Fishery Management Report No. 24-22

2024 Report to the Alaska Board of Fisheries on the Status of the Allocation of Hatchery-Produced Salmon in the Southeast Alaska Region

by

Flip Pryor

October 2024

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	′
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	″
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 24-22

2024 REPORT TO THE ALASKA BOARD OF FISHERIES ON THE STATUS OF THE ALLOCATION OF HATCHERY-PRODUCED SALMON IN THE SOUTHEAST ALASKA REGION

by
Flip Pryor
Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau

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

October 2024

The Fishery Management Report series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone regional peer review.

Product names used in this publication are included for completeness and do not constitute product endorsement. The Alaska Department of Fish and Game does not endorse or recommend any specific company or their products.

Flip Pryor,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
1255 West 8th Street, Douglas, Alaska, USA

This document should be cited as follows:
Pryor, F. 2024. 2024 Report to the Alaska Board of Fisheries on the status of the allocation of hatchery-produced salmon in the Southeast Alaska region. Alaska Department of Fish and Game, Fishery Management Report No. 24-22, Anchorage.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

This report summarizes the development and implementation of the *Southeastern Alaska Area Enhanced Salmon Allocation Management Plan* (5 AAC 33.364), and the status of the allocation of hatchery-produced salmon among the 3 commercial gear groups in the management plan: drift gillnet, purse seine, and troll through preliminary 2023 values.

Keywords: Hatchery-produced salmon, allocation, gillnet, seine, troll, chum salmon, Chinook salmon, coho salmon, pink salmon, sockeye salmon, Alaska Board of Fisheries, Regional Planning Team, and Southeast Alaska.

INTRODUCTION

Since the *Southeastern Alaska Area Enhanced Salmon Allocation Management Plan* (5 AAC 33.364) was adopted in 1994, Alaska Department of Fish and Game (department) has written a report to the Alaska Board of Fisheries (board) every 3-year board cycle with a status update on allocation of hatchery-produced salmon among 3 commercial gear groups in the Southeast Salmon Enhancement Region: drift gillnet, purse seine (seine), and troll. This report summarizes the development and implementation of the plan, monitors trends in harvest, price per pound, marine survival, and releases for the 3 most valuable hatchery-produced species: chum, coho, and Chinook salmon. Marine survival by brood year was provided by Southern Southeast Regional Aquaculture Association (SSRAA), Northern Southeast Regional Aquaculture Association (NSRAA), and Douglas Island Pink and Chum, Incorporated (DIPAC). Due to multiple return years of different species, complete marine survival data are available for brood year 2016 Chinook salmon, brood year 2017 chum salmon and brood year 2020 coho salmon. The value data used in this report includes finalized data from 1985 to 2022 and preliminary 2023 data. In December 2024, private nonprofit operators will finalize 2023 and provide preliminary 2024 fish contribution estimates in their annual report to the department. In the spring of 2025, Commercial Fisheries Entry Commission (CFEC) will produce preliminary 2024 price and weight data and finalize 2023 price data. In April 2025, the department will present finalized 2023 allocation values and preliminary 2024 allocation values to the Joint Northern Southeast and Southern Southeast Regional Planning Team (Joint RPT).

Currently, the allocation of hatchery-produced salmon does not conform to the allocation ranges defined in the plan. When reviewing the value of hatchery-produced salmon harvested by each gear group in 5-year rolling averages, the drift gillnet fleet is above their allocation range, the troll fleet is below their range, and the seine fleet is within their range. Increases of hatchery production, specifically chum and coho salmon at targeted release sites, have been used to address allocation imbalances. Since 2012, net gear opportunity in several terminal harvest areas has been manipulated to address allocation imbalance. Two factors outside of regulatory control, marine survival and price paid to fishers, have exerted substantial influence on the distribution of benefits from the salmon fishery enhancement program.

BRIEF HISTORY OF THE ALLOCATION PLAN

In early 1991, the board asked the commercial fishers of Southeast Alaska, through the 2 regional aquaculture associations, to develop a plan for the equitable sharing of the hatchery-produced salmon harvest. The Southeast Allocation Task Force (SATF) was formed to draft a plan. The SATF consisted of 6 voting members with 3 members from NSRAA and 3 members from SSRAA, and equal representation from each of the 3 commercial gear groups. Nonvoting members included

department staff, regional aquaculture association staff, and a nonregional aquaculture association staff representative from DIPAC. The allocation plan was developed through a lengthy public process, and in 1994 the board approved the plan, which is now 5 AAC 33.364 *Southeastern Alaska Area Enhanced Salmon Allocation Management Plan* (Appendix A1). As set forth in Findings of the Alaska Board of Fisheries #94-148-FB (Appendix A2), and adopted as 5 AAC 40.345 *Southeast Alaska*, the Joint RPT reviews the allocation of hatchery-produced salmon each spring and makes recommendations to the commissioner on hatchery production changes to comply with the allocation plan. The Joint RPT has also made recommendations to the board concerning board proposals and fisheries management adjustments within terminal harvest areas that may affect allocation values.

DESCRIPTION OF THE ALLOCATION PLAN

The purpose of the *Southeastern Alaska Area Enhanced Salmon Allocation Management Plan* is to provide a fair and reasonable distribution of hatchery-produced salmon and reduce conflicts among the seine, troll, and drift gillnet gear groups in the Southeast Alaska (SEAK) salmon enhancement area. The plan defines allocation ranges as seine 44–49%; hand and power troll 27–32%; and drift gillnet 24–29%. The plan directs the department to annually estimate the value of hatchery-produced salmon using CFEC data. If a gear group is outside its allocation percentage range for 3 consecutive years, the board may adjust fisheries within special harvest areas (SHA) to bring the gear group within its allocation range.

Findings of the Alaska Board of Fisheries #94-148-FB are associated with the allocation management plan. These findings provide a detailed explanation of the plan development process, a report from the SATF for enhanced salmon, and guidelines for plan implementation.

IMPLEMENTING THE PLAN, ADJUSTMENTS, AND STATUS

A SHA is an area designated for cost-recovery harvest by the hatchery operator, which are conducted under different regulations than traditional commercial fisheries (AS 16.10.455, 5 AAC 40.030–5 AAC 40.085). However, in some cases, a SHA may open to traditional commercial fisheries, in which case harvest is managed as a terminal harvest area (THA) where traditional commercial fishery regulations apply. For this report, THA will be used to define both SHA and THA.

The department derives harvest value from the following: (1) hatchery operator reported number of hatchery-produced salmon harvested by commercial gear type, (2) CFEC calculated average price per pound by gear type, and (3) average weights, by gear type, calculated by CFEC and published in the annual department report *Overview of Southeast Alaska and Yakutat Commercial, Personal Use, and Subsistence Salmon Fisheries: Reports to the Alaska Board of Fisheries*, with the exception of SSRAA chum salmon weights, which are provided by the hatchery operator. Allocation percentages are evaluated as 5-year rolling averages of value.

The tools for adjusting allocation percentages are THA management adjustments (time in area), new hatchery production, and modification of existing hatchery production (Guideline #13 in Findings of the Alaska Board of Fisheries #94-148-FB). Management adjustments within a THA are used for short-term corrections. New production or modification of existing production are long-term remedies, which take at least a salmon life cycle for changes to be fully realized.

Production changes are traditionally initiated by hatchery organizations through the permit amendment process or the Joint RPT may make recommendations to the commissioner (5 AAC 40.345). The allocation status of hatchery-produced salmon through 2023 has changed over time (Figure 1). Since 1995, troll harvest value has been below their allocation range. Since 2004, drift gillnet harvest value has been above their allocation range. Since 2018, the seine harvest value has been within their allocation range.

FACTORS AFFECTING THE ALLOCATION

The overall value of hatchery-produced salmon in SEAK has dipped and peaked on several occasions, with the longest upward trend from 2002 until 2012 (Figure 2). Chum salmon continue to be the dominant contributor to the value of hatchery-produced salmon in SEAK (Figure 3). Over the past 10 years chum salmon have made up 83% of the hatchery-produced value, followed by coho salmon at 10%, Chinook salmon at 5%, and sockeye and pink salmon at 1% each. This is significantly different from the base years used to establish the ranges, 1985–1993, when chum salmon was 51% of the hatchery-produced value, coho salmon was 26%, sockeye salmon was 9%, Chinook salmon was 8%, and pink salmon was 6%. The hatchery-produced value of chum, coho, and Chinook salmon have all increased over the development of the program, with chum salmon values increasing the most. Details of how each species affects the overall value of hatchery-produced salmon are discussed later in this report.

The standard for measuring allocation to the 3 gear groups is represented mathematically as A + B + C = 100%. Therefore, logic dictates if A increases, then (B + C) must decrease by the same amount. For this reason, it is possible for a gear group to decrease their percentage of the total value even if the value of hatchery-produced salmon caught by that group increases year after year. An example of this occurred when troll value trended upward from 2002 through 2013 (Figure 4), yet their allocation percentage decreased simultaneously. Likewise, a downward trend in value for all gear groups could lead to an increase in allocation for 1 group, if 1 of the other 2 gear groups are trending down at a steeper rate.

HATCHERY PRODUCTION AND LIMITATIONS

Since the allocation plan was adopted in 1994, the Joint RPT has annually reviewed the allocation of hatchery-produced salmon and made recommendations on hatchery production to the department's commissioner. The Joint RPT has also made recommendations to the board concerning proposals that may affect allocation percentages. Additional details of the Joint RPT can be found in the *Actions Taken by the Regional Planning Team* section below.

There is an inherent risk of adjusting production to correct an imbalance in gear group allocation. One issue is the extended lag times from egg take to harvest. This is especially true for Chinook, sockeye, and chum salmon due to their longer life cycle. A decision to modify production numbers will take 4 years to see the peak return for chum salmon, and 5 years for Chinook salmon. In a worst-case scenario, a decision to *increase* production results in little or no increased harvest value, if survivals and prices decline. A decision to *decrease* production could result in a magnified drop in harvest value if survivals and prices decline. Additionally, changes in production may not always benefit the target gear group. For example, increasing coho salmon releases to benefit the troll fleet could negatively impact the troll fleet if returning adults migrate through a high-exploitation traditional net fishery or the troll exploitation rate is low and the net fisheries "clean up" the return in the THA.

Southeast Alaska hatcheries have production limitations in the form of freshwater availability and the physical footprint needed for freshwater rearing. Large numbers of salmon eggs can be incubated in hatchery buildings and reared to the fry stage using a relatively small amount of water and physical space. Freshwater rearing, usually in round ponds or raceways, uses significantly more water and requires a large amount of flat space. Pink and chum salmon can be ponded as fry straight out of the hatchery building into saltwater net pens and reared to the smolt stage (2 to 4 grams) in just a few months. The short rearing time and small body size of the fish at release keep production costs down. This explains why large numbers of pink and chum salmon can be raised inexpensively (pennies per smolt). Chinook, coho, and sockeye salmon require a full year of freshwater rearing in relatively high-flow raceways before they can be moved to saltwater net pens and reared to smolt stage (20 to 30 grams). The limitation of rearing space, the larger target release size, and the high cost (dollars per smolt) associated with a full year of rearing explains why much smaller numbers of these species are raised. Southeast hatcheries are very close to maximum production of all species of salmon without major upgrades to infrastructure or building new hatcheries.

FISH PRICES

Prices in this report are from CFEC analysis of harvest and value data. The CFEC provides the department with preliminary price data for the SEAK area by species and gear group at the end of each calendar year using fish ticket data. Final prices are determined the following year using Commercial Operator Annual Reports. The seine and drift gillnet prices are for whole fish. All troll prices are for gutted, head-on, except chum salmon prices which are for whole fish.

CHUM SALMON

Chum salmon are the dominant contributor to the overall value of hatchery-produced salmon, averaging 83% of the value, or an annual average of $35.6 million over the last 10 years. Chum salmon is also the primary source of cost recovery for most hatchery operations in SEAK. Since 2001, the average price for all gear groups is $0.60 per pound, with a high of $1.20 and a low of $0.19. Although the 2 net gear groups receive the majority of hatchery-produced chum salmon value, the troll fleet has been effective at targeting chum salmon in some years (Figure 5). The primary difference in value among the gear groups within a given year is the number of fish harvested, because all 3 groups harvest similar size fish and receive similar prices. Increases in chum salmon production at specific release sites, as well as balancing gear access to THAs, have been used to address allocation imbalance. However, increases in chum salmon releases do not necessarily equate to larger returns because marine survival can fluctuate greatly (Figure 6). The overall value of chum salmon can be affected by marine survival, size of the fish at harvest, and exvessel prices. For example, in 2012, high values of hatchery-produced chum salmon were recorded due to high harvest, large fish, and a high price. In 2013, more chum salmon were harvested but the overall value decreased due to lower prices and smaller fish. In 2023, even with a record run, the overall value fell to an average value due to a moderate price and smaller fish.

The most recent 10-year average harvest of seine-caught hatchery-produced chum salmon is 3.2 million fish with an average value of $18.8 million. Over the last 10 years, the seine fleet has harvested 54% of hatchery-produced chum salmon in SEAK. In 2018, the seine fleet had a record high value of $35.7 million. Although this was a modest number of hatchery-produced chum salmon harvested by the seine fleet in a single year, the value was augmented by large fish and a high price (Figure 7).

The most recent 10-year average harvest of drift gillnet caught hatchery-produced chum salmon is 2.4 million fish, with an average value of $13.8. Over the last 10 years, the drift gillnet fleet has harvested 39% of hatchery-produced chum salmon in SEAK. In 2012, the gillnet fleet had a record high value of just under $26 million. Although this was the second largest number of hatchery-produced chum salmon ever harvested by the gillnet fleet, the value was augmented by larger-than-average weights and a high price (Figure 8).

The most recent 10-year average harvest of troll caught hatchery-produced chum salmon is 411,000 fish, with an average value of just under $3.0 million. Over the last 10 years, the troll fleet has harvested 7% of hatchery-produced chum salmon in SEAK. In 2022, the troll fleet harvested a record high value of $8.7 million. This was the largest number of hatchery-produced chum salmon ever harvested by the gillnet fleet, at a record high price, with a slightly below average weight (Figure 9). Targeting hatchery-produced chum salmon has led to a significant increase in overall troll value but has not increased troll allocation percentage, primarily due to harvesting similar size fish and receiving similar prices as the net fleets.

Marine survival can also play an important role in determining value to a gear group (Figure 10). Marine survival by brood year for SSRAA, NSRAA, and DIPAC combined for the past 10 years is 2.0%, which is down from the average of 3.0% from brood years 1985 through 2007. When considering differences among hatchery release sites within brood years, a difference in survival can affect the allocation percentages. For example, in the late 1990s, high marine survivals at Hidden Falls Hatchery, which primarily benefited the seine fleet, coupled with larger than average weights, more than compensated for low prices and pushed the seine fleet above their allocation range. More recently, high marine survivals of chum salmon returning to Macaulay Salmon Hatchery, which primarily benefit the drift gillnet fleet, moved the drift gillnet fleet above their allocation range. For the last several years, returns to Macaulay Salmon Hatchery and Hidden Falls Hatchery have moved closer to average.

COHO SALMON

Coho salmon are the second largest contributor to the value of hatchery-produced salmon, contributing 10% of the overall value, or an annual average value of just over $4.5 million for the last 10 years. The troll fleet receives most of the value from hatchery-produced coho salmon (Figure 11). The troll fleet not only catches most of these fish but also receives a significantly higher price per pound than the net fleets. The most recent 10-year-average troll price is $2.00 per pound, compared to the combined net gear average of $0.91. The current prices are significantly higher than prices in the 1990's, which offsets lower harvest rates (Figure 12). Increased releases of coho salmon to address allocation imbalance have been offset by decreased marine survival (Figure 13). The most recent 10-year average marine survival of hatchery-produced coho salmon is 3.3%, significantly lower than the overall marine survival of brood years 1985 to 2010, which is 8.0%.

CHINOOK SALMON

Chinook salmon are the third largest contributor to the value of hatchery-produced salmon, contributing 5% of the overall value, or an average of $2.1 million for the last 10 years. The troll fleet receives most of the value from hatchery-produced Chinook salmon but since 2006, the value to the net fleets has been significant (Figure 14). Increased harvest of hatchery-produced Chinook salmon will raise the value to the troll fleet but may not necessarily lead to an increase in the troll

percentage of allocation, primarily due to the small percentage of overall value contributed by Chinook salmon production. Additionally, increased restraints imposed by the Pacific Salmon Treaty, coupled with harvest restrictions to protect wild SEAK Chinook salmon, have limited the amount of fishing time for the troll fleet, which reduces the troll catch and allows more fish to return to the terminal areas where they are harvested by the net fleets. The most recent 10-year average price is $6.93 per pound for troll-caught Chinook salmon, which is significantly higher than the average price from 1985 to 2013 of $2.86 (Figure 15). However, lower harvests have offset the higher prices. Beginning with the brood year 1998, Chinook salmon releases increased primarily due to harvest constraints of the Pacific Salmon Treaty. However, lower marine survivals have offset efforts to increase the value of the troll fleet (Figure 16). Marine survival for brood years 1985 to 1997 is 2.1%. The most recent 10-year average marine survival is 1.1%, which includes several brood years with marine survivals of 1.0% or less.

SOCKEYE SALMON

Over the last 10 years, sockeye salmon have annually contributed 1% of the overall value of hatchery-produced salmon in SEAK, or just over $611,000. The only hatchery currently producing sockeye salmon is DIPAC's Snettisham Hatchery. The drift gillnet fleet harvests most of the common property contribution, with a recent 10-year average of approximately $571,000. The seine fleet harvests the rest of the hatchery-produced sockeye salmon with a recent 10-year average of approximately $40,000. Snettisham Hatchery harvests a portion of the sockeye salmon return for cost recovery, but not enough to cover operating costs, which must be augmented by chum salmon harvest at Macaulay Salmon Hatchery. Snettisham Hatchery also incubates sockeye salmon eggs for Pacific Salmon Treaty enhancement projects.

PINK SALMON

Over the last 10 years, pink salmon have annually contributed 1% of the overall value of hatchery-produced salmon in SEAK, or just over $341,000. The only hatchery in SEAK currently producing pink salmon for fisheries enhancement is the Port Armstrong Hatchery by Armstrong-Keta Incorporated. Port Armstrong Hatchery's primary cost-recovery efforts are on pink salmon, which helps pay for their coho salmon program that has a high contribution rate to the troll fleet. Sitka Sound Science Center has a small release of pink salmon, primarily for research and education purposes. However, some fish are harvested in commercial fisheries in Sitka Sound, and the cost-recovery harvest of pink salmon helps pay for hatchery operations. The seine fleet is the primary common property beneficiary of pink salmon releases, harvesting just over $313,000 annually over the last 10 years.

ACTIONS TAKEN BY THE REGIONAL PLANNING TEAM

Two of the most influential factors affecting gear group values are marine survival and price per pound, both of which are outside the control of the hatchery associations, the department, and the board. The Joint RPT has never suggested that the present allocation imbalance is due to failure of the associations to follow board approved allocation guidelines.

The Joint RPT takes their assignment of allocation plan oversight very seriously. Joint RPT meetings are a forum to discuss hatchery production changes and possible modifications of the

harvest of hatchery-produced fish to address the allocation imbalance[1]. The Joint RPT believes the intent of the allocation plan has always been to try to increase targeted production and/or harvest opportunity of any gear group below its allocation range using measures that do not significantly and directly penalize the historical harvest opportunities of the gear group that is above its target range.

The Joint RPT has recommended to the commissioner that hatcheries continue to increase production if possible to help the gear group that is below its target allocation range, specifically chum and coho salmon production increases to address the current allocation imbalance.

During the 1999/2000 board cycle, the Joint RPT submitted 2 proposals intended to increase opportunity for the troll fleet to harvest hatchery-produced Chinook, coho, and chum salmon. The first proposal eliminated the 20% chum salmon cap during the spring Chinook salmon fishery near Hidden Falls Hatchery. The second proposal allowed the department to extend the length of the weekly Snow Passage spring fishery based on hatchery-produced coho salmon harvest. Although both proposals may have increased value to the troll fleet, neither change has significantly affected the allocation percentages.

During the 2008/2009 board cycle, the Joint RPT submitted a proposal to change from a 2:1 to a 1:1 ratio for drift gillnet and seine openings in the Deep Inlet THA for 2009, 2010, and 2011. Additionally, the Joint RPT submitted the "Industry Consensus 12/9/08" letter as a Record Copy. The industry consensus letter was a recommendation from the industry members who were present at the fall 2008 RPT meeting, was unanimously supported by the Joint RPT, and included a list of both long-term suggestions (increases in chum and coho salmon production) and short-term suggestions (recommendations on board proposals) for how to address the allocation imbalances. The board accepted the industry consensus letter and followed the guidelines regarding enhanced salmon allocation proposals. The proposals adopted by the board had some impact on the allocation values but not enough to solve the percentage imbalance. The long-term solutions of increased production mentioned in the letter may have impacted gear group values but have yet to solve the percentage imbalance.

During the 2011/2012 board cycle, the Joint RPT submitted 2 proposals: a proposal to continue the 1:1 time ratio for drift gillnet and seine openings in the Deep Inlet THA through 2017, and a proposal to continue a 1:1 time ratio for drift gillnet and seine openings at the Anita Bay THA through 2017. The Joint RPT also submitted "Industry Consensus 12/8/11," which was written by industry representatives and unanimously supported by the Joint RPT. The consensus letter modified the sunset dates on their 2 proposals to 2014.

During the 2014/2015 board cycle, the Joint RPT submitted 3 "placeholder" board proposals: a proposal to set time ratio for drift gillnet and seine openings in Deep Inlet THA through an unspecified sunset date, a proposal to set time ratio for drift gillnet and seine openings at Anita Bay THA through an unspecified sunset date, and a proposal to continue the District 12 and 14 hatchery chum salmon troll fishery management plan through an unspecified sunset date. The Joint RPT also submitted recommendations to the board through written public comment. The letter withdrew the 2 Joint RPT proposals on THA rotations, supported the Joint RPT proposal to

[1] The role of the Joint RPT in making recommendations relative to allocation poses a unique situation for the 3 ADF&G representatives on the team. ADF&G staff provides technical input and participates in team discussions, but only the 6 industry representatives on the Joint RPT vote on recommendations or proposals submitted to the Board of Fisheries.

continue the District 12 and 14 chum salmon troll fisheries with an amended sunset of 2017 and gave recommendations on 19 other proposals.

During the 2017/2018 and 2021/2022 (delayed by the beginning of the COVID-19 pandemic) board cycle, the Joint RPT chose not to submit any proposals or make recommendations to the board through written public comment. The Joint RPT has not submitted any proposals for this board cycle. A decision on submitting a written public comment will occur at the next scheduled Joint RPT meeting on December 5, 2024.

FIGURES

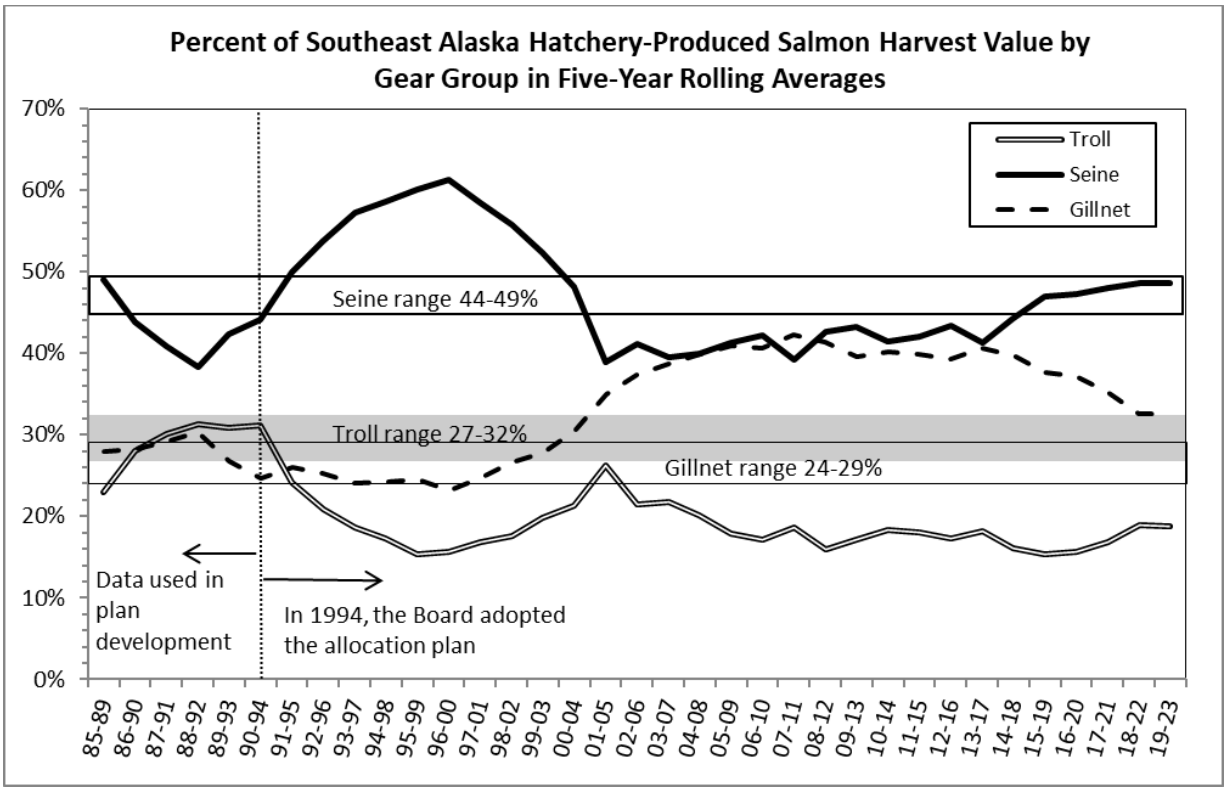

Figure 1.–Percent of Southeast Alaska hatchery-produced salmon harvest value by gear group in 5-year rolling averages, 1985–2023.

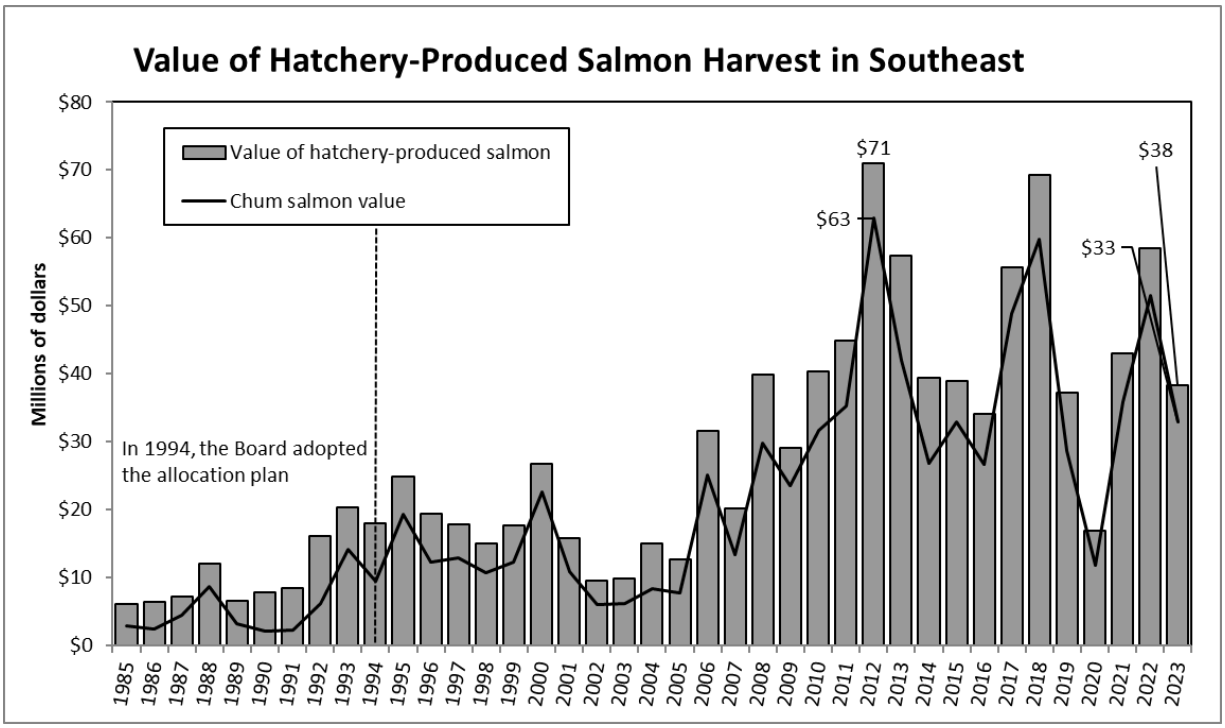

Figure 2.–Value of hatchery-produced salmon harvest in Southeast Alaska, 1985–2023.

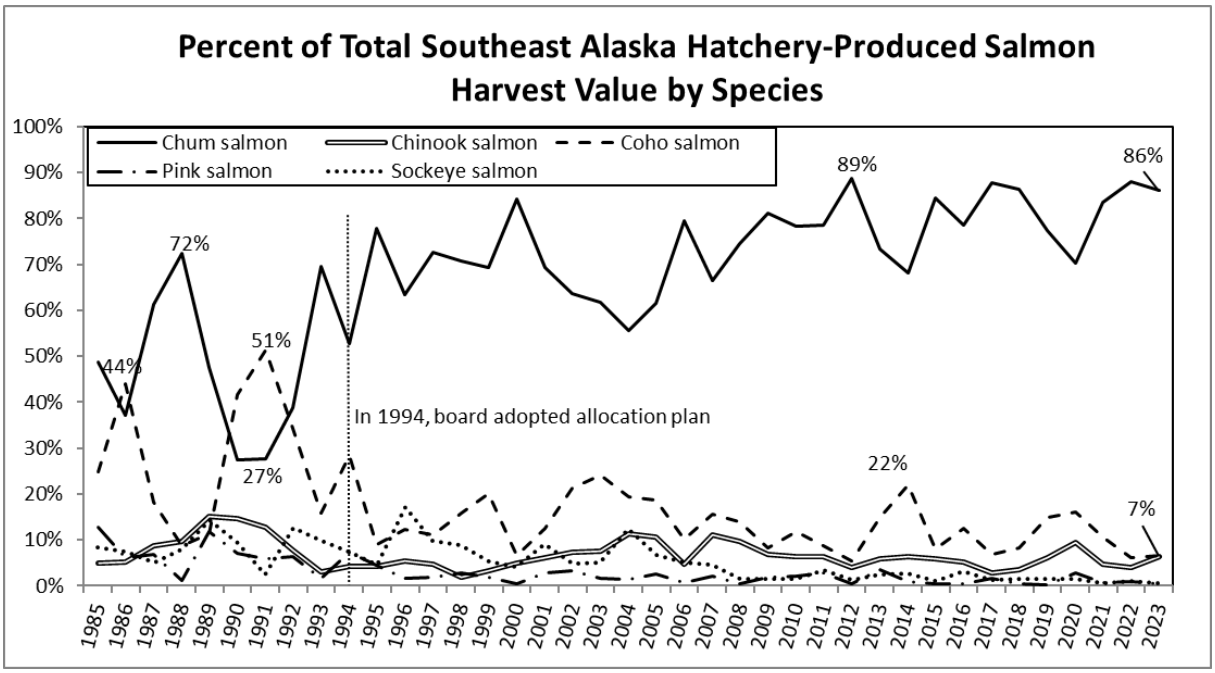

Figure 3.–Percent of total Southeast Alaska hatchery-produced salmon harvest value by species, 1985–2023.

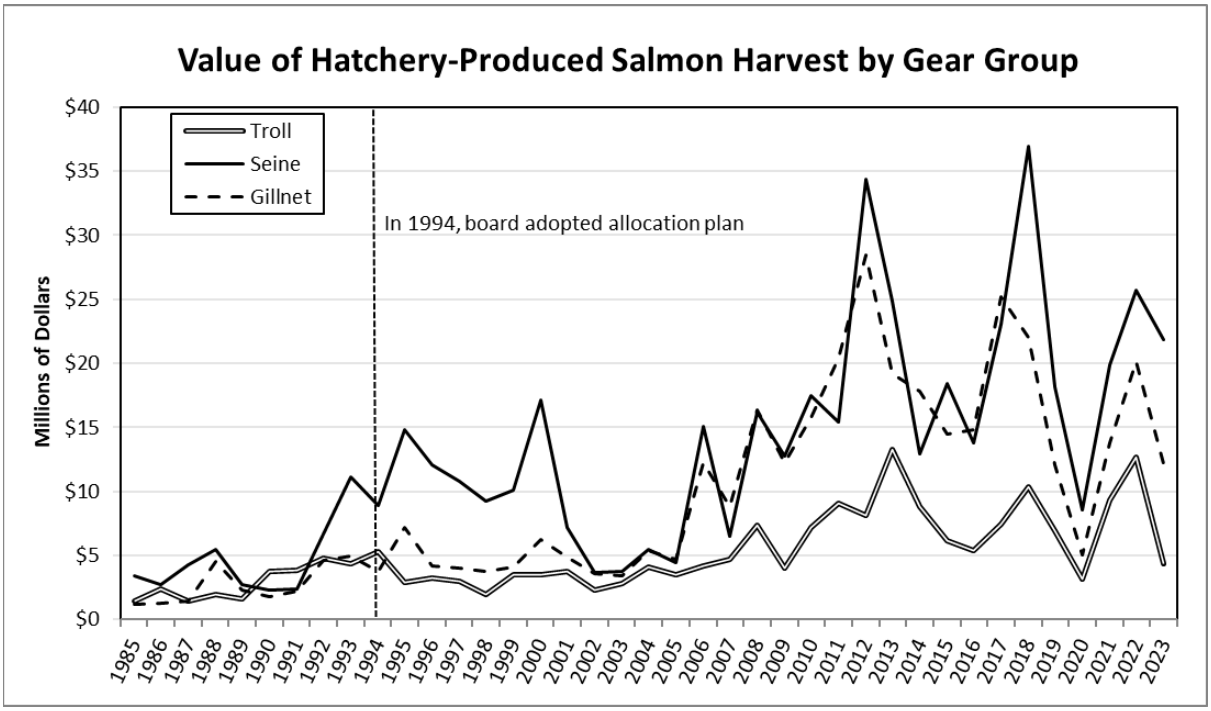

Figure 4.–Value of hatchery-produced salmon harvest by gear group, 1985–2023.

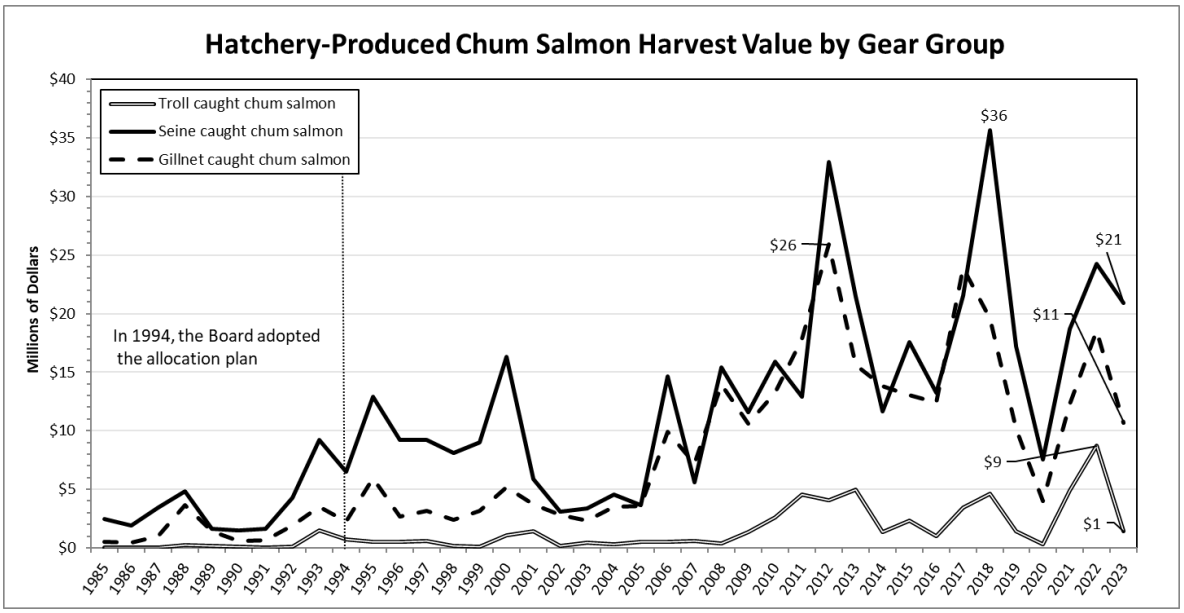

Figure 5.–Hatchery-produced chum salmon harvest value by gear group, 1985–2023.

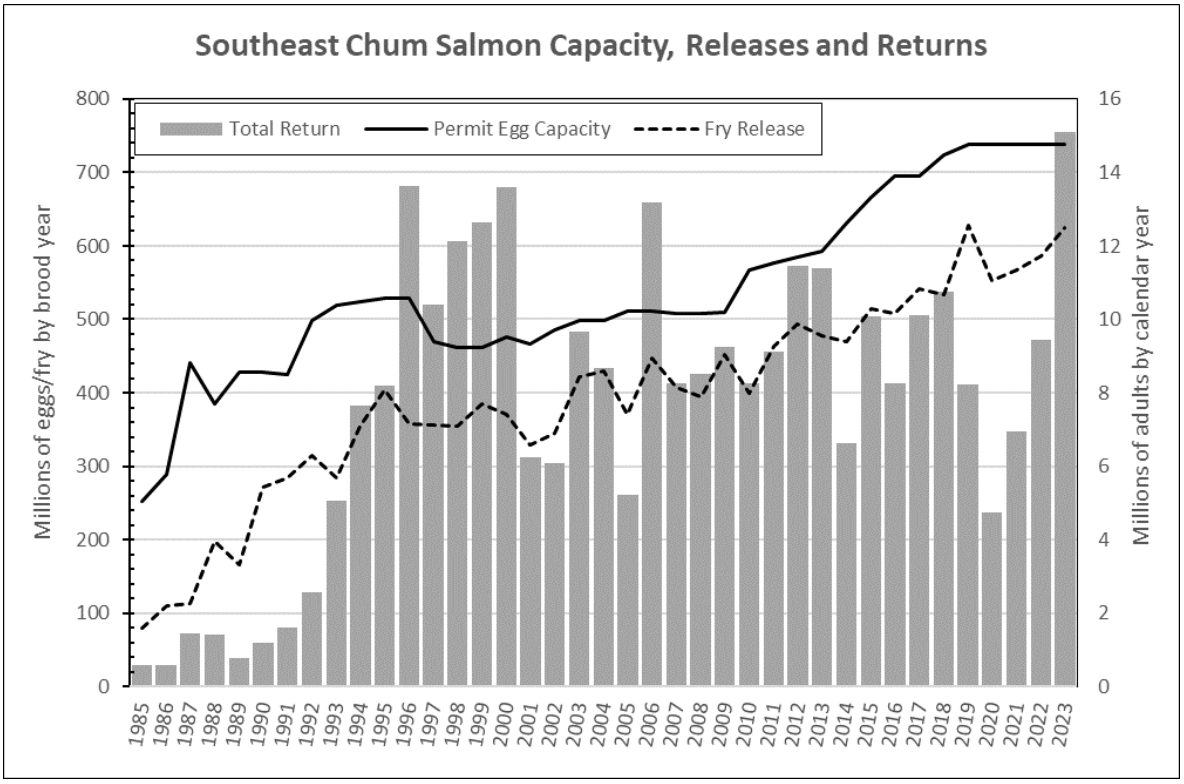

Figure 6.–Southeast Alaska hatchery chum salmon capacity, releases and returns, 1985–2023.

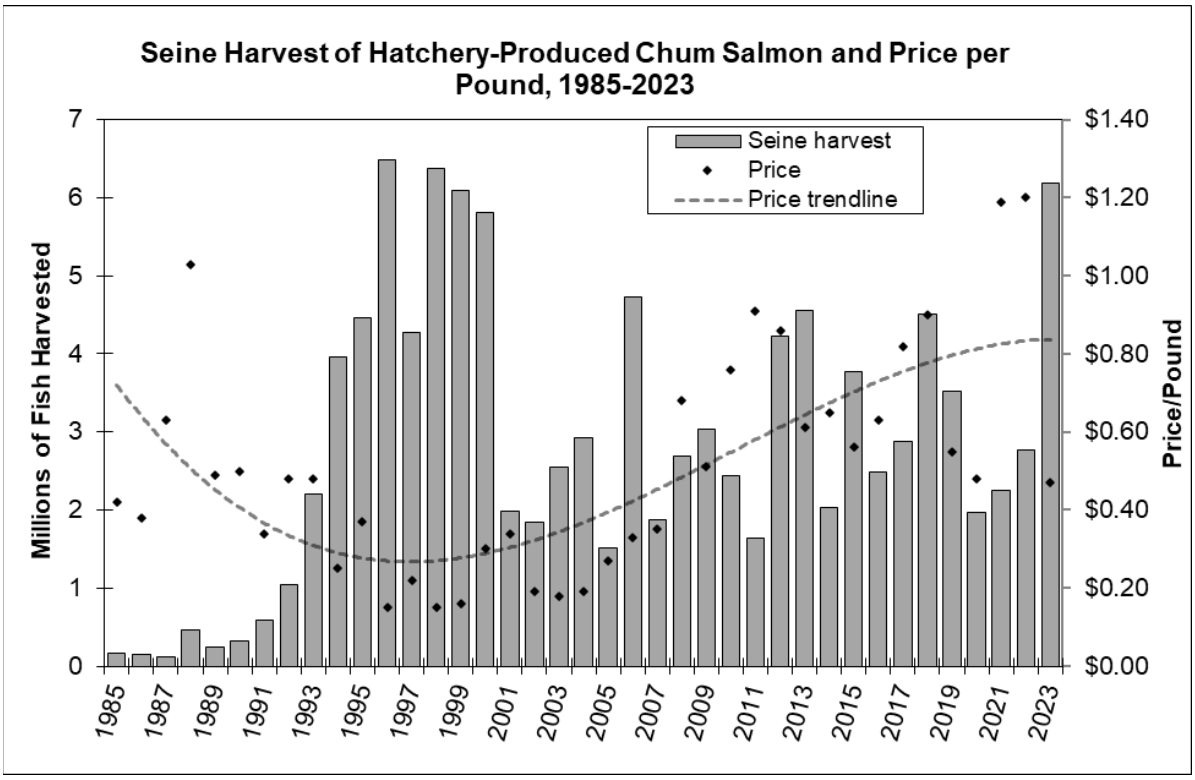

Figure 7.–Seine harvest of hatchery-produced chum salmon and price per pound, 1985–2023.

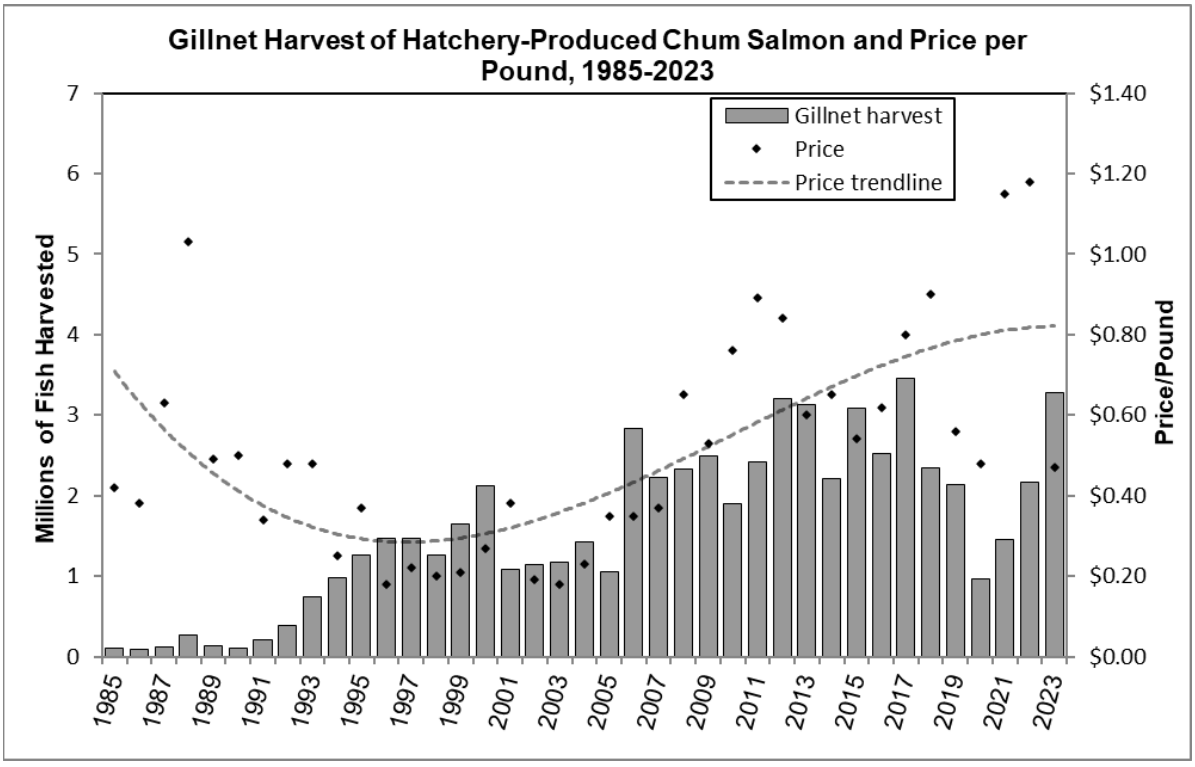

Figure 8.–Gillnet harvest of hatchery-produced chum salmon and price per pound, 1985–2023.

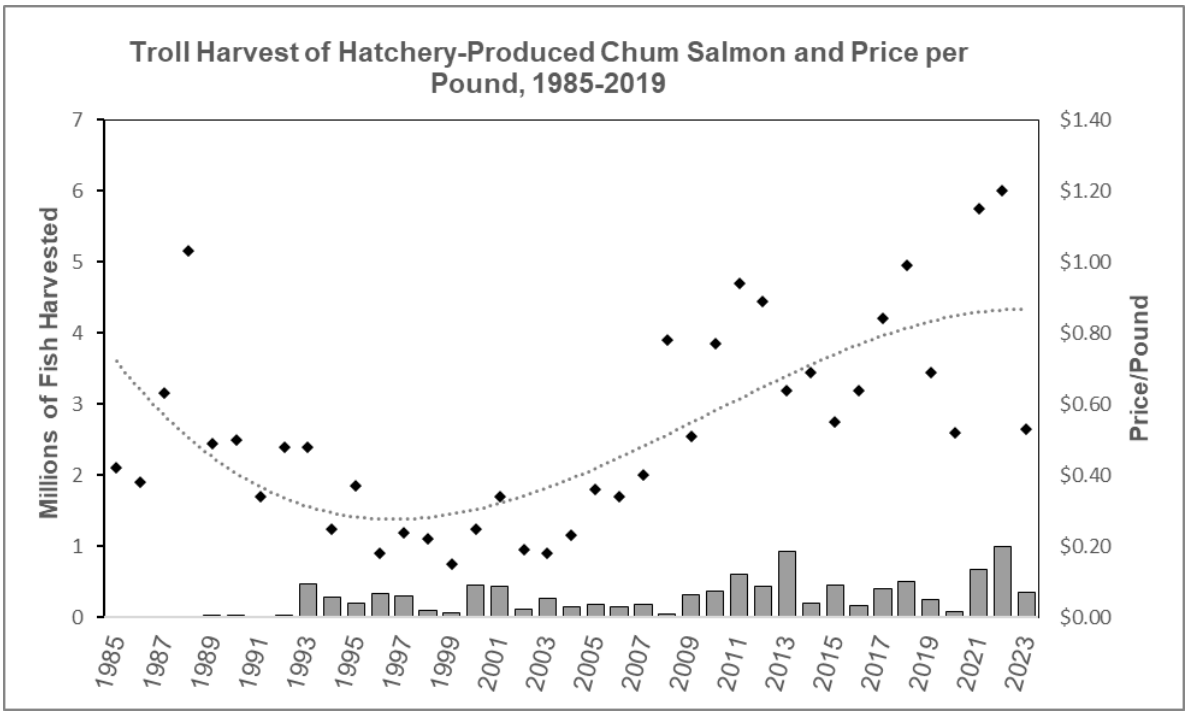

Figure 9.–Troll harvest of hatchery-produced chum salmon and price per pound, 1985–2023.

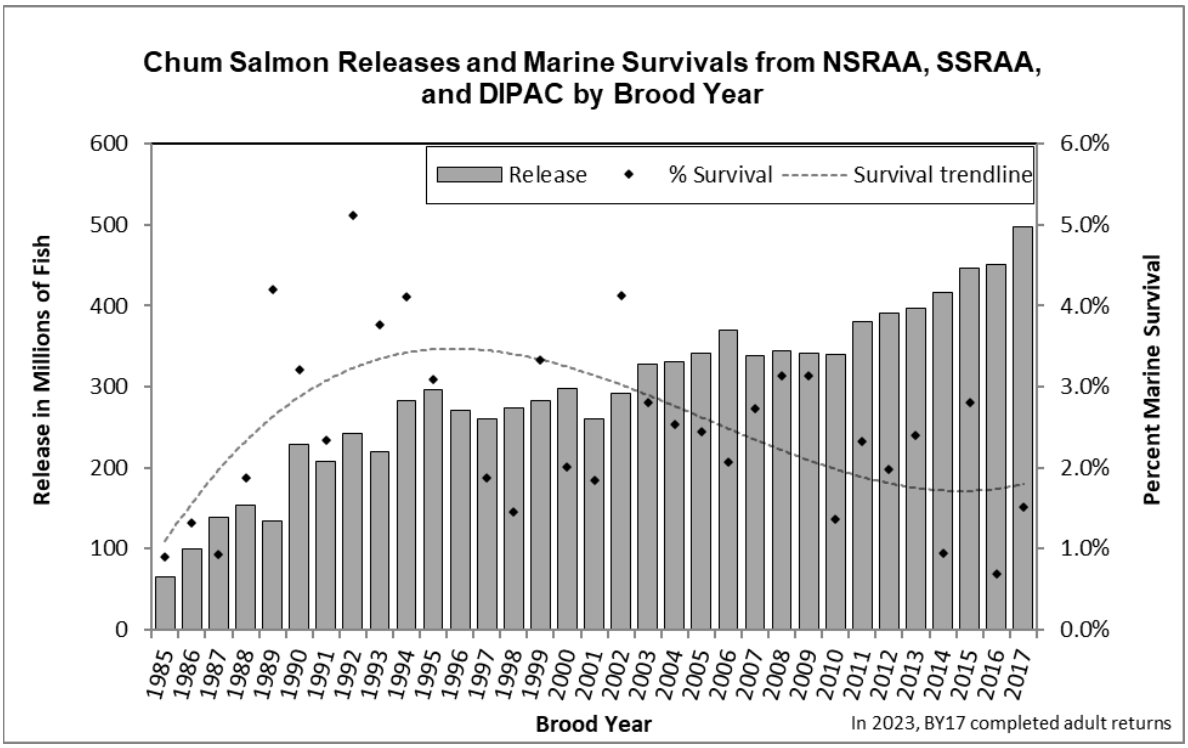

Figure 10.–Chum salmon releases and marine survivals from NSRAA, SSRAA, and DIPAC by Brood Year, 1985–2017.

Note: In 2023, 6-year-old brood year 2017 chum salmon returned, completing the return cycle. The primary return is made up of 4-year-olds.

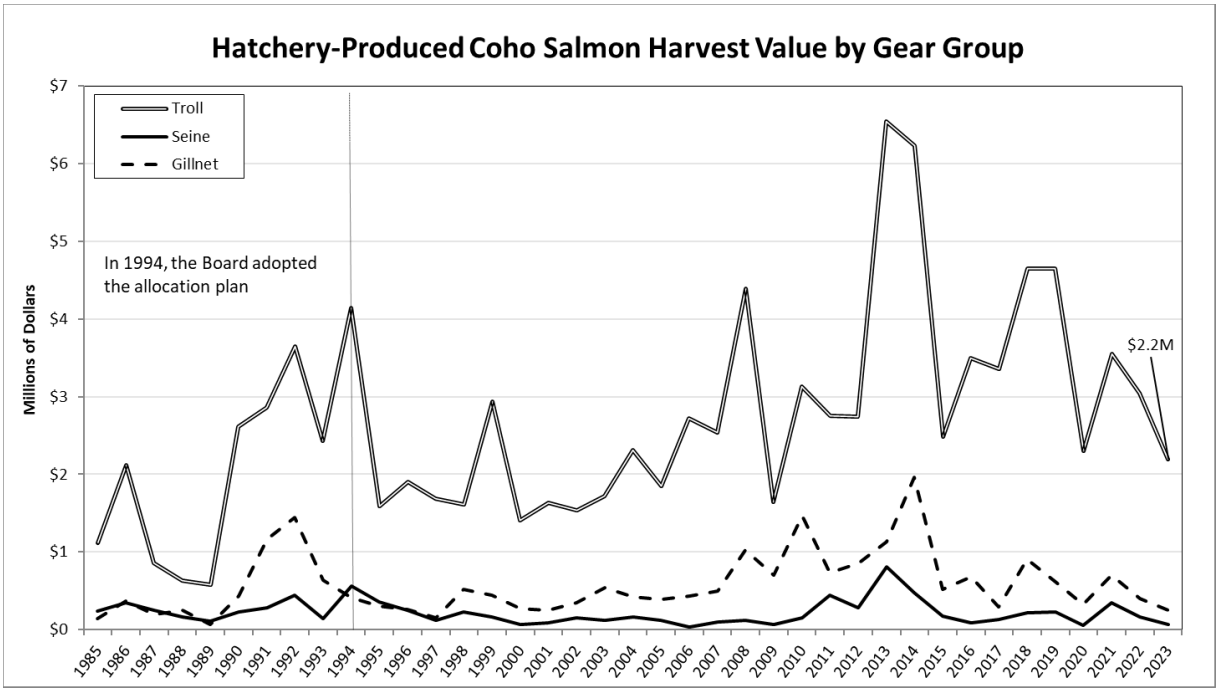

Figure 11.–Hatchery-produced coho salmon harvest value by gear group.

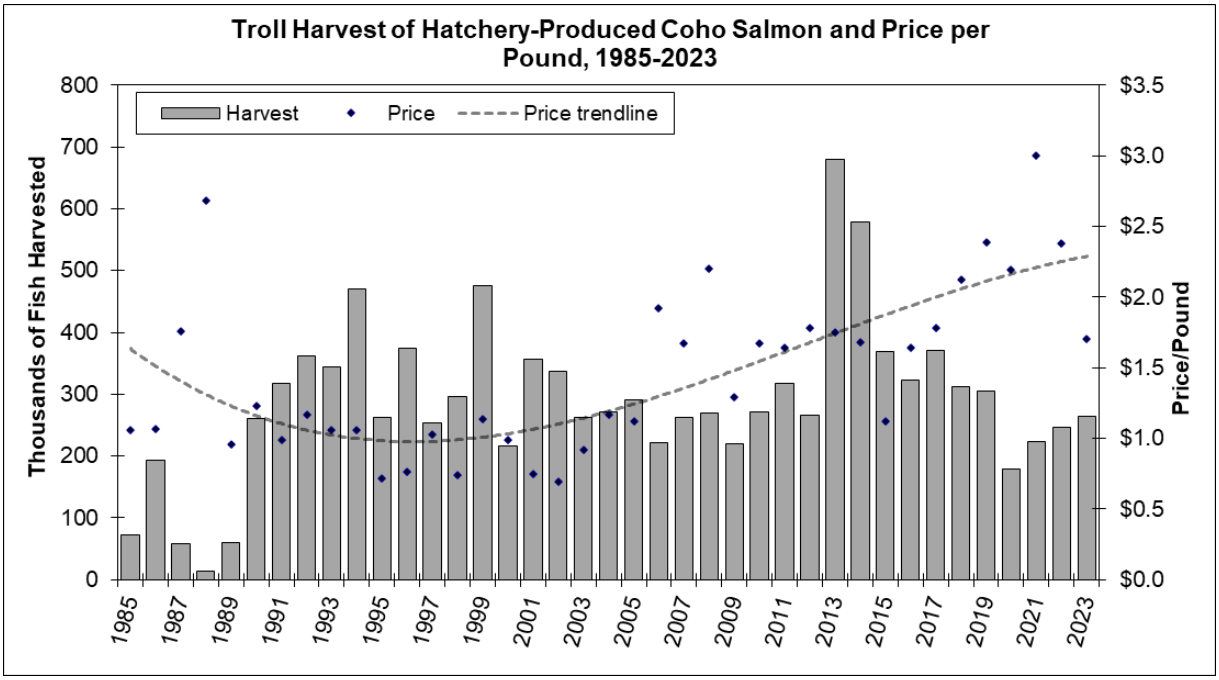

Figure 12.–Troll harvest of hatchery-produced coho salmon and price per pound, 1985–2023.

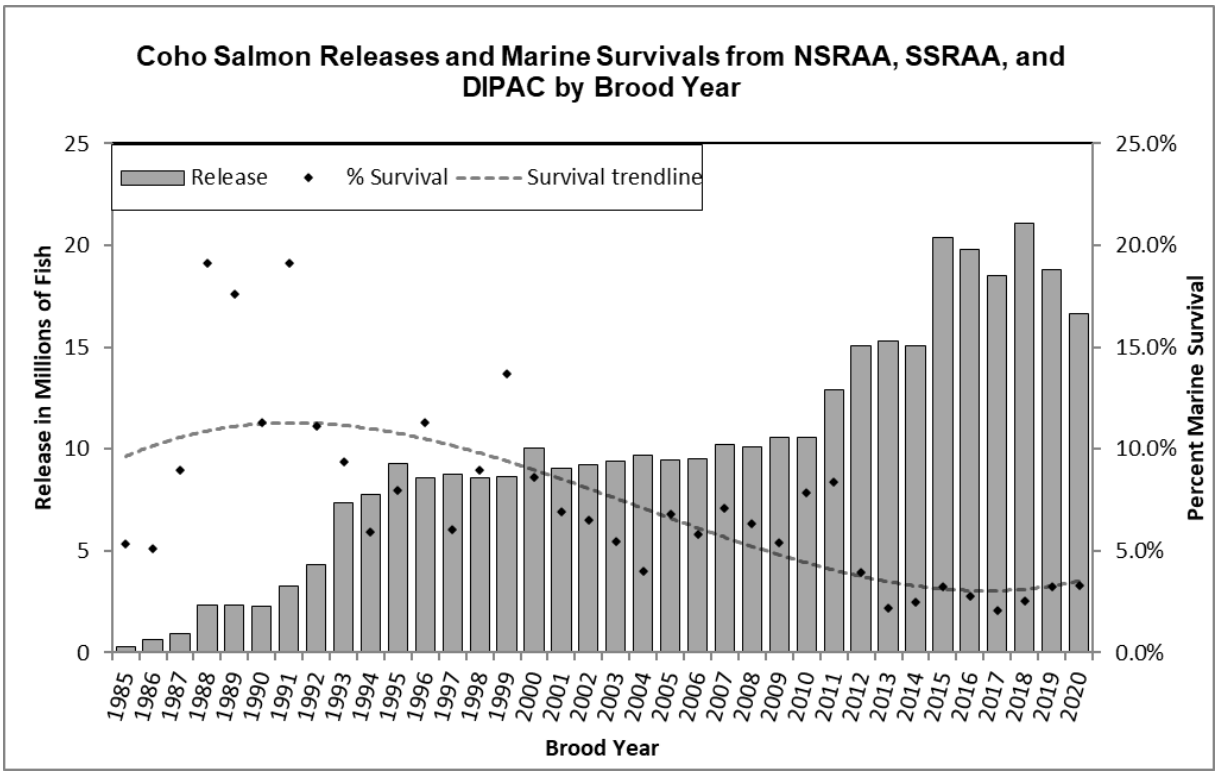

Figure 13.–Coho salmon releases and marine survivals from NSRAA, SSRAA, and DIPAC by Brood Year, 1985–2020.

Note: In 2023, the last brood year 2020 coho salmon returned, completing the life cycle.

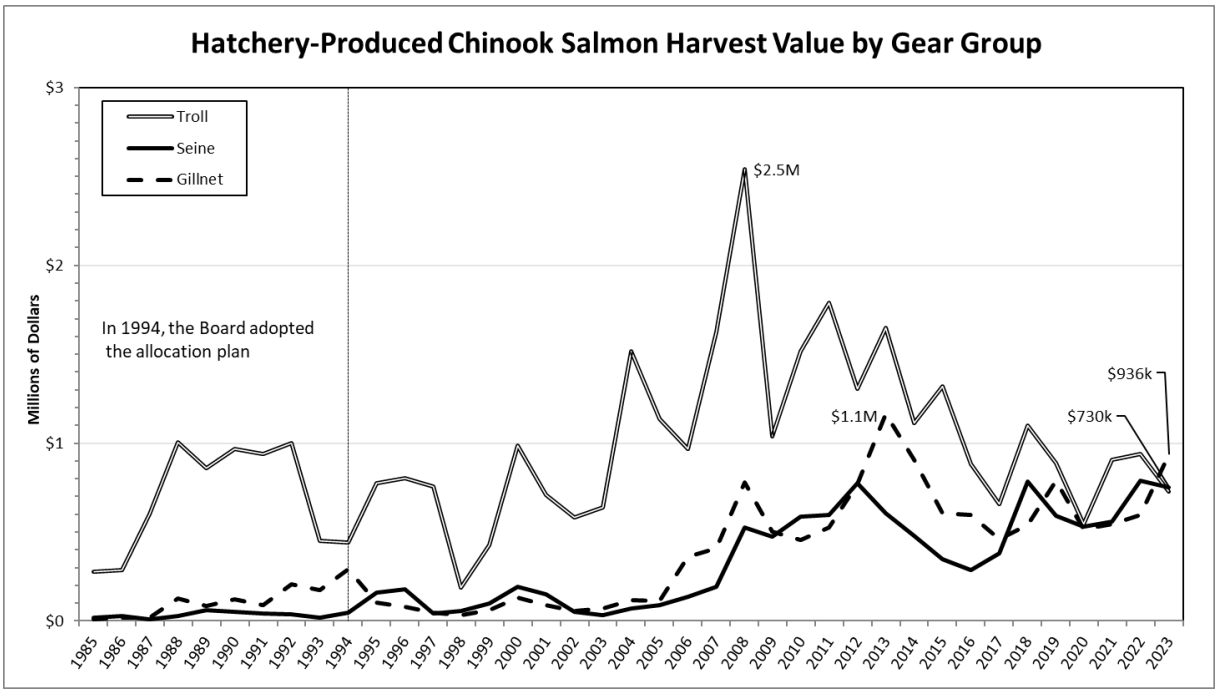

Figure 14.–Hatchery-produced Chinook salmon harvest value by gear group, 1985–2023.

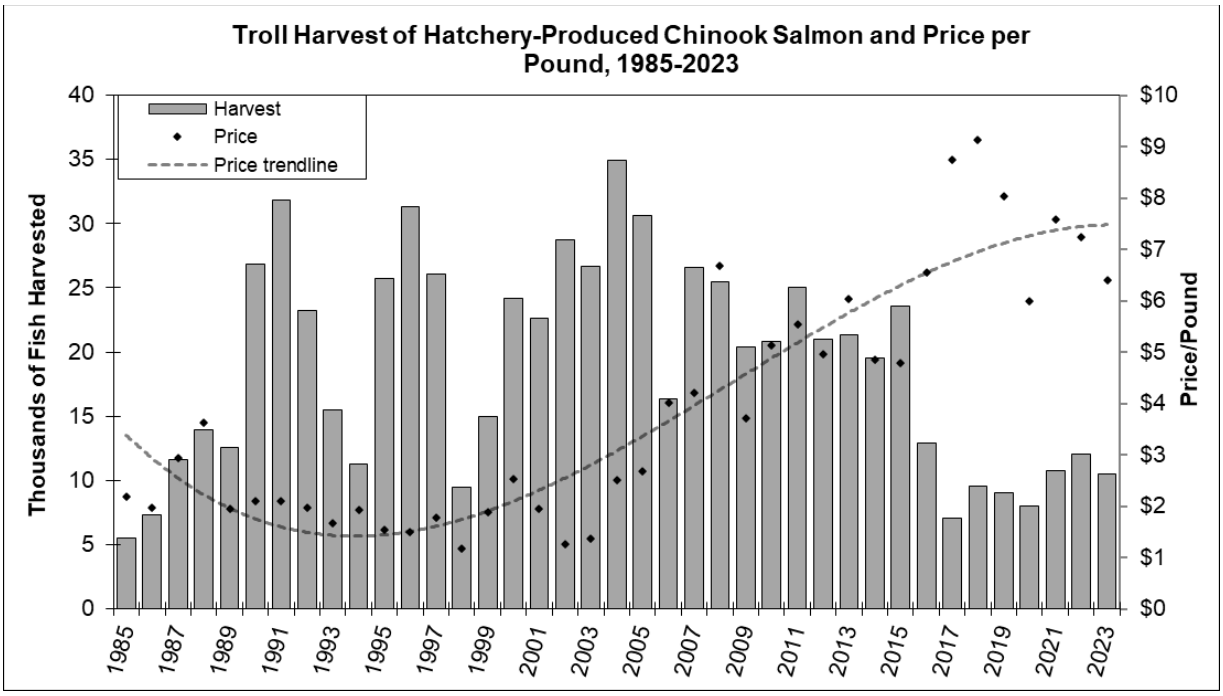

Figure 15.–Troll harvest of hatchery-produced Chinook salmon and price per pound, 1985–2023.

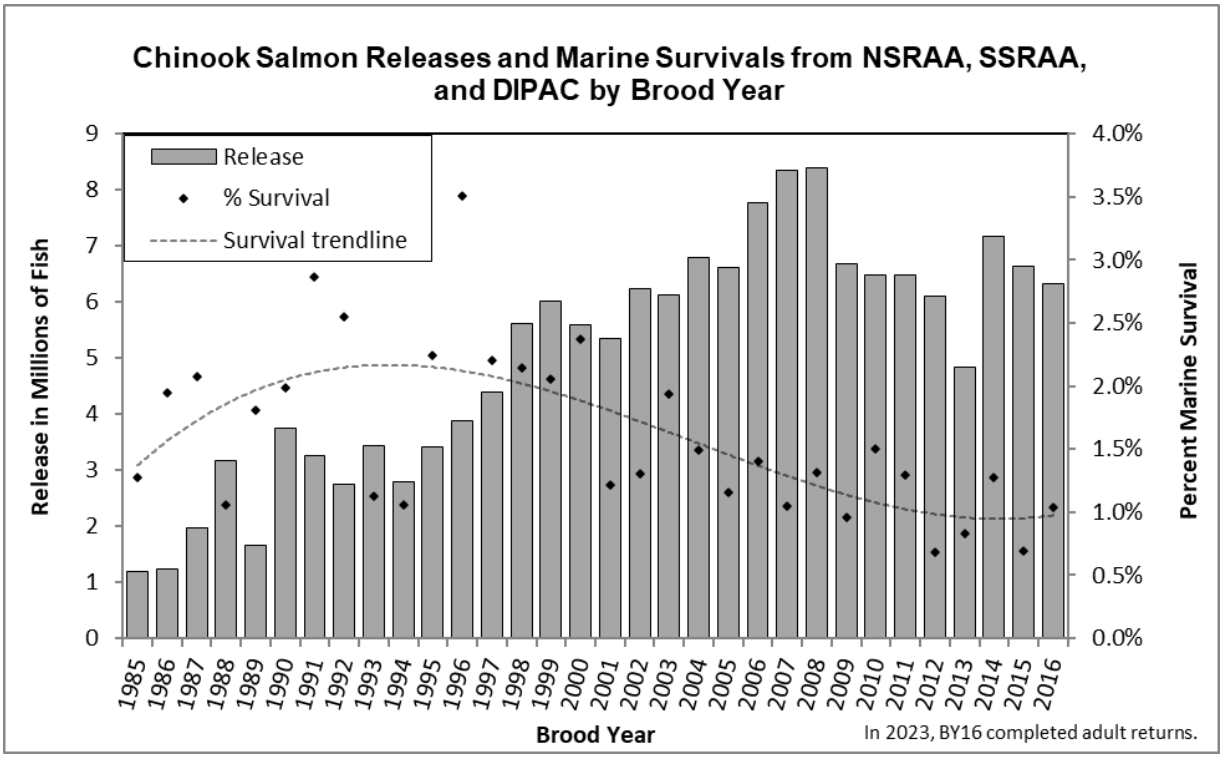

Figure 16.–Chinook salmon releases and marine survivals from NSRAA, SSRAA, and DIPAC by Brood Year, 1985–2016.

Note: In 2023, the last of the brood year 2016 Chinook salmon returned, completing the life cycle.

APPENDIX A

Appendix A1.–5 AAC 33.364 Southeastern Alaska Area Enhanced Salmon Allocation Management Plan.

(a) The purpose of the management plan contained in this section is to provide a fair and reasonable distribution of the harvest of salmon from enhancement projects among seine, troll, and drift gillnet commercial fisheries, and to reduce conflicts among these users, in the Southeastern Alaska Area. The Board of Fisheries establishes the following value allocations:

(1) seine – 44 percent to 49 percent;
(2) hand and power troll – 27 percent to 32 percent;
(3) drift gillnet – 24 percent to 29 percent.

(b) The department shall evaluate the annual harvest of salmon stocks from enhancement projects to determine whether the distribution of the value of enhanced salmon taken in the seine, troll, and drift gillnet fisheries in the Southeastern Alaska Area is consistent with the allocation established in (a) of this section. The evaluation of allocation percentages shall be based on five-year increments, beginning with 1985. The value of the enhanced salmon harvested each year shall be determined by the department based on data from the Commercial Fisheries Entry Commission.

(c) If the value of the harvest of enhanced salmon stocks by a gear group listed in (a) of this section is outside of its allocation percentages for three consecutive years, the board will, in its discretion, adjust fisheries within special harvest areas to bring the gear group within its allocation percentage.

(d) The department may not make inseason adjustments or changes in management in or out of the special harvest areas to achieve the allocation percentages established in (a) of this section.

(Eff. 5/29/94, Register 130)
Authority: AS 16.05.251 AS 16.05.730 AS 16.10.440

(Previously finding #94-02-FB)

Southeastern Alaska Area Enhanced Salmon Allocation Management Plan (5 AAC 33.364)

Background: In March 1991 Mike Martin, Chairman of the Board of Fisheries, asked the Northern Southeast Regional Aquaculture Association (NSRAA) and the Southern Southeast Regional Aquaculture Association (SSRAA) to coordinate the development of the Southeastwide allocation plan for all Enhanced salmon.

The issue concerned the benefits of commercial fishers received from the enhancement activities especially in relation to the amount of the 3% Salmon Enhancement Tax (SET) paid. The issue was different between the Regional Associations and could not be resolved. Numerous proposals have been submitted to the Board of Fisheries to resolve the issue but none were acted upon. Chairman Martin requested that the 2 Regional Associations consider an all-Southeast Alaska Allocation Plan to include all enhancement activities: Fish and Game FRED division, Independent Non-profit Aquaculture corporations; and Regional Aquaculture Associations.

The Board of Directors of NSRAA and SSRAA agreed to accept the challenge. They formed a group that first met on March 29, 1991, in Ketchikan. The group called itself the Southeast Allocation Task Force (SATF). The SATF is composed of 6 voting members, 3 each from NSRAA and SSRAA, and each association provided 1 seine, 1 troll, and 1 drift gillnet representative for a total of two people from each gear type on SATF. All decisions were by consensus. No meeting was held without 6 voting members present.

There were 2 non-voting members on the SATF, one each from the FRED Division and a representative from the independent nonprofit aquaculture corporations. DIPAC represented the independent seat. Also, each Regional Association provided 1 staff member. Pete Esquiro represented NSRAA and Don Amend represented SSRAA. The staff and non-voting members are resource people who provided technical input and comments when appropriate. The SATF also has had technical input from the NMFS at Auke Bay, the limited entry commission, and other people as needed.

All meetings were publicly held. Announcements were made Southeastwide in newspapers and radios. Public attendance was minimal, but a few members of the public showed up at each meeting. These people were allowed to address the SATF as recognized by the chair. There was no appointed sport representative, but these interests were present at a few meetings. There was a total of 5 meetings.

The SATF developed the number of fish caught and this was reviewed by scientists at the Auke Bay Laboratory. The value of the fish was provided by the Limited Entry Commission. The data do not include enhancement activities by the National Marine Fisheries Service (NMFS), Metlakatla Indian Community (MIC) on Annette Island, or the U.S. Forest Service (USFS). The production at NMFS is small and experimental. Although the production by the MIC is significant and they also harvest Alaska Enhanced fish, this was not included because their harvest and production cannot be controlled by the State.

-continued-

The USFS conducts many habitat enhancement activities, but the numbers cannot be verified or evaluated. All of SE Alaska was included (Districts 1–15), but the Yakutat area was excluded.

The base period for data analysis was 1985. Production prior to 1985 was not significant and most projects were just coming on line. The data were evaluated through 1990 and will be updated annually as they become available. Averages were based on this period when production was still increasing and changing. Estimates were made based upon all currently permitted capacity when at full production. Future production was based on planned increases in capacity, but not yet permitted or operational.

The development of the agreement was based on catches by power and hand trollers, seiners, and drift gillnetters. Setnets were not included and are not used in the areas analyzed. Sport, sport charter, subsistence, and personal use were not included. The agreement was based only upon those who pay the 3% SET. No allocation was suggested for these other groups. The belief was that they are restricted by bag limits and an allocation of enhanced fish is inappropriate.

The guidelines will be submitted to the Board of Fisheries and may be set in regulation or developed into policy. The guidelines will be used by the Regional Planning Teams (RPTs) as one element in the evaluation of permit requests and proposed production changes. The Commissioner of Fish and Game will consider the guidelines when evaluating permits or establishing special harvest areas. The Commissioner of Commerce of Economic Development will consider them in determining salmon enhancement loans for changes in production. The Board of Fisheries will use them to make decisions concerning gear group disagreements that involve enhanced fish production. The guidelines are viewed as goals to achieve and remain flexible for changing conditions, such as management changes, treaty changes, gear changes, or legislative changes. It was not intended for Fish and Game management to use in managing the common property fishery, except in a very few special instances.

REPORT OF THE SOUTHEAST ALASKA ALLOCATION TASK FORCE (SATF) FOR ENHANCED SALMON.

Following are the fourteen (14) guiding principles which were developed along with rationale statements of each:

(1). The primary goal of the Southeast Alaska salmon enhancement program is to provide additional fishing opportunities and revenue to traditional common property fisheries.

(A) Performance Goals: Hatchery program plans and performance, over time, should provide a 70% contribution (after broodstock) to common property fisheries. Out of recognition for those hatcheries not receiving any salmon enhancement tax (SET) revenues, a 60% contribution (after broodstock) to common property fisheries is an acceptable goal. This goal should be expanded to 70% when these non-association hatcheries retire their existing debt obligation to the State of Alaska.

(B) Operators of hatcheries and other enhancement projects will use these performance goals in designing the annual management plans they submit to the joint Regional Planning Team (RPT) for review prior to approval by the Commissioner.

-continued-

(C) It is recommended that enhancement programs that achieve these performance goals be given priority from the Department of Commerce and Economic Development on the requests for funding from the Fisheries Enhancement Revolving Loan Fund.

(D) *Common property fisheries* means those fisheries available to the people for common use.

Rationale: The enhancement programs are primarily for the benefit of the common property fishery and not for the benefit of private and state ownership. To ensure the emphasis is on the common property fisheries, the 70% and 60% performance goals specified in 1A shall be used in evaluating projects. Although contributions to the common property fisheries will vary from year to year depending on run strength, survival rates, and management, the long-term benefit must be to the common property fisheries. No penalty for failures is suggested. However, hatchery management plans should include these production goals, and if they are not achieved over time, it is intended that management changes be made to ensure these goals.

Broodstock are not included because they were viewed the same as escapement goals. Broodstock do not financially benefit anyone directly and are essential for continued production (see number 3).

(2). Management of traditional "wild stock" fisheries are not to be restricted by cost-recovery needs (economic escapement) of hatcheries.

Rationale: This concept is embodied in Alaska Statute 16.05.730. The SATF could not envision any circumstance in which a wild stock fishery should be interrupted to ensure a cost-recovery harvest.

(3). Restrictions on conduct of traditional "wild stock" fisheries to meet broodstock needs should be absolutely minimal and should be clearly documented by adequate production and harvest data. Protection of broodstock should only occur near terminal areas. (Consistent with AS 16.05.730, and regulations 5 AAC 40.005 and 5 AAC 40.220.)

Rationale: The SATF recognizes the importance of broodstock. However, broodstock alone should not drive a common property fishery. Protection of broodstock should only occur near terminal areas and only when the wild stocks can be adequately harvested in another area. The need for protection of broodstock in any area must be documented by showing that broodstock goals are adversely affected and the area contains significant broodstock.

However, it is not intended that an operator manipulate activities just to ask for broodstock protection, such as by conducting cost-recovery harvest without taking proper steps to ensure broodstock collection.

(4). Enhancement projects should include tagging or marking that will allow determination of the amount of production harvested in the various fisheries.

-continued-

Rationale: It is recommended that adequate tagging programs be required under the Commissioner's authority (AS 16.10.400). Operator estimates are not adequate for estimating contribution to common property fisheries. Tagging or marking programs are essential; however, because the technology for marking fish is still evolving, no method is recommended. It is assumed that the most reliable and cost-effective method will be used.

5). The State of Alaska should commit to an adequate mark–recovery program for all enhanced salmon to provide harvest and production data.

Rationale: It is recommended that those responsible for enhancing fish should pay for the marking, but only the state has the resources to conduct the tag–recovery program. The allocation agreement will not work unless the state commits to a mark recovery program. Also, there was evidence that the tag recovery program will not being conducted equally among the gear types or species harvested. For example, troll Chinook fisheries have been more intensively sampled, whereas the seine harvest has been sampled the least of the groups. The tag–recovery program should be designed to provide an equal level of confidence in the contribution of enhanced salmon to each gear type.

(6). Habitat enhancement and restoration projects where marking is not feasible will not be counted. Other field projects where marking is feasible and economically acceptable will be counted.

Rationale: Lake fry plants, stream bioenhancement, stream rehabilitation, and other enhancement strategies are frequently conducted with small numbers of fish in remote areas. It may not be practical or economically feasible to mark the fish. These enhancement and restoration projects are encouraged and it is recognized that they contribute to the common property fisheries, but they will not be counted in the allocation percentages. However, where feasible, marking should be conducted.

(7). The allocation percentage goals will be used to provide a fixed target for production.

Rationale: Enhancement projects and production goals have frequently been established based on political expediency or the economic viability of the operator. However, whenever fish are released and the returning adults harvested, an allocation is made. The allocation can become disproportionate based on the number of fish and where they are released.

It is desirable that new production or revised existing production contribute to achieving the allocation percentage goals established. This, however, should not be the only criteria used to judge the desirability of new or revised production. If such new or revised production is projected to unbalance the distribution of enhanced salmon, and the change in production is otherwise considered desirable, the RPT will evaluate the overall enhancement program to determine what adjustments may be necessary to bring distribution of the harvest into compliance with the allocation percentage goals and make recommendations to the Commissioner.

(8). Allocation percentage goals will be long term.

Rationale: It is recognized that survival rates can vary considerably within and among enhancement projects throughout SE Alaska. Also, variations in the management of the common property fisheries influence the harvest rates.

-continued-

The allocation percentage goals are not expected to be attained each year but should be attained over the long term. Any change in production takes 2 to 5 years to impact a fishery. Therefore, allocation percentage goals should be based on a minimum of 5-year increments (see number 9).

(9). Overall contribution of revenue from salmon enhancement projects should be evaluated using the most recent 5-year average. Adjustments should be implemented only after discrepancies are determined to exist in the 5-year average for 3 consecutive years.

Rationale: See number 8 above. The distribution of enhanced fish is expected to vary widely from year to year. A 5-year rolling average was used because it constitutes a production cycle and levels year-to-year variation. It is recognized that a single abnormal year can change the 5-year average outside the range of the allocation percentage goals; therefore, the guidelines establish a 3-year period of consistent discrepancy before any change is made.

(10). The joint RPT will evaluate current enhanced salmon production and the distribution of harvest revenues and update this on an annual basis.

(A) Each facility should be evaluated after a minimum 5 years of operation to determine whether the 70% or 60% common property contribution, referred to in guiding principle 1A, is being achieved or to determine the realistic production and common property contribution for the facility.

(B) The joint RPT will conduct an evaluation to determine when the allocation percentages are not being achieved and adjustments are necessary.

(C) The joint RPT will recommend to the Commissioner adjustments to facilities' annual operating plans as necessary to accomplish the desired allocation goal.

Rationale: The SATF believes the joint RPT is the appropriate body to review the contribution data. The joint RPT is responsible for establishing and maintaining the comprehensive salmon plan, under the Commissioner's authority, and is responsible for recommending the permit changes for production to the Commissioner.

(11). Achieving these allocation percentage goals should not result in any modifications, in time or area, to the traditional "wild stock" fisheries. Minor modification may be considered to allow experimental or test fisheries that would not adversely impact wild stocks.

Rationale: The SATF strongly believed that the common property fisheries for wild stocks should not be manipulated in order to achieve the allocation percentage goals. However, this is not intended to preclude experimental or test fisheries, special hatchery access fisheries, or the establishment of new special harvest areas in order to access enhanced fish. For example, this could include the June troll fisheries for Chinook, late season openings, or other special openings used to target enhanced fish as long as wild stocks are not adversely impacted. It is recommended that the department allow targeted fisheries on enhanced stocks when they will not adversely impact sustained yield of wild stocks. The department should work closely with hatchery operators in establishing these fisheries, keeping in mind the 70% and 60% contribution goals. The harvest of enhanced salmon in a targeted wild stock fishery is considered incidental to the harvest of wild stocks.

-continued-

(12). There should be no inseason changes in management of enhanced salmon in or out of the special harvest areas to achieve the allocation percentage goals.

Rationale: These guidelines are established to reach long-term allocation percentages. Inseason common property fisheries adjustments should not be considered to meet allocation goals. No adjustment of wild stock fisheries should be allowed in order to meet the allocation percentage goals.

(13). When adjustments are deemed necessary to the distribution of the harvest to meet allocation percentage goals, the following tools should be used: (1) special harvest area management adjustments; (2) new Enhanced salmon production; and (3) modification of enhancement projects production, including remote releases. Hidden Falls shall remain a seine/troll terminal harvest area (consistent with 5 AAC 33.374).

(A) The joint RPT will make appropriate recommendations through the Commissioner to the annual operating plan(s) of the facility or facilities to attain allocation goals.

(B) Facilities may request changes in operating plans to meet allocation requirements.

Rationale: New production and facility modifications to meet the allocation percentage goals are long term changes and will take 5 to 10 years to have an impact. Changes in special harvest areas can be used in the short term to help modify any imbalances that occur.

For example, special harvest areas can be designated to only one gear group, or the fishing time allowed to different gear groups could be adjusted. The effectiveness of this will also be contingent on the gear type and the targeted species. The SATF expects these adjustments will be reviewed by the joint RPT, and the joint RPT will make recommendations to the Commissioner as to the most appropriate action needed to achieve the allocation percentage goals. It is anticipated that short-term solutions such as special harvest area management adjustments will only be used until decisions concerning long-term adjustments can take effect. The allocation percentage goals will also be considered when reviewing permit alteration requests. If new production is not feasible or desirable, changes in remote releases can include new sites, change in species composition, change in the numbers of salmon released, or a combination of these.

(14). The allocative percentages will be:

Note: The following percentages refer to the total value (nominal dollars) of enhanced salmon. These percentages are not intended to apply to wild stock allocations.

Seine – 44% to 49%
Troll – 27% to 32%
Gillnet – 24% to 29%