team voted at its spring meeting to recommend approval. The proposed release site is farther removed from the Stikine River and trollers would have better access to the enhanced fish than they have in the Earl West Cove THA. Also, culturists expected to produce a better quality smolt from the Burnett Inlet site. Some members of the gillnet fleet were concerned that higher numbers of chinook salmon in Clarence Strait would result in cutbacks to their fishery; however, Southeast Region management biologists did not expect this to happen as a result of moving the release site. The PAR was ultimately denied, however, based on fish health concerns. It would not have been possible to ensure complete isolation of the chinook salmon from the effluent from the rearing sockeye. Instead, relocation of chinook salmon production, along with coho and chum production, to Anita Bay was approved by ADF&G.

Little Port Walter Chinook Production

Releases from brood year 1999 will be the last Unuk and Chickamin chinook salmon smolts produced at Little Port Walter. Funding has not been identified to carry the chinook salmon broodstock project forward. NMFS staff will continue to evaluate adult returns. Research on mixing of enhanced and wild chinook salmon remains funded and will continue for the time being.

NSRAA Zero-Check Chinook Release

NSRAA staff have noted that some of the chinook salmon in the Green Lake rearing project attain a size of 20 grams or more by mid-July. A surplus of BY '99 chinook salmon exists, and NSRAA proposes to transfer the largest 200 K from Green Lake to saltwater pens in mid-July 2000, and release them after acclimation. A discussion of past failures of zero-check chinook salmon releases ensued, with the conclusion that NSRAA would be releasing much larger smolts than ever before, and it was worth a try.

Federal Funding

Two sources of funding for possible use in chinook salmon enhancement have been established in recent months. The *Northern Fund*, associated with the 1999 U.S./ Canada Pacific Salmon Treaty agreement, can be used for transboundary river projects in the U.S. and B.C. Some \$75 M will be put into an endowment, and a board will oversee disbursement of all or part of the earnings. Makeup of the board has yet to be determined. The fund can be used for all species.

The second fund, the *Salmon Recovery Fund*, contains \$14 M in federal money. The Chinook Planning Team conducted a teleconference with John Sisk, in Governor Knowles office, to get an update on this fund. The details of fund disbursement have not been established. The four areas of application will be: 1) habitat restoration and protection, 2) enhancing economic opportunities, 3) research and monitoring, and 4) national and international cooperation. There will be a five-year period in which to expend the funds, and the Governor's office will have oversight. According to Mr. Sisk, ADF&G will coordinate the process of developing priorities.

The 2000 Chinook Planning Team Meeting was overshadowed by the news of the deaths of Ladd Macaulay and Martin Richard. On the previous day, both men were in a car accident along with Steve McGee who was seriously injured. We greatly missed Steve at the meeting, and the loss of Ladd and Martin was very difficult to accept.

VI. EFFECT OF THE SOUTHEAST ALASKA CHINOOK SALMON HATCHERY PROGRAM ON WILD STOCKS

Salmonid hatchery programs in the Pacific Northwest have recently been identified as being among the causal factors in the listing or pending listing of several species of salmon under the Endangered Species Act. Hatchery programs have been implicated because the genetic integrity of wild stocks has been lost through mixing of wild and hatchery fish during spawning. In addition, wild stocks have been overharvested because of greater fishing pressure on hatchery stocks.

The Alaska hatchery program has been designed to minimize impacts on wild stocks through consideration of the topics discussed in the following sections. These topics are considered to be important factors in maintaining the genetic integrity of wild stocks.

A. Site and Stock Selection

Southeast Alaska hatchery sites, remote release sites, and broodstocks were selected to minimize the chance of returning hatchery stocks mixing with wild stocks (Holland et al. 1983). No hatcheries in Southeast Alaska were built on streams with natural runs of chinook salmon. With few exceptions, chinook salmon hatcheries in the region are located on islands at or near tidewater (Heard et al. 1995; Heard 1996). Most hatcheries are 50 to 240 km from any endemic chinook salmon stock. The Chinook Salmon Plan (Holland et al. 1983) delineates a 'sensitive' and a 'non-sensitive' zone for chinook salmon stock selection and transport considerations. The zones are based on the potential for impacting wild stocks. A sensitive zone, in which wild spawning populations are present, is comprised of commercial fishing Districts 101, 107, 108, 110, 111, and 115 (Figure 16). Within the sensitive zone, movement of stocks is limited and new stock needs must be met with the closest feasible stock. The non-sensitive zone, in which there are no systems that contain self-sustaining populations of chinook salmon, is delineated by commercial fishing Districts 102, 103, 104, 105, 106, 109, 112, and 116. Stock needs in the non-sensitive zone may be met by any stock approved through the department review process.

B. Straying

An examination of several wild and hatchery systems indicates there has been very little straying. Results from surveys that examined wild chinook salmon populations for hatchery CWTs were first reported by Heard et al. (1995). Heard reported survey results through 1993 and found that 0.30% of the fish examined in wild stock systems were strays from hatcheries. In 1997, 1998, and 1999 extensive numbers of chinook salmon in wild systems were sampled for biological data, including CWTs. Examination of 12,127 chinook salmon in 1997, 8,508 in 1998, and 8,980 in 1999 indicated hatchery stray rates of

0.35%, 0.42%, and 0.30%, respectively. Survey results for 1999 are reported in Table 19. Historically, only the escapement to the Farragut River has had an unusually high incidence of hatchery strays.

One hatchery CWT was found in the escapement to Andrew Creek (Stikine River) in 1999, out of 154 fish examined; it was from the Earl West Cove release (Andrew Creek ancestry). One hatchery CWT was also found in the escapement to the Keta River in 1999, out of 404 fish examined; it was from Tamgas Creek Hatchery.

C. Genetic Studies

Genetics staffs of several organizations have been collecting and analyzing genetic data from wild-spawning and hatchery populations of chinook salmon throughout Alaska for a number of years. The goal of one recent ADF&G project was to develop a database that can be used to identify the origin of chinook salmon harvested as trawl bycatch in Alaska waters (Crane et al. 1996). In addition, researchers sought to define relationships within and among hatchery stocks. In Southeast Alaska, collections were made from six wild-spawning populations and 11 (by site and brood year) derivative hatchery stocks. Data were analyzed for temporal stability of allele frequencies of a broodstock within hatcheries, allele frequency homogeneity among hatcheries using the same broodstock, and homogeneity of allele frequencies between a hatchery stock and its wildstock progenitor. These studies will enable detection and tracking of genetic changes of individual stocks both through time and between hatchery broodstocks. ADF&G's Genetic Policy prohibits the planting of chinook salmon offspring of wild broodstock beyond the F1 generation back into their stream of origin, to avoid introduction into the wild population of any salmon whose allele frequencies may have been altered through domestication.

D. Domestication Effects Studies

Studies have been initiated by the National Marine Fisheries Service Auke Bay Lab in cooperation with ADF&G to evaluate any differences in performance and life history characteristics between native Southeast Alaskan chinook salmon stocks and hatchery stocks derived from them. Concern has been expressed over the potential deleterious effects of hatchery practices on wild salmon stocks. Alaska is in the unique position of being able to compare unperturbed wild chinook salmon with fifth and sixth generation hatchery stocks, which originated from them. Gamete collections were made in 1996 and 1998 on the Chickamin and Unuk Rivers respectively to compare the offspring of wild stock fish with those from the Little Port Walter Hatchery's Chickamin and Unuk stocks. Comparisons include evaluating the ability of fry to avoid predation, hatchery performance (growth and survival to smolt), the ability of smolt to act as predators on pink fry, marine survival, age at maturation, and growth. Preliminary results indicate no significant differences in the predation behavior and feeding trials. Evaluation will continue and hopefully expand to other chinook salmon stocks.

Based on the above information, it appears the hatchery program has had little deleterious effect on the genetic integrity of Southeast wild stocks. The higher-than-expected amount of straying into the Farragut River, however, is a cause for concern and should be regularly monitored. Research on the effects of hatchery stock/wild stock interactions should continue to be supported.

The department manages chinook salmon harvests primarily to sustain the health and maximum sustainable yields of wild stocks. Hatcheries and remote release sites have been situated to enable managers to maximize the harvest of hatchery returns with minimum disruption of wild stocks. The "spring" fisheries (i.e., experimental and terminal fisheries) target hatchery returns in areas where abundance of wild stocks is low. Management of the experimental fisheries is based primarily on the percentage of hatchery chinook salmon present, as determined through extensive catch sampling. A low abundance of Alaska hatchery stocks results in reduced fishing time.

VII. BROODSTOCK PERFORMANCE

The Chinook Planning Team, as part of the Southeast Alaska-wide Production and Management Committee, has compiled marine survival and troll harvest rate data for the major, long-standing chinook salmon programs in Southeast. The impetus for formation of the committee in 1998 was to prepare a proposal for supplemental chinook and coho salmon production, using federal funding anticipated at that time. The survival and troll harvest rates are now included in the Chinook Annex (Figure 17). Troll harvest rates are expressed as percent of total return, including all age classes. Survival rates are based on all recoveries, from all age classes.

Marine survival rates for chinook salmon released from most southern and central southeast facilities have declined since the beginning of programs in the early 1980s. However, at some of these facilities there are indications that survival rates are improving (Crystal Lake, Earl West Cove, Whitman Lake, and Tamgas Creek).

Survival rates at the largest northern southeast and Chatham Strait facilities (Medvejie and Hidden Falls) increased in the late 1980s, but may now be tapering off somewhat.

Troll harvest rates are on an upward trend for most facilities as the fleet and managers become more adept at targeting enhanced fish. Notable exceptions to the upward trend are Crystal Lake Hatchery, where the emphasis has shifted to producing chinook salmon for the sport fishery, and Tamgas Creek, which has no experimental or terminal troll fishery that targets the return.

LITERATURE CITED

- Crane, P. A., W. D. Templin, and L. W. Seeb. 1996. Genetic stock identification of Alaska chinook salmon. Alaska Department of Fish and Game, Commercial fisheries Management and Development Division. Regional Information Report 5J96-17. Juneau.
- Heard, W. R. 1996. Sequential imprinting in chinook salmon: is it essential for homing fidelity? *Bulletin of the National Research Institute on Aquaculture, Supplement 2*:59-64.
- Heard, W., R. Burkett, F. Thrower, and S. McGee. 1995. A review of chinook salmon resources in Southeast Alaska and development of an enhancement program designed for minimal hatchery-wild stock interaction. *American Fisheries Society* 15:21-37.
- Holland, J., B. Bachen, G. Freitag, P. Kissner, and A. Wertheimer. 1983. Chinook salmon plan for Southeast Alaska. Alaska Department of Fish and Game, Fisheries Rehabilitation, Enhancement, and Development Division, Special Report, Juneau.
- McGee, S., B. Bachen, G. Freitag, M. Stopha, D. Gaudet, R. Josephson, G. Garcia, and F. Thrower. 1996. 1996 annex, chinook salmon plan for southeast Alaska. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division. Regional Information Report 1J96-24. Juneau.
- McGee, S., C. Denton, B. Bachen, G. Freitag., M. Stopha, D. Gaudet, R. Josephson, F. Thrower. 1997. 1997 annex, chinook salmon plan for Southeast Alaska. Alaska Department of Fish and Game, Commercial fisheries Management and Development Division. Regional Information Report 5J97-21. Juneau.

Table 1. Estimates of total escapements of chinook salmon to escapement indicator systems and to Southeast Alaska and transboundary (T) rivers, 1975-1999.^{a,b}

| Year | MAJOR SYSTEMS | | | | MEDIUM SYSTEMS | | | | | | | | | TOTAL | Expanded Region Total ^f | |
|------------------------------|------------------------|-----------------------|--------------------------|-------------|----------------|--------------|--------|--------------|----------------|---------|------------|--------------|-------------|-------------|------------------------------------|---------|
| | Elsek ^c (T) | Taku ^d (T) | Stikine ^e (T) | Major SubT. | Situk | Chilkat | Andrew | Unuk (T) | Chick-amin (T) | Blossom | Keta | Medium SubT. | King Salmon | ALL SYSTEMS | | |
| 1975 | | 12,920 | 7,571 | 20,491 | | | | 520 | 1,481 | 365 | 508 | 2,873 | 62 | 23,426 | 27,888 | |
| 1976 | 4,898 | 24,582 | 5,723 | 35,203 | 1,365 | | | 404 | 627 | 170 | 210 | 2,776 | 96 | 38,075 | 45,327 | |
| 1977 | 12,130 | 29,496 | 11,445 | 53,071 | 1,732 | | | 456 | 3,896 | 1,450 | 280 | 575 | 8,389 | 199 | 61,659 | 73,404 |
| 1978 | 11,458 | 17,124 | 6,835 | 35,417 | 776 | | | 388 | 4,424 | 1,234 | 358 | 980 | 8,159 | 84 | 43,660 | 51,976 |
| 1979 | 16,316 | 21,617 | 12,610 | 50,543 | 1,266 | | | 327 | 2,304 | 954 | 135 | 1,065 | 6,051 | 113 | 56,707 | 67,508 |
| 1980 | 10,398 | 39,239 | 30,573 | 80,210 | 905 | | | 282 | 4,064 | 1,779 | 223 | 480 | 7,732 | 104 | 88,046 | 104,817 |
| Average | 11,040 | 24,163 | 12,460 | 45,823 | 1,209 | | | 396 | 3,672 | 1,254 | 255 | 636 | 5,997 | 110 | 51,929 | 61,820 |
| 1981 | 8,302 | 49,559 | 36,057 | 93,918 | 702 | | | 536 | 2,924 | 1,536 | 398 | 823 | 6,918 | 139 | 100,975 | 120,208 |
| 1982 | 9,076 | 23,847 | 40,488 | 73,411 | 434 | | | 672 | 5,404 | 2,284 | 863 | 1,885 | 11,542 | 354 | 85,307 | 101,555 |
| 1983 | 9,848 | 9,795 | 6,424 | 26,067 | 592 | | | 366 | 4,500 | 2,398 | 1,473 | 2,055 | 11,383 | 245 | 37,695 | 44,875 |
| 1984 | 6,588 | 20,778 | 13,995 | 41,361 | 1,726 | | | 389 | 7,348 | 4,408 | 1,270 | 1,525 | 16,666 | 265 | 58,292 | 69,395 |
| 1985 | 5,657 | 35,916 | 16,037 | 57,610 | 1,521 | | | 640 | 4,736 | 3,824 | 1,773 | 1,560 | 14,054 | 175 | 71,839 | 85,522 |
| Average | 7,894 | 27,979 | 22,600 | 58,473 | 995 | | | 521 | 4,982 | 2,890 | 1,155 | 1,570 | 12,112 | 236 | 70,821 | 84,311 |
| 1986 | 10,734 | 38,110 | 14,889 | 63,733 | 2,067 | | | 1,414 | 8,504 | 6,980 | 3,195 | 1,725 | 23,885 | 255 | 87,873 | 104,611 |
| 1987 | 10,339 | 28,935 | 24,632 | 63,906 | 1,265 | | | 1,576 | 7,892 | 3,900 | 3,373 | 1,920 | 19,926 | 196 | 84,028 | 100,033 |
| 1988 | 8,105 | 44,524 | 37,554 | 90,183 | 837 | | | 1,128 | 6,984 | 3,144 | 960 | 1,438 | 14,491 | 208 | 104,882 | 124,859 |
| 1989 | 9,570 | 40,329 | 24,282 | 74,181 | 653 | | | 1,060 | 4,596 | 3,736 | 860 | 2,888 | 13,793 | 240 | 88,214 | 105,016 |
| 1990 | 7,443 | 52,142 | 22,619 | 82,204 | 676 | | | 1,328 | 2,364 | 2,256 | 643 | 1,515 | 8,781 | 179 | 91,164 | 108,529 |
| Average | 9,238 | 40,808 | 24,795 | 74,841 | 1,100 | | | 1,301 | 6,068 | 4,003 | 1,806 | 1,897 | 16,175 | 216 | 91,232 | 108,609 |
| 1991 | 9,690 | 51,645 | 23,206 | 84,541 | 878 | 5,897 | 800 | 2,620 | 1,948 | 598 | 680 | 13,421 | 134 | 98,096 | 108,995 | |
| 1992 | 5,344 | 55,889 | 34,129 | 95,362 | 1,579 | 5,284 | 1,556 | 3,496 | 1,384 | 375 | 543 | 14,217 | 99 | 109,678 | 121,864 | |
| 1993 | 13,130 | 66,125 | 58,962 | 138,217 | 899 | 4,472 | 2,120 | 4,272 | 1,556 | 758 | 905 | 14,982 | 259 | 153,458 | 170,508 | |
| 1994 | 14,801 | 48,368 | 33,094 | 96,263 | 1,263 | 6,795 | 1,144 | 4,623 | 1,552 | 403 | 765 | 16,545 | 207 | 113,015 | 125,572 | |
| 1995 | 22,431 | 33,805 | 16,784 | 73,020 | 4,355 | 3,790 | 686 | 3,088 | 2,309 | 543 | 438 | 15,208 | 144 | 88,372 | 98,191 | |
| Average | 13,079 | 51,166 | 33,235 | 97,481 | 1,795 | 5,248 | 1,261 | 3,620 | 1,750 | 535 | 666 | 14,874 | 169 | 112,523 | 125,026 | |
| 1996 | 14,179 | 79,019 | 28,949 | 122,147 | 1,913 | 4,920 | 670 | 4,668 | 1,587 | 550 | 743 | 15,051 | 288 | 137,486 | 152,762 | |
| 1997 | 11,796 | 114,938 | 26,996 | 153,730 | 1,837 | 7,728 | 586 | 2,970 | 1,088 | 330 | 615 | 15,154 | 357 | 169,241 | 188,046 | |
| 1998 | 5,439 | 31,039 | 25,968 | 62,446 | 1,245 | 3,337 | 974 | 4,132 | 1,564 | 393 | 446 | 12,091 | 132 | 74,669 | 82,966 | |
| 1999 | 8,745 | 20,545 | 19,947 | 49,237 | 1,523 | 2,271 | 1,210 | 3,914 | 2,004 | 530 | 968 | 12,420 | 300 | 61,957 | 68,841 | |
| 1999 CHANGE FROM 1998 | | | | | | | | | | | | | | | | |
| Number | 3,306 | -10,494 | -6,021 | -13,209 | 278 | -1,066 | 236 | -218 | 440 | 137 | 522 | 329 | 168 | -12,712 | -14,124 | |
| Percent | 61% | -34% | -23% | -21% | 22% | -32% | 24% | -5% | 28% | 35% | 117% | 3% | 127% | -17% | -17% | |
| Goals | | | | | | Under review | | | | | | | | | | |
| Lower Point | 4,400 | 30,000 | 15,000 | 49,400 | 500 | | 650 | 2,800 | 1,680 | 600 | 600 | 8,800 | 120 | 58,320 | 64,800 | |
| Upper | 6,800 | 36,000 | 17,500 | 60,300 | 600 | 2,000 | 750 | 3,500 | 2,100 | 750 | 750 | 10,450 | 150 | 70,900 | 78,778 | |
| | 9,294 | 55,000 | 26,000 | 90,294 | 1,000 | | 1,500 | 5,600 | 3,360 | 1,200 | 1,200 | 16,200 | 240 | 106,734 | 118,593 | |

AVERAGE PERCENT OF POINT GOAL

| Year | Elsek | Taku | Stikine | Major SubT. | Situk | Chilkat | Andrew | Unuk | Chickmin | Blossom | Keta | Med. SubT. | King Salmon | TOTAL ALL |
|-------|-------|------|---------|-------------|-------|---------|--------|------|----------|---------|------|------------|-------------|-----------|
| 75-80 | 162% | 67% | 71% | 76% | 201% | | 53% | 105% | 60% | 34% | 85% | 57% | 73% | 73% |
| 81-85 | 116% | 78% | 129% | 97% | 166% | | 69% | 142% | 138% | 154% | 209% | 116% | 157% | 100% |
| 86-90 | 136% | 113% | 142% | 124% | 183% | | 173% | 173% | 191% | 241% | 253% | 155% | 144% | 129% |
| 91-95 | 192% | 142% | 190% | 162% | 299% | 262% | 168% | 103% | 83% | 71% | 89% | 142% | 112% | 159% |
| 96-98 | 148% | 171% | 146% | 161% | 272% | 228% | 115% | 112% | 74% | 60% | 92% | 131% | 180% | 156% |

^a Numbers in bold type are weir counts or mark-recapture estimates and are not expanded.

^b Index escapements are expanded for survey counting rates and unsurveyed tributaries.

^c Elsek escapement = (weir count X 4.0) minus above weir harvest.

^d Taku escapement = 5 trib. count X 5.2.

^e Stikine escapement = L. Tahltan count X 5.15

^f Region total expanded for 84% without Chilkat River, 90% with Chilkat escapement included.

Table 2. Southeast Alaska winter troll fishery chinook salmon catches, vessel landings, and catch per landing, by troll accounting year (October - September), years ending 1980 - 1999.

| Year | -----Early Winter (Oct.-Dec.)----- | | | ---Late Winter (Jan.-Apr. 14)--- | | | --Total Winter (Oct. - Apr. 14)-- | | | Annual Troll Total | Winter % of Annual Total |
|------|------------------------------------|----------|-------------------|----------------------------------|----------|-------------------|-----------------------------------|----------|-------------------|--------------------|--------------------------|
| | Chinook | Landings | Catch/ Landing | Chinook | Landings | Catch/ Landing | Chinook | Landings | Catch/ Landing | | |
| 1980 | 4,002 | 528 | 8 | 3,608 | 406 | 9 | 7,610 | 934 | 8 | 303,874 | 3% |
| 1981 | 1,737 | 279 | 6 | 7,027 | 744 | 9 | 8,764 | 1,023 | 9 | 248,791 | 4% |
| 1982 | 4,865 | 535 | 9 | 6,857 | 764 | 9 | 11,722 | 1,299 | 9 | 242,315 | 5% |
| 1983 | 12,517 | 926 | 14 | 17,340 | 1,424 | 12 | 29,857 | 2,350 | 13 | 269,790 | 11% |
| 1984 | 14,223 | 1,217 | 12 | 17,153 | 1,980 | 9 | 31,376 | 3,197 | 10 | 235,699 | 13% |
| 1985 | 14,235 | 1,016 | 14 | 7,234 | 1,090 | 7 | 21,469 | 2,106 | 10 | 216,089 | 10% |
| 1986 | 16,779 | 1,202 | 14 | 6,147 | 832 | 7 | 22,926 | 2,034 | 11 | 237,698 | 10% |
| 1987 | 18,453 | 1,404 | 13 | 10,075 | 994 | 10 | 28,528 | 2,398 | 12 | 242,562 | 12% |
| 1988 | 44,774 | 2,626 | 17 | 15,684 | 1,784 | 9 | 60,458 | 4,410 | 14 | 231,185 | 26% |
| 1989 | 24,426 | 2,354 | 10 | 9,872 | 1,402 | 7 | 34,298 | 3,756 | 9 | 235,609 | 15% |
| 1990 | 17,617 | 1,128 | 16 | 15,513 | 1,476 | 11 | 33,130 | 2,604 | 13 | 287,100 | 12% |
| 1991 | 19,920 | 1,094 | 18 | 20,622 | 1,915 | 11 | 40,542 | 3,009 | 13 | 263,091 | 15% |
| 1992 | 28,277 | 1,952 | 14 | 43,554 | 2,673 | 16 | 71,831 | 4,625 | 16 | 183,354 | 39% |
| 1993 | 20,275 | 1,210 | 17 | 42,447 | 2,365 | 18 | 62,722 | 3,575 | 18 | 226,561 | 28% |
| 1994 | 35,193 | 1,132 | 31 | 21,175 | 1,498 | 14 | 56,368 | 2,630 | 21 | 186,167 | 30% |
| 1995 | 10,382 | 642 | 16 | 7,486 | 871 | 9 | 17,868 | 1,513 | 12 | 138,115 | 13% |
| 1996 | 6,008 | 430 | 14 | 3,393 | 447 | 8 | 9,401 | 877 | 11 | 141,334 | 7% |
| 1997 | 13,252 | 627 | 21 | 7,705 | 524 | 15 | 20,957 | 1,151 | 18 | 246,462 | 9% |
| 1998 | 9,783 | 578 | 17 | 23,021 | 1,423 | 16 | 32,804 | 2,001 | 16 | 191,983 | 17% |
| 1999 | 13,989 | 594 | 24 | 16,988 | 1,432 | 12 | 30,977 | 2,026 | 15 | 145,898 | 21% |

Table 3. The number of salmon harvested and permits fished in the 1999 spring (Experimental and Terminal) troll fisheries.^a

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|-------------------------------|--------|--------|-------|-----------------------------------|-----------------------|---------------|---------------|
| Experimental Fisheries | | | | | | | |
| West Rock | 22 | 05/24- | 05/25 | 2 | | | |
| Area 10121 | 23 | 06/01- | 06/02 | 2 | | | |
| | 24 | 06/07- | 06/08 | 2 | | | |
| | 25 | 06/14- | 06/15 | 2 | | | |
| | 26 | 06/21- | 06/22 | 2 | | | |
| | 27 | 06/28- | 06/29 | 2 | | | |
| West Rock Total: | | | | No Landings Reported | | | |
| Gravina Is. | 22 | 05/24- | 05/28 | 5 | | | |
| Area 10129 | 23 | 06/01- | 06/04 | 4 | 6 | 129 | 44% |
| | 24 | 06/07- | 06/11 | 5 | 8 | 218 | 45% |
| | 25 | 06/14- | 06/19 | 6 | 4 | 13 | 0% |
| | 26 | 06/20- | 06/26 | 7 | 12 | 311 | 66% |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Gravina Is. Total: | | | | 19 | 686 | 52% | |
| Mountain Point | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10145 | 22 | 05/24- | 05/28 | 5 | | | |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/19 | 6 | 7 | 152 | 90% |
| | 26 | 06/20- | 06/26 | 7 | 9 | 222 | 60% |
| 27 | 06/27- | 06/29 | 3 | | | | |
| Mountain Point Total: | | | | 11 | 376 | 72% | |
| Pt. Alava Shore | 22 | 05/24- | 05/25 | 2 | | | |
| Area 10153 | 23 | 06/01- | 06/02 | 2 | | | |
| | 24 | 06/07- | 06/08 | 2 | | | |
| | 25 | 06/14- | 06/15 | 2 | | | |
| | 26 | 06/21- | 06/22 | 2 | | | |
| | 27 | 06/28- | 06/29 | 2 | | | |
| Pt. Alava Shore Total: | | | | Less than 3 permits fished | | | |
| Ship Is. Shore | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10280 | 22 | 05/24- | 05/28 | 5 | | | |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/18 | 5 | 3 | 37 | 37% |
| | 26 | 06/21- | 06/26 | 6 | | | |
| 27 | 06/27- | 06/29 | 3 | | | | |
| Ship Is. Shore Total: | | | | 4 | 47 | 29% | |
| Snow Passage | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10641 | 22 | 05/24- | 05/25 | 2 | | | |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/18 | 5 | | | |
| | 26 | 06/21- | 06/26 | 6 | 3 | 7 not sampled | |
| 27 | 06/27- | 06/29 | 3 | | | | |
| Snow Passage Total: | | | | 4 | 14 not sampled | | |

-continued-

Table 3. (page 2 of 6)

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|-------------------------------|-------|--------|-------|------|----------------------|----------------|---------------|
| Experimental Fisheries | | | | | | | |
| Steamer Point | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10630 | 22 | 05/24- | 05/25 | 2 | | | |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/19 | 6 | 3 | 77 | 46% |
| | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Steamer Point Total: | | | | | 4 | 82 | 40% |
| Ernest Sound | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10710 | 22 | 05/24- | 05/25 | 2 | | | |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/18 | 5 | | | |
| | 26 | 06/21- | 06/26 | 6 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Ernest Sound Total: | | | | | No Landings Reported | | |
| Deer Island | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10720 | 22 | 05/24- | 05/25 | 2 | | | |
| | 23 | 06/01- | 06/05 | 5 | | | |
| | 24 | 06/06- | 06/12 | 7 | | | |
| | 25 | 06/13- | 06/19 | 7 | 3 | 54 not sampled | |
| | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Deer Island Total: | | | | | 6 | 139 | 41% |
| Babbler Pt. | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10747 | 22 | 05/24- | 05/25 | 2 | 3 | 12 | 0% |
| | 23 | 06/01- | 06/04 | 4 | | | |
| | 24 | 06/07- | 06/11 | 5 | | | |
| | 25 | 06/14- | 06/18 | 5 | | | |
| | 26 | 06/21- | 06/26 | 6 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Babbler Pt. Total: | | | | | 5 | 41 | 0% |
| Baht Harbor | 21 | 05/17- | 05/18 | 2 | | | |
| Area 10830 | 22 | 05/24- | 05/25 | 2 | 4 | 82 | 37% |
| | 23 | 06/01- | 06/05 | 5 | 8 | 176 | 49% |
| | 24 | 06/06- | 06/12 | 7 | 6 | 154 | 28% |
| | 25 | 06/13- | 06/19 | 7 | 3 | 31 | 100% |
| | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Baht Harbor Total: | | | | | 10 | 450 | 61% |
| Kingsmill Point | 19 | 05/03- | 05/04 | 2 | | | |
| Area 10951 | 19-20 | 05/08- | 05/12 | 5 | 9 | 119 | 19% |
| | 20-21 | 05/15- | 05/22 | 8 | 8 | 170 | 37% |
| | 22 | 05/23- | 05/29 | 7 | 5 | 77 | 16% |
| | 23 | 05/30- | 06/02 | 4 | | | |
| | 23-24 | 06/05- | 06/12 | 8 | 13 | 464 | 49% |
| | 25 | 06/13- | 06/19 | 7 | 7 | 108 | 60% |
| | 26 | 06/20- | 06/26 | 7 | 7 | 79 | 51% |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Kingsmill Point Total: | | | | | 28 | 1,178 | 43% |

-continued-

Table 3. (page 3 of 6)

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|-------------------------------|-------|--------|-------|------|---------|---------|---------------|
| Experimental Fisheries | | | | | | | |
| Little Port Walter | 19 | 05/03- | 05/04 | 2 | | | |
| Area 10910 | 20 | 05/10- | 05/11 | 2 | | | |
| | 21 | 05/17- | 05/18 | 2 | 3 | 43 | 14% |
| | 22 | 05/24- | 05/25 | 2 | 4 | 69 | 45% |
| | 23 | 05/31- | 06/05 | 6 | 8 | 228 | 41% |
| | 24 | 06/06- | 06/12 | 7 | 8 | 144 | 47% |
| | 25 | 06/13- | 06/19 | 7 | 9 | 286 | 26% |
| | 26 | 06/20- | 06/26 | 7 | 12 | 161 | 32% |
| | 27 | 06/27- | 06/29 | 3 | 3 | 21 | not sampled |
| Little Port Walter Total: | | | | | 23 | 952 | 35% |
| Tebenkof Bay | 19 | 05/03- | 05/04 | 2 | 5 | 129 | 27% |
| Area 10962 | 20 | 05/10- | 05/11 | 2 | 10 | 466 | 48% |
| | 20-21 | 05/15- | 05/19 | 5 | 5 | 465 | 28% |
| | 21-22 | 05/22- | 05/26 | 5 | 3 | 68 | 16% |
| | 23 | 05/31- | 06/01 | 2 | 6 | 157 | 0% |
| | 24 | 06/07- | 06/08 | 2 | 12 | 277 | 42% |
| | 24-25 | 06/12- | 06/19 | 8 | 11 | 253 | 11% |
| | 26 | 06/20- | 06/26 | 7 | 10 | 123 | 10% |
| | 27 | 06/27- | 06/29 | 3 | | | not sampled |
| Tebenkof Bay Total: | | | | | 33 | 1,941 | 24% |
| Frederick Sd. | 19 | 05/03- | 05/04 | 2 | 3 | 96 | 49% |
| Area 11031 | 19-20 | 05/08- | 05/15 | 8 | | | |
| | 21 | 05/16- | 05/22 | 7 | | | |
| | 22 | 05/23- | 05/29 | 7 | 5 | 68 | 30% |
| | 23 | 05/30- | 06/05 | 7 | 16 | 266 | 48% |
| | 24 | 06/06- | 06/12 | 7 | 14 | 177 | 52% |
| | 25 | 06/13- | 06/19 | 7 | 14 | 237 | 44% |
| | 26 | 06/20- | 06/26 | 7 | 13 | 171 | 23% |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Frederick Sd. Total: | | | | | 33 | 1,106 | 43% |
| Chatham Strait | 19 | 05/03- | 05/06 | 4 | | | |
| Area 11212 | 20 | 05/10- | 05/14 | 5 | 6 | 78 | 49% |
| | 21 | 05/17- | 05/22 | 6 | 7 | 67 | 67% |
| | 22 | 05/23- | 05/29 | 7 | | | |
| | 23 | 05/30- | 06/05 | 7 | 9 | 417 | 56% |
| | 24 | 06/06- | 06/12 | 7 | 23 | 532 | 85% |
| | 25 | 06/13- | 06/19 | 7 | 13 | 454 | 31% |
| | 26 | 06/20- | 06/26 | 7 | 16 | 381 | 63% |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Chatham Strait Total: | | | | | 40 | 1,970 | 63% |
| Lisianski Inlet | 20 | 05/10- | 05/11 | 2 | | | |
| Area 11395 | 21 | 05/17- | 05/18 | 2 | 5 | | 3% |
| | 22 | 05/24- | 05/25 | 2 | 10 | | 18% |
| | 23 | 05/31- | 06/01 | 2 | 4 | | 0% |
| | 24 | 06/07- | 06/08 | 2 | 5 | | 0% |
| | 25 | 06/14- | 06/15 | 2 | 10 | | 0% |
| | 26 | 06/21- | 06/22 | 2 | 6 | | 7% |
| | 27 | 06/28- | 06/29 | 2 | 3 | | not sampled |
| Lisianski Inlet Total: | | | | | 21 | 612 | 4% |

-continued-

Table 3. (page 4 of 6)

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|-------------------------------|-------|--------|-------|------|---------|---------|---------------|
| Experimental Fisheries | | | | | | | |
| Middle Island | 19 | 05/03- | 05/04 | 2 | 3 | 6 | 28% |
| Area 11341 | 19-20 | 05/08- | 05/12 | 5 | 9 | 64 | 0% |
| | 21 | 05/17- | 05/22 | 6 | 7 | 123 | 78% |
| | 22 | 05/23- | 05/29 | 7 | 9 | 79 | 41% |
| | 23 | 05/30- | 06/05 | 7 | 11 | 86 | 100% |
| | 24 | 06/06- | 06/12 | 7 | 9 | 91 | 0% |
| | 25 | 06/13- | 06/19 | 7 | 12 | 314 | 79% |
| | 26 | 06/20- | 06/26 | 7 | 21 | 582 | 42% |
| | 27 | 06/27- | 06/29 | 3 | 4 | 29 | 56% |
| Middle Island Total: | | | | | 45 | 1,374 | 51% |
| Salisbury Sound | 19 | 05/03- | 05/04 | 2 | 3 | 6 | 0% |
| Area 11362 | 20 | 05/10- | 05/11 | 2 | | | 10% |
| | 21 | 05/17- | 05/18 | 2 | | | |
| | 22 | 05/24- | 05/25 | 2 | 4 | 58 | 14% |
| | 23 | 05/31- | 06/01 | 2 | | | |
| | 24 | 06/07- | 06/08 | 2 | 7 | 118 | 100% |
| | 25 | 06/14- | 06/15 | 2 | 8 | 114 | 22% |
| | 26 | 06/21- | 06/25 | 5 | 12 | 245 | 33% |
| | 27 | 06/28- | 06/29 | 2 | 9 | 183 | 31% |
| Salisbury Sound Total: | | | | | 29 | 731 | 46% |
| Silver Bay (Medvejie) | 21 | 05/17- | 05/21 | 5 | 33 | 402 | 11% |
| Area 11335 | 22 | 05/24- | 05/29 | 6 | 32 | 256 | 74% |
| | 23 | 05/30- | 06/05 | 7 | 32 | 343 | 45% |
| | 24 | 06/06- | 06/12 | 7 | 51 | 1,046 | 67% |
| | 25 | 06/13- | 06/19 | 7 | 76 | 1,743 | 72% |
| | 26 | 06/20- | 06/26 | 7 | 54 | 621 | 50% |
| | 27 | 06/27- | 06/30 | 4 | 12 | 82 | 0% |
| Silver Bay (Medvejie) Total: | | | | | 115 | 4,493 | 57% |
| Inner Silver Bay | 19 | 05/03- | 05/08 | 6 | | | |
| Area 11337 | 20 | 05/09- | 05/15 | 7 | 3 | 32 | 0% |
| | 21 | 05/16- | 05/22 | 7 | 6 | 105 | 48% |
| | 22 | 05/23- | 05/29 | 7 | 4 | 23 | 100% |
| | 23 | 05/30- | 06/05 | 7 | 7 | 42 | 0% |
| | 24 | 06/06- | 06/12 | 7 | | | 0% |
| | 25 | 06/13- | 06/19 | 7 | 11 | 159 | 100% |
| | 26 | 06/20- | 06/26 | 7 | 4 | 71 | 0% |
| | 27 | 06/27- | 07/03 | 7 | 5 | 113 | not sampled |
| | 28 | 07/04- | 07/10 | 7 | | | not sampled |
| Inner Silver Bay Total: | | | | | 25 | 615 | 47% |
| Port Frederick | 19 | 05/03- | 05/06 | 4 | 7 | 46 | 100% |
| Area 11430 | 19-20 | 05/08- | 05/15 | 8 | 8 | 71 | 59% |
| | 21 | 05/16- | 05/22 | 7 | 9 | 79 | 50% |
| | 22 | 05/23- | 05/29 | 7 | 20 | 144 | 28% |
| | 23 | 05/30- | 06/05 | 7 | 15 | 63 | 0% |
| | 24 | 06/06- | 06/12 | 7 | 11 | 83 | 90% |
| | 25 | 06/13- | 06/19 | 7 | 10 | 105 | 14% |
| | 26 | 06/20- | 06/26 | 7 | 5 | 32 | 82% |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Port Frederick Total: | | | | | 32 | 623 | 47% |

-continued-

Table 3. (page 5 of 6)

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|-------------------------------|------|--------|-------|------|-----------------------------|---------|---------------|
| Experimental Fisheries | | | | | | | |
| Pt. Adolphus | 19 | 05/03- | 05/04 | 2 | | | |
| Area 11423 | 20 | 05/10- | 05/11 | 2 | | | |
| | 21 | 05/17- | 05/18 | 2 | | | |
| | 22 | 05/24- | 05/25 | 2 | | | |
| | 23 | 05/29- | 06/05 | 8 | | | |
| | 24 | 06/06- | 06/12 | 7 | | | |
| | 25 | 06/13- | 06/19 | 7 | | | |
| | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 06/29 | 3 | | | |
| Pt. Adolphus Total: | | | | | No Landings Reported | | |
| Pt. Sophia | 19 | 05/03- | 05/04 | 2 | 3 | 11 | 0% |
| Area 11427 | 20 | 05/10- | 05/11 | 2 | | | |
| | 21 | 05/17- | 05/18 | 2 | | | |
| | 22 | 05/24- | 05/28 | 5 | | | |
| | 23 | 05/30- | 06/05 | 7 | 3 | 53 | 75% |
| | 24 | 06/06- | 06/12 | 7 | 12 | 265 | 58% |
| | 25 | 06/13- | 06/19 | 7 | 11 | 118 | 74% |
| | 26 | 06/20- | 06/26 | 7 | 3 | 9 | 0% |
| | 27 | 06/27- | 06/29 | 3 | 4 | 16 | 0% |
| Pt. Sophia Total: | | | | | 24 | 497 | 46% |
| Cross Sound | 25 | 06/14- | 06/18 | 5 | 8 | 65 | 4% |
| Area 11421 | 26 | 06/21- | 06/25 | 5 | 23 | 76 | 30% |
| | 27 | 06/28- | 06/29 | 2 | 22 | 24 | 0% |
| Cross Sound Total: | | | | | 26 | 165 | 15% |
| Terminal Fisheries | | | | | | | |
| Carroll Inlet | 21 | 05/20- | 05/22 | 3 | | | |
| Area 10146 | 22 | 05/23- | 05/29 | 7 | | | |
| | 23 | 05/30- | 06/05 | 7 | 3 | 17 | 100% |
| | 24 | 06/06- | 06/12 | 7 | | | |
| | 25 | 06/13- | 06/19 | 7 | | | |
| | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 07/03 | 7 | | | |
| | 28 | 07/04- | 07/10 | 7 | | | |
| Carroll Inlet Total: | | | | | 5 | 37 | 100% |
| Wrangell Narrows | 23 | 06/01- | 06/05 | 5 | 7 | 52 | 100% |
| Area 10644 | 24 | 06/06- | 06/12 | 7 | 15 | 216 | 100% |
| Wrangell Narrows Total: | | | | | 15 | 268 | 100% |
| Earl West Cove | 25 | 06/15- | 06/19 | 5 | | | |
| Area 10745 | 26 | 06/20- | 06/26 | 7 | | | |
| | 27 | 06/27- | 07/03 | 7 | | | |
| Earl West Cove Total: | | | | | Total: No Landings Reported | | |

-continued-

Table 3. (page 6 of 6)

| Fishery Name | Week | Open | Close | Days | Permits | Chinook | Ak. Hatchery% |
|---------------------------|--------|--------|-------|------|----------------------|---------|---------------|
| Terminal Fisheries | | | | | | | |
| Hidden Falls | 19 | 05/03- | 05/08 | 6 | | | |
| Area 11222 | 20 | 05/09- | 05/15 | 7 | | | |
| | 21 | 05/16- | 05/22 | 7 | | | |
| | 22 | 05/23- | 05/29 | 7 | 4 | 94 | 100% |
| | 23 | 05/30- | 06/05 | 7 | 7 | 211 | 100% |
| | 24 | 06/06- | 06/12 | 7 | 11 | 220 | 100% |
| | 25 | 06/13- | 06/19 | 7 | 8 | 694 | 100% |
| | 26 | 06/20- | 06/26 | 7 | 16 | 834 | 100% |
| 27 | 06/27- | 06/30 | 4 | | | | |
| Hidden Falls Total: | | | | | 26 | | 100% |
| Deep Inlet | 27 | 07/03- | 07/03 | 1 | | | |
| Area 11338 | 28 | 07/10- | 07/10 | 1 | | | |
| | 29 | 07/17- | 07/17 | 1 | | | |
| | 30 | 07/24- | 07/24 | 1 | | | |
| | 31 | 07/31- | 07/31 | 1 | | | |
| | 32 | 08/07- | 08/07 | 1 | | | |
| | 33 | 08/14- | 08/14 | 1 | | | |
| | 34 | 08/21- | 08/21 | 1 | | | |
| | 35 | 08/28- | 08/28 | 1 | | | |
| | 36 | 09/04- | 09/04 | 1 | | | |
| | 37 | 09/11- | 09/11 | 1 | | | |
| Deep Inlet Total: | | | | | No Landings Reported | | |

| Spring Fishery Totals: | Permits Fished | Days | Chinook | Alaska Hatchery % |
|------------------------|----------------|------|---------|-------------------|
| Experimental | 330 | 876 | 18,099 | 48% |
| Terminal | 46 | 152 | 2,367 | 5% |
| Spring Fishery Total: | 342 | 1028 | 20,466 | 54% |

^a Catches omitted from weeks where less than 3 permits made landings. Therefore, totals may not reflect the sum of weekly values.

Table 4. Number of days, effort (boat days) and dates the Southeast Alaska troll fishery was open [chinook retention (CR)], closed to chinook salmon fishing [chinook non-retention (CNR)], and closed to all species (all) during the general summer season, April 15 - September 30, 1978 - 1999.

| Year | Open Periods | | | | | Closed Periods | | | | |
|-------------------|---------------------------|----------------|--|---------------------|--|--|---|----------|---|--|
| | Days ^a Open | Days Closed | Dates Open | CR Days | CR Effort in Boat Days ^b | Closed Periods | Number of Days | CNR Days | CNR Effort in Boat Days ^b | |
| 1978 | 169 | 0 | Apr 15- Sep-30 | 169 | | None | | 0 | | |
| 1979 | 169 | 0 | Apr 15- Sep-30 | 169 | | None | | 0 | | |
| 1980 | 149 | 20 | Apr 15- Jul-14 Jul-25- Sep-20 | 91 58 | | Jul-15- Jul-24 Sep-21- Sep-30 | 10 (all) 10 (all) | 0 | | |
| 1981 | 101 | 69 | May 15- Jun-25 July 5- Aug-06 Aug 20- Sep-03 Sep-13- Sep-20 | 42 36 15 8 | 76,691 | Apr-15- May-14 Jun-26- Jul-04 Aug-10- Aug-19 Sep-04- Sep-12 Sep-21- Sep-30 | 30 (all) 9 (all) 10 (all) 9 10 (all) | 9 | 3,526 | |
| 1982 | 65 | 104 | May 15- Jun-06 Jun-17- Jul-28 | 23 42 | 53,371 | Apr-15- May-14 Jun-07- Jun-16 Jul-29- Aug-07 Aug-08- Sep-20 Sep-21- Sep-30 | 30 (all) 10 (all) 10 (all) 44 10 (all) | 44 | 32,727 | |
| 1983 | 60 | 109 | May 15- Jun-08 July 1- Aug-04 | 25 35 | 48,734 | Apr-15- May-14 Jun-09- Jun-30 Aug-05- Aug-14 Aug-15- Sep-20 Sep-21- Sep-30 | 30 (all) 22 (all) 10 (all) 37 10 (all) | 37 | 18,385 | |
| 1984 | 45 | 124 | June 5- Jun-30 Jul-11- Jul-29 | 26 19 | 33,641 | Apr-15- Jun-04 Jul-01- Jul-10 Jul-30- Aug-14 Aug-15- Aug-24 Aug-25- Sep-20 Sep-21- Sep-30 | 51 (all) 10 (all) 16 10 (all) 27 10 (all) | 43 | 29,583 | |
| 1985 | 33.6 | 135.4 | June 3- Jun-12 July 1- Jul-22 Aug 25- Aug 26 ^c | 10 22 1.6 | 30,628 | Apr-15- Jun-02 Jun-13- Jun-30 Jul-23- Aug-14 Aug-15- Aug-24 Aug-26- Sep-20 Sep-21- Sep-30 | 49 (all) 18 (all) 23 10 (all) 25.4 10 (all) | 48.4 | 35,725 | |
| 1986 | 41 | 128 | Jun-20- Jul-15 Aug 21- Aug-26 Sept 1- Sep-09 | 26 6 9 | 33,079 | Apr-15- Jun-19 Jul-16- Aug-10 Aug-11- Aug-20 Aug-27- Aug-31 Sep-10- Sep-20 Sep-21- Sep-30 | 66 (all) 26 10 (all) 5 11 10 (all) | 42 | 34,173 | |
| 1987 | 23 | 146 | Jun-20- Jul-12 | 23 | 19,077 | Apr-15- Jun-19 Jul-13- Aug-02 Aug-03- Aug-12 Aug-13- Sep-20 Sep-21- Sep-30 | 66 (all) 21 10 (all) 39 10 (all) | 60 | 37,214 | |
| 1988 | 12 | 157 | July 1- Jul-12 | 12 | 9,507 | Apr-15- Jun-30 Jul-13- Jul-25 Jul-26- Aug-04 Aug-05- Aug-14 Aug-15- Aug-24 Aug-25- Aug-31 Sep-01- Sep-03 Sep-04- Sep-20 Sep-21- Sep-30 | 77 (all) 13 10 (all) 10 10 (all) 7 3 (all) 17 ^d 10 (all) | 47 | 27,275 | |
| 1989 ^e | 13 | 156 | July 1- Jul-13 | 13 | 9,585 | Apr-15- Jun-30 Jul-14- Aug-13 Aug-14- Aug-23 Aug-24- Sep-20 Sep-21- Sep-30 | 77 (all) 31 10 (all) 28 10 (all) | 59 | 38,404 | |

-continued-

Table 4. (page 2 of 2)

| Year | Open Periods | | | | | Closed Periods | | | |
|-------------------|---------------------------|----------------|---|-------------|--|--|--|----------|---|
| | Days ^a Open | Days Closed | Dates Open | CR Days | CR Effort in Boat Days ^b | Closed Periods | Number of Days | CNR Days | CNR Effort in Boat Days ^b |
| 1990 ^c | 24 | 145 | July 1- Jul-22 Aug 23- Aug-24 | 22 2 | 17,172 | Apr-15- Jun-30 Jul-23- Aug-12 Aug-13- Aug-22 Aug-25- Sep-20 Sep-21- Sep-30 | 77 (all) 21 10 (all) 27 10 (all) | 48 | 29,525 |
| 1991 ^c | 7.5 | 161.5 | July 1- Jul-08 | 7.5 | 4,718 | Apr-15- Jun-30 Jul-08- Aug-15 Aug-16- Aug-24 Aug-25- Sep-20 Sep-21- Sep-30 | 77 (all) 38.5 10 (all) 26 10 (all) | 64.5 | 32,565 |
| 1992 ^c | 4.5 | 164.5 | July 1- Jul-04 Aug-23- Aug-24 | 3.5 1 | 2,881 | Apr-15- Jun-30 Jul-04- Aug-12 Aug-13- Aug-22 Aug-24- Sep-20 Sep-21- Sep-30 | 77 (all) 39.5 10 (all) 28 10 (all) | 67.5 | 36,306 |
| 1993 ^c | 20 | 149 | Jul-01- Jul-06 Aug-21- Aug-25 Sept. 12 Sep-20 | 6 5 9 | 12,036 | Apr-15- Jun-30 Jul-07- Jul-11 Jul-12- Aug-12 Aug-13- Aug-20 Aug-26- Sep-11 Sep-21- Sep-30 | 77 (all) 5 (all) 32 8 (all) 17 10 (all) | 49 | 30,502 |
| 1994 ^c | 12 | 157 | Jul-01- Jul-07 Aug-29- Sep-02 | 7 5 | 6,434 | Apr-15- Jun-30 Jul-08- Aug-26 Aug-27- Aug-28 Sep-03- Sep-30 | 77 (all) 52 2 (all) 28 | 80 | 35,716 |
| 1995 | 17 | 152 | Jul-01- Jul-10 Jul-30- Aug-05 | 10 7 | 8,420 | Apr-15- Jun-30 Jul-11- Jul-29 Aug-06- Aug-12 Aug-13- Aug-22 Aug-23- Sep-30 | 77 (all) 19 7 10 (all) 39 | 65 | 23,435 |
| 1996 | 12 | 157 | Jul-01- Jul-10 Aug-19- Aug-20 | 10 2 | 5,282 | Apr-15- Jun-30 Jul-11- Aug-14 Aug-15- Aug-19 Aug-21- Sep-20 Sep-21- Sep-30 | 77 (all) 35 5 (all) 30 10 (all) | 65 | 23,167 |
| 1997 | 21 | 148 | Jul-01- Jul-07 Aug-18- Aug-24 Aug-30- Sep-05 | 7 7 7 | 9,126 | Apr-15- Jun-30 Jul-08- Aug-07 Aug-08- Aug-17 Aug-25- Aug-29 Sep-06- Sep-20 | 77(all) 30 10(all) 5 14 ^f | 49 | 17,653 |
| 1998 | 53 | 116 | Jul-01- Jul-11 Aug-20- Sep-30 | 11 42 | 12,517 | Apr-15- Jun-30 Jul-12- Aug-11 Aug-12- Aug-19 | 77(all) 30 8(all) | 30 | 11,928 |
| 1999 | 11 | 158 | Jul-01- Jul-06 Aug-18- Aug-22 | 6 5 | 4,624 | Apr-15- Jun-30 Jul-07- Aug-12 Aug-13- Aug-17 Aug-23- Sep-30 | 77(all) 36 5(all) 39 | 75 | 21,581 |

^a Number of days the major portion of Southeast Alaska was open to chinook salmon fishing.

^b Summer total of boat days estimated from inseason dockside interviews with troll fisherman and actual landings from fish tickets tabulated postseason.

^c Trolling was open to all species for 39 hours, 12:01 am Aug 25 to 3:00 p.m. Aug 26.

^d In 1988, the southern areas of Southeast Alaska were closed due to coho conservation concerns.

^e Hatchery access fisheries were conducted for 6 days each year in June, except in 1991, when only 4.5 were open.

^f In 1997, the northern areas of Southeast Alaska were closed due to coho conservation concerns.

Table 5. Chinook salmon catch per fleet day (rounded to nearest hundred) in the Southeast Alaska troll fishery during the general summer season, April 15 - September 30, 1984 -1999.^a

| Year | Fishing Period | Number of Days | Chinook Catch | Fish Per Fleet Day | Chinook Abundance Index ^b |
|------|-----------------|----------------|---------------|--------------------|--------------------------------------|
| 1984 | Jun 5-30 | 26 | 130,000 | 5,000 | |
| | Jul 11-29 | 19 | 77,000 | 4,100 | |
| | | 45 | 207,000 | 4,600 | 1.34 |
| 1985 | Jun 3-12 | 10 | 66,000 | 6,600 | |
| | Jul 1-22 | 22 | 114,000 | 5,200 | |
| | Aug 25-26 | 2 | 13,000 | 8,300 | |
| | | 34 | 193,000 | 5,700 | 1.27 |
| 1986 | Jun 20 - Jul 15 | 26 | 155,000 | 6,000 | |
| | Aug 21 - 26 | 6 | 31,900 | 5,300 | |
| | Sep 1 - 9 | 9 | 27,500 | 3,000 | |
| | | 41 | 214,400 | 5,200 | 1.48 |
| 1987 | Jun 20 - Jul 12 | 23 | 209,000 | 9,100 | 1.78 |
| 1988 | Jul 1-12 | 12 | 162,000 | 13,500 | 2.04 |
| 1989 | Jul 1-13 | 13 | 167,000 | 12,800 | 1.85 |
| 1990 | Jul 1-22 | 22 | 200,000 | 9,100 | |
| | Aug 23-24 | 2 | 12,000 | 3,000 | |
| | | 24 | 212,000 | 8,800 | 1.84 |
| 1991 | Jul 1-8 | 8 | 154,000 | 20,500 | 1.82 |
| 1992 | Jul 1-4 | 4 | 66,000 | 18,900 | |
| | Aug 23 | 1 | 7,000 | 7,000 | |
| | | 4.5 | 73,000 | 16,200 | 1.65 |
| 1993 | Jul 1-6 | 6 | 101,000 | 16,800 | |
| | Aug 21-25 | 5 | 25,000 | 5,000 | |
| | Sep 12-20 | 9 | 19,000 | 2,100 | |
| | | 20 | 145,000 | 7,200 | 1.71 |
| 1994 | Jul 1-7 | 7 | 98,000 | 14,000 | |
| | Aug 29 - Sep 2 | 5 | 20,000 | 4,000 | |
| | | 12 | 118,000 | 9,800 | 1.55 |

-continued-

Table 5. (page 2 of 2)

| Year | Fishing Period | Number of Days | Chinook Catch | Fish Per Fleet Day | Chinook Abundance Index ^b |
|------|-----------------|----------------|---------------|--------------------|--------------------------------------|
| 1995 | Jul 1-10 | 10 | 76,000 | 7,600 | |
| | Jul 30 - Aug 5 | 7 | 21,000 | 3,000 | |
| | | 17 | 97,000 | 5,700 | 0.99 |
| 1996 | Jul 1 - 10 | 10 | 76,000 | 7,600 | |
| | Aug 19 - 20 | 2 | 8,000 | 4,000 | |
| | | 12 | 84,000 | 7,000 | 0.9 |
| 1997 | Jul 1-7 | 7 | 122,000 | 17,400 | |
| | Aug 18 - 24 | 7 | 38,000 | 5,400 | |
| | Aug 30 - Sep 5 | 7 | 22,000 | 3,100 | |
| | | 21 | 182,000 | 8,700 | 1.37 |
| 1998 | Jul 1 - 11 | 11 | 103,000 | 9,400 | |
| | Aug 20 - Sep 30 | 42 | 36,000 | 960 | |
| | | 53 | 139,000 | 2,600 | 1.25 |
| 1999 | Jul 1 - 6 | 6 | 78,000 | 13,000 | |
| | Aug 18 - Aug 22 | 5 | 16,000 | 3,200 | |
| | | 11 | 94,000 | 8,500 | 1.16 |

^a The general summer fishery does not include experimental, terminal, or hatchery access fisheries, which target Alaska hatchery stocks.

^b Abundance index is estimated by the chinook technical committee of the Pacific Salmon Commission

Table 6. Contribution in numbers and percent of Alaska hatchery chinook salmon in the winter, experimental, terminal, hatchery access, and general summer troll fisheries, 1989-1999.

| Fishery | Year | Total Catch ^a | Alaskan Hatcheries | |
|-----------------------|-------|--------------------------|--------------------|------------|
| | | | Number | Percent |
| Winter | 1989 | 34,300 | 4,915 | 14% |
| | 1990 | 33,100 | 4,433 | 13% |
| | 1991 | 42,600 | 10,246 | 24% |
| | 1992 | 71,800 | 6,977 | 10% |
| | 1993 | 62,700 | 3,862 | 6% |
| | 1994 | 56,400 | 1,957 | 3% |
| | 1995 | 17,900 | 2,131 | 12% |
| | 1996 | 9,400 | 1,653 | 18% |
| | 1997 | 20,900 | 1,740 | 8% |
| | 1998 | 32,800 | 2,362 | 7% |
| | 1999 | 31,000 | 2,172 | 7% |
| | | <i>average</i> | | <i>11%</i> |
| Experimental | 1989 | 2,500 | 854 | 34% |
| | 1990 | 7,100 | 4,250 | 60% |
| | 1991 | 14,000 | 6,159 | 44% |
| | 1992 | 11,200 | 5,378 | 48% |
| | 1993 | 15,800 | 6,574 | 42% |
| | 1994 | 11,300 | 4,922 | 44% |
| | 1995 | 21,700 | 13,987 | 64% |
| | 1996 | 31,000 | 14,900 | 48% |
| | 1997 | 33,200 | 13,500 | 41% |
| | 1998 | 19,200 | 5,001 | 26% |
| | 1999 | 18,000 | 8,626 | 48% |
| | | <i>average</i> | | <i>45%</i> |
| Terminal ^b | 1989 | 900 | 900 | 100% |
| | 1990 | 16 | 16 | 100% |
| | 1991 | 5,900 | 5,900 | 100% |
| | 1992 | 4,100 | 4,100 | 100% |
| | 1993 | 2,800 | 2,800 | 100% |
| | 1994 | 100 | 100 | 100% |
| | 1995 | 1,300 | 1,300 | 100% |
| | 1996 | 16,400 | 16,400 | 100% |
| | 1997 | 9,500 | 9,500 | 100% |
| | 1998 | 1,300 | 1,300 | 100% |
| 1999 | 2,000 | 2,367 | 100% | |
| Hatchery Access | 1989 | 31,200 | 5,606 | 18% |
| | 1990 | 34,900 | 6,712 | 19% |
| | 1991 | 46,500 | 8,577 | 18% |
| | 1992 | 23,800 | 6,459 | 27% |
| | | | <i>average</i> | |

-continued-

Table 6. (page 2 of 2)

| Fishery | Year | Total Catch ^a | Alaskan Hatcheries | |
|--------------------|------|--------------------------|--------------------|---------|
| | | | Number | Percent |
| General Summer | 1989 | 167,000 | 5,225 | 3% |
| | 1990 | 212,000 | 14,281 | 7% |
| | 1991 | 154,000 | 6,606 | 4% |
| | 1992 | 72,600 | 2,460 | 3% |
| | 1993 | 145,200 | 4,931 | 3% |
| | 1994 | 118,400 | 5,341 | 5% |
| | 1995 | 97,200 | 9,724 | 10% |
| | 1996 | 84,600 | 4,800 | 6% |
| | 1997 | 182,800 | 4,200 | 2% |
| | 1998 | 138,700 | 3,700 | 3% |
| | 1999 | 94,000 | 3,700 | 4% |
| | | <i>average</i> | | 5% |
| Total ^c | 1989 | 235,900 | 17,500 | 7% |
| | 1990 | 287,116 | 29,692 | 10% |
| | 1991 | 263,000 | 37,488 | 14% |
| | 1992 | 183,500 | 25,374 | 14% |
| | 1993 | 226,500 | 18,167 | 8% |
| | 1994 | 186,200 | 12,320 | 7% |
| | 1995 | 138,100 | 27,142 | 20% |
| | 1996 | 141,400 | 37,753 | 27% |
| | 1997 | 246,400 | 28,940 | 12% |
| | 1998 | 192,000 | 12,363 | 6% |
| | 1999 | 146,000 | 16,865 | 12% |
| | | <i>average</i> | | 12% |

^a Does not include Annette Island catches

^b Terminal areas are accounted as 100% Alaskan hatchery.

^c Totals may not agree with other totals due to rounding.

Table 7. Estimated harvest and Alaska hatchery add-on of chinook salmon by commercial and sport fisheries in Southeast Alaska, 1999.

| Fishery | Total Catch | Common Property Catch | Alaska Hatchery/ Terminal Exclusion ^a | | | Add-On | Treaty Fish ^b (Base Catch) |
|--|-------------|-----------------------|--|----------|----------|--------|--|
| | | | General Fisheries | Terminal | Subtotal | | |
| Annette Island Catches | | | | | | | |
| Seine | 10 | 10 | 0 | 0 | 0 | 0 | 10 |
| Gillnet | 729 | 729 | 248 | 0 | 248 | 183 | 546 |
| Trap | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Troll | 3 | 3 | 0 | 0 | 0 | 0 | 3 |
| Total Annette Island | 742 | 742 | 248 | 0 | 248 | 183 | 559 |
| General Purse Seine and Gillnet | | | | | | | |
| Seine | 17,832 | 6,086 | 4 | 11,746 | 11,750 | 11,749 | 6,083 |
| Gillnet | 8,898 | 5,750 | 1,900 | 3,148 | 5,048 | 4,551 | 4,347 |
| Setnet | 5,108 | 2,000 | 0 | 3,108 | 3,108 | 3,108 | 2,000 |
| Total Net Fisheries (Including Annette Island) | 32,577 | 14,575 | 2,153 | 18,002 | 20,155 | 19,592 | 12,985 |
| Troll | | | | | | | |
| Winter Fishery | | | | | | | |
| Oct 11 - Dec 31 | 13,989 | | 490 | 0 | 490 | 362 | 13,627 |
| Jan 1 - Apr 14 | 16,988 | | 1,683 | 0 | 1,683 | 1,243 | 15,745 |
| Winter Total | 30,977 | | 2,172 | 0 | 2,172 | 1,604 | 29,373 |
| Spring Fishery | | | | | | | |
| Experimental | 18,099 | | 8,626 | 0 | 8,626 | 6,370 | 11,729 |
| Terminal | 2,367 | | 0 | 2,367 | 2,367 | 2,367 | 0 |
| Spring Total | 20,466 | | 8,626 | 2,367 | 10,993 | 8,737 | 11,729 |
| Summer Fishery | | | | | | | |
| July 1 - 11 | 78,058 | | 3,004 | 0 | 3,004 | 2,218 | 75,840 |
| Aug 20 - Sep 30 | 16,394 | | 696 | 0 | 696 | 514 | 15,880 |
| Summer Total | 94,452 | | 3,700 | 0 | 3,700 | 2,732 | 91,720 |
| Total Troll (including Annette Island) | 145,898 | | 14,498 | 2,367 | 16,865 | 13,073 | 132,825 |
| Sport Fishery | | | | | | | |
| All 1999 | 60,600 | | 11,800 | 4,300 | 16,100 | 13,014 | 47,586 |
| Grand Totals | 239,075 | | 28,451 | 24,669 | 53,120 | 45,679 | 193,396 |
| Alaska Hatchery Add-On | | | | 45,679 | | | |
| Risk Factor | | | | 2,442 | | | |

^a Numbers under the ALASKA HATCHERY/TERMINAL EXCLUSION are Alaska hatchery fish, with the following exceptions:

- The terminal harvest for the set gillnet fishery includes the total Situk set gillnet harvest minus 2,000 fish caught in the Situk River.
- The terminal harvest for the sport fishery includes the total Situk River harvest minus 200 fish.

^b Under the terms of the PST, the number of PST (or treaty) fish is the total harvest minus the add-on. The add-on is the number of Alaskan hatchery produced chinook salmon, minus 1) 5,000 fish for pre-treaty catches of Alaskan hatchery chinook salmon and 2) a risk factor. The risk factor is the standard deviation of the estimate of the total number of Alaska hatchery chinook salmon.

Table 8. Minimum estimated contribution of hatchery chinook salmon to sampled marine boat sport fisheries of Southeast Alaska, 1999.^a

| Region or Hatchery | Ketchikan ^b | Sitka | Juneau | Craig | Petersburg | Wrangell | Total |
|--------------------------------------|------------------------|-----------|-----------|-----------|------------|----------|--------|
| | 4/26-9/26 | 4/26-9/26 | 4/26-9/26 | 4/26-9/12 | 5/03-7/11 | 4/26-7/4 | |
| British Columbia | 252 | 4,155 | 1 | 314 | 1 | 8 | 4,731 |
| <i>Nitinat R</i> | 0 | 2,099 | 0 | 116 | 0 | 0 | 2,215 |
| <i>Robertson Cr</i> | 58 | 823 | 0 | 63 | 0 | 0 | 944 |
| <i>Shuswap R</i> | 6 | 338 | 0 | 18 | 0 | 0 | 362 |
| Washington | 142 | 1,537 | 0 | 117 | 3 | 0 | 1,799 |
| Oregon | 2 | 150 | 0 | 3 | 0 | 0 | 155 |
| Non-Alaska Total | 397 | 5,845 | 1 | 435 | 4 | 8 | 6,685 |
| Alaska | | | | | | | |
| Big Boulder Instream (ADF&G) | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| Carroll Inlet (SSRAA) | 146 | 0 | 0 | 11 | 10 | 0 | 167 |
| Crystal Lake (ADF&G) | 17 | 10 | 77 | 0 | 124 | 0 | 228 |
| Crystal Lake/Earl West Cove | 0 | 0 | 24 | 0 | 9 | 41 | 74 |
| Crystal Lake/Neets Bay | 56 | 0 | 12 | | 11 | | 79 |
| Deer Mountain (KIC) | 287 | 0 | 0 | 5 | 0 | 0 | 292 |
| Gastineau Hatchery (DIPAC) | 0 | 32 | 1,495 | 0 | 0 | 0 | 1,527 |
| Hidden Falls (NSRAA) | 0 | 197 | 588 | 0 | 31 | 0 | 816 |
| L. Port Walter (NMFS) | 3 | 85 | 63 | 1 | 4 | 0 | 156 |
| Medvejie (NSRAA) | 0 | 1,999 | 0 | 17 | 0 | 0 | 2,016 |
| Neets Bay (SSRAA) | 174 | 34 | 0 | 9 | 0 | 0 | 217 |
| Sheldon Jackson | 0 | 118 | 0 | | | | 118 |
| Snettisham (ADF&G) | 0 | 14 | 54 | 0 | 0 | 0 | 68 |
| Tamgas Creek (MIC) | 92 | 11 | 32 | 0 | 0 | 0 | 135 |
| Whitman Lake (SSRAA) | 1,531 | 32 | 49 | 0 | 0 | 0 | 1,612 |
| Alaska Total | 2,306 | 2,532 | 2,398 | 43 | 189 | 41 | 7,509 |
| All Areas Total | 2,703 | 8,377 | 2,399 | 478 | 193 | 49 | 14,199 |
| Sampled Harvest | 1358 | 5244 | 1727 | 1,315 | 589 | 284 | 10,517 |
| Estimated Total Harvest ^c | 4,814 | 20,804 | 6,150 | 7,967 | 1,023 | 1,530 | 42,288 |
| Percent Alaska Hatchery | 48% | 12% | 39% | 3% | 32% | 14% | |
| Percent Total Hatchery | 56% | 40% | 39% | 36% | 33% | 17% | |

^a Not all expanded to entire area. Craig, Petersburg, and Wrangell hatchery contribution estimates are based on catch sampling programs only. Additional terminal area Alaska hatchery harvests included about 1,000 (Gastineau/Snettisham) in the Juneau area and 2,000 (Crystal Lake) in the Petersburg area.

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

^c All harvest numbers are preliminary, pending results of the Statewide Harvest Survey.

Table 9. Annual Southeast Alaska commercial and recreational chinook salmon harvests and Alaska hatchery contributions, in thousands of fish, 1965-1999.

| Year | Commercial Fisheries | | | Sport Fisheries ^c | Total ^d | Alaska Hatchery Harvest | % Alaska Hatchery | Total Less AK Hatchery |
|--------------|----------------------|------------------|----------|------------------------------|--------------------|-------------------------|-------------------|------------------------|
| | Troll ^a | Net ^b | Subtotal | | | | | |
| 1965 | 309 | 28 | 337 | 13 | 350 | | | |
| 1966 | 282 | 26 | 308 | 13 | 321 | | | |
| 1967 | 275 | 26 | 301 | 13 | 314 | | | |
| 1968 | 304 | 27 | 331 | 14 | 345 | | | |
| 1969 | 290 | 24 | 314 | 14 | 328 | | | |
| Ave. 1965-69 | 292 | 26 | 318 | 13 | 332 | | | |
| 1970 | 305 | 18 | 323 | 14 | 337 | | | |
| 1971 | 311 | 23 | 334 | 15 | 349 | | | |
| 1972 | 242 | 44 | 286 | 15 | 301 | | | |
| 1973 | 308 | 36 | 344 | 16 | 360 | | | |
| 1974 | 322 | 24 | 346 | 17 | 363 | | | |
| Ave. 1970-74 | 298 | 29 | 327 | 15 | 342 | | | |
| 1975 | 287 | 13 | 300 | 17 | 317 | | | |
| 1976 | 231 | 10 | 241 | 17 | 258 | | | |
| 1977 | 272 | 13 | 285 | 17 | 302 | | | |
| 1978 | 375 | 25 | 400 | 17 | 417 | | | |
| 1979 | 338 | 28 | 366 | 17 | 383 | | | |
| Ave. 1975-79 | 301 | 18 | 318 | 17 | 335 | | | |
| 1980 | 304 | 20 | 324 | 20 | 344 | 7 | 2% | 337 |
| 1981 | 249 | 19 | 268 | 21 | 289 | 2 | 1% | 287 |
| 1982 | 242 | 48 | 290 | 26 | 316 | 1 | 0% | 315 |
| 1983 | 270 | 19 | 289 | 22 | 311 | 2 | 1% | 309 |
| 1984 | 236 | 32 | 268 | 22 | 290 | 5 | 2% | 285 |
| Ave. 1980-84 | 260 | 28 | 288 | 22 | 310 | 3 | 1% | 307 |
| 1985 | 216 | 35 | 252 | 25 | 276 | 14 | 5% | 263 |
| 1986 | 238 | 22 | 260 | 23 | 283 | 18 | 6% | 265 |
| 1987 | 243 | 15 | 258 | 24 | 282 | 24 | 9% | 258 |
| 1988 | 231 | 21 | 252 | 26 | 278 | 30 | 11% | 248 |
| 1989 | 236 | 24 | 260 | 31 | 291 | 34 | 12% | 257 |
| Ave. 1985-89 | 233 | 23 | 256 | 26 | 282 | 24 | 9% | 258 |
| 1990 | 288 | 27 | 315 | 51 | 366 | 62 | 17% | 304 |
| 1991 | 264 | 32 | 296 | 60 | 356 | 70 | 20% | 286 |
| 1992 | 184 | 31 | 215 | 43 | 259 | 45 | 17% | 214 |
| 1993 | 226 | 28 | 254 | 49 | 303 | 39 | 13% | 264 |
| 1994 | 186 | 35 | 221 | 42 | 263 | 38 | 14% | 225 |
| Ave. 1990-94 | 230 | 31 | 260 | 49 | 309 | 51 | 16% | 259 |
| 1995 | 138 | 48 | 186 | 50 | 236 | 66 | 28% | 170 |
| 1996 | 141 | 37 | 178 | 42 | 221 | 75 | 34% | 146 |
| 1997 | 246 | 25 | 271 | 70 | 340 | 55 | 16% | 285 |
| 1998 | 192 | 24 | 216 | 55 | 271 | 33 | 12% | 239 |
| 1999 | 146 | 33 | 179 | 61 | 240 | 53 | 22% | 186 |

^a Troll catches prior to 1980 are reported by calendar year. From 1981-1990, catches are for the catch accounting year, October 1 to September 30.

^b Purse seine chinook salmon catches reported under net fisheries for 1986-91 do not include chinook salmon less than five pounds reported on fish tickets.

^c Estimates of sport catches for 1965-76 based on 1977-80 average catch per capita data. Sport catches for 1977 to 1998 based on statewide postal harvest surveys. Sport harvest for 1999 is based on preliminary creel survey data, pending compilation of statewide postal harvest surveys. Includes freshwater harvest estimates, and undersized fish harvested.

^d Total reported catches do not include approximately 200 to 400 chinook salmon harvested annually by native food fisheries in several rivers.

Table 10. Actual and projected releases of chinook salmon by brood year.

| FRY | | Brood Year | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|--------------------|------------|------|------|--------------|------|--------------|------------|---------------|-------------|------------|------|-------------|-------------|--------------|--------------|--------------|-------------|-----------|------|-------------|--------------|------------|
| Facility | Release Site | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
| BEAVER FALLS | BRENNAN LK | | | | | | 109.3 | | | | | | | | | | | | | | | | |
| BIG BOULDER INSTREAM | BIG BOULDER CR | | | | | | | | | | | | | | | | 24.3 | 45.1 | 62 | | | | |
| CRYSTAL LAKE | FARRAGUT LK | | | | | | | 21.5 | 12 | | | | | | 66.5 | 95.8 | 125.1 | | | | | | |
| CRYSTAL LAKE | FARRAGUT R | | | | | | 22.8 | 23.8 | | | | | | | | | | | | | | | |
| CRYSTAL LAKE | GENGEN LK OHMER CR | | | | | | 13.4 | | | | | | | | | | | | | | | | |
| CRYSTAL LAKE | HARDING R | | | | | | | | | 30.5 | | | 31.2 | | 41.8 | | | | | | | | |
| CRYSTAL LAKE | TAHINIR | | | | | | | 43 | 46.5 | | | | | | | | | | | | | | |
| DEER MOUNTAIN | BOLD IS LK | | | | | | | 27.9 | | | | | | | | | | | | | | | |
| DEER MOUNTAIN | BRENNAN LK | | | | | | | 225.7 | | | | | | | | | | | | | | | |
| GASTINEAU | BIG BOULDER CR | | | | | | | | | | | | | | 44.8 | 23.4 | 28.1 | | | | | | |
| GASTINEAU | TAHINIR | | | | | | | | | | | | | | 62.6 | | | | | | | | |
| HIDDEN FALLS | ELIZA LK | | | | | | | | 130 | | | | | | | | | | | | | | |
| HIDDEN FALLS | FARRAGUT LK | | | | | | | | | | | | 29.4 | | | | | | | | | | |
| HIDDEN FALLS | INDIAN R | | | | | | | | 51 | | | | | | | 122.1 | | | | | | | |
| JERRY MYERS | TAHINIR | | | | | | | | | | | | 30.1 | 36.3 | | | | | | | | | |
| LITTLE PORT WALTER | BANNER LK | | | | | | | 96.1 | | | | | | | | | | | | | | | |
| LITTLE PORT WALTER | LARRY LK | | | | 15.5 | | | | | | | | | | | | | | | | | | |
| LITTLE PORT WALTER | OSPREY LK | | | | | | 141.9 | | | | | | | | | | | | | | | | |
| LITTLE PORT WALTER | TRANQUIL LK | | | | 6.6 | | | | | | | | | | | | | | | | | | |
| NEETS BAY | LONG LK | | | | | | | | | | | | | | | | | | | | 29.8 | 273.6 | 200 |
| SNETTISHAM | INDIAN LK | | | | | | | | | | | | | | | 283 | | | | | | | |
| SNETTISHAM | INDIAN R | | | | | | | | | | 269 | | | | | | | | | | | | |
| SNETTISHAM | REDOUBT LK | | | | | | | | 911 | | | | | | | | | | | | | | |
| WHITMAN LAKE | CARROLL R | | | | 78.3 | | | | | | | | | | | | | | | | | | |
| Total Fry Releases | | | | | 100.4 | | 287.4 | 438 | 1150.5 | 30.5 | 269 | | 90.8 | 36.3 | 215.6 | 241.3 | 460.5 | 45.1 | 62 | | 29.8 | 273.6 | 200 |

| AGE 0 SMOLTS | | Brood Year | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|---------------|-------------|-------------|------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|------|-------------|--------------|------------|------------|--------------|--------------|------------|--------------|------|------|------------|
| Facility | Release Site | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
| DEER MOUNTAIN | CRAB BAY | | | | | | | | 71 | 48 | | | | | | | | | | | | | |
| DEER MOUNTAIN | WARD COVE | | | | | | | | | 171 | | | | | | | | | | | | | |
| CRYSTAL LAKE | CRYSTAL CR | 14.6 | 13.7 | | 59.1 | | | | | | | | | | | | | | | | | | |
| DEER MOUNTAIN | KETCHIKAN CR | | | | | | | | | | | | | | | | | | | | | | |
| DEER MOUNTAIN | THOMAS BASIN | | | | | 20.6 | 304.9 | 227 | 284 | | | | | | | | | | | | | | |
| DEER MOUNTAIN | THORNE BAY | | | | | | | | 68 | 83 | | | | | | | | | | | | | |
| LITTLE PORT WALTER | L PORT WALTER | 28.9 | | | | | | | 102.4 | 90.2 | 4.2 | | | | | | | | | | | | |
| MEDVEJIE | BEAR COVE | | | | | | | | | | | | | | | | | | | | | | 200 |
| NEETS BAY | NEETS BAY | | | | | | 152.1 | 407.2 | 2299.7 | 2733 | 8.5 | | | 29.5 | | | | | | | | | |
| PORT ARMSTRONG | JETTY CR | | | | | | | | 75.6 | | | | | | | | | | | | | | |
| TAMGAS CREEK | TAMGAS CR | | | | | | 70 | 150 | 555.4 | 1947.3 | 1756.3 | | | 770.6 | 179 | 968 | 996.4 | 411.1 | 964 | 197.1 | | 104 | |
| WHITMAN LAKE | CARROLL INLET | | | | | | | | 281 | 435 | | | 27.3 | | | | | | | | | | |
| WHITMAN LAKE | HERRING COVE | | | | | | | 12.6 | | | | | | | | | | | | | | | |
| WHITMAN LAKE | NEETS BAY | | | | | | 53.9 | | | | | | | | | | | | | | | | |
| Total Age 0 Smolt Releases | | 43.6 | 13.7 | | 59.1 | 20.6 | 580.8 | 796.8 | 3661.5 | 5583.1 | 1769.1 | | 27.3 | 800.1 | 179 | 968 | 996.4 | 411.1 | 964 | 197.1 | | | 304 |

-continued-

Table 10. (page 2 of 2)

| AGE 1 & 2 SMOLTS | | Brood Year | | | | | | | | | | | | | | | | | | | | 1998 | 1999 | |
|---|----------------|------------|--------------|--------------|--------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|-----|
| Facility | Release Site | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | |
| BELL ISLAND NET PENS | BELL ISLAND | | | | | | | | | | | | 5.9 | 5.3 | 5.7 | 5.3 | | | | | | | | |
| BURNETT INLET | BURNETT INLET | | | | | | | | | | 100 | 192.4 | 100.2 | 54.2 | | | | | | | | | | |
| BURRO CREEK | BURRO CR | | | | | | | | | | | | 7.1 | | | | | | | | | | | |
| BURRO CREEK | TAIYA INLET | | | | | | | | | | | | | 8.6 | 8.7 | 1.9 | 34.9 | 12.8 | 16 | | | | | |
| CRYSTAL LAKE | CRYSTAL CR | | 42.2 | 273.8 | 137.9 | 566 | 135 | 351 | 432.5 | 550 | 479.4 | 542.3 | 434.1 | 520.4 | 463 | 443.4 | 451.9 | 501.3 | 540 | 610.1 | 670.9 | 717 | 600 | |
| CRYSTAL LAKE | EARL WEST COVE | | | | | | | 98 | 251.9 | 482.7 | 394.2 | 486.5 | 399.6 | 368.1 | 436.3 | 316.1 | 203.6 | 241.6 | 396.8 | 386.4 | 364.4 | 459 | 400 | |
| CRYSTAL LAKE | NEETS BAY | | | | | | | | | | | | | | | | | | 338.8 | 404.3 | 347.3 | 400 | 400 | |
| CRYSTAL LAKE | OHMER CR | | | | | 100 | | 201 | | | 228.6 | 342.5 | | | | | | | | | | | | |
| DEER MOUNTAIN | BIG SALT | | | | | | | | | 51 | | | 25 | | | | | | | | | | | |
| DEER MOUNTAIN | KETCHIKAN CR | 72.1 | 65.7 | 118.8 | 127.9 | | | 46.4 | 42 | 70 | 166.8 | 85.6 | 79.1 | 127.8 | 71.3 | 85.1 | 98.7 | 80.8 | 97.9 | 101.3 | 51.4 | 90.5 | 100 | |
| DEER MOUNTAIN | THOMAS BASIN | | | | 18.7 | | | | | | | | | | | | | | | | | | | |
| DEER MOUNTAIN | THORNE BAY | | | | | | | | | | 24.3 | 35.5 | 24.4 | | | | | | | | | | | |
| GASTINEAU | AUKE BAY | | | | | | | | | | | | | | | | 193.5 | 106.3 | 176.2 | 174.2 | | | | 151 |
| GASTINEAU | AUKE CR | | | | | | | | | | | | | | | | | | | | 173.2 | 56 | | |
| GASTINEAU | FISH CR | | | | | | | | | | | | | | | | 196.5 | 109.3 | 179.2 | 179.1 | 183.7 | 166 | 180 | |
| GASTINEAU | GASTINEAU CH | | | | | | | | | | | | 43.6 | 191.8 | 207.5 | 241.4 | 158.7 | 64.4 | 171.9 | 112.7 | 221.4 | 208 | 210 | |
| GASTINEAU | SHEEP CR | | | | | | | | | | | | | | | | 28.5 | 35.4 | 44.7 | | | | | |
| GASTINEAU | PULLEN CR | | | | | | | | | | | | | | | | | | | | | 90 | 29 | |
| HIDDEN FALLS | KASNYKU BAY | | | 80.5 | 70 | 97 | 92.1 | 98 | 159 | 337.9 | 222.6 | 184.1 | 1554 | 1755 | 1053 | 923.5 | 888.5 | 944.5 | 1070.9 | 1104.4 | | 1200 | 1200 | |
| HIDDEN FALLS | LUTAK INLET | | | | | | | | | | | 38.7 | | | | | | | | | | | | |
| HIDDEN FALLS | TAIYA INLET | | | | | | | | | | | | | 30.2 | 56.4 | 38.8 | | | | | | | | |
| JERRY MYERS | TAIYA INLET | | | | | | | | 6.1 | 4.7 | 1.7 | 6.4 | 7.2 | 11.9 | 12.9 | 1.7 | 5.6 | 1.5 | | 8.6 | 1.9 | | | |
| LITTLE PORT WALTER | L PORT WALTER | 166.7 | 30.6 | 20.3 | 120.2 | 175.3 | 215.1 | 207 | 212.2 | 287.1 | 142.1 | 173.5 | 186.8 | 275.5 | 215.3 | 150.4 | 208.4 | 152.2 | 202.2 | 107.7 | 106.5 | 120 | 100 | |
| MEDVEJIE | BEAR COVE | | | | 26.6 | 21.9 | 108 | 227.5 | 174.6 | 743.5 | 921 | 866.8 | 1144.7 | 762.4 | 1083.4 | 1130.2 | 1004.9 | 1053 | 1119.5 | 1640.5 | 2100 | 2100 | | |
| NEETS BAY | NEETS BAY | | | | | | 131.7 | 930.1 | 731.2 | 708.2 | 691.1 | 1608 | 388.2 | 728.5 | 377.4 | 215 | | 556.8 | 1 | 138.1 | 194.1 | | | |
| PORT ARMSTRONG | JETTY CR | | | | | | | | 69.9 | | 89.9 | 144.3 | 62.2 | 110 | | | | | | | | | | |
| SHELDON JACKSON | CRESCENT BAY | | | | | | | | | | | | | | 89.4 | 103.4 | 78.4 | 57.8 | 79.1 | 41.3 | 11.4 | 82.3 | 90 | |
| SHELDON JACKSON | SITKA SOUND | | | | | | | 54.2 | 45.6 | 32.3 | 96.7 | 100.5 | 50.6 | 103.1 | | | | | | | | | | |
| SNETTISHAM | AUKE BAY | | | | | | | | 46 | 117 | 276.4 | 46 | 50.1 | 100.5 | 141 | | | | | | | | | |
| SNETTISHAM | AUKE CR | | | | | | | 85.6 | 90.5 | 46 | | | | | | | | | | | | | | |
| SNETTISHAM | FISH CR | | | | | | | 60.3 | 62.7 | 74 | 67 | 254.5 | 45.2 | 345 | 105.7 | 143 | | | | | | | | |
| SNETTISHAM | GASTINEAU CH | | | | | | | | | | 11 | 101.5 | | | | | | | | | | | | |
| SNETTISHAM | MONTANA CR | | | | | | | 28.3 | 30.7 | 52 | 33 | | | | | | | | | | | | | |
| SNETTISHAM | PORT ARMSTRONG | | | | | | | | | | | | | 308.8 | 1264.4 | | | | | | | | | |
| SNETTISHAM | SHEEP CR | | | | | | | 30.3 | 31.1 | 31.6 | 120 | 222.7 | | | | | | | | | | | | |
| SNETTISHAM | SPEEL ARM | | 26.7 | 39.2 | 234.1 | 286.2 | 104.2 | 192.7 | 832.4 | 181.4 | 876 | 1075.8 | | | | | | | | | | | | |
| TAMGAS CREEK | TAMGAS CR | | | | 48 | 391.2 | | 424 | 2445.7 | 164.4 | 888.1 | 1233.8 | 671 | 527.2 | 338.6 | 284 | 142.2 | 167.2 | 381.7 | 523.3 | 501.2 | 486 | 380 | |
| WHITMAN LAKE | CARROLL INLET | | | | | | | 51.3 | 816.6 | 892.3 | 702.5 | 1004.8 | 1100 | 1217.8 | 1062.7 | 1147.9 | 513.3 | | | | | | | |
| WHITMAN LAKE | HERRING COVE | | 145.6 | | | | 27.2 | 119.1 | 98 | 151 | 55 | 75.4 | 73.7 | 106.2 | 109 | 123.2 | 124.7 | 239 | 697.2 | 713.3 | 741.9 | 751 | 750 | |
| WHITMAN LAKE | NEETS BAY | | | | 135.2 | 144.2 | 100.2 | | | | | | | | | | | | | | | | | |
| Total Age 1&2 Smolt Releases | | 239 | 165.3 | 597.7 | 854.4 | 1416 | 1223.5 | 3079.4 | 6524.8 | 4158.2 | 6365.7 | 9175.1 | 4812.7 | 7787.7 | 7442.1 | 5584.7 | 4459.5 | 4241.8 | 5316.8 | 5706.8 | 6314.3 | 6495.8 | 6690 | |

Table 11. Chinook smolt capacity of Southeast Alaska hatcheries, 1996 - 1999.

| Facility | Age at Release | Thousands of smolts | | | |
|--------------------|----------------|---------------------|---------|---------|---------|
| | | 1996 | 1997 | 1998 | 1999 |
| Burro Creek | 1 | 40.0 | 50.0 | 100.0 | 100.0 |
| Crystal Lake | 1 | 1,800.0 | 1,800.0 | 1,800.0 | 1,800.0 |
| Deer Mountain | 1 | 100.0 | 100.0 | 100.0 | 100.0 |
| Gastineau | 1 | 590.0 | 590.0 | 600.0 | 600.0 |
| Hidden Falls | 1 | 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 |
| Jerry Myers | 1 | 10.0 | 10.0 | 10.0 | 10.0 |
| Klawock River | 1 | | | | 250.0 |
| Little Port Walter | 1 | 200.0 | 200.0 | 200.0 | 200.0 |
| Medvejie Creek | 1 | 1,100.0 | 1,100.0 | 2,000.0 | 2,000.0 |
| Neets Bay | 1 | 325.0 | 325.0 | 325.0 | 325.0 |
| Port Armstrong | 1 | 1,500.0 | 1,500.0 | 1,500.0 | 1,500.0 |
| Sheldon Jackson | 1 | 100.0 | 100.0 | 100.0 | 100.0 |
| Tangas | 0 | 250.0 | 250.0 | 250.0 | 250.0 |
| Tangas | 1 | 500.0 | 500.0 | 500.0 | 500.0 |
| Whitman Lake | 1 | 775.0 | 775.0 | 775.0 | 775.0 |
| Total Age 0 | | 250.0 | 250.0 | 250.0 | 250.0 |
| Total Age 1 & 2 | | 8,140.0 | 8,150.0 | 9,110.0 | 9,360.0 |

Table 12. Estimated harvest and escapement of chinook salmon from Southeast Alaska enhancement sites in 1999.

| Release Site | Harvest | | | | | | | Rack Return | | Total | | |
|--------------------------|---------|--------|-------|--------------------|-------|-----------------------|---------------|-------------|--------|--------|-------|--------|
| | Troll | Net | | Term. | | Canadian ² | Cost Recovery | | Adults | | Jacks | |
| | | Adults | Jacks | Sport ¹ | Sport | | Adults | Jacks | | | | |
| Auke Bay | 158 | 286 | 24 | 521 | | | 1,394 | | 616 | 6 | 3,005 | |
| Big Boulder Creek | | 2 | | 4 | | | | | | | 6 | |
| Burro Creek | | | | | | | | | 40 | | 40 | |
| Carroll Inlet | 108 | | | 167 | | | | | | | 275 | |
| Crystal Lake | 1,482 | 162 | 55 | 228 | 2,000 | a | 6 | | 2,990 | 1,660 | 8,583 | |
| Deer Mountain | 143 | 48 | 9 | 292 | 200 | b | | | 630 | | 1,322 | |
| Earl West Cove | 473 | 4,019 | 35 | 74 | 170 | c | | | | | 4,771 | |
| Farragut Lake | 18 | | | | | | | | | | 18 | |
| Fish Creek | 68 | 274 | | 779 | | e | | | 73 | 4 | 1,198 | |
| Gastineau | 26 | 45 | | 133 | 1,000 | a,d | | | 31 | 4 | 1,239 | |
| Hidden Falls | 4,890 | 10,905 | 855 | 816 | 50 | b | | 1,948 | 91 | 4,048 | 26 | 23,629 |
| Indian Lake ³ | | | | 56 | | | | | | | 56 | |
| Little Port Walter | 1,356 | 152 | 84 | 156 | | | 3 | 2 | 3 | 1,378 | 61 | 3,195 |
| Medvejie Creek | 5,256 | 952 | | 2,016 | 300 | b | | 8897 | 494 | 1,808 | 386 | 20,109 |
| Neets Bay ⁴ | 628 | 36 | 102 | 296 | | | | | | | 1,062 | |
| Sheep Creek | 6 | 35 | | 107 | | | | | 22 | | 170 | |
| Sheldon Jackson | 164 | | | 118 | | | | | 70 | | 352 | |
| Tamgas Creek | 401 | 494 | 76 | 135 | | | 11 | 3026 | 677 | 1,448 | 6,268 | |
| Whitman Lake | 2,026 | 347 | 52 | 1,612 | 20 | b | 21 | | 3,467 | 577 | 8,122 | |
| Totals | 17,203 | 17,757 | 1,292 | 7,510 | 3,740 | # | 41 | 15,267 | 588 | 15,850 | 4,172 | 83,420 |

¹ Estimate from Sport Fish sampling program.

² Expanded by tagging fraction only; sampling fraction unknown.

³ Reared at Snettisham Hatchery, brood year 1993.

⁴ Includes fish reared at Crystal Lake and released at Neets Bay.

^a Sport Fish estimate.

^b Operator's estimate for terminal area.

^c Sum of CWT contribution minus Sport Fish estimate of non-terminal-area harvest, from catch sampling.

^d Terminal sport estimate includes returns to Auke Bay, Fish Creek, and Sheep Creek release sites.

^e Includes 11 adults returning from fish reared at Snettisham Hatchery.

Table 13. Estimated harvest and escapement of Alaska hatchery-produced chinook salmon in Southeast Alaska, 1980-1999.

| Year | Gear Type | | | Cost Recovery | Brood Escapement ^a | Total Return ^b |
|------|-----------|--------|--------|---------------|-------------------------------|---------------------------|
| | Troll | Net | Sport | | | |
| 1980 | 5,877 | 363 | N/A | 0 | N/A | 8,571 |
| 1981 | 1,949 | 59 | N/A | 0 | N/A | 3,985 |
| 1982 | 943 | 212 | N/A | 0 | N/A | 2,105 |
| 1983 | 1,857 | 113 | 872 | 0 | 1,451 | 4,293 |
| 1984 | 3,626 | 563 | 1,904 | 0 | 6,029 | 12,122 |
| 1985 | 8,100 | 2,400 | 3,372 | 2,011 | 9,819 | 25,702 |
| 1986 | 9,900 | 2,700 | 5,010 | 1,900 | 10,063 | 29,573 |
| 1987 | 16,600 | 2,300 | 5,108 | 2,466 | 15,426 | 41,900 |
| 1988 | 19,716 | 5,154 | 5,545 | 8,670 | 13,732 | 52,817 |
| 1989 | 18,804 | 8,831 | 6,351 | 17,748 | 13,071 | 64,805 |
| 1990 | 30,040 | 12,341 | 16,612 | 20,824 | 14,696 | 94,513 |
| 1991 | 38,336 | 14,488 | 18,818 | 25,854 | 14,425 | 111,921 |
| 1992 | 25,687 | 9,432 | 9,983 | 20,523 | 13,004 | 78,629 |
| 1993 | 17,805 | 13,999 | 9,279 | 22,929 | 14,712 | 78,724 |
| 1994 | 12,069 | 5,726 | 6,110 | 17,401 | 25,009 | 66,315 |
| 1995 | 26,187 | 22,506 | 9,983 | 23,690 | 29,680 | 112,046 |
| 1996 | 33,344 | 23,196 | 10,515 | 30,003 | 18,737 | 115,795 |
| 1997 | 28,111 | 7,984 | 9,605 | 30,487 | 15,652 | 91,839 |
| 1998 | 11,504 | 9,749 | 8,014 | 17,413 | 28,886 | 75,566 |
| 1999 | 17,203 | 19,049 | 11,250 | 15,855 | 20,022 | 83,379 |

^a Includes jacks.

^b Totals do not include chinook salmon caught in Canadian fisheries.

Table 14. Percent distribution of troll catch of hatchery chinook salmon by PSMFC area, 1980-1999.^{1, 2, 3}

| Facility/Stock/Fishery | | PMFC Area | | | | | | | | | Catch | % |
|------------------------|--------|-----------|------|------|------|------|------|-----|------|-----|--------|-----|
| | | LYN | NOUT | COUT | CNTR | STEP | SNTR | CIN | SOUT | SIN | | |
| <u>Tahini River</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 0% | 30% | 0% | 16% | 0% | 0% | 0% | 48 | 46% |
| | summer | 0% | 0% | 0% | 27% | 0% | 11% | 13% | 0% | 4% | 56 | 54% |
| <u>Big Boulder Cr.</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 0% | 0% | 0% | 15% | 0% | 0% | 0% | 2 | 15% |
| | summer | 0% | 0% | 23% | 54% | 0% | 8% | 0% | 0% | 0% | 11 | 85% |
| <u>Lutak Inlet</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 0% | 69% | 0% | 0% | 0% | 0% | 0% | 27 | 69% |
| | summer | 0% | 8% | 0% | 21% | 0% | 3% | 0% | 0% | 0% | 12 | 31% |
| <u>Jerry Myers</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 27% | 12% | 0% | 1% | 0% | 0% | 0% | 43 | 40% |
| | summer | 11% | 0% | 9% | 39% | 0% | 1% | 0% | 0% | 0% | 65 | 60% |
| <u>Burro Creek</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 50% | 0% | 0% | 0% | 0% | 0% | 0% | 2 | 50% |
| | summer | 0% | 0% | 0% | 0% | 0% | 50% | 0% | 0% | 0% | 2 | 50% |
| <u>Gastineau</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 1% | 0% | 0% | 12% | 0% | 0% | 0% | 187 | 13% |
| | summer | 0% | 5% | 8% | 53% | 0% | 21% | 0% | 0% | 0% | 1,228 | 87% |
| <u>King Salmon R.</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% | 0% | 12 | |
| | summer | 18% | 0% | 0% | 72% | 0% | 0% | 0% | 0% | 0% | 107 | |
| <u>Snettisham</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 0% | 1% | 2% | 31% | 0% | 0% | 0% | 154 | 34% |
| | summer | 0% | 0% | 0% | 11% | 9% | 37% | 5% | 3% | 0% | 302 | 66% |
| | winter | 0% | 0% | 2% | 9% | 1% | 22% | 0% | 0% | 0% | 2,471 | 34% |
| | summer | 0% | 1% | 5% | 21% | 1% | 35% | 0% | 1% | 1% | 4,719 | 66% |
| <u>Hidden Falls</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 12% | 33% | 0% | 8% | 0% | 0% | 0% | 261 | 53% |
| | summer | 0% | 1% | 4% | 31% | 0% | 11% | 0% | 0% | 0% | 231 | 47% |
| | winter | 0% | 0% | 1% | 1% | 0% | 2% | 0% | 0% | 0% | 2,041 | 5% |
| | summer | 0% | 1% | 4% | 80% | 0% | 9% | 0% | 0% | 0% | 41,479 | 95% |
| <u>Sheldon Jackson</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 17% | 1% | 0% | 0% | 0% | 0% | 0% | 562 | 18% |
| | summer | 0% | 0% | 77% | 3% | 0% | 2% | 0% | 0% | 0% | 2,621 | 82% |

-continued-

Table 14. (page 2 of 3)

| Facility/Stock/Fishery | | PMFC Area | | | | | | | | | Catch | % |
|---------------------------|--------|-----------|------|------|------|------|------|-----|------|-----|--------|------|
| | | LYN | NOUT | COUT | CNTR | STEP | SNTR | CIN | SOUT | SIN | | |
| <u>Medvejie Creek</u> | | | | | | | | | | | | |
| Andrew Cr. | winter | 0% | 0% | 6% | 1% | 0% | 1% | 0% | 0% | 0% | 3,623 | 8% |
| | summer | 0% | 1% | 85% | 1% | 0% | 4% | 0% | 1% | 0% | 42,203 | 92% |
| Chickamin | winter | 0% | 0% | 4% | 0% | 0% | 1% | 0% | 0% | 0% | 635 | 5% |
| | summer | 0% | 3% | 86% | 1% | 0% | 3% | 1% | 1% | 0% | 12,094 | 95% |
| <u>Farragut River</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 4% | 2% | 2% | 24% | 0% | 0% | 0% | 187 | 31% |
| | summer | 0% | 1% | 2% | 8% | 1% | 57% | 1% | 1% | 0% | 412 | 69% |
| <u>Crystal Lake</u> | | | | | | | | | | | | |
| Andrew Cr. | winter | 0% | 0% | 2% | 2% | 1% | 22% | 2% | 0% | 0% | 21,186 | 30% |
| | summer | 0% | 1% | 5% | 7% | 1% | 37% | 16% | 2% | 2% | 50,331 | 70% |
| <u>Little Port Walter</u> | | | | | | | | | | | | |
| Unuk R. | winter | 0% | 0% | 2% | 3% | 0% | 17% | 0% | 0% | 0% | 4,613 | 23% |
| | summer | 0% | 2% | 8% | 13% | 0% | 50% | 1% | 2% | 0% | 15,365 | 77% |
| Chickamin R. | winter | 0% | 0% | 4% | 1% | 0% | 18% | 0% | 0% | 0% | 3,167 | 25% |
| | summer | 0% | 2% | 7% | 12% | 0% | 52% | 0% | 1% | 0% | 9,440 | 75% |
| King Salmon R | winter | 0% | 0% | 4% | 1% | 0% | 25% | 0% | 0% | 0% | 328 | 30% |
| | summer | 0% | 1% | 6% | 18% | 0% | 45% | 0% | 0% | 0% | 761 | 70% |
| <u>Port Armstrong</u> | | | | | | | | | | | | |
| Unuk R. | winter | 0% | 0% | 5% | 7% | 0% | 11% | 0% | 0% | 0% | 818 | 24% |
| | summer | 0% | 0% | 9% | 13% | 0% | 52% | 1% | 1% | 0% | 2,615 | 76% |
| Andrew Cr. | winter | 0% | 0% | 8% | 0% | 0% | 2% | 0% | 0% | 0% | 95 | 10% |
| | summer | 0% | 3% | 5% | 20% | 0% | 62% | 0% | 0% | 0% | 860 | 90% |
| <u>Harding River</u> | | | | | | | | | | | | |
| | winter | 0% | 0% | 4% | 0% | 0% | 7% | 3% | 0% | 0% | 10 | 13% |
| | summer | 0% | 0% | 23% | 3% | 0% | 23% | 21% | 4% | 13% | 65 | 87% |
| <u>Burnett Inlet</u> | | | | | | | | | | | | |
| Andrew Ck | winter | 0% | 0% | 2% | 8% | 0% | 17% | 0% | 0% | 0% | 221 | 27% |
| | summer | 0% | 3% | 4% | 4% | 0% | 11% | 23% | 5% | 22% | 601 | 73% |
| Harding R. | winter | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 4 | 100% |
| | summer | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0 | 0% |
| <u>Bell Island</u> | | | | | | | | | | | | |
| Unuk R. | winter | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0 | 0% |
| | summer | 0% | 0% | 38% | 13% | 0% | 25% | 0% | 0% | 25% | 8 | 100% |

-continued-

Table 14. (page 3 of 3)

| Facility/Stock/Fishery | | PMFC Area | | | | | | | | | Catch | % |
|------------------------|--------|-----------|------|------|------|------|------|-----|------|-----|--------|-----|
| | | LYN | NOUT | COUT | CNTR | STEP | SNTR | CIN | SOUT | SIN | | |
| <u>Neets Bay</u> | | | | | | | | | | | | |
| Unuk R. | winter | 0% | 0% | 3% | 3% | 0% | 8% | 2% | 0% | 4% | 5,567 | 20% |
| | summer | 0% | 4% | 5% | 7% | 0% | 12% | 12% | 9% | 31% | 22,295 | 80% |
| Chickamin R. | winter | 0% | 0% | 20% | 0% | 1% | 3% | 3% | 0% | 0% | 426 | 28% |
| | summer | 0% | 2% | 40% | 1% | 0% | 18% | 2% | 4% | 5% | 1,109 | 72% |
| <u>Deer Mountain</u> | | | | | | | | | | | | |
| Unuk R. | winter | 0% | 0% | 1% | 1% | 0% | 13% | 2% | 0% | 4% | 1,258 | 22% |
| | summer | 0% | 4% | 16% | 6% | 0% | 9% | 6% | 10% | 28% | 4,499 | 78% |
| <u>Whitman Lake</u> | | | | | | | | | | | | |
| Chickamin R. | winter | 0% | 0% | 7% | 1% | 0% | 6% | 2% | 1% | 7% | 4,371 | 23% |
| | summer | 0% | 3% | 11% | 3% | 0% | 10% | 5% | 9% | 37% | 14,687 | 77% |
| Unuk R. | winter | 0% | 0% | 2% | 1% | 0% | 5% | 0% | 0% | 2% | 2,320 | 11% |
| | summer | 0% | 4% | 6% | 4% | 0% | 8% | 3% | 12% | 53% | 19,494 | 89% |
| <u>Tamgas Creek</u> | | | | | | | | | | | | |
| Unuk/Chickamin R. | winter | 0% | 0% | 5% | 2% | 0% | 8% | 1% | 0% | 8% | 2,560 | 26% |
| | summer | 0% | 2% | 7% | 3% | 0% | 5% | 3% | 7% | 47% | 7,467 | 74% |

¹ Distributions of 20% or more of the harvest are shaded in this table to illustrate the northern outside to southern inside distribution of the harvest.

² The distribution is expressed as a percentage of the total harvest in each Pacific States Marine Fisheries Commission (PSMFC) area.

² PSMFC Areas:

| Name | Abbreviation | Districts |
|-----------------------|--------------|------------------------------|
| Lynn Canal | LYN | 115 |
| Northern Outside | NOUT | 116, 157, 181, 183, 185, 189 |
| Central Outside | COUT | 113, 154 |
| Central Intermediate | CNTR | 112, 114 |
| Stephens Passage | STEP | 111 |
| Southern Intermediate | SNTR | 105, 109, 110 |
| Central Inside | CIN | 106, 107, 108 |
| Southern Outside | SOUT | 103, 104, 152 |
| Southern Inside | SIN | 101, 102, 150 |

Table 15. Total return of chinook salmon released from various enhancement sites in Southeast Alaska, by return year.^a

| Return Year | Auke Creek ^b | Big Boulder ^c | Burro Creek | Carroll Inlet ^d | Crystal Lake | Deer Mountain | Earl West ^e | Fish Creek ^b | Gastineau | Hidden Falls | Jerry Myers |
|-------------------|-------------------------|--------------------------|-------------|----------------------------|--------------|---------------|------------------------|-------------------------|-----------|--------------|-------------|
| 1980 | | | | | 5,258 | 160 | | | | | |
| 1981 | | | | | 2,531 | 310 | | | | | |
| 1982 | | | | | 1,284 | 1,577 | | | | | |
| 1983 | | | | | 1,633 | 2,481 | | | | | |
| 1984 | | | | | 4,186 | 2,246 | | | | 18 | |
| 1985 | | | | | 8,879 | 3,144 | | | | 83 | |
| 1986 | | | | | 7,081 | 2,511 | | | | 257 | |
| 1987 | 7 | | | | 16,681 | 565 | | | | 661 | |
| 1988 | 196 | | | 653 | 10,076 | 539 | 384 | | | 573 | |
| 1989 | 467 | | | 5,003 | 11,213 | 1,541 | 2,807 | | 5 | 571 | |
| 1990 | 908 | | | 22,045 | 18,693 | 1,370 | 11,226 | | 11 | 1,566 | 60 |
| 1991 | 1547 | | | 28,810 | 15,657 | 1,324 | 15,595 | | 113 | 2,179 | 91 |
| 1992 | 780 | | | 9,868 | 12,676 | 1,002 | 9,570 | | 87 | 2,613 | 32 |
| 1993 | 1410 | | | 3,008 | 8,361 | 1,171 | 9,264 | | 707 | 2,784 | 55 |
| 1994 | 804 | | 1 | 1,409 | 6,143 | 1,113 | 8,523 | | 2,471 | 10,185 | 250 |
| 1995 | 411 | 3 | 7 | 2,775 | 6,558 | 841 | 4,516 | | 3,771 | 32,295 | 214 |
| 1996 | 955 | 35 | 34 | 1,999 | 10,310 | 483 | 4,678 | 704 | 3,075 | 40,813 | 29 |
| 1997 | 298 | 9 | 46 | 2,758 | 7,474 | 614 | 1,866 | 556 | 3,985 | 25,440 | |
| 1998 | 246 | 22 | 76 | 1,906 | 5,394 | 761 | 3,183 | 337 | 2,687 | 11,913 | 6 |
| 1999 ^b | 3,005 | 6 | 40 | 275 | 8,583 | 1,322 | 4,771 | 1,198 | 1,239 | 23,629 | |

| Return Year | L. Port Walter | Lynn Canal ^f | Medveje Creek | Montana Creek ^g | Neets Bay ^h | Port Armstrong ⁱ | Sheep Creek ^j | Sheldon Jackson | Snettisham | Tamgas Creek | Whitman Lake |
|-------------------|----------------|-------------------------|---------------|----------------------------|------------------------|-----------------------------|--------------------------|-----------------|------------|--------------|--------------|
| 1980 | 1,877 | | | | | | | | | | |
| 1981 | 896 | | | | | | | | | | |
| 1982 | 1,441 | | | | | | | | | | 2,672 |
| 1983 | 1,577 | | | | | | | | 33 | | |
| 1984 | 2,670 | | | | 400 | | | | 214 | | 3,356 |
| 1985 | 3,363 | | 686 | | 2,796 | | | | 392 | | 3,815 |
| 1986 | 6,338 | | 86 | | 9,872 | | | | 960 | 529 | 770 |
| 1987 | 9,517 | | 426 | | 7,126 | | | | 2,645 | 1,829 | 2,987 |
| 1988 | 7,592 | | 775 | 2 | 17,320 | | 100 | | 1,122 | 1,821 | 4,220 |
| 1989 | 5,144 | | 680 | 9 | 26,148 | 2,069 | 362 | 176 | 436 | 2,562 | 8,730 |
| 1990 | 7,271 | 11 | 3,829 | 91 | 15,217 | 1,163 | 620 | 351 | 1,244 | 2,571 | 39,169 |
| 1991 | 7,587 | 74 | 7,589 | 93 | 9,470 | 846 | 1,284 | 490 | 991 | 8,617 | 3,800 |
| 1992 | 3,026 | 189 | 17,382 | 61 | 8,908 | 1,355 | 799 | 467 | 1,647 | 7,233 | 714 |
| 1993 | 2,995 | 267 | 28,980 | 5 | 11,326 | 1,515 | 1,864 | 892 | 2,214 | 3,008 | 428 |
| 1994 | 3,873 | 295 | 21,462 | 10 | 3,254 | 1,241 | 1,002 | 1,280 | 1,757 | 2,163 | 399 |
| 1995 | 5,190 | 200 | 45,921 | 29 | 2,279 | 1,270 | 377 | 1,194 | 201 | 1,940 | 1,019 |
| 1996 | 4,270 | 201 | 37,868 | | 715 | 2,526 | 4 | 1,316 | | 1,834 | 1,039 |
| 1997 | 3,953 | 138 | 37,077 | | 765 | 1,086 | 7 | 638 | | 3,926 | 1,508 |
| 1998 | 2,121 | 60 | 21,031 | | 874 | 17 | 5 | 273 | | 4,638 | 19,949 |
| 1999 ^b | 3,195 | 0 | 20,109 | | 1,062 | | 170 | 352 | | 6,268 | 8,122 |

^a Includes all ages and Canadian recoveries.

^b Reared at Snettisham (BY 84-92) and Gastineau (BY 93-97).

^c Releases of fed fry incubated and reared at Gastineau Hatchery.

^d Reared at Whitman Lake Hatchery.

^e Reared at Crystal Lake Hatchery.

^f smolts reared at Hidden Falls and Gastineau hatcheries, released in Lynn Canal.

^g Reared at Snettisham.

^h Includes smolts reared at Crystal Lake and released at Neets Bay.

ⁱ includes smolts reared at Snettisham and released at Port Armstrong.

^j brood years 1984-1988 reared at Snettisham; brood year 1993 reared at Gastineau.

Table 16. Common property exploitation rate (%) of chinook salmon returning to various enhancement sites in Southeast Alaska, by return year.^{a, b}

| Return Year | Crystal Lake | Deer Mountain | Hidden Falls | L. Port Walter | Medvejie Creek | Neets Bay | Port Armstrong | Sheldon Jackson | Tamgas Creek | Whitman Lake |
|-------------------|--------------|---------------|--------------|----------------|----------------|-----------|----------------|-----------------|--------------|--------------|
| 1980 | 86.4 | | | 97.0 | | | | | | |
| 1981 | 66.3 | 79.2 | | 67.5 | | | | | | |
| 1982 | 40.6 | 62.2 | | 66.0 | | | | | | |
| 1983 | 28.4 | 51.0 | | 46.5 | | | | | | |
| 1984 | 51.6 | 47.7 | | 39.2 | | | | | | 39.5 |
| 1985 | 58.2 | 51.1 | 79.1 | 60.1 | | 47.9 | | | | 34.7 |
| 1986 | 63.6 | 40.8 | 95.7 | 44.1 | | 61.1 | | | | 25.0 |
| 1987 | 63.2 | 59.7 | 81.0 | 44.4 | | 44.9 | | | 94.6 | 38.0 |
| 1988 | 43.4 | 34.7 | 52.5 | 36.2 | 26.1 | 42.6 | | | 51.7 | 52.2 |
| 1989 | 42.0 | 34.9 | 38.6 | 37.5 | 43.0 | 32.8 | | | 54.2 | 42.2 |
| 1990 | 51.4 | 47.5 | 59.0 | 63.9 | 44.0 | 23.4 | 54.2 | 25.5 | 48.8 | 66.2 |
| 1991 | 88.1 | 38.1 | 63.2 | 70.5 | 25.8 | 46.2 | 47.9 | 23.3 | 39.5 | 54.5 |
| 1992 | 85.1 | 19.9 | 46.9 | 50.9 | 38.0 | 35.0 | 53.3 | 58.0 | 38.4 | 30.5 |
| 1993 | 92.0 | 57.6 | 58.0 | 44.1 | 34.8 | 28.7 | 26.4 | 43.5 | 50.9 | 41.4 |
| 1994 | 20.1 | 49.3 | 40.0 | 49.2 | 41.4 | 32.0 | 64.5 | 43.2 | 39.9 | 41.1 |
| 1995 | 80.9 | 61.5 | 63.1 | 59.5 | 50.5 | 51.3 | 35.5 | 73.2 | 30.4 | 41.4 |
| 1996 | 85.1 | 31.1 | 80.4 | 62.1 | 26.0 | 82.5 | 73.1 | 88.6 | 11.0 | 39.6 |
| 1997 | 75.0 | 21.6 | 61.5 | 69.5 | 35.5 | 28.8 | 98.3 | 53.6 | 18.5 | 47.6 |
| 1998 | 63.5 | 53.6 | 65.7 | 69.2 | 28.7 | 78.1 | 100.0 | 42.9 | 12.2 | 47.9 |
| 1999 ^c | 56.8 | 52.3 | 74.5 | 55.9 | 44.3 | 100.0 | | 80.1 | 23.0 | 53.9 |

^a Excludes 0-ocean and 1-ocean fish in cost recovery and escapement, and Canadian recoveries.

^b Includes only sites with good accountability. For other sites, return data are not discrete to that site, or there is no weir or other means to count the total return.

^c Preliminary data.

Table 17. Chinook salmon egg takes in Southeast Alaska in 1999 (numbers in thousands).

| Facility | Stock | Females Spawned | Green Eggs | Disposition of Eggs | | |
|------------------------|-----------------|--------------------|------------|---------------------|--------------------------------|-------------------------|
| | | | | Facility | Total Adjusted # Green Eggs | Total # of Eyed Eggs |
| Burro Creek | Tahini R. | 5 | 31.0 | Gastineau | 33.9 | 29.7 |
| Crystal Lake | Andrew Cr. | 418 | 2,308.0 | Crystal Lake | 1,524.0 | 1,478.0 |
| | | | 788.0 | Gastineau | 788.0 | 662.0 |
| Deer Mountain | Unuk | 35 | 181.5 | Deer Mountain | 157.9 | 113.9 |
| Hidden Falls | Andrew Cr. | 316 | 1,782.6 | Hidden Falls | 1,400.0 | 1,360.9 |
| Little Port Walter | Unuk R. | 48 | 239.0 | Little Port Walter | 239.0 | 175.8 |
| | Chickamin R. | 48 | 257.5 | Little Port Walter | 257.5 | 170.6 |
| Medvejie | Andrew Cr. | 607 | 3,111.0 | Medvejie | 2,781.0 | 2,429.5 |
| Sheldon Jackson | Andrew Cr. | 35 | 136.0 | Sheldon Jackson | 136.0 | 103.0 |
| Tamgas Creek | Unuk/Chickamin | 108 | 580.0 | Tamgas | 580.0 | 570.0 |
| Whit. Lk/Carroll Inlet | Chickamin R. | 330 | 1,815.0 | Whitman Lake | 1,311.0 | 1,115.0 |
| | | | | Crystal Lake | 602.4 | 512.0 |
| Total | Hatchery Return | 1,950 | 11,230 | | 9,811 | 8,720 |

Table 18. Rearing strategies and release sites of 1999 brood chinook salmon eggs in enhancement programs (numbers in thousands).

| Rearing Facility | Stock | Adjusted Green Eggs | Release Site | Fry Plants | Age-0 Smolts | Age-1 Smolts | |
|--------------------|----------------|---------------------|----------------|--------------------|--------------|-----------------|----------------------|
| | | | | | | FW ^a | SW ^b |
| Crystal Lake | Chickamin R. | 602.4 | Neets Bay | | | | 400 |
| | Andrew Cr. | 1,524.0 | Crystal Cr | | | 600.0 | |
| | | | Earl West Cove | | | | 400.0 |
| Deer Mountain | Unuk R. | 157.9 | Ketchikan Cr | | | 100.0 | |
| Gastineau | Tahini R. | 33.9 | Pullen Cr | | | | 29.0 |
| | Andrew Cr. | 788.0 | Gastineau | | | | 210.0 |
| | | | Auke Bay | | | | 151.0 |
| | | | Fish Cr | | | | 180.0 |
| Hidden Falls | Andrew Cr. | 1,400.0 | Hidden Falls | | | | 1,200.0 |
| Jerry Myers | Tahini R. | | Taiya Inlet | | | | |
| Little Port Walter | Unuk R. | 239.0 | L. Port Walter | | | 50.0 | |
| | Chickamin R. | 257.5 | L. Port Walter | | | 50.0 | |
| Medveje | Andrew Cr. | 2,781.0 | Bear Cove | | 200.0 | | 2,100.0 ^c |
| Sheldon Jackson | Andrew Cr. | 136.0 | Crescent Bay | | | 90.0 | |
| Tamgas Creek | Unuk/Chickamin | 580.0 | Tamgas Cr | | 104.0 | | 380.0 |
| Whitman Lake | Chickamin R. | 1,311.0 | Herring Cove | | | 750.0 | |
| | | | Long Lake | 250.0 ^d | | | |
| Total | | 9,811 | | 250 | 304 | 1,640 | 5,050 |

^a Released from fresh water rearing.

^b Released from salt water rearing.

^c Includes Green Lake project.

^d Volitional outmigration to Neets Bay as age-1 smolts.

Table 19. Incidence of hatchery strays in ten wild stock streams in Southeast Alaska.

| Stream | Years Examined | Total # Years | Number Examined | Hatchery Tags | Hatchery Fish | % from hatcheries |
|--------------|--------------------------|------------------|--------------------|------------------|------------------|----------------------|
| Chickamin | 1985-1993;1995-1999 | 14 | 2,431 | 4 | 28 | 1.15% |
| Chilkat | 1983-1987;1989-1999 | 16 | 8,446 | 7 | 7 | 0.08% |
| Farragut | 1983-1985;1989;1991-1993 | 7 | 617 | 34 | 51 | 8.27% |
| Harding | 1986;1989-1993 | 6 | 363 | 2 | 4 | 1.10% |
| King Salmon | 1979;1981-1992;1998-1999 | 15 | 563 | 0 | 0 | 0.00% |
| Stikine | 1979-1992;1997-1999 | 17 | 20,241 | 14 | 92 | 0.45% ^{a,b} |
| Taku | 1979-1990;1994-1999 | 18 | 42,887 | 0 | 0 | 0.00% |
| Unuk | 1985-1999 | 15 | 10,766 | 7 | 26 | 0.24% |
| Keta | 1998-1999 | 2 | 716 | 1 | 20 | 2.79% ^c |
| Blossom | 1998-1999 | 2 | 239 | 1 | 8 | 3.35% |
| Total | | | 87,269 | 70 | 236 | 0.27% |

^a Includes Andrew Creek.

^b Two wild Unuk tags in 1998 - not included.

^c One wild Unuk tag in 1998 - not included.

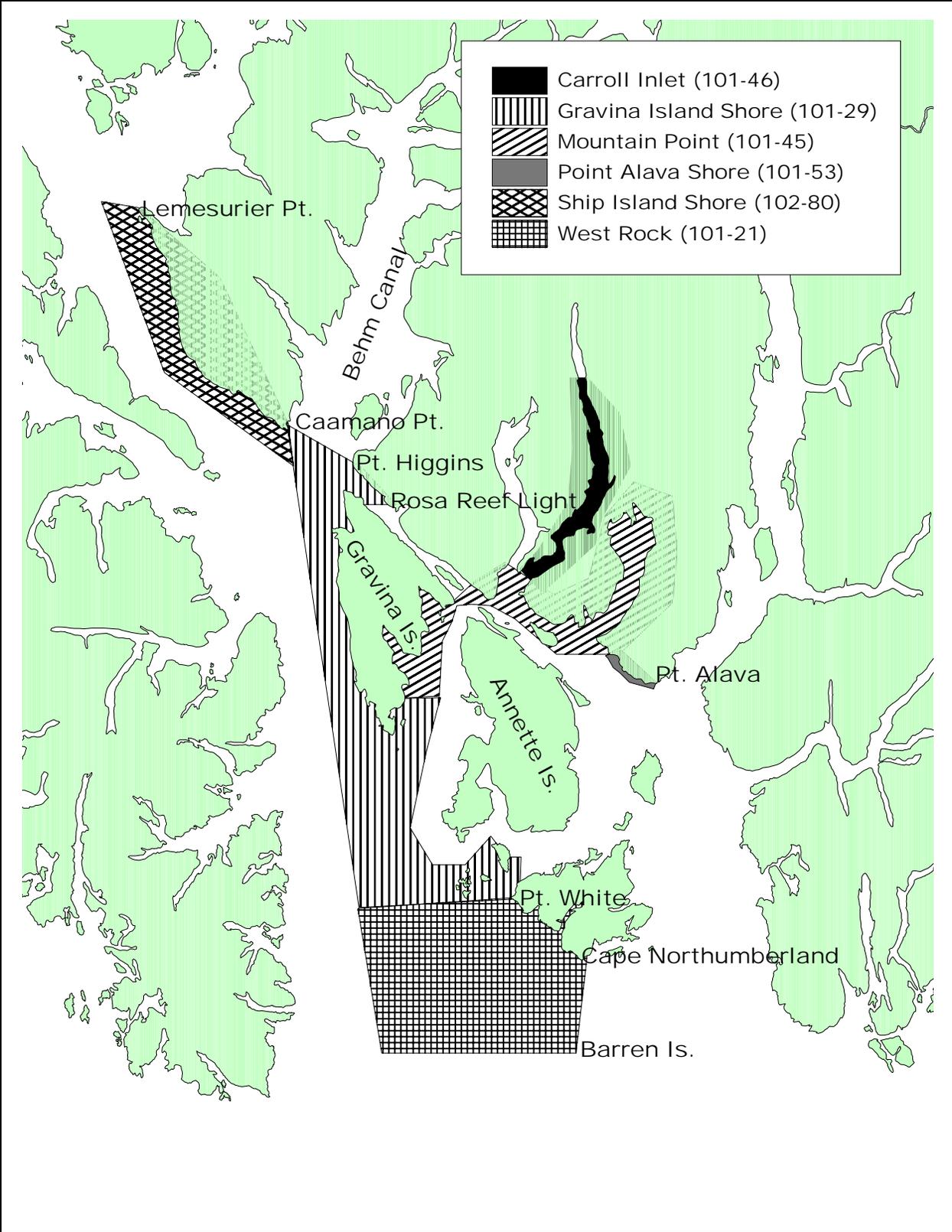


Figure 1. Ketchikan area spring troll fisheries, 1999.

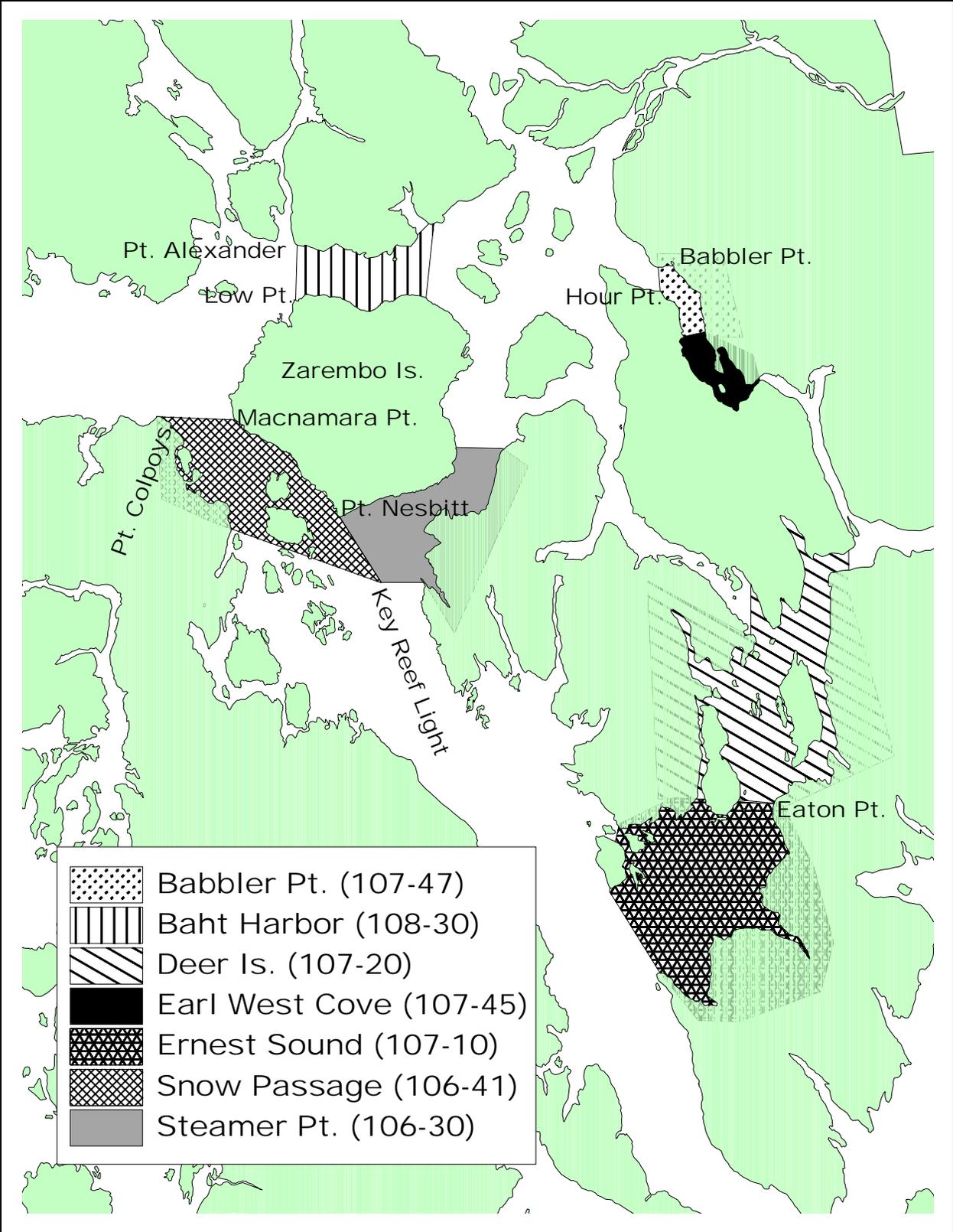


Figure 2. Wrangell area spring troll fisheries, 1999.

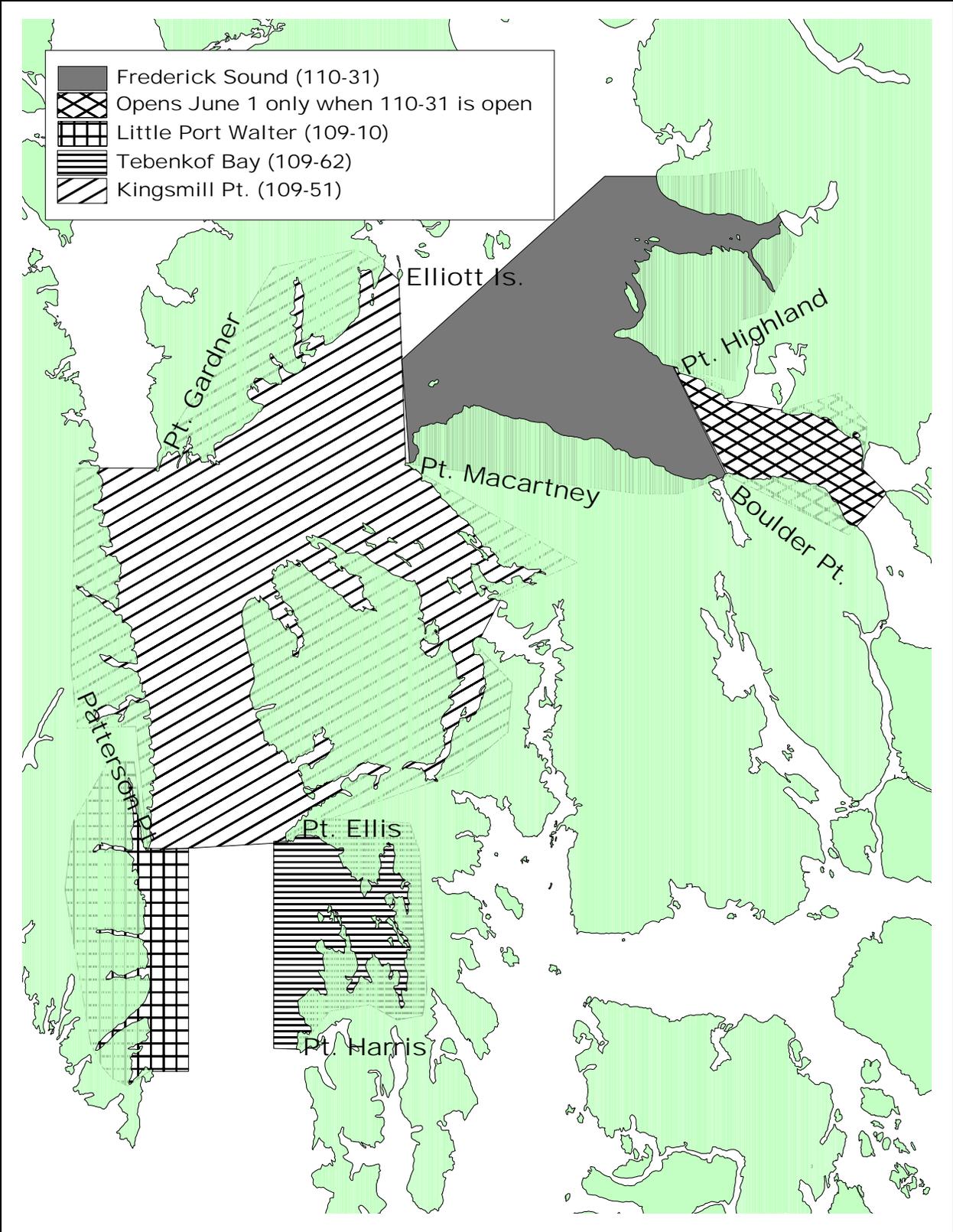


Figure 3. Lower Chatham area spring troll fisheries, 1999.

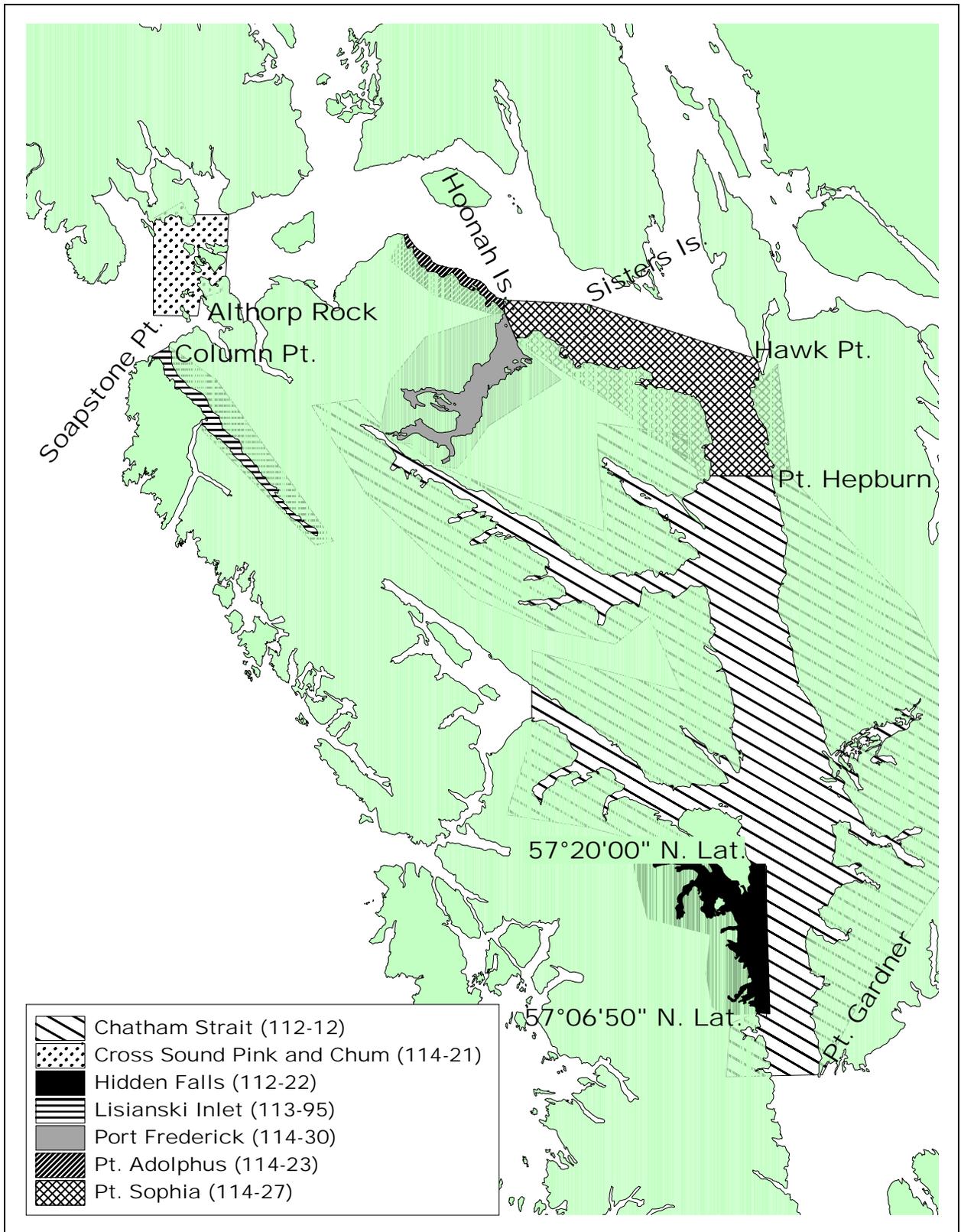


Figure 4. Upper Chatham area spring troll fisheries, 1999.

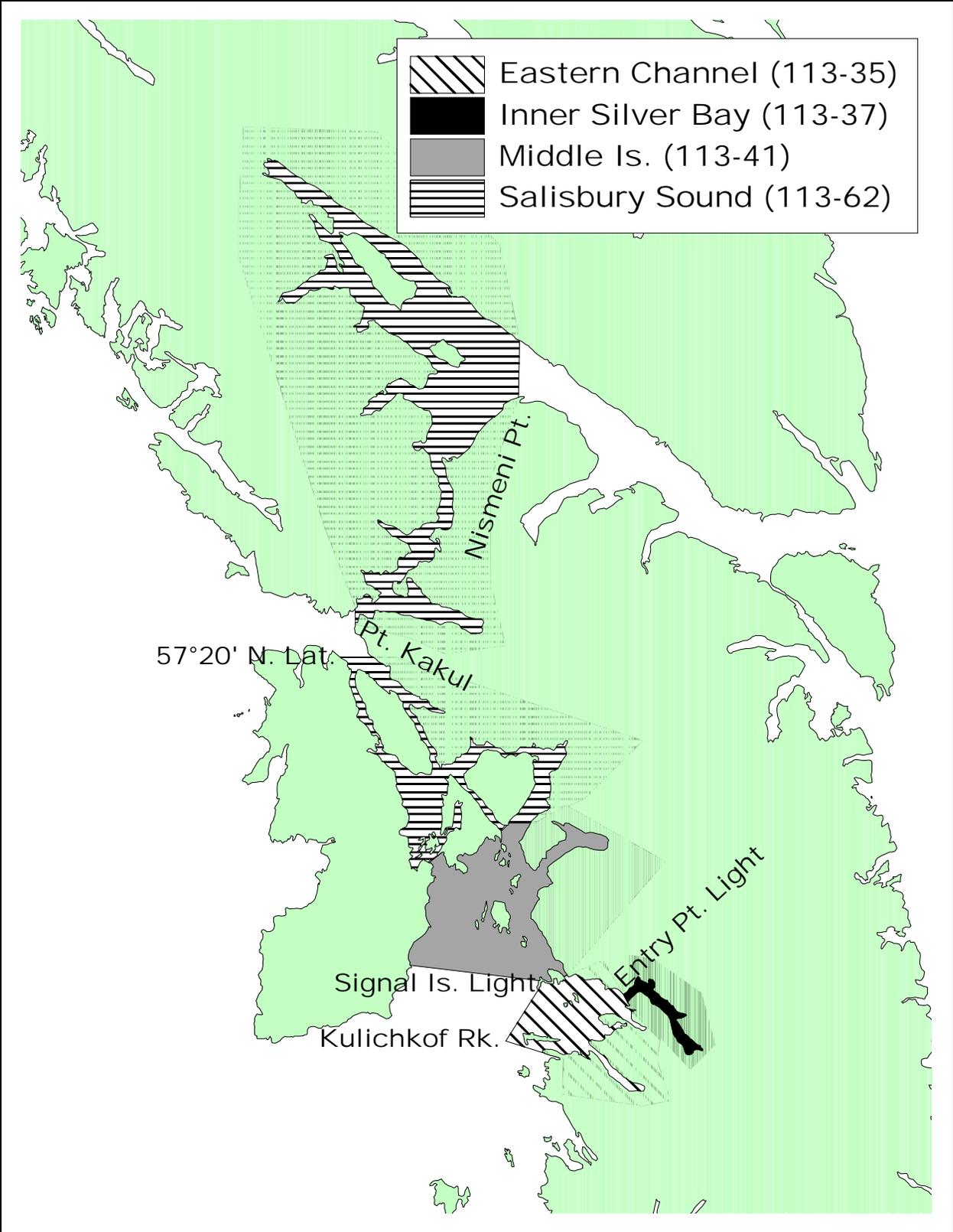


Figure 5. Sitka area spring troll fisheries, 1999.

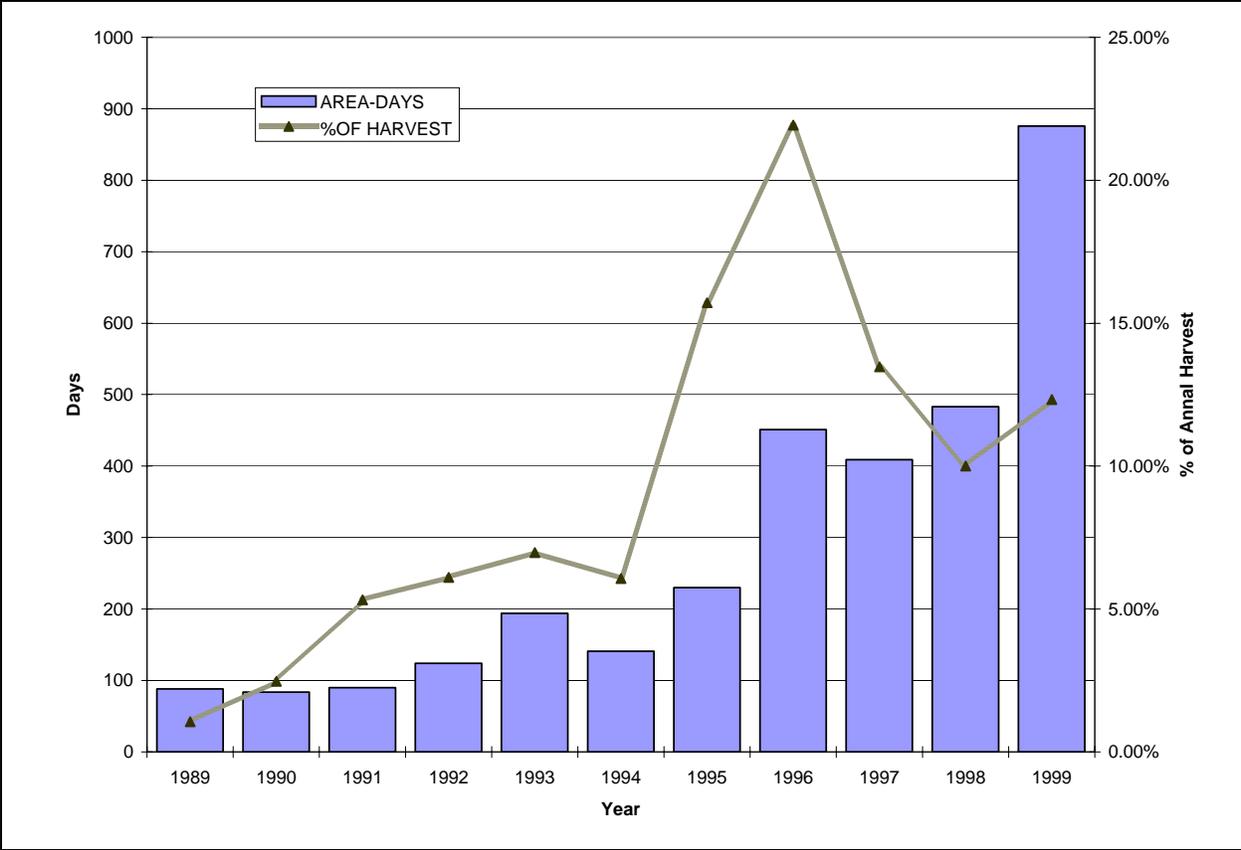


Figure 6. Number of days and percent of annual harvests taken in experimental fisheries, 1989-1999.

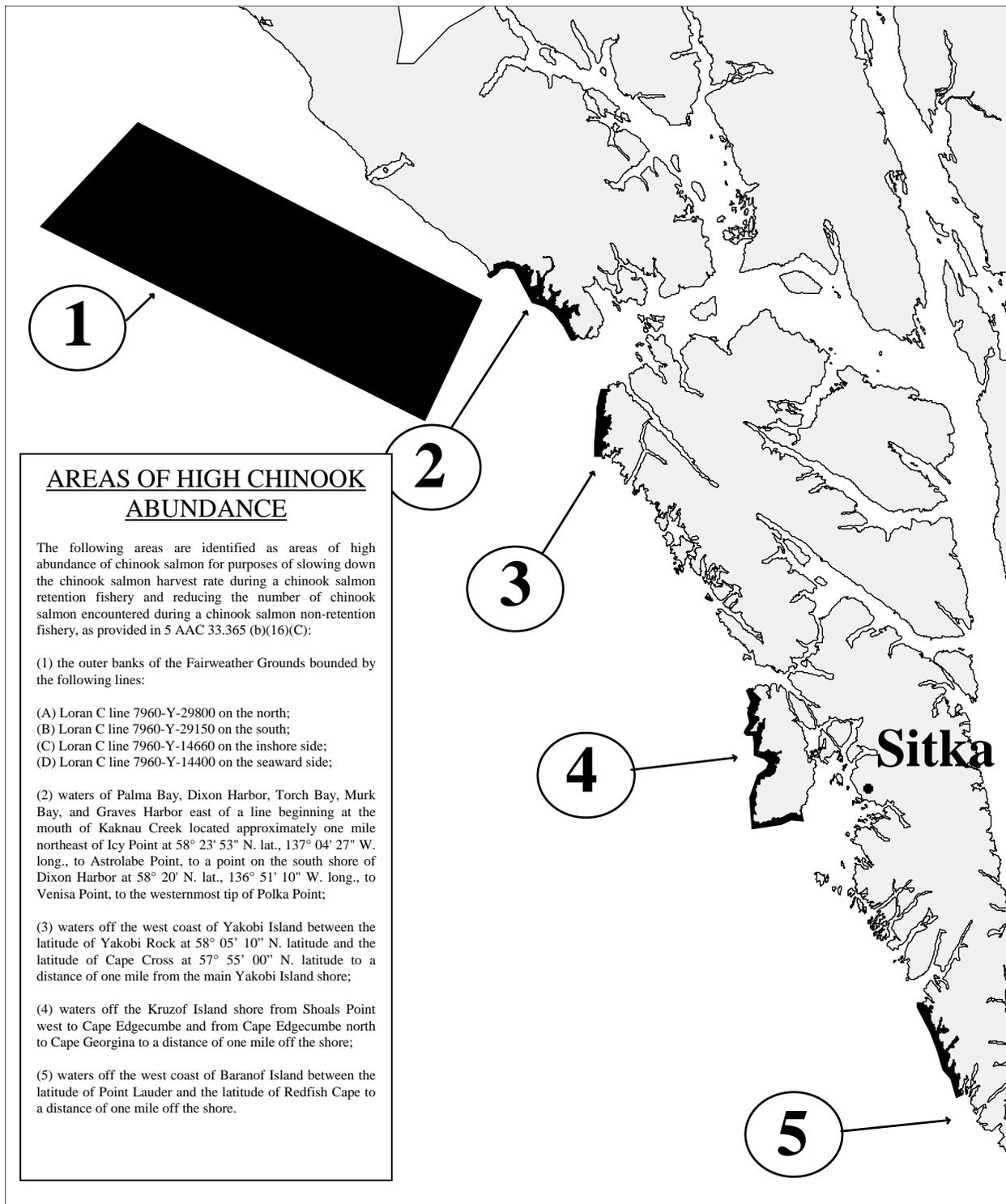


Figure 7. Southeast Alaska areas closed to trolling for all species following the initial chinook salmon opening in the Southeast Alaska summer troll season.

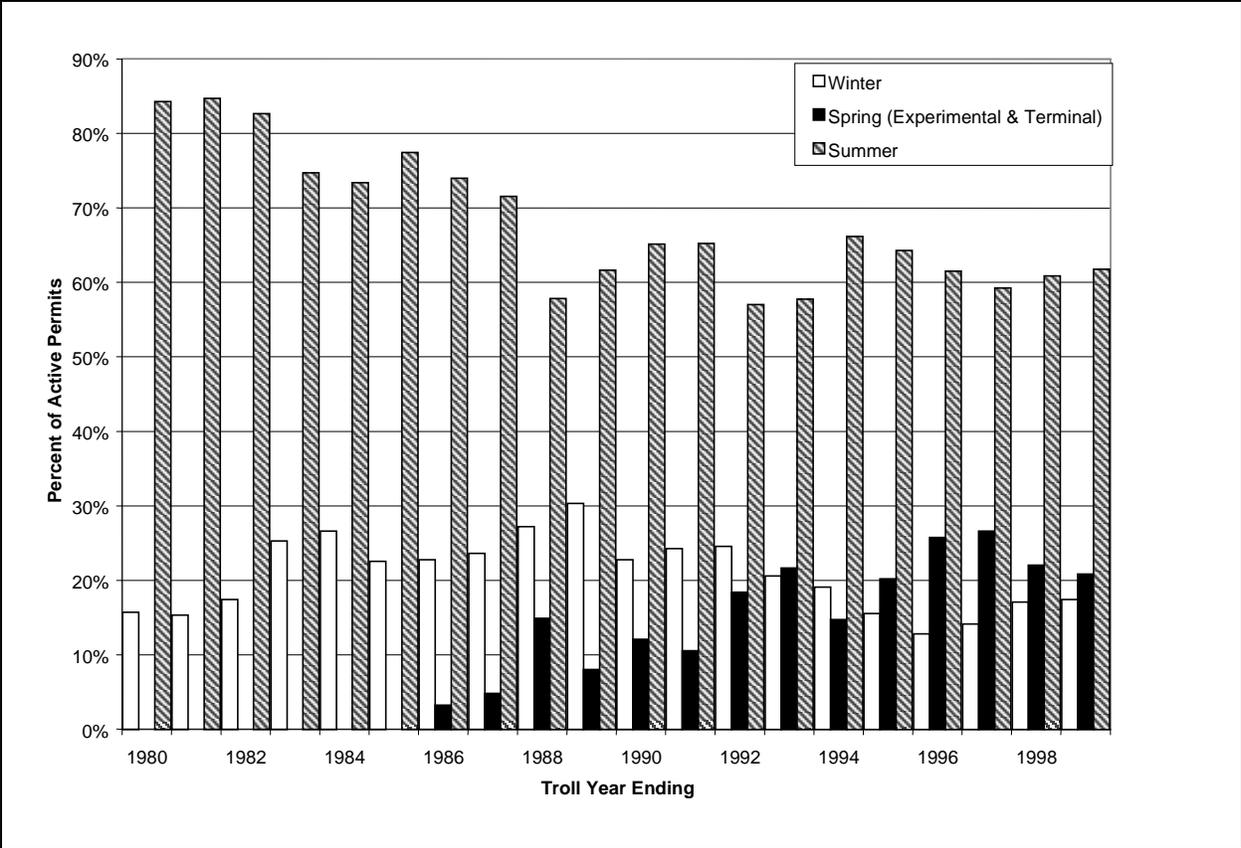


Figure 8. Percent of active troll permits fished by season, 1980-1999.

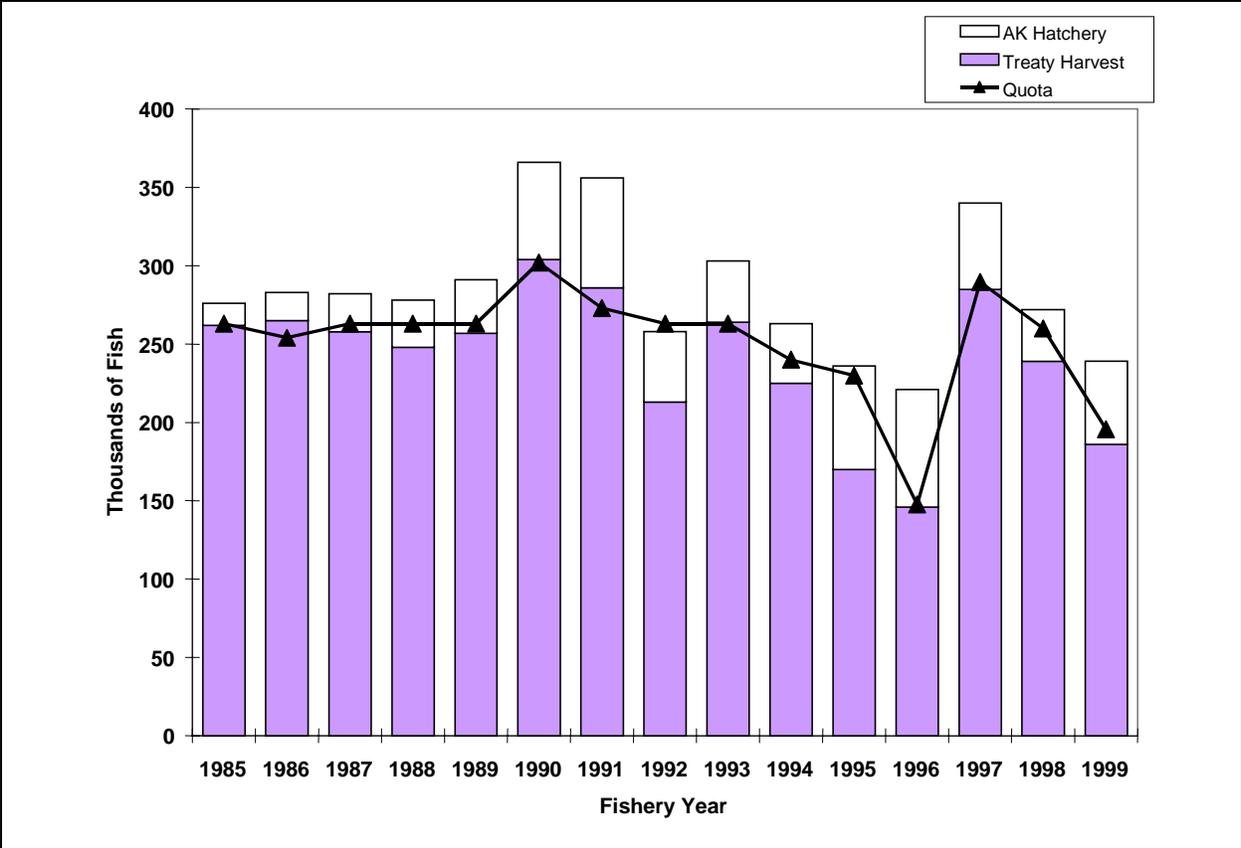


Figure 9. Number of chinook salmon harvested under the Pacific Salmon Treaty quota, 1985-1999.

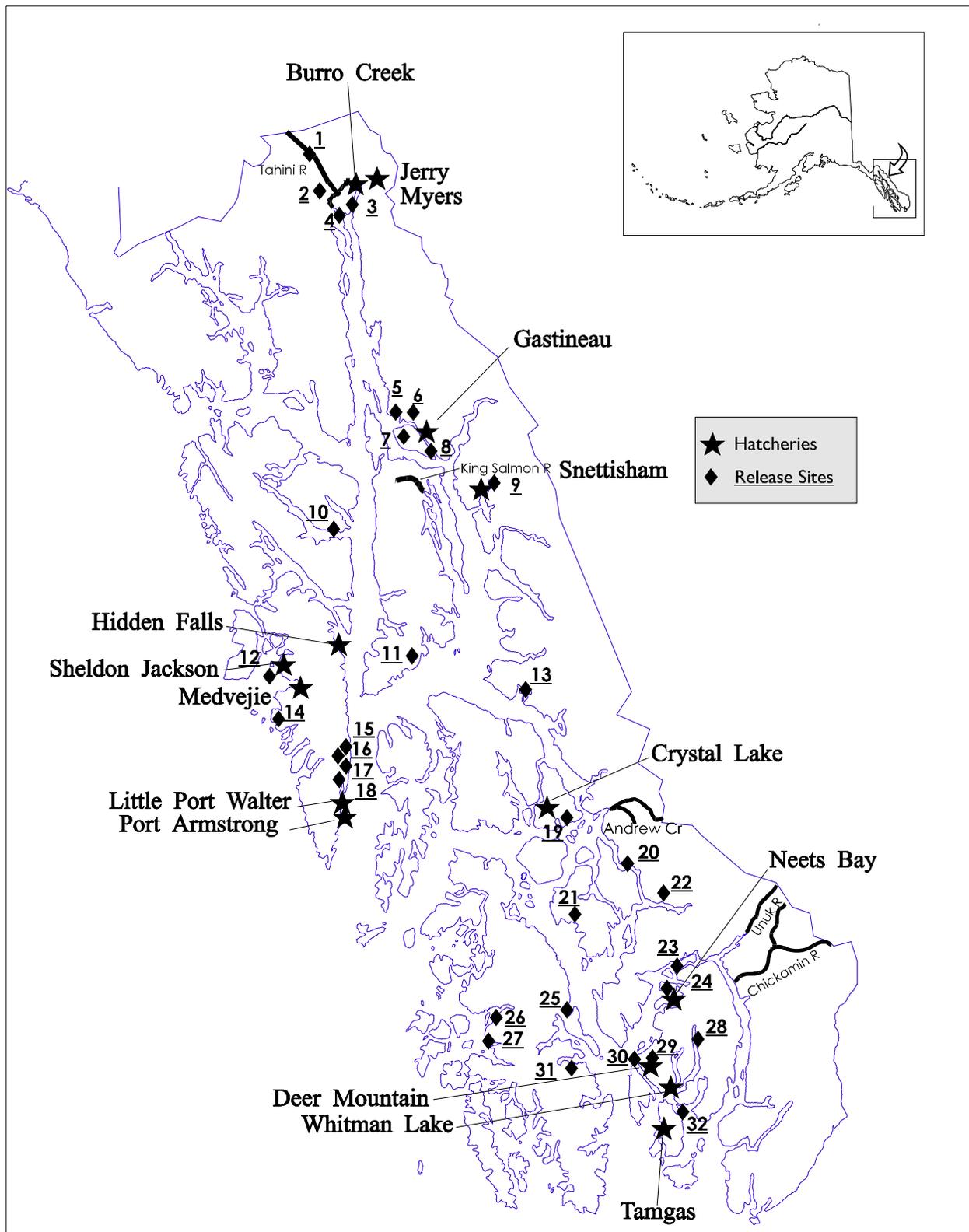


Figure 10. Location of chinook salmon hatcheries, remote release sites, and primary ancestral stock rivers in Southeast Alaska.

Key to remote release sites shown in Figure 10, and stream numbers of chinook salmon release sites and ancestral stocks.

Remote Release Sites

Hatchery Release Sites

| <u>Site No.</u> | <u>Site</u> | <u>District</u> | <u>Sub-district</u> | <u>Stream</u> | <u>Site</u> | <u>Hatchery</u> | <u>Site</u> | <u>District</u> | <u>Sub-district</u> | <u>Stream</u> |
|-----------------|----------------|-----------------|---------------------|-----------------|-------------|--------------------|--------------------|---------------------|---------------------|---------------|
| 5 | Auke Bay | 111 | 50 | 0 ¹ | | Deer Mountain | Ketchikan Cr | 101 | 47 | 10250 |
| 5 | Auke Cr | 111 | 50 | 10420 | | Port Armstrong | Jetty Creek | 109 | 10 | 0 |
| 16 | Banner Lk | 109 | 10 | na ² | | Sheldon Jackson | Crescent Bay | 113 | 41 | 0 |
| 23 | Bell Island | 101 | 80 | 0 | | Whitman Lake | Herring Cove | 101 | 45 | 0 |
| 2 | Big Boulder Cr | 115 | 32 | 10250 | | Neets Bay | Neets Bay | 101 | 90 | 0 |
| 26 | Big Salt | 103 | 60 | 0 | | Tamgas Creek | Tamgas Cr | 101 | 25 | 10250 |
| 32 | Bold Island Lk | 101 | 41 | 10070 | | Hidden Falls | Kasnyku Bay | 112 | 11 | 0 |
| 31 | Brennan Lk | 102 | 40 | 10280 | | Snettisham | Speel Arm | 111 | 33 | 0 |
| 21 | Burnett Inlet | 106 | 22 | 0 | | Gastineau | Gastineau Channel | 111 | 40 | 0 |
| 28 | Carroll Inlet | 101 | 45 | 0 | | Crystal Creek | Crystal Cr | 106 | 44 | 0 |
| 28 | Carroll R | 101 | 45 | 10780 | | Jerry Myers | Pullen Cr | 115 | 34 | 10310 |
| 27 | Crab Bay | 103 | 60 | 0 | | Burro Creek | Burro Cr | 115 | 34 | 10230 |
| 20 | Earl West Cove | 107 | 40 | 0 | | Medvejie | Bear Cove | 113 | 37 | 0 |
| 11 | Eliza Lk | 109 | 30 | 10060 | | Little Port Walter | Little Port Walter | 109 | 10 | 0 |
| 13 | Farragut Lk | 110 | 14 | 10070 | na | | | | | |
| 13 | Farragut R | 110 | 14 | 10070 | | | | | | |
| 7 | Fish Cr | 111 | 50 | 0 | | | | | | |
| 19 | Gengen Lk | 108 | 40 | 10500 | 2002 | <u>River</u> | <u>District</u> | <u>Sub-district</u> | <u>Stream</u> | <u>Site</u> |
| 22 | Harding R | 107 | 40 | 10490 | | Andrew Creek | 108 | 40 | 10150 | 2008 |
| 9 | Indian Lk | 111 | 33 | 10300 | | Big Boulder Creek | 115 | 32 | 10250 | |
| 10 | Indian R | 112 | 42 | 10080 | | Chickamin River | 101 | 71 | 10040 | 2018 |
| 15 | Larry Lk | 109 | 10 | na | | Farragut River | 110 | 14 | 10070 | |
| 24 | Long Lk | 101 | 95 | na | | Harding River | 107 | 40 | 10490 | |
| 4 | Lutak Inlet | 115 | 33 | 0 | | King Salmon River | 111 | 17 | 10100 | |
| 6 | Montana Cr | 111 | 50 | 10520 | | Tahini River | 115 | 32 | 10250 | 2175 |
| 19 | Ohmer Cr | 108 | 40 | 10500 | | Unuk River | 101 | 75 | 10300 | 2030 |
| 17 | Osprey Lk | 109 | 10 | na | | | | | | |
| 14 | Redoubt Lk | 113 | 41 | 10430 | | | | | | |
| 8 | Sheep Cr | 111 | 40 | 10280 | | | | | | |
| 12 | Sitka Sound | 113 | 41 | 0 | | | | | | |
| 1 | Tahini R | 115 | 32 | 10250 | 2175 | | | | | |
| 3 | Taiya Inlet | 115 | 34 | 0 | | | | | | |
| 30 | Thomas Basin | 101 | 47 | 10250 | | | | | | |
| 25 | Thorne Bay | 102 | 70 | 0 | | | | | | |
| 18 | Tranquil Lk | 109 | 10 | na | | | | | | |
| 29 | Ward Cove | 101 | 47 | 0 | | | | | | |

¹ Stream = 0 indicates return to a terminal harvest site or hatchery.

² Non-anadromous; site is barrierred and adults are unable to access.

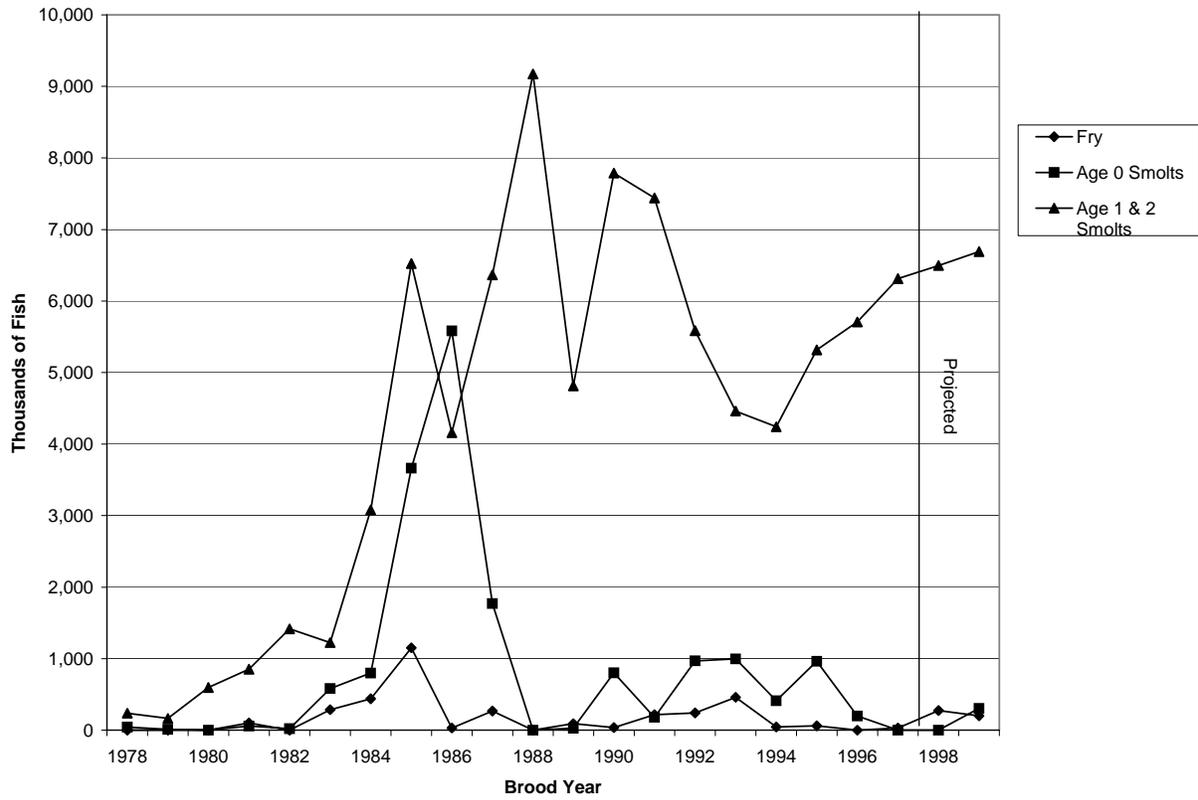


Figure 11. Actual and projected releases of hatchery-produced chinook salmon in Southeast Alaska by brood year, 1978-1998.

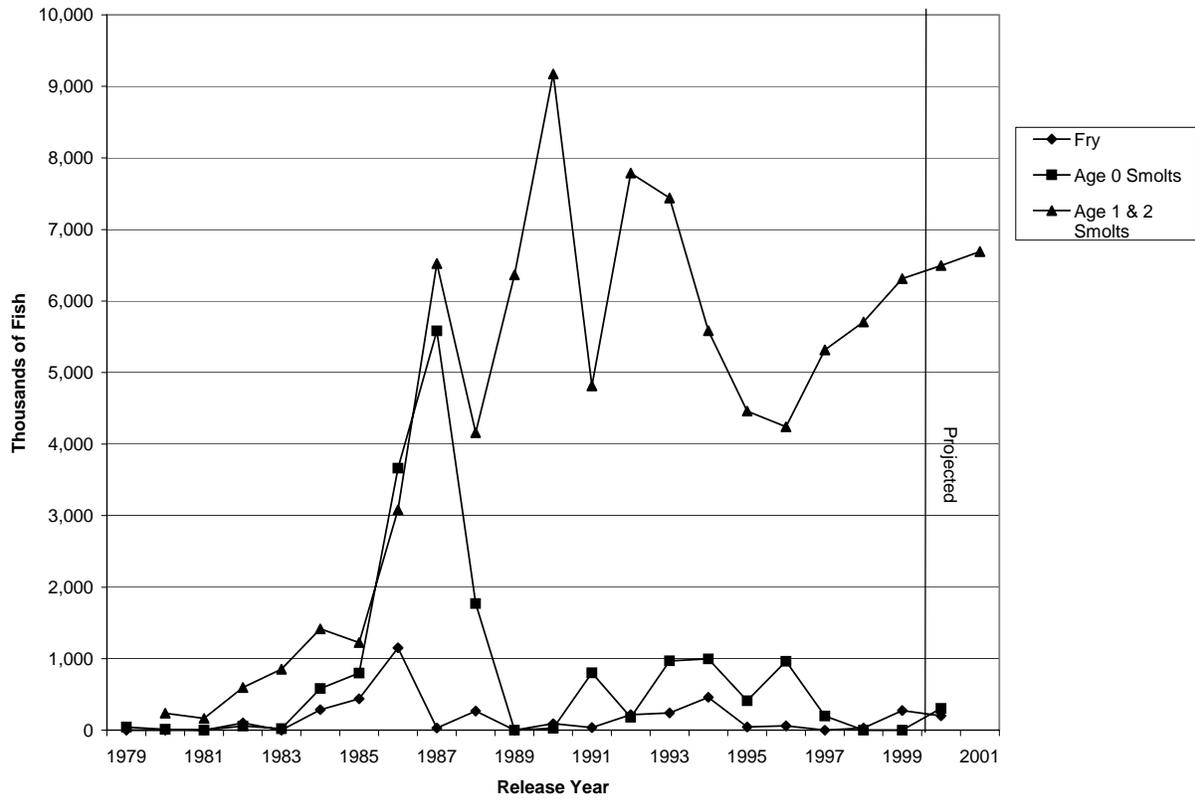


Figure 12. Actual and projected releases of hatchery-produced chinook salmon in Southeast Alaska by calendar year, 1979-2001.

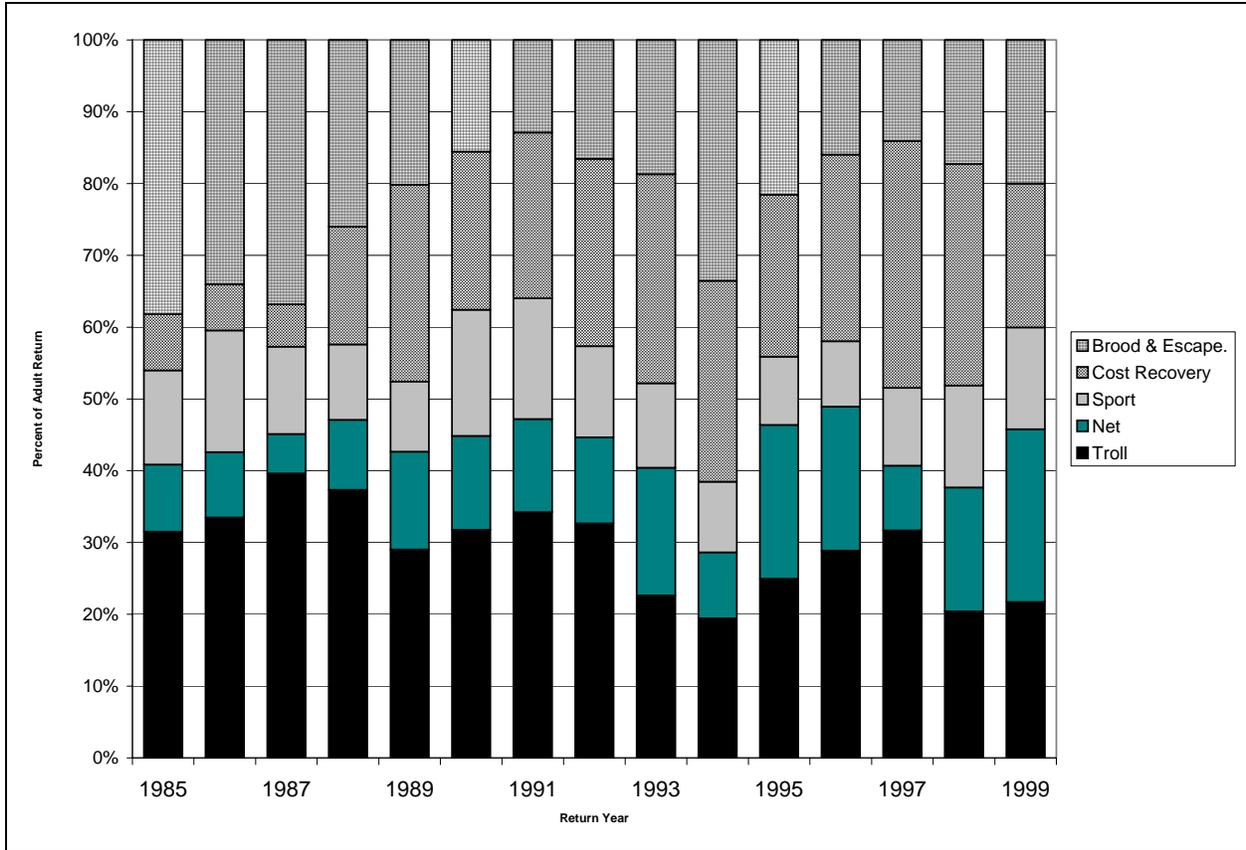


Figure 13. Percentages of Alaska hatchery-produced chinook salmon harvested in common property fisheries and utilized by hatchery operators for cost recovery or broodstock and escapement, 1985-1999.

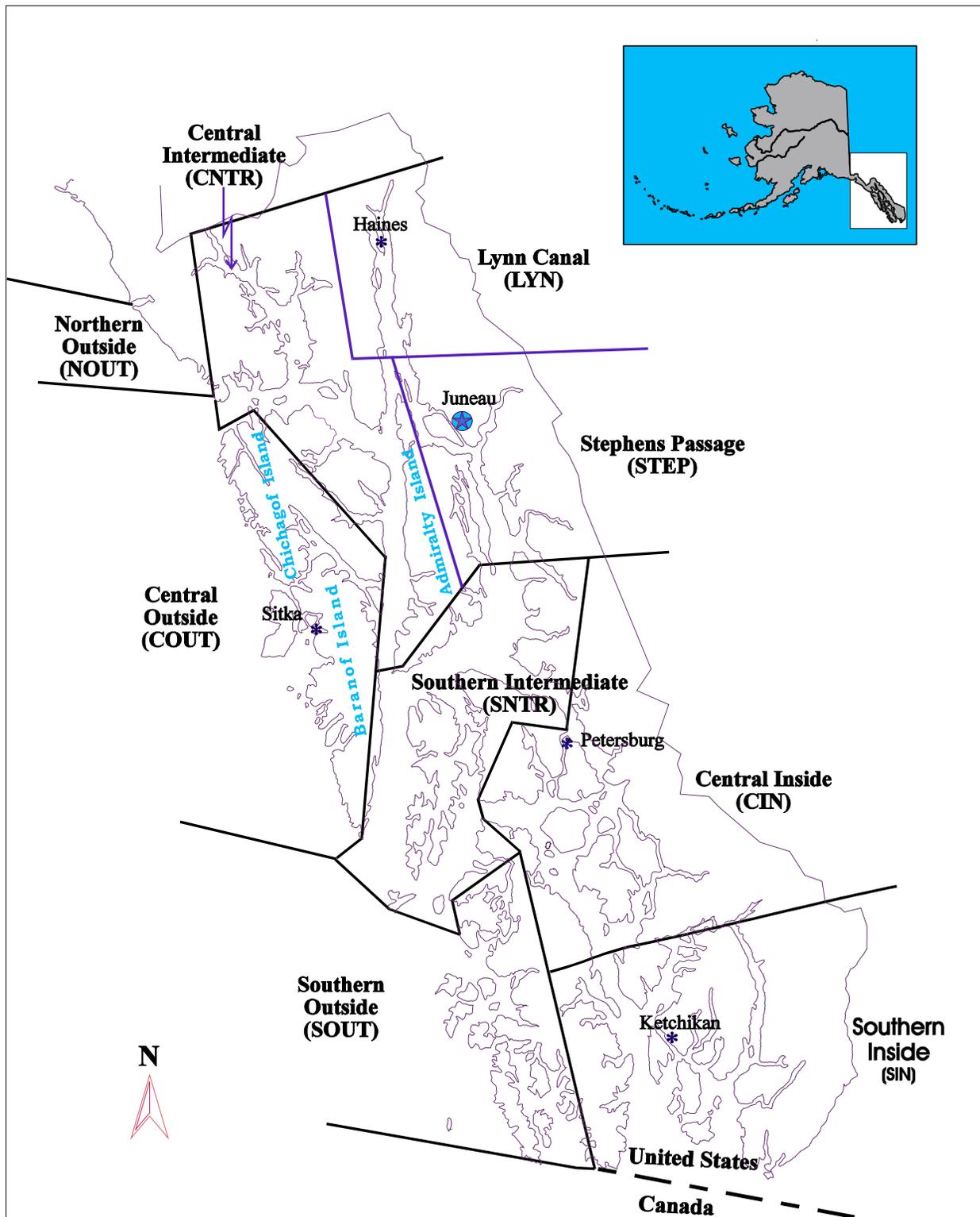


Figure 14. Pacific States Marine Fisheries Commission areas in Southeast Alaska.

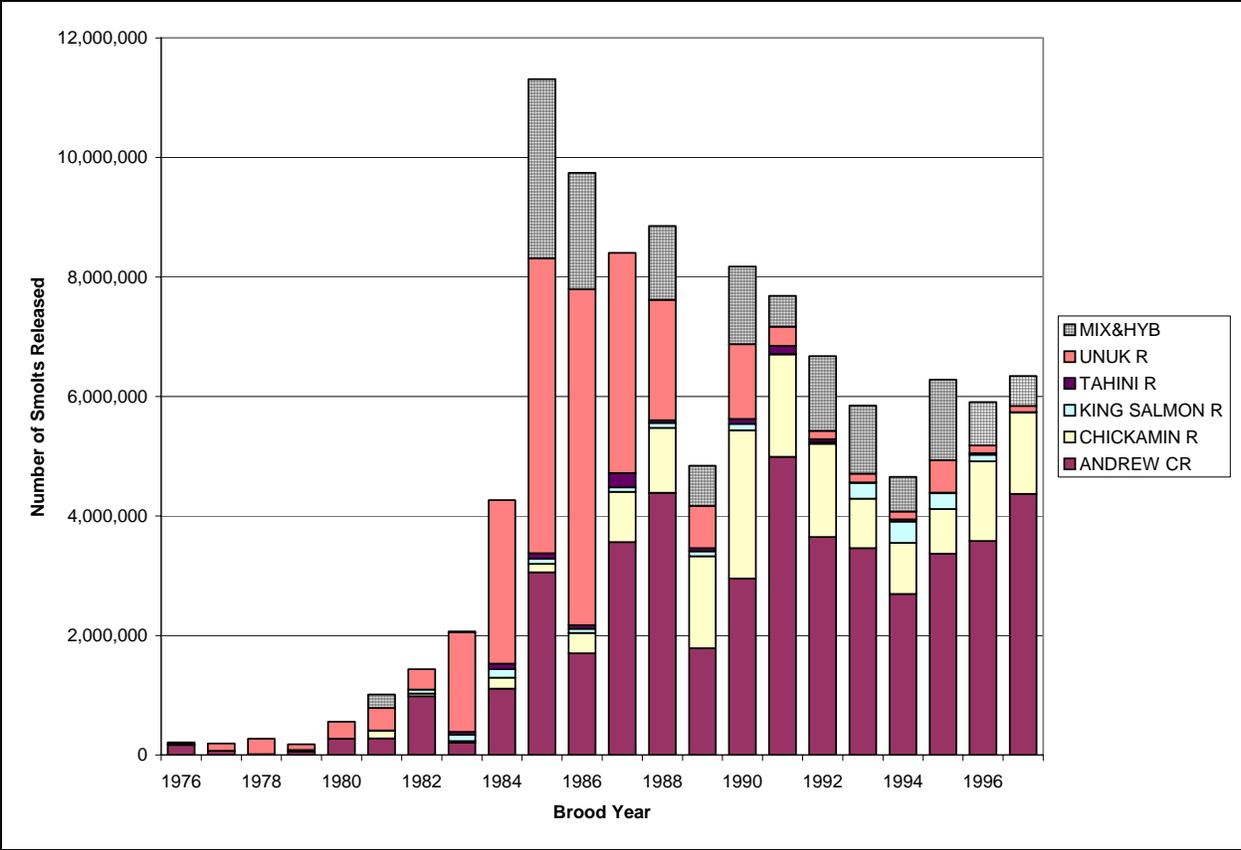


Figure 15. Number of chinook salmon released by Southeast Alaska hatcheries, by ancestral stock, brood years 1976-1997.

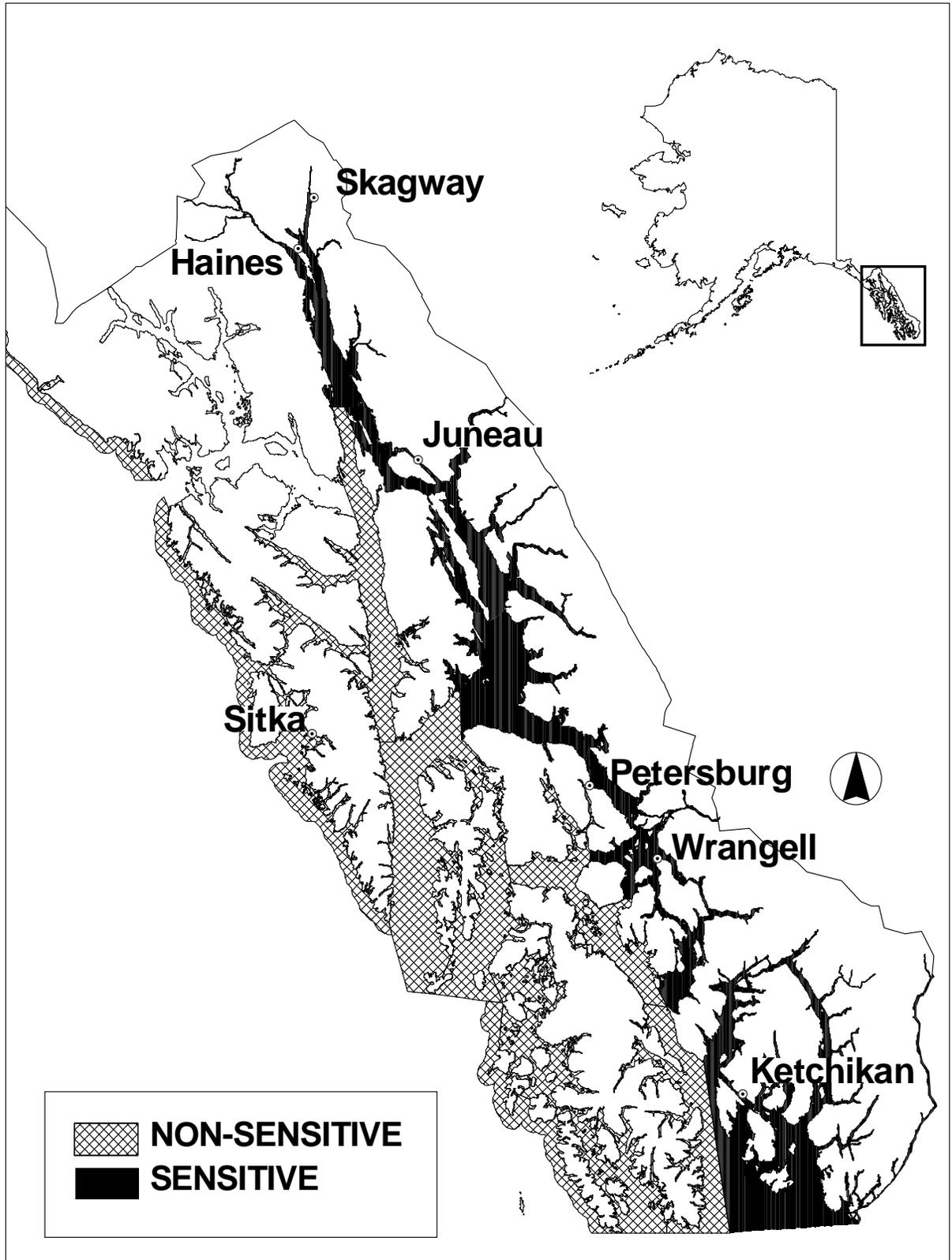


Figure 16. Chinook salmon sensitive and non-sensitive areas in Southeast Alaska.

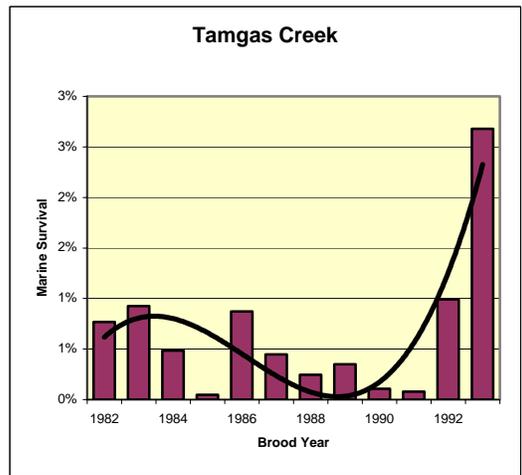
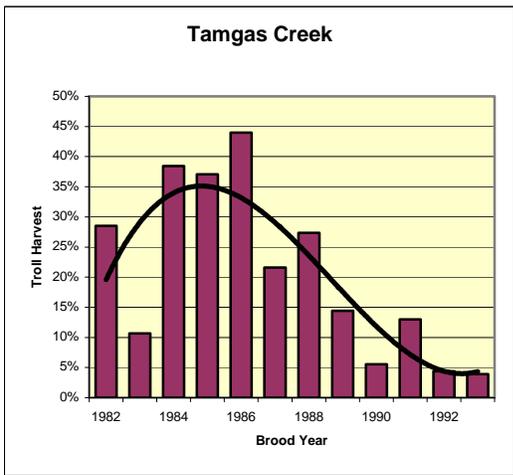
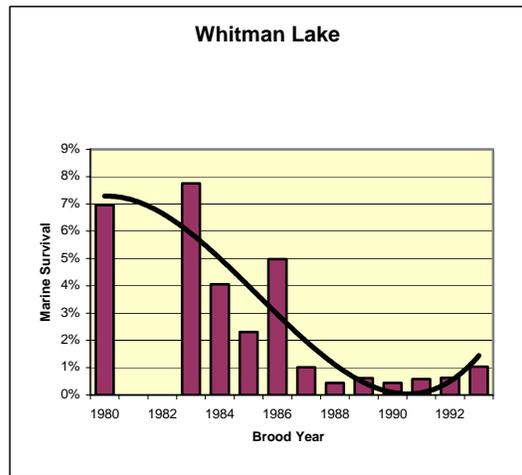
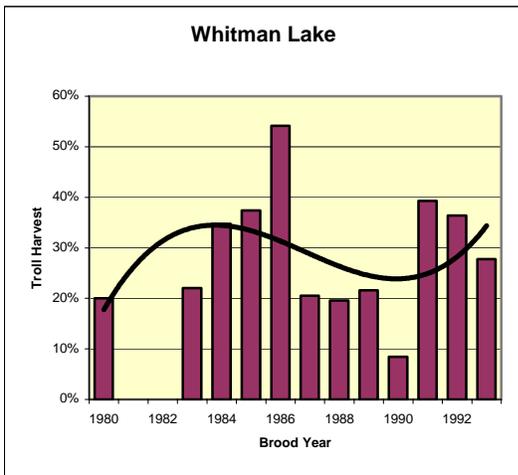
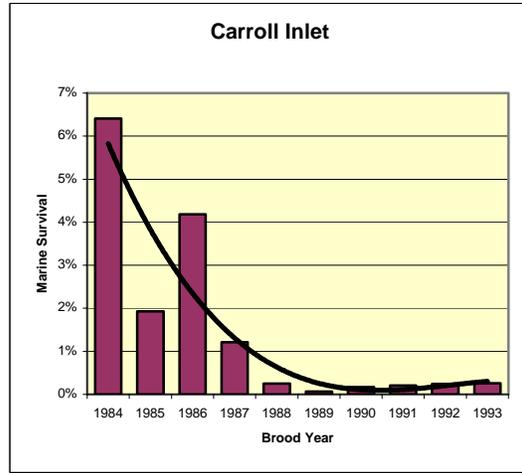
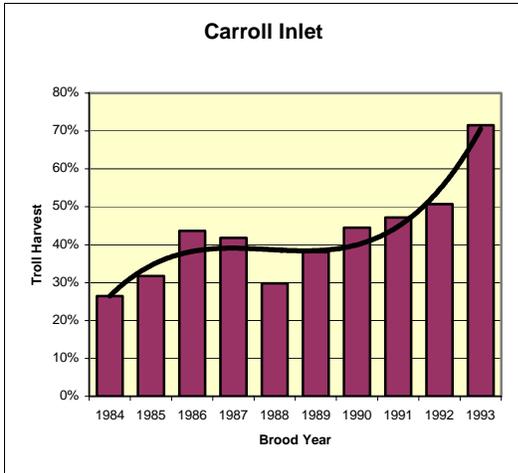


Figure 17. Troll harvest rate and marine survival of chinook salmon released from Southeast Alaska enhancement sites.

Figure 17. (page 2 of 4)

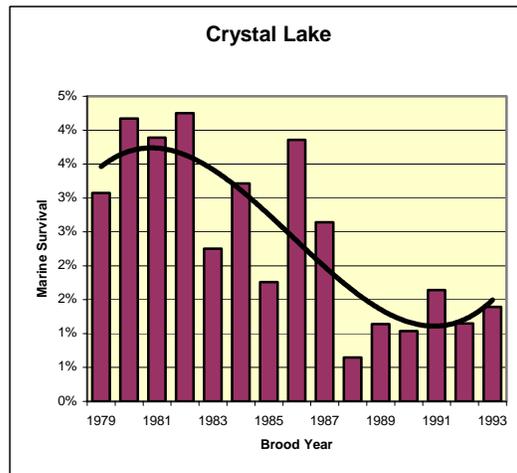
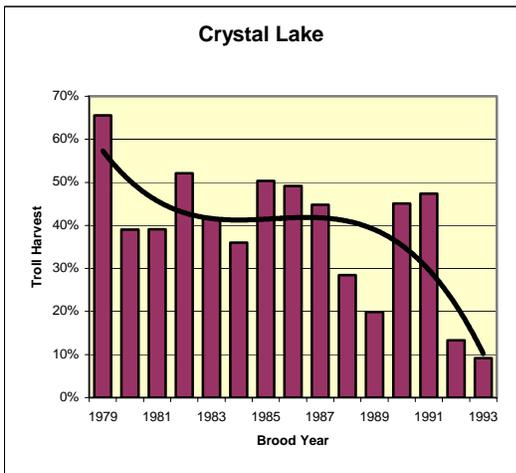
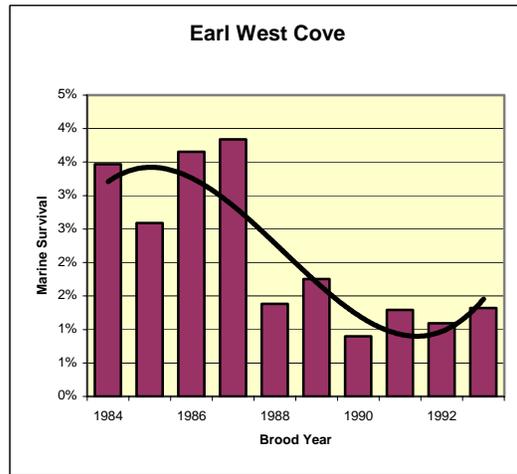
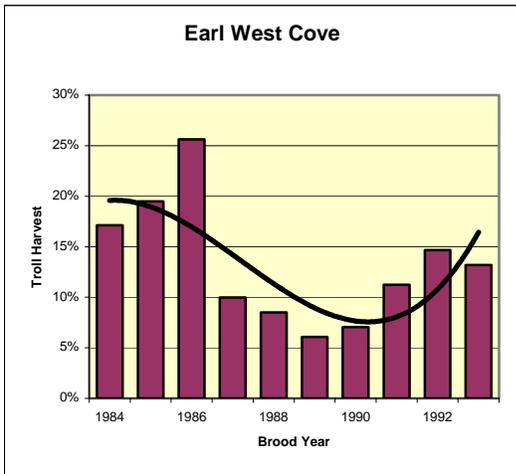
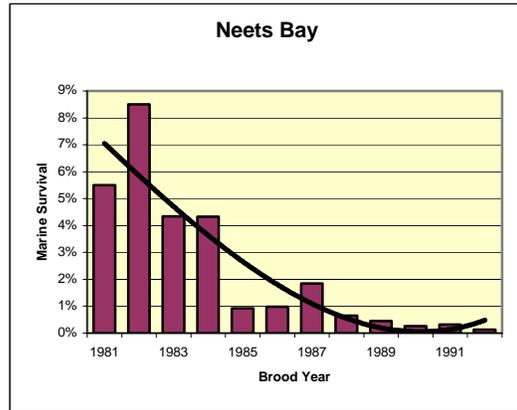
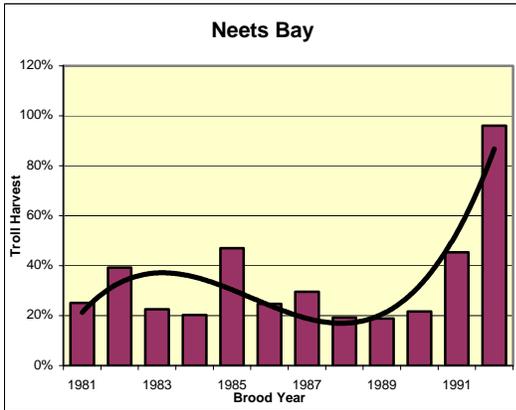


Figure 17. (page 3 of 4)

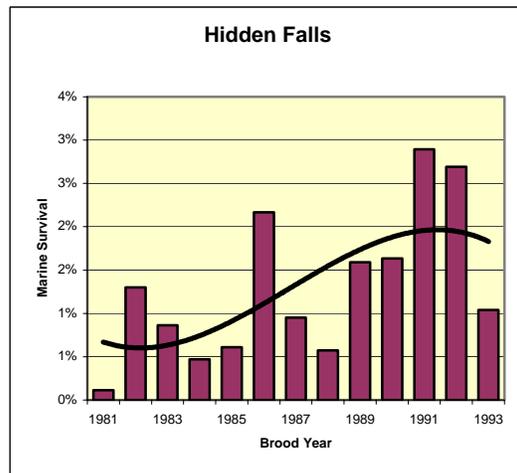
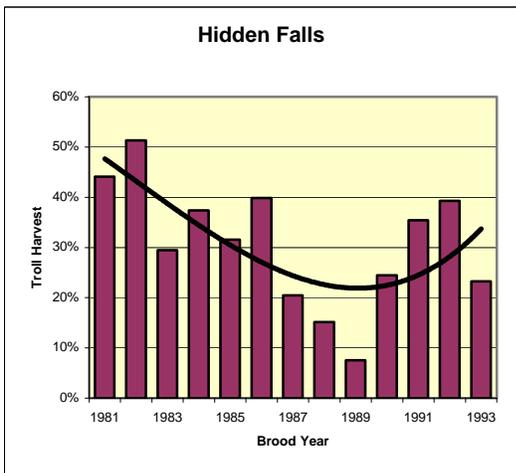
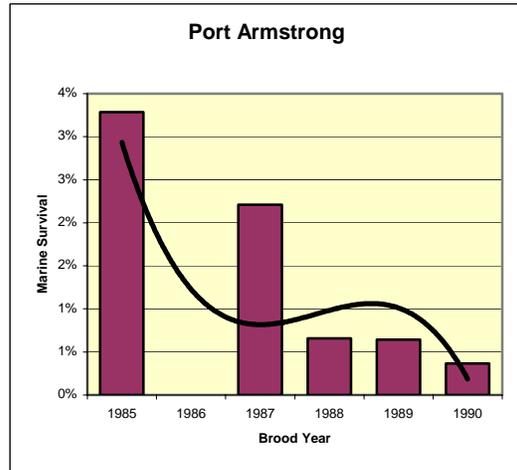
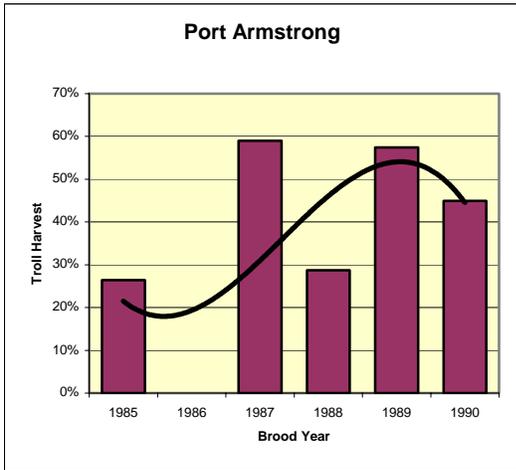
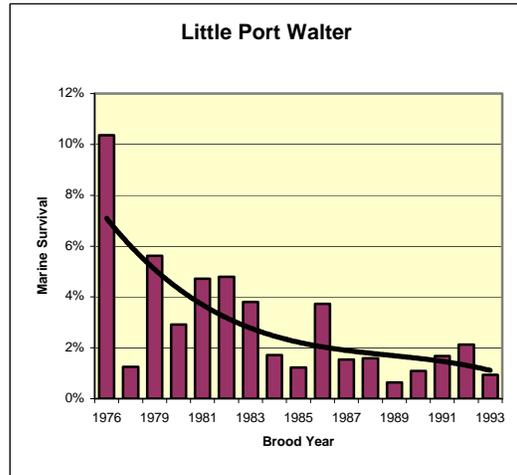
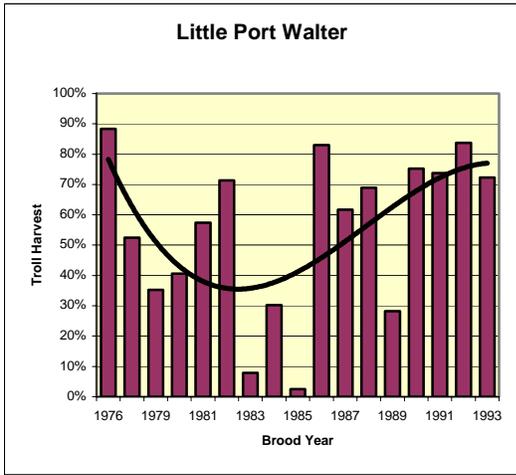
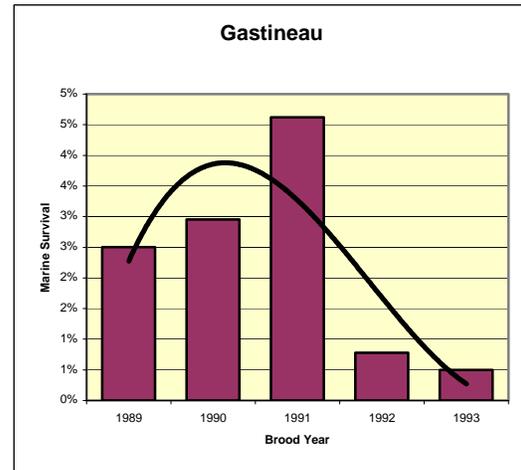
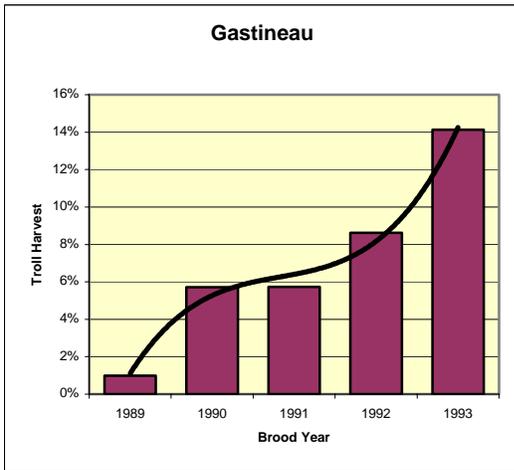
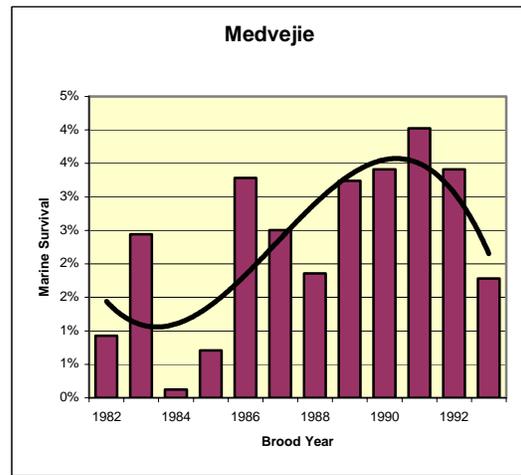
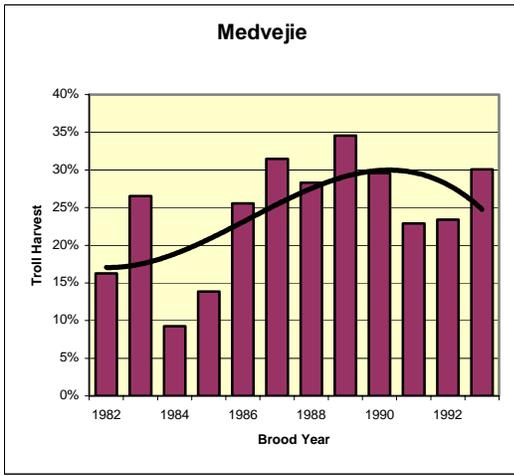


Figure 17. (page 4 of 4)



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

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfield Drive, Suite 300, Arlington, VA 22203; or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-4120, (TDD) 907-465-3646, or (FAX) 907-465-2440.