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Alaska Salmon Fisheries Enhancement Annual Report 2017

by

Mark Stopha

March 2018

Alaska Department of Fish and Game **Division of 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, Special Publications and the Division of Commercial Fisheries Regional Reports. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

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

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by
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ABSTRACT

This annual report reviews the Alaska salmon fisheries enhancement program. The success of this program is attributable to the development of statutes, regulations, and policies that require hatcheries to be located away from important natural salmon stocks and to use local broodstock sources. To maintain genetic diversity, Alaska hatcheries do not selectively breed for size or other trait and use large numbers of broodstock for production. Most hatchery releases are marked so that fisheries managers can estimate the strength of wild stocks in the catch inseason and manage wild stocks conservatively.

Currently, 29 salmon hatcheries are operating in the state. Twenty five facilities are operated by private nonprofit corporations, which are funded primarily from the sale of a portion of hatchery returns. Two sport fish hatcheries are operated by the state, one research hatchery by the National Marine Fisheries Service, and one production hatchery by the Metlakatla Indian Community.

In 2017, the commercial fleet caught about 47 million hatchery-produced salmon worth an estimated $331 million in first wholesale value. Hatchery fish contributed 21% of the statewide commercial salmon harvest, which is the lowest percentage of hatchery fish in the harvest since 1995, and due largely to an extraordinary wild stock harvest that was the 3rd highest in Alaska history. An additional 194,000 Alaska hatchery fish were caught in the sport, personal use and subsistence fisheries.

Hatchery production in Alaska is designed to supplement — not replace—wild stock production. Alaska's salmon harvests in 2013, 2015 and 2017 were three of the four highest wild stock returns in history dating back to the late 1800's. Abundance-based wild stock management priority, habitat protection, and record wild-stock harvests reflect the state's commitment to conservation of wild stocks and provide the foundation of its salmon fisheries enhancement program.

Key words: Alaska salmon hatchery, hatchery, pink salmon, chum salmon, Chinook salmon, coho salmon, sockeye salmon

PREFACE

This report is a review of Alaska's hatchery production based on information provided by hatchery operators and other harvest information. The report is intended to update the Alaska State Legislature on the status of Alaska's fishery enhancement program in fulfillment of Alaska Statute 16.05.092. Numbers in tables may be rounded for clarity. Hatchery industry acronyms used in this publication are listed in Table 1. Hatchery locations are depicted in Figure 2. Alaska hatchery egg take, release, return and value data by species and region for 2017 are provided in Tables 2–16.

Multiple types of propagative fish resource permits are issued each year for research to accredited institutions of higher learning and for cooperative governmental projects, as well as for educational, vocational, and scientific purposes. A summary of propagative fish resource permits issued in 2017 is provided in Table 17.

Historical annual summaries of hatchery production, including number of eggs collected, juveniles released, adult returns, and harvest, are listed in Tables 18–29 and figures 1 and 3–17.

Alaska hatchery operators contact information, active hatchery permits, permitted capacities by region and hatchery, and the Alaska fisheries enhancement program timeline of events, are found in Tables 30–33.

In this document, *wild* fish refer to fish that are offspring of parents that naturally spawned in watersheds and intertidal areas. *Hatchery* fish are fish reared in a hatchery to a juvenile stage and released. *Farmed* fish are fish reared in captivity to market size for sale. Farming of finfish, including salmon, is not legal in Alaska. Also note that a small number (less than 200,000) in the

overall statewide catch—primarily in the Southeast Alaska Chinook salmon harvest—are hatchery fish from hatcheries outside Alaska, and that these fish are included with the wild catch.

Broodstock are fish used for egg and milt collection at the hatchery.

The *commercial harvest* is composed of the *common property* and *cost-recovery* harvests. The *common property* commercial harvest is fish available for harvest by commercial fishing permit holders. Sport, personal use, and subsistence users also harvest *common property* fish. The *cost-recovery* harvest is fish harvested in designated special harvest areas (SHA) to pay for hatchery operations.[1]

Exvessel value is the value paid to fishermen by a processor for their harvest. *First wholesale value* is the value of processed product sold by a processor. Exvessel values by region were estimated as the percentage of the hatchery harvest in the region for each species multiplied by the total exvessel value for that species in the region, by year. First wholesale values were estimated as the percentage of the hatchery harvest in the state for each species multiplied by the total wholesale value in the state for each species by year.

First wholesale values are not yet available for 2017. As a proxy, the 2017 first wholesale value was estimated as the 2017 exvessel value of the hatchery harvest by species, multiplied by the previous 5-year (2012–2016) weighted average quotient of the first wholesale value of the statewide catch divided by the exvessel value of the statewide catch, by species.

Exvessel and first wholesale values of hatchery fish were estimated based on average prices paid for all salmon on fish tickets or annual processor reports by region by calendar year. Cost-recovery fish may be priced under contract to a processor, but cost-recovery value in this report is estimated based on the average price for all salmon sold in each region by species.

A *tender* vessel is a boat that transports the catch from a fishing boat to a processing facility. Tenders are usually larger vessels that can transport the catch from numerous fishing boats to a shore-based processor so that the fishing vessels can stay on the fishing grounds and continue fishing.

Monetary values are not adjusted for inflation unless otherwise noted.

Contributions of hatchery fish are in numbers of fish, and not weight of fish.

Values and numbers of hatchery fish are for Alaska hatcheries, only, and do not include harvest in Alaska from non-Alaska hatcheries, such as hatcheries in Canada or the Pacific Northwest states.

References in this document to the ADF&G commissioner refer to the commissioner or their delegates.

An Executive Summary intended to provide an overview of the hatchery program begins this report, followed by a more detailed review of Alaska hatchery history, regulatory and policy guidelines, and production.

[1] At Hidden Falls Hatchery, fish are harvested in the special harvest area (SHA) in a commercial common property fishery that is subject to a special cost recovery assessment tax to pay for operations.

EXECUTIVE SUMMARY 2017

Alaska's modern hatchery program was developed in response to historically low salmon abundance in the early 1970s (Figure 1). In 1971, the Alaska Legislature established the Division of Fisheries Rehabilitation Enhancement and Development (FRED) within the Alaska Department of Fish and Game (ADF&G) for hatchery development. In 1972, Alaska voters approved an amendment to the state Constitution (Article 8, section 15), providing for an exemption to the "no exclusive right of fishery" clause, enabling limited entry to Alaska's state fisheries and allowing harvest of salmon for broodstock and cost recovery for hatcheries. In 1974, the Alaska Legislature expanded the hatchery program, authorizing private nonprofit (PNP) corporations to operate salmon hatcheries (Table 33). Alaska's salmon hatchery program developed under this authority and was designed to supplement—not replace—sustainable natural production.

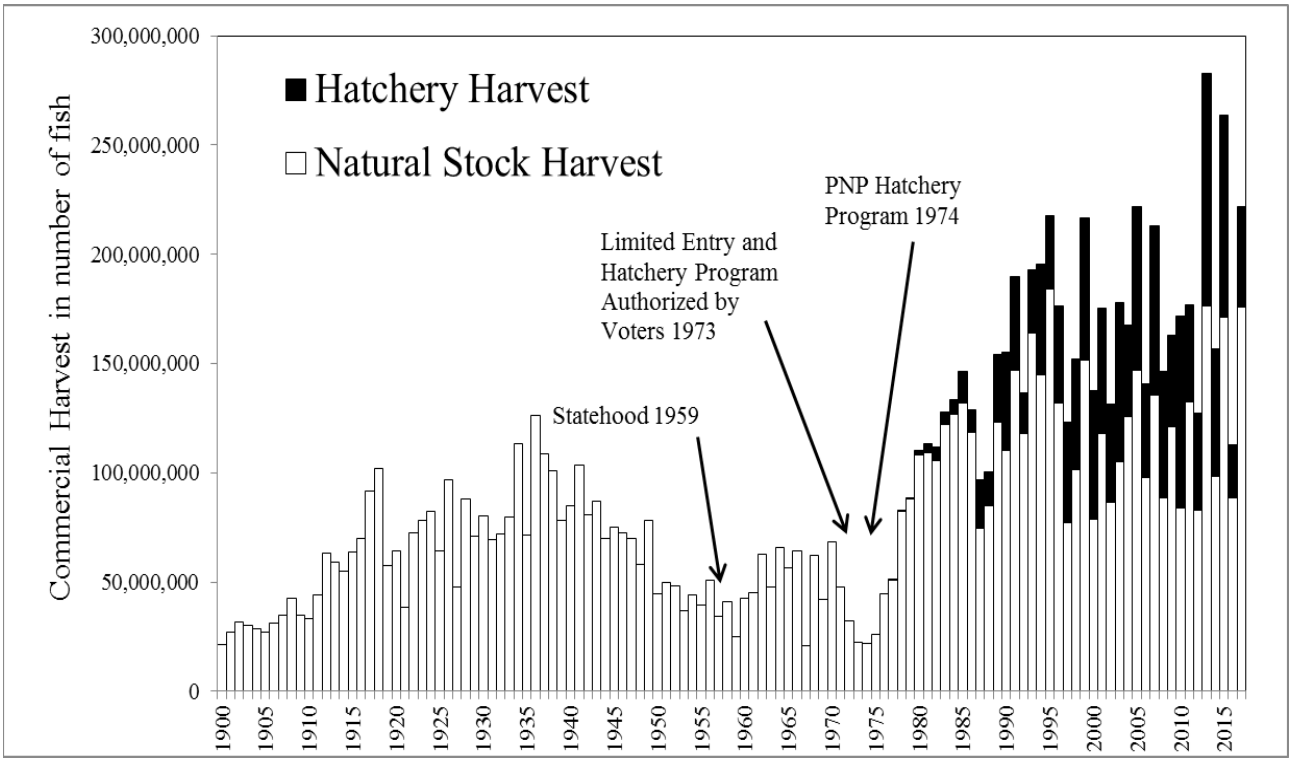

Figure 1.–Commercial salmon harvest in Alaska, 1900–2017.

Alaska's salmon fishery harvests were just 22 million fish in 1973 and 1974 (Figure 1). Since then, Alaska's post-statehood hatchery program has produced significant contributions to the fisheries alongside sustainable, healthy, well-managed wild production. The five largest wild stock harvests in Alaska history occurred, in order of descending rank, in 1995, 2013, 2017, 2015 and 1993. The top five hatchery harvests have occurred since 2005, with the largest hatchery harvests in 2013 and 2015.

The success of the hatchery program is attributable to Alaska standards requiring hatcheries to be located away from important natural salmon stocks, to use local broodstock sources, and to mark hatchery fish as necessary so that fisheries managers can determine the strength of wild stocks in the catch and manage wild stocks conservatively. In addition, Alaska hatcheries do not

selectively breed for size or any other trait and use large numbers of broodstock to maintain genetic diversity per the state's *Genetic Policy*.

Hatcheries function to improve egg-to-juvenile survival. Depending on species, egg-to-fry survival averages about 10% or less in nature due to flooding, freezing, drought, predation, etc. In hatcheries, egg-to-fry survival is usually 90% or higher. Once hatchery-raised juveniles are released to the ocean, they are subject to the same elements for survival as their naturally-spawned counterparts.

Currently, there are 29 hatcheries operating in Southeast Alaska, Prince William Sound, Cook Inlet, and Kodiak regions (Figure 2, Table 31 and Table 32). Most facilities (25 hatcheries) are operated by PNPs. ADF&G operates two sport fish hatcheries in Anchorage and Fairbanks. The National Marine Fisheries Service operates a research hatchery at Little Port Walter. The Metlakatla Indian Community operates Tamgas Creek Hatchery.

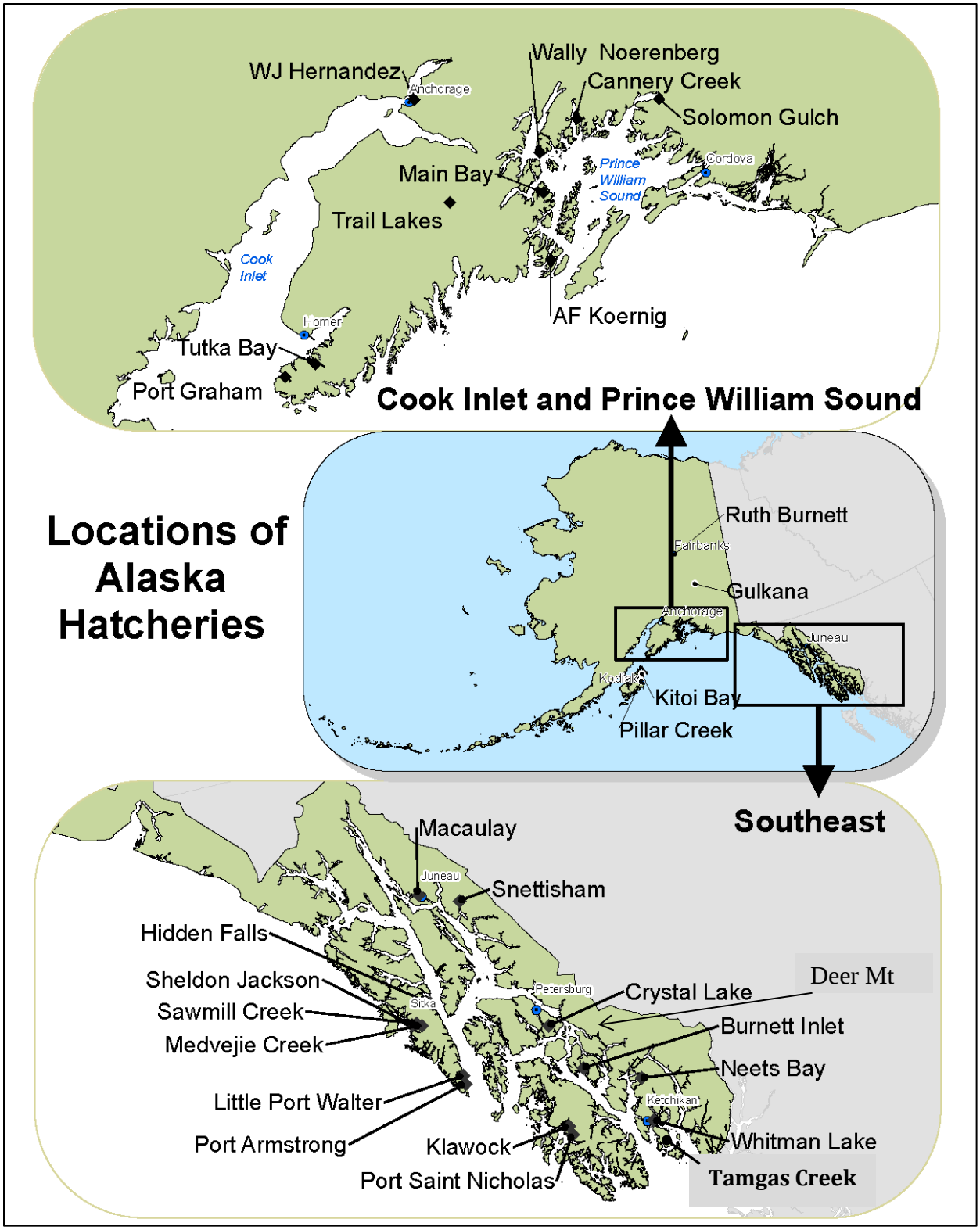

Figure 2.–Salmon hatcheries currently operating in Alaska.

Alaska's hatcheries produce primarily pink and chum salmon because hatchery production is limited by freshwater capacity, freshwater rearing space, and costs of production (Figure 3). Pink and chum salmon fry can be released to salt water soon after hatching. Chinook, sockeye, and coho salmon fry must typically spend a year or more in fresh water before development to the smolt stage, when they can tolerate salt water and be released. This makes these three species much more expensive to rear, as they require a higher volume of fresh water, holding areas for freshwater rearing, and feeding.

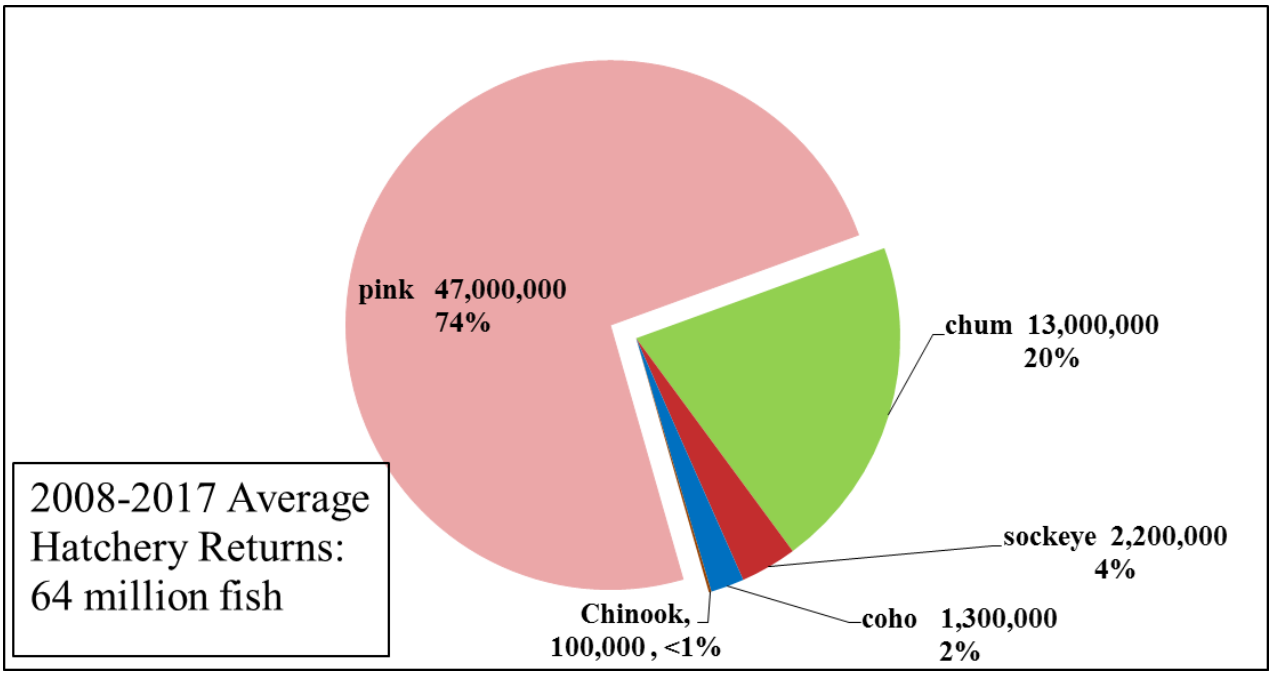

Figure 3.–Alaska hatchery production and percent of hatchery production by species in numbers of fish harvested, 2007–2017 annual average.

Although a majority of the harvest of a species in a region may be made up of hatchery production—pink salmon in Prince William Sound or chum salmon in Southeast Alaska, for example—this does not mean that hatchery production comes at the expense of wild stock production. Hatchery production grew at a pace that managers could assess the returns and understand how to manage for wild stock returns in the presence of hatchery returns and provide for adequate escapement of wild stocks. The development of otolith marking[2] allows all pink and chum salmon produced in Cook Inlet, Southeast Alaska and Prince William Sound to be marked so that ADF&G staff can determine the harvest composition inseason and manage for wild stocks.

As fisheries management has adapted to hatchery production, so have the fishing fleet and processing sector adapted to harvest the hatchery returns. When fishing is open elsewhere to target wild stocks, the fleet may instead focus effort on hatchery returns at terminal sites where

[2] Otolith marking is usually done by alternating the temperature of the water during egg incubation, which lays down regular marks on the fish ear bone (the otolith). Wild fish usually do not have the otolith markings. Otoliths can be removed from fish harvested and hatchery and wild stock contributions to the catch estimated.

hatchery fish were released—particularly if tender service is also concentrated there. Fishermen can harvest hatchery fish and offload to nearby tenders, saving time and fuel in their operations. This may also decrease fishing pressure on some wild stocks.

2017 SEASON SUMMARY

In 2017, Alaska hatcheries contributed nearly 47 million fish to the commercial fishery[3] (Figure 4; Table 5). Hatchery fish made up 21% of the statewide commercial salmon harvest of 222 million fish. About 20% (9.4 million fish) of the total commercial hatchery harvest were harvested for cost recovery to pay for hatchery operations (Table 5).

Record wild stock returns were recorded in several areas of the state. Norton Sound had a record return of coho salmon, and Chignik and the Alaska Peninsula had record returns of pink salmon.[4] In Bristol Bay, the 2017 season was the third highest harvest of sockeye salmon since 1975, and the third consecutive year of strong harvests, following the fourth highest harvest in 2016 and sixth highest harvest in 2015.[5] The statewide harvest of wild stock chum salmon was the fifth highest since 1975.

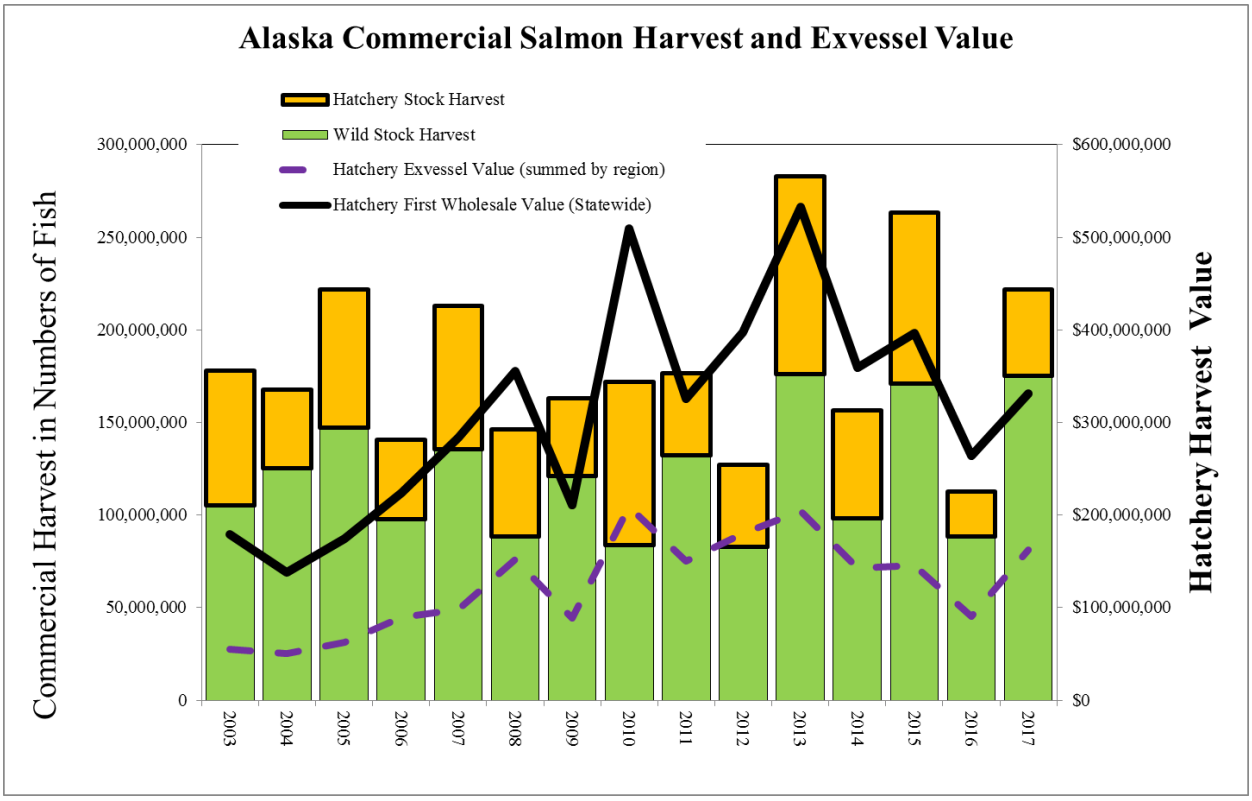

Figure 4.–Hatchery and wild stock harvest in numbers of fish and the estimated exvessel and first wholesale value of the hatchery fish harvest, 2003–2017.

[3] The commercial fishery comprises 2 components: (1) the common property fisheries, which are open to fishermen holding salmon permits, and (2) cost recovery fisheries, which are fish harvested to pay for PNP hatchery operations.

[4] http://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr10032017.

[5] http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_grossearnings_byarea, accessed 1/31/2018 and http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/865497019.pdf. Note that there are no production hatcheries in Norton Sound, Chignik, the Alaska Peninsula or Bristol Bay and the record harvests are presumed to be of all wild stock fish.

The statewide exvessel value of the commercial hatchery harvest was $162 million (Figures 4 and 5; Table 6), and comprised 24% of the statewide harvest exvessel value. Chum salmon accounted for 57% of the value of the hatchery harvest, followed by pink salmon (28%), sockeye (10%), coho (3%), and Chinook salmon (2%).[6] The first wholesale value of the 2017 hatchery harvest was estimated at $332 million.[7]

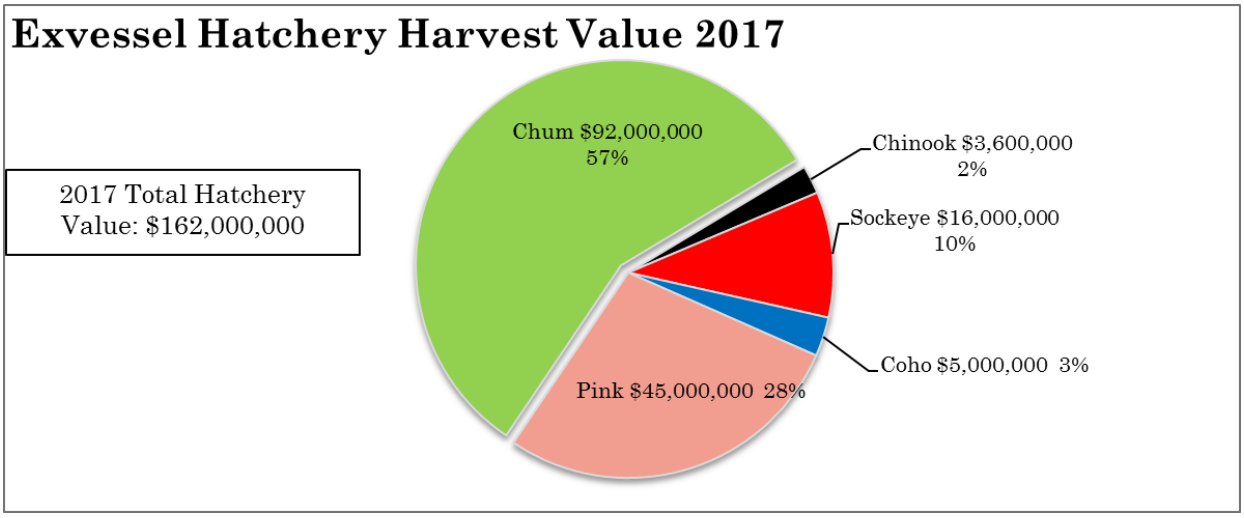

Figure 5.–Species composition of 2017 Alaska hatchery commercial harvest, with the exvessel value by species, and the percent of the total hatchery value for each species. Commercial exvessel value is the estimated value paid to fishermen for the common property harvest and to hatchery associations for the cost recovery harvest.

Note: Exvessel value for hatchery harvest is the total harvest value paid by fish buyers to fishermen for all salmon from http://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/2017_preliminary_salmon_summary_table.pdf (accessed 01/18/2018), multiplied by the hatchery percent of the commercial harvest.

About 194,000 hatchery-produced salmon, rainbow trout, arctic char, and grayling were harvested by sport, personal use, and subsistence users in 2017 (Table 7). Hatchery-produced coho salmon were the greatest part of this harvest (86,000 fish), followed by rainbow trout (36,000 fish), sockeye salmon (33,000 fish), pink salmon (12,000 fish), Chinook salmon (10,000 fish), landlocked salmon (8,000 fish), chum salmon (6,000 fish), arctic char (2,000 fish), and grayling (1,000 fish).

[6] Note that hatchery contribution to the statewide harvest can differ from the contribution to the statewide exvessel value because of differences in exvessel values paid for salmon in different regions of the state. For example, Chinook salmon and chum salmon hatchery production is largely in Southeast Alaska, where exvessel price per pound is usually among the highest in the state for these two species.

[7] See Preface for method of estimating 2017 first wholesale value.

REGIONAL HATCHERY CONTRIBUTION

Most of Alaska's hatchery production is in Prince William Sound (Figure 6, Table 27), where pink, chum and sockeye salmon are the primary hatchery species. Next is Southeast Alaska, where chum, pink and coho salmon are the primary hatchery species (Table 26). Kodiak hatcheries produce primarily pink and sockeye salmon (Table 29) and Cook Inlet hatcheries produce primarily sockeye and pink salmon (Table 28). Two ADF&G Division of Sport Fish hatcheries produce landlocked salmon, trout, char, and grayling for stocking Interior and Southcentral freshwater systems, as well as Chinook and coho salmon for saltwater release in Cook Inlet and Prince William Sound.

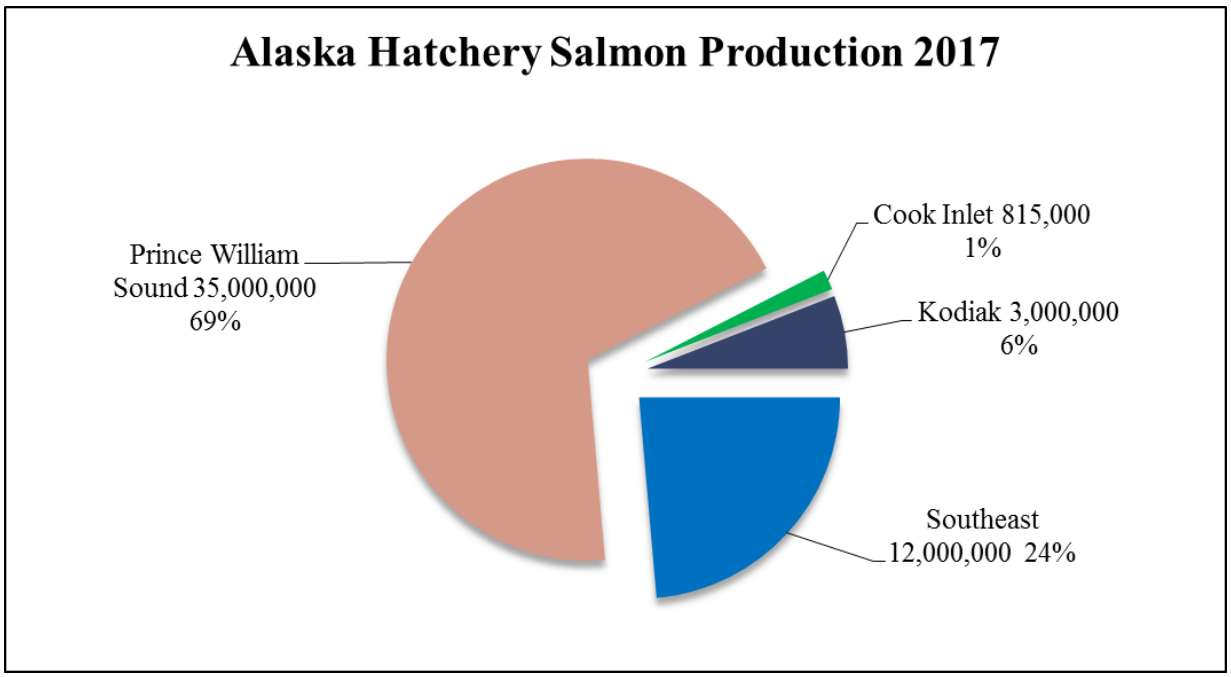

Figure 6.–Alaska hatchery total return in numbers of fish by region, 2017. The total return includes both the catch and fish used for broodstock. Hatchery return is in number of fish to each region and the percent is the regional hatchery harvest contribution to the total state hatchery return.

(note:Rainbow trout, grayling and arctic char from the sport fish hatcheries are not included.)

COMMON PROPERTY FISHERIES (TABLES 5–7; FIGURE 7)

Southeast Alaska

About 8 million Alaska hatchery fish were caught in the Southeast Alaska common property commercial fisheries in 2017, worth an estimated exvessel value of $53 million, or 39% of the total exvessel value for common property commercial salmon fisheries in the region. Chum salmon contributed most to the value of the hatchery returns ($45 million), followed by coho salmon ($3.7 million) and Chinook salmon ($2.6 million).

For the sport/personal use/subsistence fisheries, coho salmon contributed the most hatchery fish (34,000 fish), followed by Chinook salmon (7,000 fish), chum salmon (5,000 fish) and sockeye salmon (4,300 fish).

Prince William Sound

About 28 million hatchery-produced salmon were harvested in the Prince William Sound common property commercial fisheries in 2017, worth an estimated exvessel value $69 million, or 57% of the total exvessel value for common property commercial salmon fisheries in the region. Pink salmon contributed most to the value of the hatchery returns ($36 million), followed by chum salmon ($23 million), and sockeye salmon ($10 million).

For the sport/personal use/subsistence fisheries, coho salmon contributed the most hatchery fish (24,000 fish), followed by sockeye (13,000 fish), pink salmon (9,000 fish), and chum salmon (1,000 fish).

Cook Inlet

About 146,000 hatchery-produced salmon were harvested in the Cook Inlet common property commercial fisheries in 2017, worth an estimated exvessel value $594,000, or 2% of the total exvessel value for common property commercial salmon fisheries in the region. Sockeye salmon contributed most to the value of the hatchery returns ($518,000), followed by pink salmon ($76,000).

For the sport/personal use/subsistence fisheries, sockeye salmon contributed the most anadromous salmon (14,000 fish), followed by coho (13,000 fish), pink (2,500 fish) and Chinook salmon (1,900 fish; Table 7). An additional 26,000 Arctic char, grayling, landlocked salmon, and rainbow trout were caught in Cook Inlet area lakes (Table 16).

Kodiak

About 693,000 hatchery-produced salmon were harvested in the Kodiak common property commercial fisheries in 2017, worth an estimated exvessel value of $3 million, or 6% of the total exvessel value for common property commercial salmon fisheries in the region. Sockeye salmon contributed most to the value of the hatchery returns ($2.3 million), followed by chum salmon ($460,000).

For the sport/personal use/subsistence fisheries, coho salmon contributed the most hatchery fish (15,000 fish), followed by Chinook salmon (1,300 fish) and sockeye salmon (1,000 fish).

Interior

About 22,000 Arctic char, grayling, landlocked salmon and rainbow trout were caught in Interior Alaska lakes (Table 16).

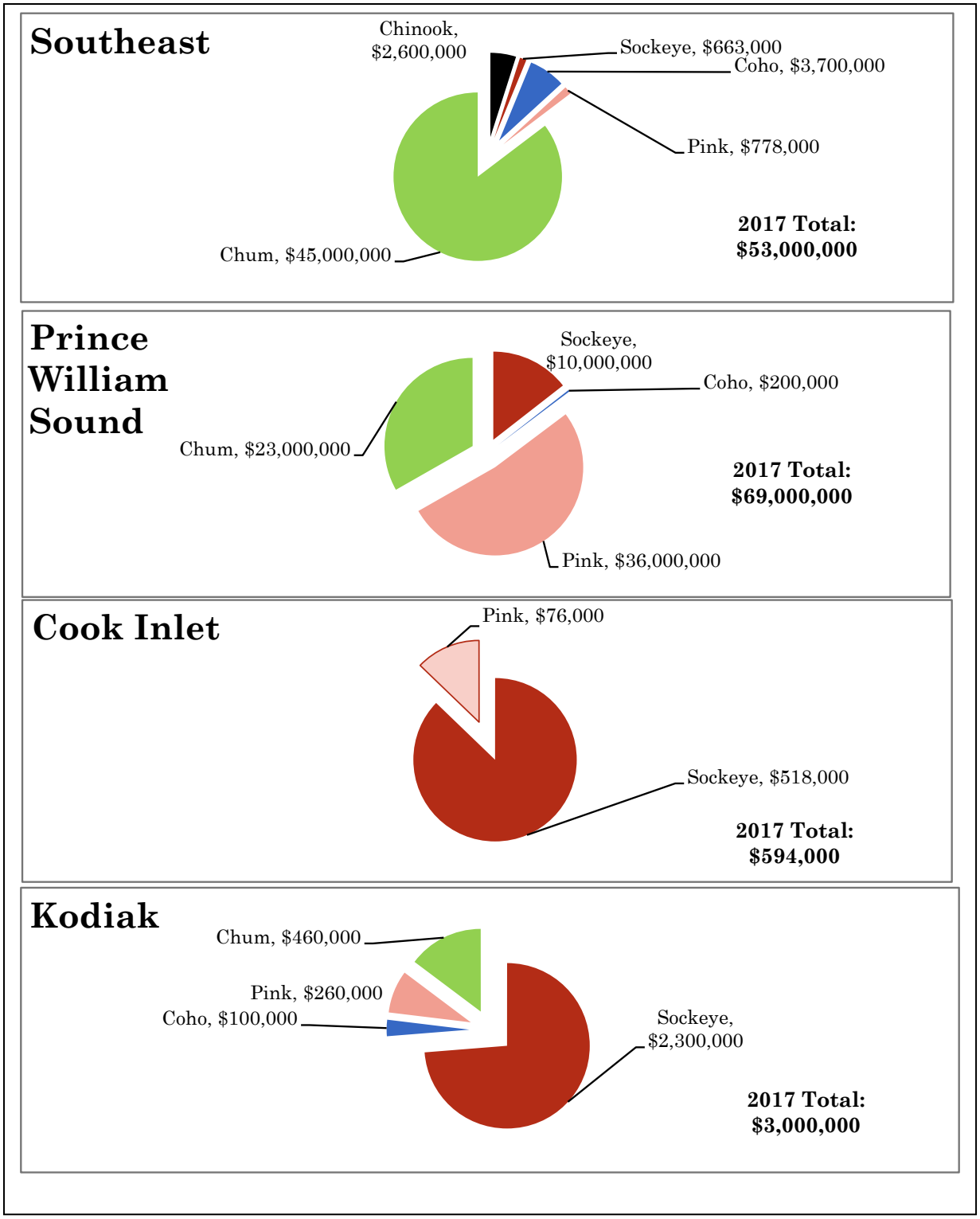

Figure 7.–Exvessel value of commercial common property hatchery harvest by region, 2017.

HATCHERY PRODUCTION IN ALASKA'S SCHOOLS

In addition to production hatcheries that provide salmon for Alaska's fisheries, an extensive program occurs for education and research across the state that is permitted through ADF&G. About 150 schools across the state participated in educational propagation of salmon in 2017 (Table 17). Fertilized salmon or trout eggs are incubated in aquariums for students to observe the development of the salmon until the fish hatch. Some of the fish are then released at pre-approved locations.

2018 PROJECTED HATCHERY HARVEST

Hatchery operators forecast a return of about 54 million fish in 2018 (Table 10). The 2017 hatchery return of 50 million fish compared to the 2017 forecast of 65 million fish (Stopha 2017a).

INTRODUCTION

Alaska's modern hatchery program began in 1971, when the Alaska Legislature established the Division of Fisheries Rehabilitation, Enhancement and Development (FRED) within the Alaska Department of Fish and Game (ADF&G). In 1972, Alaska voters amended Article 8, Section 15 of Alaska's Constitution to provide tools for restoring and maintaining the state's fishing economy. The amendment provided an exemption to the "no exclusive right of fishery" clause in the state constitution, enabling limited entry to Alaska's state fisheries and allowing broodstock and cost recovery harvest for hatcheries. Alaska's salmon hatchery program developed under this authority and was designed to supplement—not replace—sustainable natural production.

In 1974, the Alaska Legislature expanded the hatchery program, authorizing private nonprofit (PNP) corporations to operate salmon hatcheries: "It is the intent of this Act to authorize the private ownership of salmon hatcheries by qualified nonprofit corporations for the purpose of contributing, by artificial means, to the rehabilitation of the state's depleted and depressed salmon fishery. The program shall be operated without adversely affecting natural stocks of fish in the state and under a policy of management which allows reasonable segregation of returning hatchery-reared salmon from naturally occurring stocks."[8]

Salmon fishery restoration efforts came in response to statewide annual salmon harvests of just 22 million fish in 1973 and 1974, among the lowest catches since 1900 (Figure 1). The FRED Division, PNP hatcheries, and other agencies such as the US Forest Service, engaged in a variety of activities to increase salmon production. New hatcheries were built to raise salmon. Fish ladders were constructed around barriers to provide adult salmon access to new spawning and rearing areas. Lakes with waterfall outlets too high for adult salmon to ascend were stocked with salmon fry. Log jams were removed in streams to enable returning adults to reach spawning areas. Nursery lakes were fertilized to increase the available feed for juvenile salmon. A combination of favorable environmental conditions, limited fishing effort, abundance-based harvest management, habitat improvement and protection, and hatchery production gradually

[8] Alaska Legislature 1974. An act authorizing the operation of private nonprofit salmon hatcheries. Section 1, Chapter 111, SLA 1974, in the Temporary and Special Acts.

boosted salmon catches, with recent commercial salmon harvests (2008–2017) annually averaging 181 million fish[9]- an increase of 800% from the 1973 and 1974 harvests.

ALASKA'S HATCHERIES

The state of Alaska funded the construction of 18 hatcheries between 1969 and 1983 with general obligation bonds. The hatcheries were initially operated by ADF&G FRED Division. PNP corporations began building hatcheries in the mid-1970s. In 1988, the legislature passed an act that allowed state hatcheries to be operated by PNP hatchery corporations (AS 16.10.480). Since then, all state-owned commercial production hatcheries still in operation have been contracted to PNP hatchery operators. The PNP corporations hold their own hatchery permits[10] to operate the facilities and are responsible for funding hatchery operations.

Altogether, a total of 28 production hatcheries and 1 research hatchery are currently operating in Alaska (Figure 2, Tables 30-32). Of these, PNPs operate 25 of the hatcheries: 11 facilities owned by the state and 14 owned by PNPs. ADF&G Division of Sport Fish operates two additional state-owned hatcheries in Anchorage and Fairbanks. The Metlakatla Indian Community on the federal Annette Islands Reserve south of Ketchikan operates Tamgas Creek Hatchery. The National Marine Fisheries Service operates a federal research hatchery at Little Port Walter in lower Chatham Strait in Southeast Alaska.

An additional five PNP hatchery facilities are permitted but currently inactive: Gunnuk Creek Hatchery (Kake), Perry Island Hatchery (Prince William Sound), Bell Island Hatchery (Southern Southeast Alaska), Eklutna Hatchery (Eklutna) and Haines Projects Sites (Haines).

ALASKA'S HATCHERY PROGRAMS

In Alaska, salmon may be propagated under only two types of permits – a PNP salmon hatchery permit and a fish resource permit. Fish resource permits have a scientific or educational objective. Fish resource permits are issued for small-scale production, including salmon research, feasibility studies for potential PNP hatchery production, vocational programs, and the extensive salmon in the classroom program conducted in schools across the state (Table 17). PNP hatchery permits have a fishery enhancement objective, and are issued for production-scale hatcheries.

The purpose of PNP salmon hatcheries is to supplement the harvest of natural stocks for public benefit. Hatcheries are efficient at improving survival from the egg to juvenile stage compared to survival in the wild. For example, estimates for pink salmon *Oncorhynchus gorbuscha* egg-to-fry survival in 2 Southeast Alaska creeks ranged from less than 1% to 22%, with average survivals from 4% to 9% (Groot and Margolis 1991). Under hatchery conditions, egg to fry survival is usually 90% or higher.

Alaska hatcheries do not grow fish to adulthood, but instead incubate fertilized eggs and release resulting progeny as juveniles (i.e., fry or smolt). Juvenile salmon imprint on the release site and return to the release location as mature adults. By state policy, hatcheries generally use stocks taken from close proximity to the hatchery so that any straying of hatchery returns will have similar genetic makeup as the stocks from nearby streams. In addition, Alaska hatcheries do not

[9] http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisherySalmon.exvesselquery

[10] An exception to this is the Crystal Lake Hatchery in Petersburg, which is owned by the state, operated by the Southern Southeast Regional Aquaculture Association, and has no hatchery permit.

selectively breed. Large numbers of broodstock are used for gamete collection to maintain genetic diversity, without selection for size or any other characteristic.

Hatchery production is limited by freshwater capacity and freshwater rearing space. Soon after emergence from the egg, pink and chum salmon *O. keta* fry can be transferred from fresh water to salt water and released.

Most Chinook *O. tshawytscha*, sockeye *O. nerka*, and coho *O. kisutch* salmon stocks must spend a year or more in fresh water while fry develop to the smolt stage and can tolerate salt water, which makes them much more expensive to rear. They require a higher volume of fresh water, a holding area for freshwater rearing, and feeding.

There are economic tradeoffs between the costs of production versus the value of fish at harvest. Although Chinook, sockeye, and coho salmon usually garner higher prices per pound at harvest, chum and pink salmon are more economical to rear and generally provide a higher economic return on production costs.

Pink salmon have the shortest life cycle of Pacific salmon (2 years), provide a quick return on investment, and provide the bulk of Alaska hatchery production. From 2008 to 2017, pink salmon accounted for an annual average 74% of Alaska hatchery salmon returns by number, followed by chum (20%), sockeye (4%), coho (2%) and Chinook salmon (<1%; Figure 3).

ALASKA HATCHERY POLICIES

Numerous Alaska mandates and policies for hatchery operations were specifically developed to minimize potential adverse effects to wild stocks. Through a comprehensive permitting and planning process, PNP hatchery operations are subject to continual review by ADF&G staff.

The ADF&G *Genetic Policy* (Davis et al. 1985) sets out restrictions and guidelines for stock transport, protection of wild stocks, and maintenance of genetic variance. Policy guidelines include banning importation of salmonids from outside the state (except US/Canada transboundary rivers); restricting transportation of stocks between the major geographic areas in the state (Southeast, Kodiak Island, Prince William Sound, Cook Inlet, Bristol Bay, Arctic-Yukon-Kuskokwim, and Interior); requiring the use of local broodstock; maintaining genetic diversity by use of large populations of broodstock collected across the entire run and without regard to any physical trait such as size; and limiting the number of hatchery stocks derived from a single donor stock.

The Alaska Fish Health and Disease Control Policy (5 AAC 41.080) is designed to protect fish health and prevent spread of infectious disease in fish and shellfish. The policy is used by ADF&G fish pathologists to review hatchery plans and permits.

The Alaska Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), the Policy for the Management of Mixed-Stock Salmon Fisheries (5 AAC 39.220), the Salmon Escapement Goal Policy (5 AAC 39.223), and local fishery management plans (5 AAC 39.200) guide fisheries management for the protection of wild salmon stocks. These regulations require fishery managers to consider the interactions of wild and hatchery salmon stocks when reviewing hatchery management plans and permits.

ALASKA HATCHERY PERMITTING AND PLANNING

Regional aquaculture associations (RAAs) exist for many of Alaska's salmon planning regions. Where RAAs operate hatcheries, they also form PNP corporations, and have a board of directors whose membership is composed of commercial salmon fishing permit holders and representatives of other stakeholder groups such as sport and subsistence harvesters, processors, and city officials. PNP boards establish hatchery production goals and oversee business operations.

Salmon fishery enhancement efforts are guided by comprehensive salmon plans for each region. These plans are developed by Regional Planning Teams (RPT). RPTs are composed of six voting members: three from ADF&G and three appointed by the RAA's board of directors. Plans are developed in a public process based on the needs of fishery user groups and communities of the region. The plans can be periodically reviewed and updated to meet changing needs.

Commercial salmon fishing permit holders may vote to impose a salmon enhancement tax on sale of salmon in their region. These funds are collected by the state and distributed to the RAA to finance hatchery operations or other enhancement and rehabilitation activities. Independent PNP corporations[11], not affiliated with an RAA, also operate hatcheries in several areas of the state. The RAAs and independent PNP hatchery organizations may contract processors to harvest hatchery salmon in designated areas[12] to pay for operations. Such harvests are called *cost-recovery* fisheries, in contrast to *common property* fisheries, which are fisheries open to all qualified commercial, subsistence, personal use, and sport harvesters.

Each hatchery is permitted separately. Acquisition of a hatchery permit is an extensive process (5 AAC 40.110–40.230). A hatchery application consists of production goals, hatchery site information, water flow, water chemistry data, land ownership, water rights, hatchery design, initial proposed broodstock for the hatchery, and a financial plan. ADF&G staff draft a fishery management feasibility analysis for the proposed hatchery. ADF&G staff review the application with the applicant, who addresses any deficiencies. The application is then provided for public review.

The RPT reviews hatchery permit applications within their region to determine if the hatchery operation is compatible with the regional comprehensive salmon plan. The RPT also makes a recommendation on the permit to the ADF&G commissioner.

Following review by the RPT, a public hearing for the hatchery permit is held. The hatchery applicant describes the proposed hatchery plan, and ADF&G staff present the basic management plan (described below) for the hatchery. Public testimony and questions follow the presentations. ADF&G must respond in writing to any specific objections to the proposed permit.

The application is then sent to the ADF&G commissioner for final review. By regulation (5AAC 40.220) the commissioner's decision is based on consideration of (1) the suitability of the site for making a reasonable contribution to the common property fishery, not adversely affecting management of wild stocks, and not requiring significant alterations of traditional fisheries; (2) the operation of the hatchery makes the best use of the site's potential to benefit the common property fishery; (3) the harvest area size at the hatchery is sufficient in size to provide a segregated harvest of hatchery fish of acceptable quality for sale; (4) proposed donor sources can

[11] Independent PNP operators do not receive salmon enhancement tax funds; only RAAs receive the tax funds.
[12] Designated areas are called special harvest areas (SHA).

meet broodstock needs for the hatchery for the first cycle; (5) water sources for the hatchery are secured by permit and are of appropriate quality and quantity; and (6) the hatchery has a reasonable level of operational feasibility and an acceptable degree of potential success.

Hatchery permits cannot be transferred. When hatcheries change operators, a new permit must be issued by the process described above. The Deer Mountain Hatchery in Ketchikan, for example, changed operators in 2017, and is described in the "Hatchery Operations Changes" section later in this document.

Alaska PNP hatcheries operate under four documents: PNP hatchery permit with basic management plan (BMP), annual management plan (AMP), fish transport permit (FTP), and annual report. The hatchery permit and basic management plan, annual management plan, and fish transport permit must be approved by the ADF&G commissioner.

The hatchery permit authorizes operation of the hatchery and specifies the species permitted to be produced. The BMP, an addendum to the hatchery permit, specifies the maximum number of eggs of each species that a facility can incubate, the authorized release locations, and may identify stocks for broodstock. Hatchery permits remain in effect unless relinquished by the permit holder or revoked by the ADF&G commissioner. Hatchery permits and BMPs may be amended by the permit holder through a permit alteration request (PAR). Requested changes are reviewed by the RPT and ADF&G staff and recommendations are sent to the ADF&G commissioner for consideration.

The AMP outlines operations for the current year and is written cooperatively among ADF&G and PNP hatchery staff. Typically, AMPs include the current year's egg-take goals, juvenile releases and remaining inventory, expected adult returns, harvest management plans, FTPs (described below) required or in place, production strategies, and evaluation plans. The AMP must be consistent with the hatchery permit and BMP. Final consideration of the plan is made by the ADF&G commissioner.

An FTP is required for egg collections, transports, and releases. The FTP authorizes specific activities described in the hatchery permit and management plans including broodstock sources, gamete collections, and release sites, and must be consistent with the PNP Permit and BMP. FTP applications are reviewed by the ADF&G fish pathologist, fish geneticist, regional resource development biologist, and other ADF&G staff as delegated by the ADF&G commissioner. Reviewers may suggest conditions for the FTP. Final consideration of the application is made by the ADF&G commissioner. An FTP is issued for a fixed time period. When an FTP is renewed or amended, the FTP application goes through the same process as the original FTP, providing an ongoing review of all PNP hatchery projects over time.

Each hatchery is required to submit an annual report documenting broodstock collection, egg take numbers, releases, returns, and projected run sizes for the following year. Information from all hatchery annual reports is compiled into this annual report to the Alaska Legislature.

ADF&G Sport Fish hatcheries in Anchorage and Fairbanks produce fish specifically for sport fisheries in Cook Inlet, Resurrection Bay, Prince William Sound, and the Interior. The hatcheries are primarily funded from the federal excise tax on fishing-related equipment under the Dingell-Johnson Sport Fish Restoration Act. The funding, policy, and planning for these hatcheries is described in the current Statewide Stocking Plan

(http://www.adfg.alaska.gov/index.cfm?adfg=fishingSportStockingHatcheries.stockingPlan).

FISHERIES MANAGEMENT

The Alaska state constitution, statutes and regulations mandate that ADF&G manage salmon returns for wild stock conservation. This means that escapement goals are established for important salmon systems, and the fisheries are managed to meet these goals.

Wild and hatchery returns are managed to meet wild stock escapement goals. In some cases, one species of hatchery fish returns at the same time as other, more predominant, wild stock species, and the hatchery fish are harvested as incidental catch. For example, in Southeast Alaska, hatchery-produced chum salmon return across the timing of both sockeye and pink salmon and are caught during fisheries that are managed for sockeye or pink salmon. Chum salmon that are not harvested in the sockeye and pink salmon fisheries return to isolated release sites in bays where they can be harvested with minimal impact to wild stocks.

For some fisheries, both hatchery and wild stocks of the same species return simultaneously. In Prince William Sound, hatchery stocks of pink salmon return at the same time as the wild pink salmon stocks they are derived from. All hatchery-produced pink salmon are otolith marked. Otoliths are read from samples of fish collected from the commercial fishery to apportion the catch between hatchery and wild stocks during the season so that managers can manage for the wild stock return.

In the Kenai River, releases of hatchery sockeye salmon are limited to a small fraction of the wild populations so that they do not unduly influence management.[13]

In Southeast Alaska, a percentage of both hatchery and wild stocks of coho and Chinook salmon are coded-wire-tagged. Tags are collected and read during the season so that managers can assess the wild and hatchery components of the return to assess wild stock abundance. Hatchery stocks of pink and chum salmon are otolith-marked as well.

In Kodiak, hatchery chum and sockeye salmon stocks are otolith marked. Hatchery-produced pink salmon are not marked but return to the release site on Afognak Island where there are no substantial wild pink salmon stocks in the area. All pink salmon fishery openings in this area target hatchery-produced salmon.

HATCHERY CONTRIBUTION TO ALASKA FISHERIES

The hatchery return is composed primarily of the harvest in the fisheries and the broodstock from which eggs are collected for hatchery production. Most (95%) of the hatchery harvest occurs in the commercial common property fisheries (78%) and the cost recovery fisheries (17%), which collectively make up the commercial harvest. Sport, personal use, and subsistence fisheries harvest about 1% of the return. The remainder (4%) is broodstock, escapement, and estimated unharvested returns (Figure 8).

[13] Pat Shields, ADF&G Division of Commercial Fisheries, Fishery Biologist III, Soldotna, personal communication.

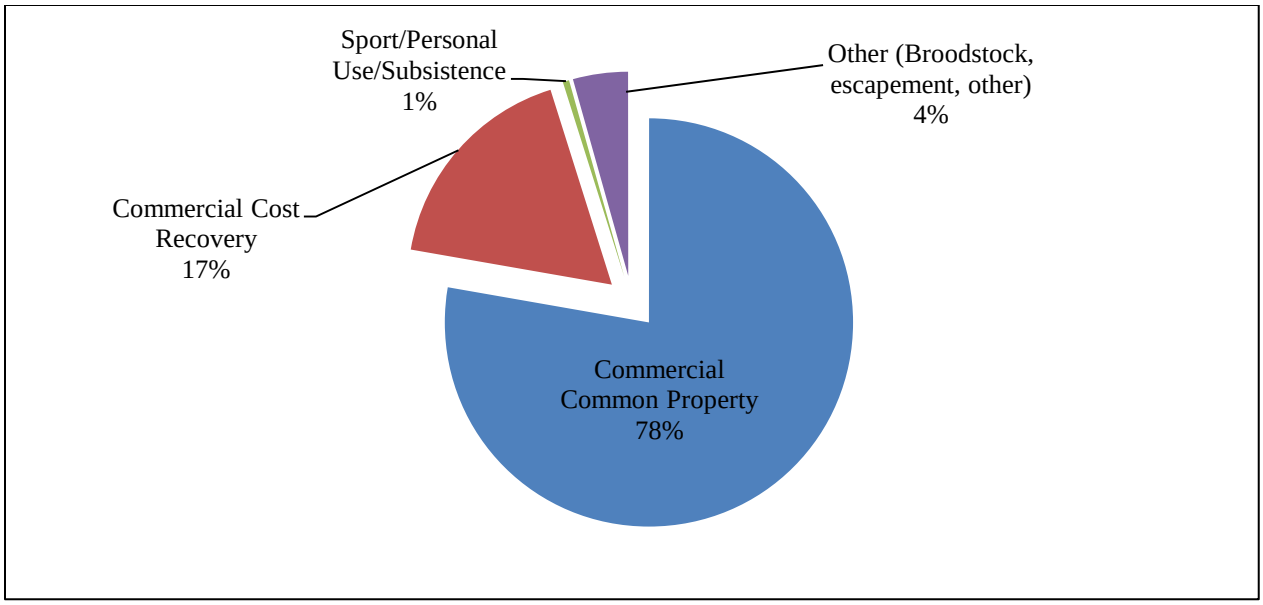

Figure 8.–Alaska salmon hatchery returns in numbers of fish by return category, 2008–2017 average.

Over the past decade (2008–2017), hatcheries contributed an annual average of about one-third of the total Alaska commercial salmon harvest. By species, Alaska hatchery fish contributed an annual average 66% of the chum, 40% of the pink, 23% of the coho, 20% of the Chinook, and 5% of the sockeye salmon in the total commercial harvest over the decade (Figure 9).

Although hatchery production may make up a majority of the harvest of a species in a region—chum salmon in Southeast Alaska or pink salmon in Prince William Sound, for example—this does not mean that hatchery production comes at the expense of wild stock production. Hatchery production grew at a pace that allowed fishery managers to assess the returns, understand how to manage for wild stocks in the presence of hatchery returns, and provide for adequate escapement of wild stocks. The development of otolith marking[14] allowed all the pink and chum salmon produced in Southeast Alaska and Prince William Sound to be marked so that hatchery and ADF&G staff can estimate the harvest composition inseason and manage for wild stocks.

[14] Otolith marking is done by alternating the temperature of the water during egg incubation, which lays down regular marks on the fish ear bone (the otolith). Wild fish usually do not have the otolith markings. Otoliths can be removed from fish harvested and hatchery and wild stock contributions to the catch estimated.

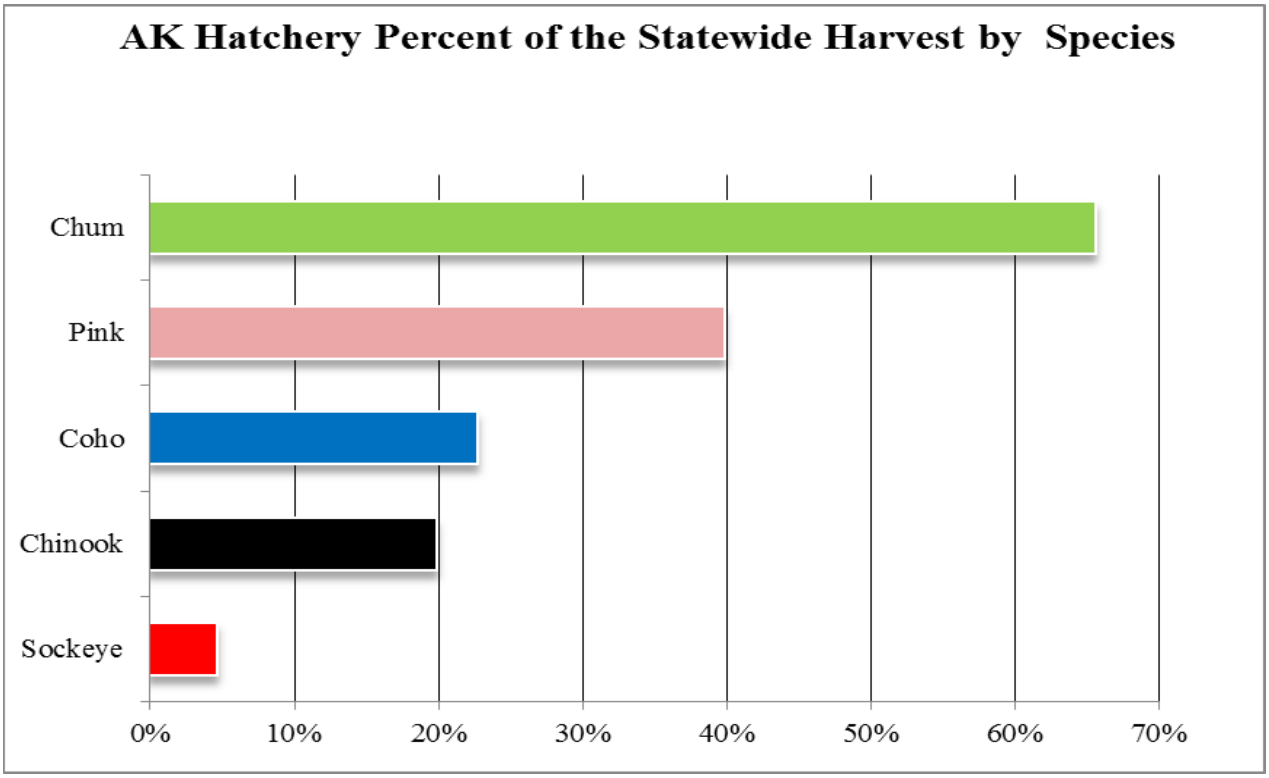

Figure 9.–Alaska hatchery contribution to the statewide commercial fishery harvest, by species, 2008–2017 average.

As fisheries management has adapted to hatchery production, so has the fishing fleet and processing sector. Most hatchery production provides the fishing fleet with more time and area to fish. When wild stock production provides surplus fish for harvest, fishermen may target those fish during open fishing periods in traditional fishing areas. When those fishing periods close, fishermen can move to the hatchery release sites that remain open and continue fishing there until the wild stock areas reopen. In some seasons, fishermen may exclusively target hatchery fish in the terminal harvest areas, even when wild stock areas are open, which may reduce harvest rates on wild stocks.

A measure of hatchery program success is achieving wild stock escapement goals in regions of the state where fisheries management is most impacted by hatchery production—Southeast Alaska and Prince William Sound. ADF&G manages salmon stocks to meet spawning escapement goals. Where escapements chronically fall short of meeting goals (i.e., over 4 to 5 years), ADF&G may recommend a *stock of concern* designation for those underperforming salmon stocks. In 2016, there were 14 stocks of concern in the state (Munro and Volk 2016). None of these stocks are located in either Prince William Sound or Southeast Alaska, indicating that wild stock escapements are being met in these regions over time.

A few wild stocks do bear mention in Southeast Alaska and Prince William Sound, however. Coghill Lake sockeye salmon escapement has been a concern for Prince William Sound fisheries managers in recent years. Although the total run to Coghill Lake (catch plus escapement) was estimated to be well above escapement needs each year between 2013 and 2016, escapements to

the lake were below the lower bound of the escapement goal in 2013, 2015 and 2016. Although no fishery openings occurred to target Coghill Lake sockeye salmon in any of these years, Coghill Lake sockeye salmon were harvested along their migration routes in fisheries targeting primarily hatchery returns. Managers were more restrictive in the amount of fishing area opened along the Coghill Lake sockeye salmon migration corridors in 2017, and were successful in achieving the escapement goal. A permit alteration submitted by PWSAC in 2017 to increase chum salmon releases from Wally Noerenberg Hatchery was suspended by PWSAC because of the management concerns for Coghill Lake sockeye salmon.

In Southeast Alaska, several Chinook salmon stocks will likely be listed as stocks of concern in 2018 because escapements have not met minimum goals for several years. Some of these wild stocks are harvested during fisheries managed for Alaska hatchery Chinook salmon. Chinook salmon fisheries were closed in several areas in the region in 2017 to conserve these wild stocks, and more closures are planned in 2018.

Alaska's salmon fisheries are, overall, among the healthiest in the world. The largest returns of wild stocks have occurred since the 1980s alongside the PNP hatchery program returns (Figure 1), with three of the highest wild stock harvests in the past four seasons. The 2013 season was a record harvest overall, with the 283 million fish commercial harvest composed of the second highest catch for wild stocks (176 million fish) and the highest catch for hatchery stocks (107 million fish) in Alaska's history. The 2015 season was the second highest harvest overall, with a 263 million fish commercial harvest composed of the fourth highest catch for wild stocks (170 million fish) and the second highest catch for hatchery stocks (93 million fish). The 2017 season was the fourth highest harvest on record (225 million fish), with the third highest wild stock harvest (175 million fish) on record. To put the magnitude of wild stock production in historical perspective, the hatchery harvests *alone* in both 2013 and 2015 were greater than the entire statewide commercial salmon harvests in every year prior to statehood except for 7 years (1918, 1926, 1934, 1936, 1937, 1938 and 1941; Figure 1).

2017 HATCHERY PRODUCTION

During the early years of modern hatchery production, egg collections grew steadily from the late 1970s until about 1995, when production leveled off (Figure 10). From 1995 to 2016, annual egg collections have ranged from about 1.6 to 2 billion eggs (Table 18). In 2017, a record 2.2 billion eggs were collected (Table 2 and Table 8).

Since 1995, annual releases have ranged from about 1.4 to 1.7 billion juveniles (Figure 10; Tables 24). About 1.6 billion juvenile salmon were released in 2017 (Table 3), which was the third consecutive year of declining releases (Table 18, Figure 10). Most of the 2017 releases were from pink and chum salmon eggs collected in 2016, and the remainder from Chinook, sockeye, and coho salmon eggs collected in 2015. Releases are expected to increase in coming years following the increased egg takes in recent years.

About 50 million adult salmon returned to Alaska hatcheries in 2017 (Table 4 and Table 9), which was an increase from the record low return of 27 million fish in 2016 but below the recent 10 year (2008-2016) average return of 67 million fish (Figure 10; Table 18).

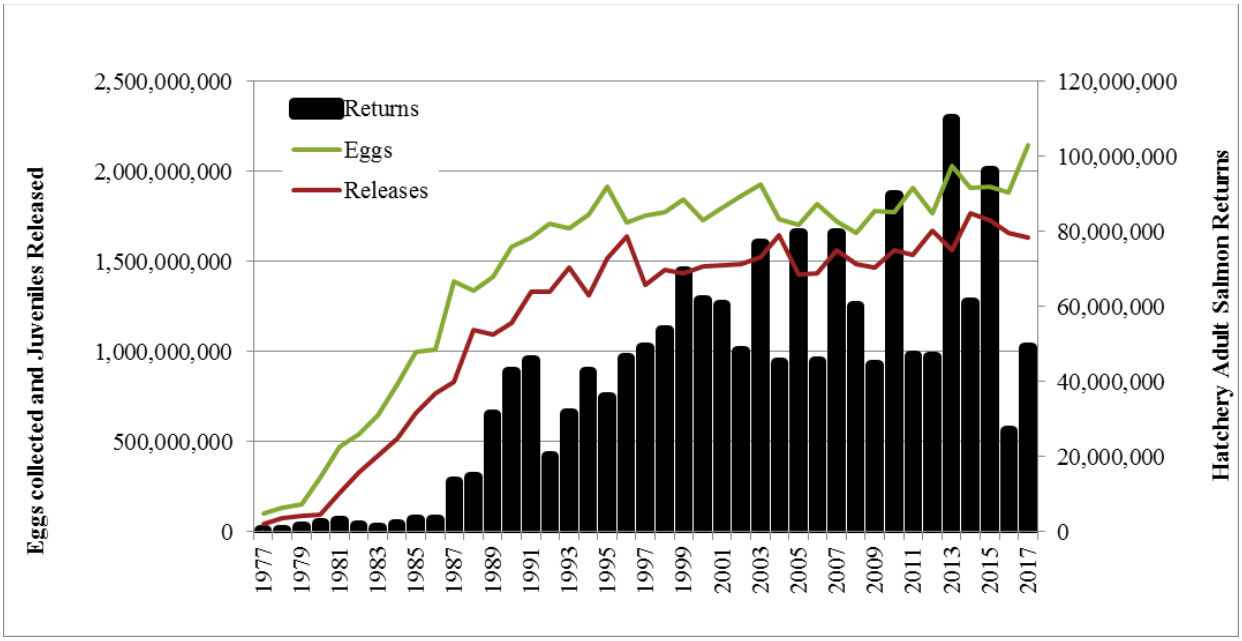

Figure 10.–Total salmon eggs collected, juveniles released and adult returns for Alaska salmon hatchery programs, 1977–2017.

Note: The returns are from previous year's releases, and not the return by brood year. For example, the 2017 returns are from fish released in 2016 and earlier, depending on species.

Pink and chum salmon are the predominant species produced by Alaska hatcheries, followed by sockeye, coho, and Chinook salmon (Figure 11, Tables 19-23). As stated earlier, pink and chum salmon are the most economical to raise because fry can migrate to saltwater soon after hatching, whereas sockeye, coho and Chinook salmon typically require a year or more of freshwater rearing and feeding.

2017 HATCHERY HARVEST

Alaska hatchery fish comprised 21% of the total commercial harvest in 2017, which is the lowest contribution since 1995 (Figure 11, Table 24). The lower hatchery contribution was due in large part to the strong wild stock return in 2017, which was the third highest wild stock commercial harvest in Alaska history (Figure 1).

In 2017, Alaska's statewide chum salmon harvest was the highest, and pink salmon harvest the fourth highest, on record. Record returns were recorded in several areas of the state where there is no hatchery production, as well. Norton Sound had a record return of coho salmon, and Chignik and the Alaska Peninsula had record returns of pink salmon.[15] In Bristol Bay, the 2017 harvest was the third highest harvest of sockeye salmon since 1975, and is the third consecutive year of strong harvests, and follows the fourth highest harvest in 2016 and sixth highest harvest in 2015.[16]

[15] http://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr10032017.

[16] http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_grossearnings_byarea, accessed 1/31/2018 and http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/865497019.pdf.

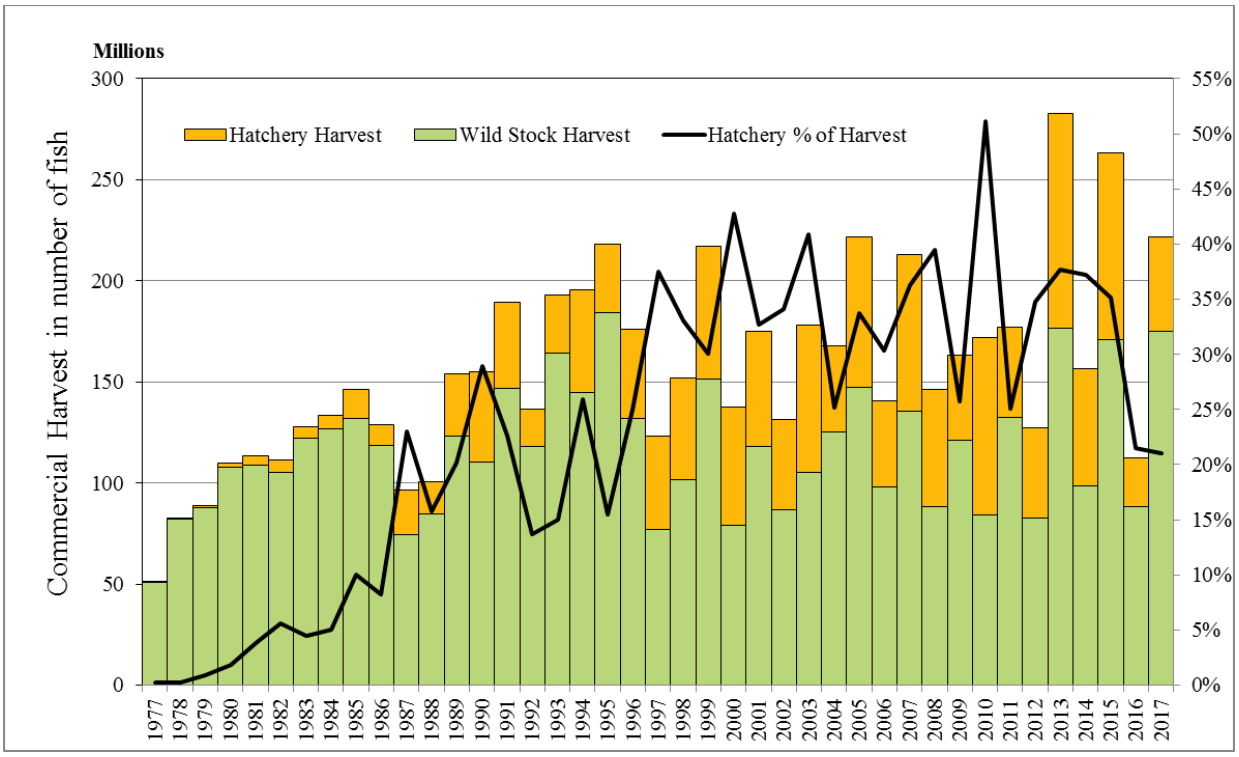

Figure 11.–Alaska commercial harvest of hatchery stocks, wild stocks and the hatchery contribution to the harvest, during the modern hatchery era in Alaska, 1977 to 2017.

In 2017, Alaska hatchery production was harvested primarily in the common property commercial fisheries, followed by the cost-recovery commercial harvest, which funds hatchery operations (Figure 12). Sport, personal use, and subsistence harvests are particularly important to harvesters in accessible locales such as Ketchikan, Juneau, Petersburg, Sitka, Valdez, Kodiak, Resurrection Bay, and Cook Inlet.

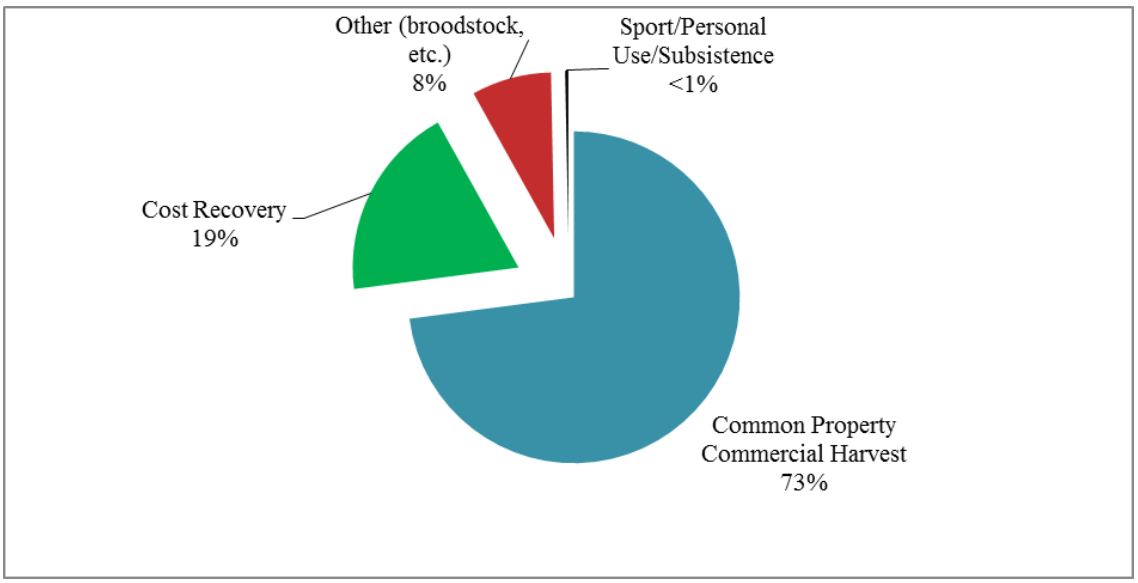

Figure 12.–Alaska salmon hatchery returns in numbers of fish by return category, 2017.

About 47 million hatchery-produced salmon were harvested in the commercial fisheries in 2017, with an estimated exvessel value of $162 million (Tables 5 and 6). Chum salmon made up 57% of the exvessel value of the commercial hatchery harvest, followed by pink salmon (28%), sockeye salmon (10%), coho salmon (3%) and Chinook salmon (2%) (Figure 5).

First wholesale value for hatchery fish totaled an estimated $332 million in 2017. Chum salmon made up 52% of the total value of the commercial hatchery harvest, followed by pink salmon (39%), sockeye salmon (4%), coho salmon (4%), and Chinook salmon (1%; Figure 13).

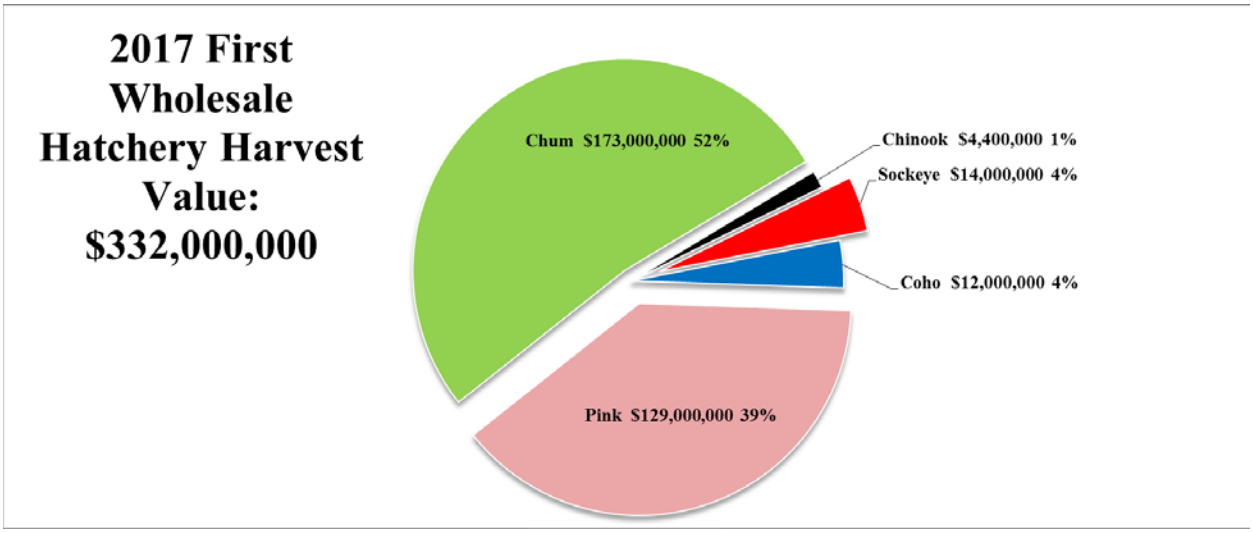

Figure 13.–Estimated first wholesale value of the commercial harvest, with the value by species and the percent of the total hatchery value for each species.

REGIONAL HATCHERY HARVEST

By region, Prince William Sound produced most (69%) of the hatchery fish in 2017, followed by Southeast Alaska (24%), Kodiak (6%) and Cook Inlet (1%) (Figure 6; Tables 11– 15). The Fairbanks and Anchorage ADF&G hatcheries provided arctic char, rainbow trout, coho salmon, and Chinook salmon for stocking numerous Interior and Cook Inlet region waters for sport fishing (Table 16).

HATCHERY PRODUCTION BY SPECIES (FIGURE 14)

Pink Salmon

Prince William Sound facilities produce the majority of hatchery pink salmon in the state. The Prince William Sound purse seine fishery, which harvests primarily pink salmon, was closed in 1972 and 1974, with minimal fishing in 1973. Fishermen and processors were anxious to get hatchery production on line quickly to aid in the recovery of the fishery,[17] and pink salmon were both a targeted species and provided the quickest turnaround from egg take to harvest. Pink

[17] Prince William Sound Regional Fisheries Planning Team. 1983. Prince William Sound comprehensive salmon plan, Phase I: 20 year plan (1983-2002). Unpublished report. Available from Mark Stopha, ADF&G fishery biologist, Juneau.

salmon were, and continue to be, the most abundant species in Prince William Sound, with historic infrastructure in place for processing pink salmon.

Chum Salmon

Southeast Alaska facilities produce the majority of chum salmon. Wild chum salmon runs return during the same period as sockeye and pink salmon runs, and chum salmon are the least abundant of these three species. During the development of the hatchery program in Southeast Alaska in the early 1980s, fishermen, processors, and ADF&G considered that chum salmon could be produced in hatcheries and that returns would be caught incidentally in the fisheries managed for pink or sockeye salmon. Hatchery release sites were selected so that chum salmon not caught in the sockeye and pink salmon fisheries could be caught at the release sites with minimal impact to wild stocks.

Sockeye Salmon

Prince William Sound facilities produce the majority of hatchery sockeye salmon. The largest returns are to Main Bay Hatchery, where a sockeye salmon smolt program was developed to enhance the sockeye salmon drift and set gillnet fisheries on the west side of Prince William Sound to balance the pink salmon fishery enhancement that primarily benefits the seine fleet. Sockeye salmon are also produced from streamside incubators along the Gulkana River (a tributary of the Copper River); these fish are caught primarily during the Copper River commercial drift gillnet, personal use dipnet, and subsistence fish wheel harvests. The streamside incubators were established by ADF&G in 1973 as mitigation for spawning habitat impacts from road construction (Stopha 2013).

Coho Salmon

Southeast Alaska facilities produce the majority of hatchery coho salmon. Southeast Alaska has the largest coho salmon commercial fishery in the state, accounting for about 54% of the statewide coho salmon harvest in 2017.[18] Returning coho salmon are available to commercial hook and line salmon trollers in Southeast Alaska—the only region where commercial trolling occurs—from July through September. This is unlike other regions of the state, where coho salmon are commercially fished with net gear and targeted only during a few weeks during the fall return.

Chinook Salmon

Most Chinook salmon hatchery production also occurs in Southeast Alaska. Chinook salmon hatchery production was largely developed after the Pacific Salmon Treaty was signed in 1985. The treaty included funding for Chinook salmon hatchery production in Southeast Alaska to mitigate harvest concessions made in the treaty. Chinook salmon are targeted year-round by the commercial troll and sport fleets, and are harvested in the summer months by the net fleets.

[18] Source: http://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/2017_preliminary_salmon_summary_table.pdf.

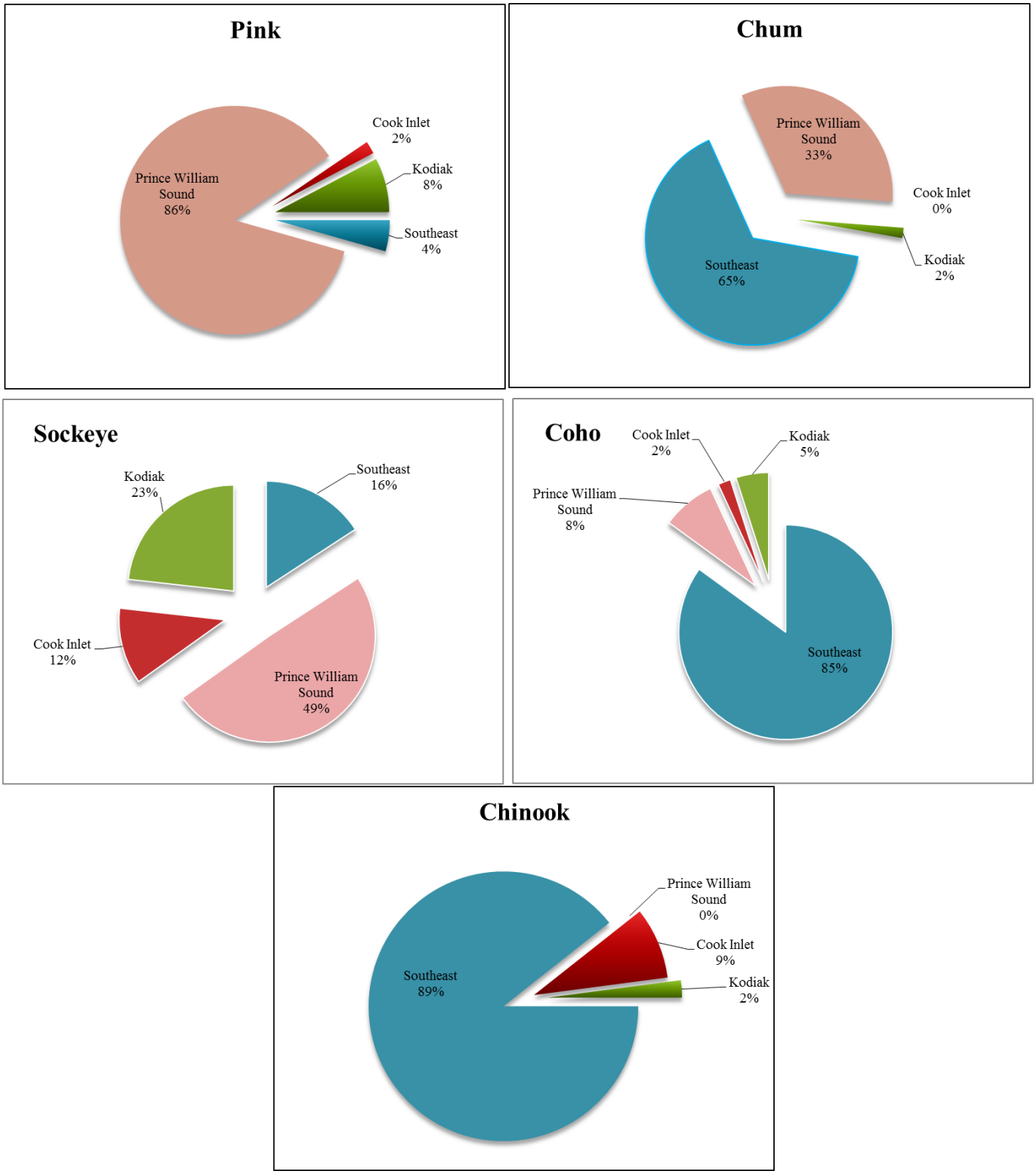

Figure 14.–Percent by region of total statewide harvest of hatchery-produced fish by species, 2017.

HATCHERY CONTRIBUTION BY REGION (TABLES 5 AND 6, FIGURE 15)

Southeast Alaska

The 7.9 million hatchery-produced salmon harvested in the commercial common property fishery in Southeast Alaska accounted for 18% of the total common property commercial catch in the region in 2017. By species, hatcheries contributed an estimated 83% of the chum, 19% of the Chinook, 17% of the coho, 12% of the sockeye, and 2% of the pink salmon in the common property commercial fisheries. An additional 4 million salmon were harvested for cost recovery. The exvessel value of hatchery fish to the commercial fishery (including cost recovery) was about $78 million, or 48% of the total exvessel value for commercial salmon fisheries in the region.

Coho salmon contributed the most hatchery fish to the sport, personal use, and subsistence fisheries (34,000 fish; Table 13), followed by Chinook salmon (7,000 fish, Table 11), chum salmon (5,000 fish, Table 15) and sockeye salmon (4,000 fish; Table 12).

Prince William Sound

The 28.5 million hatchery-produced salmon harvested in the Prince William Sound commercial common property fishery accounted for 57% of the total common property commercial catch in the region in 2017. By species, hatcheries contributed an estimated 85% of the chum, 55% of the pink, 51% of the sockeye, and 3% of the coho salmon in the common property commercial fisheries. An additional 3.4 million salmon were harvested for cost recovery. The exvessel value of hatchery fish to the commercial fishery (including cost recovery) was about $76 million, or 60% of the total exvessel value for commercial salmon fisheries in the region.

Coho salmon contributed the most hatchery fish to the sport, personal use, and subsistence fisheries (24,000 fish; Table 13), followed by sockeye salmon (13,000 fish; Table 12) and pink salmon (9,400 fish; Table 14).

Cook Inlet

The 146,000 hatchery-produced salmon harvested in the Cook Inlet commercial common property fishery accounted for 3% of the total catch in the region in 2017. By species, hatchery contribution was an estimated 5% of the pink and 2% of the sockeye salmon in the common property commercial fisheries in 2017. An additional 202,000 salmon were harvested for cost recovery. The exvessel value of hatchery fish to the commercial fishery (including cost recovery) was about $1.6 million, or 5% of the total exvessel value for commercial salmon fisheries in the region.

Sockeye salmon contributed the most hatchery fish to the sport, personal use, and subsistence fisheries (14,000 fish; Table 12), followed by coho salmon (13,000 fish; Table 13), pink salmon (2,500 fish; Table 14) and Chinook salmon (1,900 fish; Table 11).

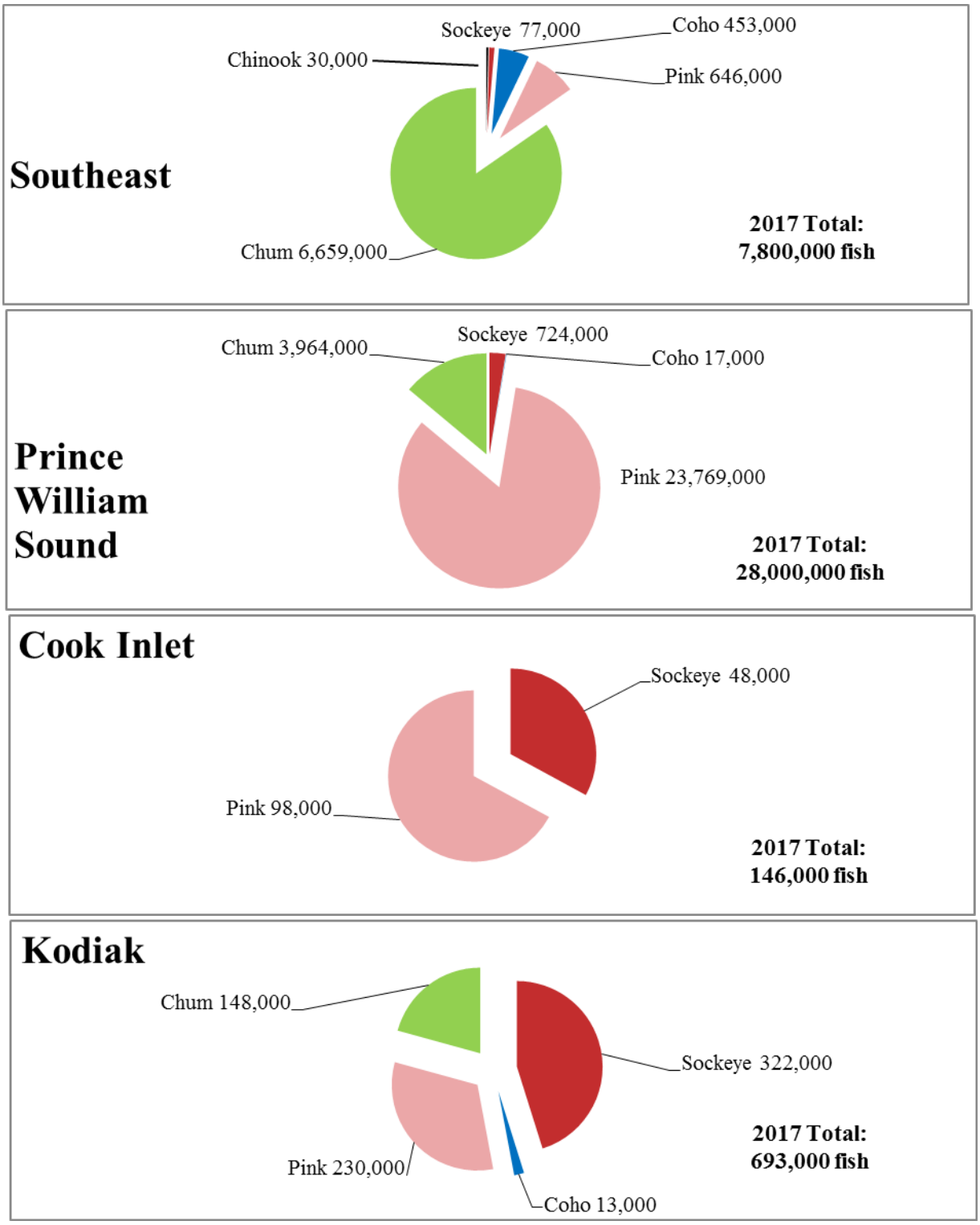

Figure 15.–Commercial common property hatchery harvest in numbers of fish by region, 2017.

Kodiak

The 693,000 hatchery-produced salmon harvested in the Kodiak commercial common property fishery accounted for 2% of the total catch in 2017. By species, hatchery contribution was an estimated 8% of the chum, 1% of the pink, 12% of the sockeye, and 4% of the coho salmon harvest in the common property commercial salmon fisheries. An additional 1.9 million salmon were harvested for cost recovery. The exvessel value of hatchery fish to the commercial fishery (including cost recovery) was about $5.5 million, or 10% of the total exvessel value for commercial salmon fisheries in the region.

Coho salmon (15,000 fish; Table 13) contributed the most hatchery fish to the sport, personal use, and subsistence fisheries, followed by Chinook salmon (1,300 fish; Table 11) and sockeye salmon (1,000 fish; Table 12).

VALUE OF THE HATCHERY HARVEST

The salmon marketplace has changed substantially since the hatchery program began. As the first adult salmon were returning to newly built hatcheries in 1980, Alaska accounted for nearly half of the world salmon supply, and larger harvests in Alaska generally meant lower prices to fishermen. Some believed the increasing hatchery production in some parts of the state was depressing salmon prices in others (Knapp et al. 2007). By 1996, rapidly expanding farmed salmon production surpassed the wild salmon harvest for the first time (Knapp at al. 2007) and wild salmon prices declined precipitously as year-round supplies of fresh, high quality farmed salmon flooded the marketplace in the U.S., Europe, and Japan. The Alaska fishing industry responded to the competition by improving fish quality, implementing intensive marketing efforts to differentiate Alaska salmon from farmed salmon, and moving part of the processing sector to China. By 2004, these efforts paid off through increasing demand and prices.

Today, Alaska typically accounts for just 12–15% of the global supply of salmon (ASMI 2011). Alaska's diminished influence on world salmon production means that Alaska's harvest volume has less effect on world salmon prices. The value of the hatchery harvest generally increased from 2004 to 2013, despite large fluctuations in harvest volume (Figure 4), then declined from 2014 to 2016 years due to factors including a strong dollar and political action in Russia (ASMI 2015).

In 2017, the hatchery value rebounded. The 2017 season was a particularly good year for chum salmon, which comprise the second largest return to Alaska's hatcheries after pink salmon. Despite a record chum salmon harvest in Alaska, the declining Japanese harvests, little backlog of fish in US cold storages, and higher priced farmed salmon[19] supported high exvessel prices for chum salmon to fishermen in much of the state (Figure 16), resulting in the second highest exvessel value for chum salmon ($129 million) since 1975.[20]

[19] http://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr10032017

[20] https://www.thecordovatimes.com/2017/10/03/fish-factor-chum-salmon-record-catches-2017.

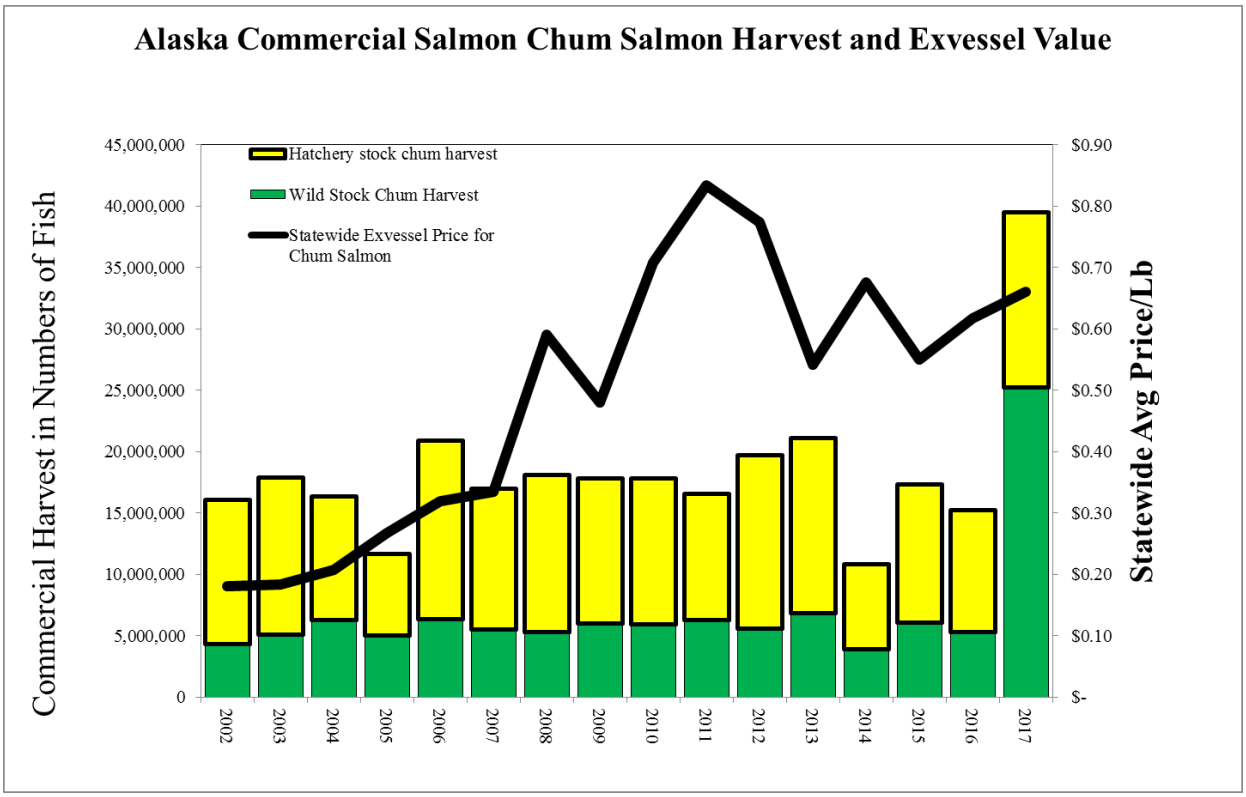

Figure 16.–Alaska chum salmon harvest of wild and hatchery stocks and exvessel price, 2002 to 2017.

First wholesale value[21] is a better measure of the value of fish to the state since it includes both the money paid to harvesters (exvessel value) and the costs of processing before sale to the wholesale market. In addition, it captures the value of roe. Mature salmon—especially chum and pink salmon— provide a valuable product not available from farmed salmon: their roe (eggs). Unlike salmon flesh, salmon roe is not in competition with farmed fish since few farmed fish are not raised to maturity. Chum salmon roe is the highest value roe, followed by pink salmon roe. From 2008 to 2015, roe accounted for between 30% and 51% of the first wholesale value of chum salmon and 17% to 40% of the first wholesale value of pink salmon[22]. First wholesale value of the hatchery harvest averaged about $368 million over the past decade, with peak years of over half a *billion* dollars in 2010 and 2013. The 2017 first wholesale value of the Alaska hatchery salmon harvest was estimated at $332 million dollars (Figure 4).

VALUE OF HATCHERY OPERATIONS

PNP hatchery operations are primarily funded by cost-recovery harvest and assessment taxes on the commercial salmon harvest, and are a significant sector of the commercial fishing industry in parts of coastal Alaska. In fiscal year 2018, the operation budgets for all PNP hatcheries in the

[21] First wholesale value is the price paid to primary processors for processed fish from ADF&G Commercial Operators' Annual Reports obtained from Shellene Hutter, ADF&G, multiplied by the hatchery percent of the commercial harvest. See the preface of this document for estimation of the 2016 first wholesale value.

[22] https://www.alaskaseafood.org/wp-content/uploads/2015/10/Spring2016-Alaska-Salmon-Industry-Analysis.pdf.

state totaled about $46 million.[23] By comparison, the statewide fiscal year 2018 operating budget for ADF&G Division of Commercial Fisheries for all state fisheries was about $72 million.[24]

HATCHERY OPERATION CHANGES IN 2017

The Southern Southeast Regional Aquaculture Association took over operations of the Deer Mountain Hatchery in 2017 through the state hatchery permitting process described earlier in the Alaska Hatchery Planning and Permitting section. The facility was previously operated by the Ketchikan Tribal Hatchery Corporation.

HATCHERY PRODUCTION IN ALASKA'S SCHOOLS

In addition to production hatcheries that provide salmon for Alaska's fisheries, an extensive program occurs for education and research across the state that is permitted through fish resource permits issued by the ADF&G Aquaculture Section. About 150 schools across the state participated in propagation of salmon programs in 2017 (Table 17). Eggs and milt are either received from a hatchery or collected from wild stocks. Fertilized eggs are incubated in aquariums for students to observe the development of the salmon until the fish hatch. Some of the fish are released at pre-approved locations.

2018 PROJECTED HATCHERY HARVEST

Hatchery operators forecast a return of about 54 million fish in 2018 (Table 10). This includes total returns of 38 million pink, 13 million chum, 1.9 million sockeye, 1.4 million coho, and 105,000 Chinook salmon to PNP Hatchery projects, as well as 92,000 arctic char, rainbow trout, landlocked salmon, and grayling from ADF&G hatcheries in the freshwater sport harvest.

The 2017 hatchery return of 50 million fish compared to a 2017 forecast of 65 million fish (Stopha 2017a).

[23] Informal survey of hatchery associations conducted by the author.

[24] https://www.omb.alaska.gov/ombfiles/18_budget/Fish/Enacted/18compsummary_fish.pdf (Accessed February 16, 2017).

EVALUATION AND PROTECTION OF WILD STOCKS

Alaska's PNP hatchery program has a track record of active assessment and innovation. Hatcheries use either coded wire tag or thermal marking (or both) to differentially mark releases. During the fishing season, the catch can be sampled to measure the magnitude of wild and hatchery stock returns, allowing fisheries managers to manage for wild stock harvest and escapement goals. The 2013, 2015, and 2017 wild stock harvests were the highest in the history of Alaska's salmon fisheries.

Thermal marking is a technique first used on a production scale at Snettisham Hatchery near Juneau. Thermal marking is most commonly done by alternating warmer and colder incubation water over about a 3- to 6-day period, usually during the egg stage. This action will lay down alternating dark and light rings on the fish's ear bone (called the otolith), similar to rings on a tree. Naturally spawned salmon will have less distinct marks that lack regularly spaced intervals. Fish can be marked with different patterns of thermal marks, allowing for stock separation among hatcheries and release sites.

The development of otolith marking is a powerful tool because 100 percent of a release can be marked. During the adult harvest, a sample of otoliths can be read to estimate how many hatchery origin fish are in the catch, and which hatcheries the fish were released from. Because all fish in a hatchery can be marked this way—not just a fraction of the releases as occurs with coded wire tags—a much more accurate assessment can be made. In addition, otoliths from immature salmon caught on the high seas can be used to determine origins and migration patterns, and otoliths from spawning carcasses can be collected during stream surveys to assess straying.

As part of sustainability certification (Knapman et al. 2009), ADF&G began evaluations of PNP hatcheries for compliance with state policies and regulations. These evaluations have been completed for nearly all hatcheries.[25] The evaluations are an important systematic assessment of Alaska salmon fishery enhancement and its relation to wild stock production at a time of heightened interest for increased hatchery production and potential impacts on wild salmon production.

Straying of hatchery-produced fish to wild stock systems has been monitored for many years. Hatchery chum salmon straying has been assessed in Southeast Alaska (Piston and Heinl 2012) and Prince William Sound systems (Brenner et al. 2012). Hatchery Chinook salmon straying has been monitored on several Southeast Alaska systems for decades (Ed Jones, ADF&G fishery biologist, Juneau, personal communication). Hatchery sockeye salmon straying studies have been conducted on Kodiak Island (Baer and Honnold 2002), in the Copper River basin (Bidlack and Valentine 2009) and the Kenai River (Habicht et al. 2013; Stopha 2012). Pink salmon straying has been monitored in Prince William Sound (Brenner et al. 2012) and is currently monitored in Cook Inlet (Hollowell et al. 2017).

A long-term study is underway to investigate interactions between hatchery and wild salmon in Alaska. A panel composed of scientists with broad experience in salmon fishery enhancement, research, and management from ADF&G, University of Alaska, aquaculture associations, and National Marine Fisheries Service, was assembled by ADF&G in 2011. The panel designed and guides a research program entitled *Interactions of Wild and Hatchery Pink and Chum Salmon in*

[25] See Stopha (2017b) for a bibliography of Alaska hatchery evaluations completed to date.

Prince William Sound and Southeast Alaska. Study funding is shared between the PNP operators, salmon processors, and State of Alaska, and administered by ADF&G. Field work is conducted by the Prince William Sound Science Center and the Sitka Sound Science Center. The study will improve understanding of hatchery and wild stock interactions and provide Alaska-specific scientific guidance for assessing Alaska's hatchery program. Study findings can be found at:

http://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.findings_updates.

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TABLES

Table 1.–List of hatchery acronyms used in this report.

Acronym	Organization
ADF&G	Alaska Department of Fish and Game
AKI	Armstrong-Keta, Inc.
BIH	Burnett Inlet Hatchery
CIAA	Cook Inlet Aquaculture Association
DIPAC	Douglas Island Pink and Chum, Inc.
KNFC	Kake Nonprofit Fisheries Corporation
KRAA	Kodiak Regional Aquaculture Association
MIC	Metlakatla Indian Community
NMFS	National Marine Fisheries Service
NSRAA	Northern Southeast Regional Aquaculture Association
PWSAC	Prince William Sound Aquaculture Corporation
SMCH	Sawmill Creek Hatchery
SSSC	Sitka Sound Science Center
SSRAA	Southern Southeast Regional Aquaculture Association
VFDA	Valdez Fisheries Development Association Incorporated

Table 2.–Estimated egg takes for Alaska hatcheries, by region, 2017.

Area	Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Total
Southeast	10,580,000	18,498,000	32,106,000	83,737,000	626,963,000	–	24,000	771,383,000
Prince William Sound	50,000	31,510,000	4,733,000	779,332,000	155,100,000	–	–	970,724,000
Cook Inlet	3,284,000	11,988,000	1,953,000	160,210,000	–	289,000	2,691,000	180,415,000
Arctic/Yukon/Kuskokwim	62,000	–	95,000	–	–	–	–	157,000
Kodiak	72,000	6,212,000	2,525,000	217,779,000	36,979,000	–	200,000	263,766,000
Total[a]	14,048,000	68,208,000	41,411,000	1,241,057,000	819,042,000	289,000	2,916,000	2,189,488,000

[a] Some figures may not total exactly due to rounding.

Table 3.–Estimated juvenile releases from Alaska hatcheries, by region, 2017.

Area	Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Total
Southeast	7,338,000	13,096,000	24,667,000	55,334,000	509,944,000	–	–	601,869,000
Prince William Sound	32,000	26,194,000	3,175,000	658,943,000	131,100,000	–	–	819,444,000
Cook Inlet	2,059,000	7,207,000	1,125,000	60,305,000	–	22,000	670,000	71,414,000
Arctic/Yukon/Kuskokwim	46,000	–	104,000	–	–	44,000	256,000	451,000
Kodiak	73,000	3,746,000	1,293,000	66,579,000	14,193,000	–	56,000	85,940,000
Total[a]	9,548,000	50,200,000	30,365,000	841,200,000	655,237,000	66,000	982,000	1,578,000,000

[a] Some figures may not total exactly due to rounding.

Table 4.–Estimated total returns attributed to Alaska hatcheries (including common property harvest, cost recovery harvest, broodstock, and other), by region, 2017.

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Southeast	59,000	258,000	800,000	1,474,000	9,357,000	11,948,000
Prince William Sound	–	804,000	76,000	28,930,000	4,705,000	34,516,000
Cook Inlet	6,000	189,000	18,000	602,000	–	815,000
Kodiak	1,000	379,000	47,000	2,588,000	221,000	3,236,000
Total[a]	66,000	1,600,000	940,000	34,000,000	14,300,000	51,000,000

[a] Some figures may not total exactly due to rounding.

Table 5.–Alaska (preliminary) commercial harvest of hatchery-produced fish, by region, 2017.

Area	Harvest	Chinook	Sockeye	Coho	Pink	Chum	Total
Southeast	Total commercial harvest[a]	168,000	783,000	2,829,000	33,847,000	11,144,000	48,770,000
	Hatchery cost-recovery harvest	12,000	135,000	118,000	641,000	3,085,000	3,991,000
	Common Property Commercial Harvest	156,000	648,000	2,711,000	33,205,000	8,058,000	44,778,000
	Hatchery-produced fish in commercial common property harvest	30,000	77,000	453,000	646,000	6,659,000	7,851,000
	% of hatchery-produced fish in commercial common property harvest	19%	12%	17%	2%	83%	18%
	Hatchery-produced fish in total commercial harvest	42,000	212,000	571,000	1,288,000	9,744,000	11,843,000
	% of hatchery-produced fish in total commercial harvest	25%	27%	20%	4%	87%	24%
Prince William Sound	Total commercial harvest[a]	14,000	1,425,000	534,000	46,474,000	5,117,000	53,565,000
	Hatchery cost-recovery harvest	0	0	9,000	2,945,000	456,000	3,410,000
	Common Property Commercial Harvest	14,000	1,425,000	525,000	43,528,000	4,662,000	50,155,000
	Hatchery-produced fish in commercial common property harvest	0	724,000	17,000	23,769,000	3,964,000	28,474,000
	% of hatchery-produced fish in commercial common property harvest	0%	51%	3%	55%	85%	57%
	Hatchery-produced fish in total commercial harvest	–	724,000	26,000	26,715,000	4,420,000	31,885,000
	% of hatchery-produced fish in total commercial harvest	0%	51%	5%	57%	86%	60%
Cook Inlet	Total commercial harvest[a]	8,000	2,133,000	314,000	2,185,000	441,000	5,081,000
	Hatchery cost-recovery harvest	4	88,000	201	114,000	246	202,000
	Common Property Commercial Harvest	8,000	2,046,000	314,000	2,071,000	440,000	4,879,000
	Hatchery-produced fish in commercial common property harvest	0	48,000	0	98,000	0	146,000
	% of hatchery-produced fish in commercial common property harvest	0%	2%	0%	5%	0%	3%
	Hatchery-produced fish in total commercial harvest	4	136,000	201	212,000	246	348,000
	% of hatchery-produced fish in total commercial harvest	0%	6%	0%	10%	0%	7%
Kodiak	Total commercial harvest[a]	7,000	2,476,000	366,000	27,101,000	1,891,000	31,841,000
	Hatchery cost-recovery harvest	0	54,000	15,000	1,790,000	6,000	1,865,000
	Common Property Commercial Harvest	7,000	2,422,000	351,000	25,311,000	1,885,000	29,975,000
	Hatchery-produced fish in commercial common property harvest	0	322,000	13,000	230,000	148,000	714,000
	% of hatchery-produced fish in commercial common property harvest	0%	13%	4%	1%	8%	2%
	Hatchery-produced fish in total commercial harvest	0	376,000	29,000	2,020,000	154,000	2,579,000
	% of hatchery-produced fish in total commercial harvest	0%	15%	8%	7%	8%	8%
Chignik/Aleutian Islands/Alaska Peninsula	Common Property Commercial Harvest	15,000	7,985,000	585,000	28,654,000	2,632,000	39,872,000
	Hatchery-produced fish in total commercial harvest	–	–	–	–	–	–
	% of hatchery-produced fish in commercial common property harvest	0%	0%	0%	0%	0%	0%
Bristol Bay	Common Property Commercial Harvest	41,000	38,781,000	241,000	35,000	1,494,000	40,592,000
	Hatchery-produced fish in total commercial harvest	–	–	–	–	–	–
	% of hatchery-produced fish in commercial common property harvest	0%	0%	0%	0%	0%	0%
Arctic-Yukon-Kuskokwim	Common Property Commercial Harvest	5,000	3,000	330,000	19,000	1,672,000	2,030,000
	Hatchery-produced fish in total commercial harvest	–	–	–	–	–	–
	% of hatchery-produced fish in commercial common property harvest	0%	0%	0%	0%	0%	0%

-continued-

Table 5.–Page 2 of 2.

Area	Harvest	Chinook	Sockeye	Coho	Pink	Chum	Total
Statewide Total[b]	Total commercial harvest[a]	259,000	53,586,00	5,200,000	138,314,00	24,391,00	221,749,000
	Hatchery cost-recovery harvest	12,000	277,000	142,000	5,491,000	3,500,000	9,421,000
	Common Property Commercial Harvest	247,000	53,310,00	5,057,000	132,823,00	20,891,00	212,328,000
	Hatchery-produced fish in commercial common property	30,000	1,171,000	483,000	24,744,000	10,771,00	37,186,000
	% of hatchery-produced fish in commercial common property	12%	2%	10%	19%	52%	18%
	Hatchery-produced fish in total commercial harvest	42,000	1,448,000	626,000	30,234,000	14,271,00	46,607,000
	% of hatchery-produced fish in total commercial harvest	16%	3%	12%	22%	59%	21%

[a] Total commercial harvest by all commercial gear types, including fish harvested by hatcheries for cost recovery. ADF&G Oceans AK database (Accessed 1/20/2017). URL not publicly available.

[b] Figures may not total exactly due to rounding.

Table 6.–Estimated exvessel value of the total Alaska commercial common property harvest (preliminary), by region, 2017.

Area	Harvest	Chinook	Sockeye	Coho	Pink	Chum	Total
Southeast	Value of the commercial harvest	$14,568,000	$6,751,000	$22,917,000	$40,758,000	$75,516,000	$161,000,000
	Value of hatchery-produced fish in cost recovery harvest	$1,000,000	$1,200,000	$1,000,000	$800,000	$20,900,000	$25,000,000
	Value of the common property commercial harvest	$13,600,000	$5,600,000	$21,900,000	$40,000,000	$54,600,000	$136,000,000
	Value of hatchery-produced fish in common property commercial harvest	$2,600,000	$663,000	$3,700,000	$778,000	$45,000,000	$53,000,000
	% value of hatchery-produced fish in common property commercial harvest	19%	12%	17%	2%	83%	39%
	Value of hatchery-produced fish in total commercial harvest	$3,600,000	$1,863,000	$4,700,000	$1,578,000	$66,000,000	$78,000,000
	% of hatchery-produced fish in total commercial harvest value	25%	28%	21%	4%	87%	48%
Prince William Sound	Value of the commercial harvest	$1,977,000	$20,555,000	$5,892,000	$70,330,000	$29,211,000	$128,000,000
	Value of hatchery-produced fish in cost recovery harvest	$0	$0	$100,000	$4,460,000	$2,600,000	$7,000,000
	Value of the common property commercial harvest	$2,000,000	$20,600,000	$5,790,000	$65,900,000	$26,600,000	$121,000,000
	Value of hatchery-produced fish in common property commercial harvest	$0	$10,000,000	$186,000	$36,000,000	$23,000,000	$69,000,000
	% value of hatchery-produced fish in common property commercial harvest	0%	51%	3%	55%	85%	57%
	Value of hatchery-produced fish in total commercial harvest	$0	$10,462,000	$286,000	$40,446,000	$25,221,698	$76,000,000
	% of hatchery-produced fish in total commercial harvest value	0%	51%	5%	58%	86%	60%
Cook Inlet	Value of the commercial harvest	$683,000	$23,143,000	$2,133,000	$1,676,000	$2,203,000	$30,000,000
	Value of hatchery-produced fish in cost recovery harvest	$300	$950,000	$1,400	$87,000	$1,200	$1,000,000
	Value of the common property commercial harvest	$680,000	$22,000,000	$2,130,000	$1,600,000	$2,201,800	$29,000,000
	Value of hatchery-produced fish in common property commercial harvest	$0	$518,000	$0	$76,000	$0	$594,000
	% value of hatchery-produced fish in common property commercial harvest	0%	2%	0%	5%	0%	2%
	Value of hatchery-produced fish in total commercial harvest	$300	$1,470,000	$1,400	$163,000	$1,200	$1,636,000
	% of hatchery-produced fish in total commercial harvest value	0%	6%	0%	10%	0%	5%
Kodiak	Value of the commercial harvest	$47,000	$17,742,000	$1,635,000	$30,813,000	$5,786,000	$56,000,000
	Value of hatchery-produced fish in cost recovery harvest	$0	$387,000	$68,200	$2,035,000	$19,100	$2,500,000
	Value of the common property commercial harvest	$47,000	$17,000,000	$1,566,800	$29,000,000	$5,800,000	$53,000,000
	Value of hatchery-produced fish in common property commercial harvest	$0	$2,300,000	$60,000	$260,000	$460,000	$3,000,000
	% value of hatchery-produced fish in common property commercial harvest	0%	14%	4%	1%	9%	6%
	Value of hatchery-produced fish in total commercial harvest	$0	$2,687,000	$128,000	$2,300,000	$479,000	$5,600,000
	% of hatchery-produced fish in total commercial harvest value	0%	15%	8%	8%	8%	10%
Chignik/Aleutian Islands/ Alaska Peninsula	Value of the commercial harvest	$176,000	$47,957,000	$1,281,000	$25,410,000	$5,726,000	$81,000,000
	Value of hatchery-produced fish in total commercial harvest	$0	$0	$0	$0	$0	$0
	% value of hatchery-produced fish in common property commercial harvest	0%	0%	0%	0%	0%	0%
Bristol Bay	Value of the commercial harvest	$312,000	$209,898,000	$988,000	$22,000	$3,418,000	$215,000,000
	Value of hatchery-produced fish in total commercial harvest	$0	$0	$0	$0	$0	$0
	% value of hatchery-produced fish in common property commercial harvest	0%	0%	0%	0%	0%	0%
Arctic-Yukon-Kuskokwim	Value of the commercial harvest	$17,000	$23,000	$2,773,000	$2,000	$6,431,000	$9,200,000
	Value of hatchery-produced fish in total commercial harvest	$0	$0	$0	$0	$0	$0
	% value of hatchery-produced fish in common property commercial harvest	0%	0%	0%	0%	0%	0%

Table 6.–Page 2 of 2.

Area	Harvest	Chinook	Sockeye	Coho	Pink	Chum	Total
Total[a]	Value of the commercial harvest[b]	$17,780,000	$326,069,000	$37,619,000	$169,011,000	$128,291,000	$679,000,000
	Value of hatchery-produced fish in cost recovery harvest	$1,000,000	$3,000,000	$1,000,000	$8,000,000	$24,000,000	$36,000,000
	Value of the common property commercial harvest	$16,780,000	$323,069,000	$36,619,000	$161,011,000	$104,291,000	$643,000,000
	Value of hatchery-produced fish in common property commercial harvest	$2,600,000	$13,000,000	$4,000,000	$37,000,000	$68,000,000	$126,000,000
	% value of hatchery-produced fish in common property commercial harvest	15%	4%	11%	22%	53%	18%
	Value of hatchery-produced fish in total commercial harvest	$3,600,000	$16,000,000	$5,000,000	$45,000,000	$92,000,000	$162,000,000
	% of hatchery-produced fish in total commercial harvest value	20%	5%	13%	27%	72%	24%

[a] Some figures may not total exactly due to rounding.

[b] Source: Value data from http://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/2017_preliminary_salmon_summary_table.pdf.

Table 7.–Estimated sport, personal use and subsistence harvest of hatchery-produced fish, 2017. Figures may not total exactly due to rounding.

Region	Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Grayling	Landlocked Salmon	Total
Southeast	7,090	4,287	34,192	–	5,000	–	–	–	–	50,000
Prince William Sound	–	13,447	23,709	9,438	1,000	–	–	–	–	48,000
Cook Inlet	1,855	14,450	12,726	2,500	–	–	–	–	–	32,000
Kodiak	1,300	1,000	15,050	–	–	–	–	–	–	17,000
Southcentral Lakes	–	–	–	–	–	1,373	20,452	377	4,164	26,000
Interior Lakes	–	–	–	–	–	1,078	15,978	729	3,760	22,000
Total	10,000	33,000	86,000	12,000	6,000	2,000	36,000	1,000	8,000	194,000

Table 8.–Eggs collected at Alaska hatcheries, 2017. Eggs transferred from one facility to another are listed with the receiving hatchery.

Region/Area/Operator/Hatchery		Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow	Total
Southeast									
Southern Southeast									
SSRAA	Burnett Inlet	–	–	1,856,000	–	63,279,938	–	–	65,135,938
	Crystal Lake	2,078,500	–	165,000	–	–	–	–	2,243,500
	Neets Bay	–	–	2,500,000	–	68,290,000	–	–	70,790,000
	Whitman Lake	1,047,867	–	4,438,000	–	39,000,000	–	–	44,485,867
	Klawock River	–		5,037,200	–	–	–	–	5,037,200
Southern Southeast Total		3,651,367	–	13,996,200	–	170,569,938	–	–	188,217,505
Northern Southeast									
NSRAA	Hidden Falls	961,506	–	6,557,791	–	142,050,278	–	–	149,569,575
	Medvejie Creek	4,432,240	–	–	131,546	77,480,845	–	–	82,044,631
	Sawmill Creek	–	–	3,351,727	–	50,029,920	–	–	53,381,647
AKI	Port Armstrong	–	–	6,438,400	82,198,745	40,153,986	–	–	128,791,131
DIPAC	Macaulay	1,051,800	–	1,509,900	–	135,839,500	–	24,400	138,425,600
	Snettisham	–	18,497,600	–	–	–	–	–	18,497,600
NMFS	Little Port Walter	483,307	–	–	–	–	–	–	483,307
SSSC	Sheldon Jackson	–	–	251,600	2,662,359	12,100,225	–	–	15,014,184
Northern Southeast Total		6,928,853	18,497,600	18,109,418	84,992,650	457,654,754	–	24,400	586,207,675
Southeast Total		10,580,220	18,497,600	32,105,618	84,992,650	628,224,692	–	24,400	774,425,180
Southcentral									
Prince William Sound									
PWSAC	AF Koernig	–	–	–	191,000,000	20,100,000	–	–	211,100,000
	Cannery Creek	–	–	–	187,000,000	–	–	–	187,000,000
	Gulkana	–	19,110,000	–	–	–	–	–	19,110,000
	Main Bay	–	12,400,000	–	–	–	–	–	12,400,000
	W Noerenberg	50,000	–	2,730,000	148,000,000	135,000,000	–	–	285,780,000
VFDA	Solomon Gulch	–	–	2,002,582	253,331,519	–	–	–	255,334,101
Prince William Sound Total		50,000	31,510,000	4,732,582	779,331,519	155,100,000	–	–	970,724,101
Cook Inlet									
CIAA	Port Graham	–	–	–	36,661,527	–	–	–	36,661,527
	Trail Lakes	–	11,988,000	587,900		–	–	–	12,575,900
	Tutka Bay Lagoon	–	–	–	123,548,148	–	–	–	123,548,148
ADF&G	WJ Hernandez	3,284,265	–	1,364,960		–	288,880	2,691,297	7,629,402
Cook Inlet Total		3,284,265	11,988,000	1,952,860	160,209,675	–	288,880	2,691,297	180,414,977
Southcentral Total		3,334,265	43,498,000	6,685,442	939,541,194	155,100,000	288,880	2,691,297	1,151,139,078
Arctic-Yukon-Kuskokwim									
ADF&G	Ruth Burnett[26]	61,950	–	95,226	–	–	–	–	157,176
Arctic-Yukon-Kuskokwim Total		61,950	–	95,226	–	–	–	–	157,176

[26] An additional 51,760 grayling eggs were collected at Ruth Burnett Sport Fish Hatchery.

Table 8. Page 2 of 2.

Region/Area/Operator/Hatchery		Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow	Total
Kodiak									
KRAA	Kitoi Bay	–	856,051	2,262,000	217,779,270	36,979,125	–	–	257,876,446
	Pillar Creek	71,584	5,355,888	262,500	–	–	–	200,000	5,889,972
Kodiak Total		71,584	6,211,939	2,524,500	217,779,270	36,979,125	0	200,000	263,766,418
Statewide Total		14,000,000	68,000,000	41,000,000	1,242,000,000	820,000,000	290,000	2,900,000	2,188,000,000

Note: Figures may not total exactly due to rounding.

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Table 9.–Alaska hatcheries releases as reported by operators, 2017.[a]

Region/Operator/Hatchery/Release Site				Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Total
Southeast	Southern Southeast										
	SSRAA	Burnett Inlet	Burnett Inlet	–	–	–	–	23,483,000	–	–	23,483,000
			Anita Bay	–	–	302,000	–	21,746,000	–	–	22,048,000
			Neck L	–	–	1,839,000	–	–	–	–	1,839,000
		Crystal Lake	Crystal Cr	564,000	–	165,000	–	–	–	–	729,000
			Anita Bay	453,000	–	–	–	–	–	–	453,000
			City Cr	98,000	–	–	–	–	–	–	98,000
		Neets Bay	Neets Bay	729,000	–	4,350,000	–	77,868,000	–	–	82,947,000
			Nakat Inlet	–	–	–	–	8,149,000	–	–	8,149,000
		Whitman Lake	Whitman Lake H	549,000	–	503,801	–	–	–	–	1,053,000
			Nakat Inlet	–	–	607,000	–	8,007,000	–	–	8,614,000
			Anita Bay	–	–	248,000	–	–	–	–	248,000
			Kendrick Bay	–	–	–	–	29,470,000	–	–	29,470,000
			Carroll Inlet	365,000	–	–	–	–	–	–	365,000
		Deer Mountain	Deer Mt Hatchery	70,000	–	–	–	–	–	–	70,000
		Klawock River	Klawock River	–	–	4,481,581	–	–	–	–	4,482,000
		Port Saint Nicholas	Port St Nicholas	88,769	–	–	–	–	–	–	89,000
		Tamgas Cr	Tamgas Cr	351,898	–	2,006,722	–	7,590,000	–	–	9,949,000
	Southern Southeast Total			3,269,000	–	14,503,000	–	176,313,000	–	–	194,084,000
	Northern Southeast										
	NSRAA	Hidden Falls	Thomas Bay	–	–	–	–	21,899,063	–	–	21,899,000
			Kasnyku Bay	552,298	–	3,176,580	–	64,602,663	–	–	68,332,000
			Southeast Cove	–	–		–	46,749,525	–	–	46,750,000
			Mist Cove	–	–	2,557,538	–	–	–	–	2,558,000
			Banner Lake	–	–	118,000	–	–	–	–	118,000
			Blanchard Lake	–	–	47,203	–	–	–	–	47,000
		Medvejie Creek	Bear Cove	1,935,237	–		202,272	17,531,454	–	–	19,669,000
			Deep Inlet	–	–		–	34,511,491	–	–	34,511,000
			Halibut Point	346,799	–		–	–	–	–	347,000
			Crawfish Inlet	228,568	–		–	–	–	–	229,000
		Sawmill Creek	Bear Cove	–	–	201,398	–	–	–	–	201,000
			Deep Inlet	–	–	907,708	–	–	–	–	908,000
			Crawfish Inlet	–	–		–	23,042,232	–	–	23,042,000
	AKI	Port Armstrong	Port Armstrong	–	–	2,061,012	52,820,574	24,802,314	–	–	79,684,000
	DIPAC	Macaulay	Macaulay	220,000	–	233,900		10,321,900	–	–	10,775,000
			Auke Bay	87,000	–	–	–	–	–	–	33,655,000
			Amalga Harbor	–	–	–	–	33,655,100	–	–	87,000
			Boat Harbor	–	–	–	–	19,218,700	–	–	19,219,000

-continued-

[a] Tamgas Creek numbers from https://mtalab.adfg.alaska.gov/CWT/reports/hatcheryrelease.aspx; all others from Annual Reports submitted by operators.

Table 9.–Page 2 of 3.

Region/Operator/Hatchery/Release Site			Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Total
DIPAC	Macaulay	Dredge/Twin L	6,516	–	–	–	–	–	–	7,000
		Fish Cr	279,000	–	–	–	–	–	–	279,000
		Lena Cove	149,000	–	–	–	–	–	–	149,000
		Limestone Inlet		–	–	–	13,417,000	–	–	13,417,000
		Sheep Creek	150,000	–	784,800	–	21,586,700	–	–	22,522,000
		Davidson Creek[b]	–	–	46,800	–	–	–	–	47,000
		Pelican Creek[b]	–	–	–	–	226,250	–	–	226,250
	Snettisham	Snettisham	–	8,037,700	–	–	–	–	–	8,038,000
		Sweetheart L	–	508,700	–	–	–	–	–	509,000
		Tahltan/Tuya L	–	3,136,400	–	–	–	–	–	3,136,000
		Tatsamenie L	–	1,201,700	–	–	–	–	–	1,202,000
		Trapper L	–	211,800	–	–	–	–	–	212,000
NMFS	Little Port Walter	L Port Walter	114,661	–	–	–	–	–	–	115,000
SSSC	Sheldon Jackson	Crescent Bay	–	–	29,449	2,303,969	2,293,105	–	–	4,627,000
Northern Southeast Total			4,069,000	13,096,000	10,164,000	55,327,000	333,857,000	–	–	416,514,000
Southeast Total			7,338,000	13,096,000	24,667,000	55,327,000	510,170,000	–	–	610,598,000
Southcentral										
Prince William Sound										
PWSAC	AFK	Sawmill Bay	–	–	–	137,500,000	29,100,000	–	–	166,600,000
	Cannery Creek	Unakwik Inlet	–	–	–	149,000,000	–	–	–	149,000,000
	Gulkana I and II	Gulkana R	–	15,690,000	–	–	–	–	–	15,690,000
	Main Bay	Main Bay	–	10,504,000	–	–	–	–	–	10,504,000
	W Noerenberg	Lake Bay	–	–	1,190,000	130,900,000	67,100,000	–	–	199,190,000
		Port Chalmers	–	–	–	–	34,900,000	–	–	34,900,000
		Chenega Bay	32,100	–	50,000	–	–	–	–	82,000
		Cordova	–	–	75,000	–	–	–	–	75,000
		Whittier	–	–	75,000	–	–	–	–	75,000
VFDA	Solomon Gulch	Solomon Gulch	–	–	1,766,068	241,542,706	–	–	–	243,309,000
		Boulder Bay	–	–	19,329	–	–	–	–	19,000
Prince William Sound Total			32,000	26,194,000	3,175,000	658,943,000	131,100,000	–	–	819,444,000
Cook Inlet										
CIAA	Trail Lakes	Bear L	–	2,756,000	155,000	–	–	–	–	2,911,000
		Resurrection B.	–	1,528,000	–	–	–	–	–	1,528,000
		Kirschner L	–	260,000	–	–	–	–	–	260,000
		Hazel L	–	834,000	–	–	–	–	–	834,000
		Leisure L	–	1,387,000	–	–	–	–	–	1,387,000
		Tutka Lagoon	–	356,000	–	–	–	–	–	356,000
		Port Graham	–	86,000	–	–	–	–	–	86,000
CIAA	Tutka Bay Lagoon	Tutka Lagoon	–	–	–	54,245,411	–	–	–	54,245,000
	Port Graham	Port Graham	–	–	–	6,059,800	–	–	–	6,060,000

-continued-

b. These projects are permitted under fish resource permits (FRP). Eggs are provided by the hatchery and releases conducted by the FRP holder.

Table 9.–Page 3 of 3.

Region/Operator/Hatchery/Release Site	Site	Chinook	Sockeye	Coho	Pink	Chum	Arctic Char	Rainbow Trout	Total
ADF&G WJ Hernandez	Bird Cr	–	–	131,547	–	–	–	–	132,000
	Campbell Cr	–	–	53,449	–	–	–	–	53,000
	Cordova, Fleming	102,683	–	–	–	–	–	–	103,000
	Crooked Cr	105,438	–	–	–	–	–	–	105,000
	Deception Cr	100,724	–	–	–	–	–	–	101,000
	Eklutna Tailrace	422,917	–	126,736	–	–	–	–	550,000
	Halibut Cove	94,236	–	–	–	–	–	–	94,000
	Homer Spit	202,508	–	136,713	–	–	–	–	339,000
	Ninilchik R	148,961	–	–	–	–	–	–	149,000
	Seldovia Harbor	104,806	–	–	–	–	–	–	105,000
	Seward Lagoon	328,337	–	264,935	–	–	–	–	593,000
	Ship Cr	348,137	–	257,047	–	–	–	–	605,000
	Whittier	100,355	–	–	–	–	–	–	100,000
	Lakes		–	–	–	–	21,997	669,947	692,000
Cook Inlet Total		2,059,000	7,207,000	1,125,000	60,305,000	–	22,000	670,000	71,389,000
Southcentral Total		2,091,000	33,401,000	4,301,000	719,248,000	131,100,000	22,000	670,000	890,833,000
Arctic-Yukon-Kuskokwim									
ADF&G Ruth Burnett	Region III Lakes	46,000	–	104,000	–	–	44,000	256,000	451,000
Arctic-Yukon-Kuskokwim Total		46,000	–	104,000	–	–	44,000	–	–
Kodiak									
KRAA Kitoi Bay	Kitoi B	–	692,083	1,050,384	66,578,959	14,192,919	–	–	82,514,000
	Crescent L	–	–	19,612	–	–	–	–	20,000
	Ouzinkie L	–	49,388		–	–	–	–	49,000
Pillar Creek	Pillar Cr	–	–	77,685	–	–	–	–	78,000
	Telrod Cove	–	355,569		–	–	–	–	356,000
	Monashka R	–	–	75,021	–	–	–	–	75,000
	Salonie Cr	20,518	–	–	–	–	–	–	21,000
	Hidden L	–	241,883	–	–	–	–	–	242,000
	Crescent L	–	132,176	–	–	–	–	–	132,000
	Spiridon L	–	2,118,152	–	–	–	–	–	2,118,000
	Ruth L	–	65,073	–	–	–	–	–	65,000
	Jennifer L	–	92,000	–	–	–	–	–	92,000
	Island L	–	–	50,137	–	–	–	–	50,000
	Mission L	–	–	20,107	–	–	–	–	20,000
	American R	26,000	–	–	–	–	–	–	26,000
	Olds R	27,000	–	–	–	–	–	–	27,000
	Kodiak Road Lks	–	–	–	–	–	–	55,874	56,000
Kodiak/Westward Total		73,000	3,746,000	1,293,000	66,579,000	14,193,000	–	56,000	85,940,000
Statewide Total		9,500,000	50,200,000	30,400,000	841,200,000	655,200,000	66,000	982,000	1,588,000,000

Table 10.–Projected adult returns, by species, to Alaska fisheries enhancement projects in 2018.

Region/Operator/Release Site		Chinook	Sockeye	Coho	Pink	Chum	Rainbow Trout	Arctic Char	Landlocked Salmon	Total
Southern Southeast										
SSRAA	Anita Bay	15,400	–	21,110	–	459,000	–	–	–	495,510
	Nakat Inlet	–	–	21,850	–	317,190	–	–	–	339,040
	Neck Lake (BIH)	–	–	55,100	–	–	–	–	–	55,100
	Crystal Lake Hatchery	3,300	–	–	–	–	–	–	–	3,300
	City Creek	1,000	–	–	–	–	–	–	–	1,000
	Neets Bay Hatchery	18,100	–	82,716	–	1,407,000	–	–	–	1,507,816
	Whitman Lake Hatchery	12,300	–	34,450	–	–	–	–	–	46,750
	Kendrick Bay	–	–	–	–	632,500	–	–	–	632,500
	Carroll Inlet	1,000	–	–	–	–	–	–	–	–
	Deer Mountain Hatchery	700	–	–	–	–	–	–	–	700
	Klawock River Hatchery	–	–	224,000	–	–	–	–	–	224,000
	Port Saint Nicholas Hatchery	1,945	–	–	–	–	–	–	–	1,945
	Coffman Cove	545	–	–	–	–	–	–	–	545
Southern Southeast Total		54,000	–	439,000	–	2,816,000	–	–	–	3,308,000
Northern Southeast										
NSRAA	Haines Projects	–	–	–	–	33,000	–	–	–	33,000
	Hidden Falls Hatchery	2,000	–	191,000	–	593,000	–	–	–	786,000
	Mist Cove	–	–	153,000	–	–	–	–	–	153,000
	Southeast Cove	–	–	–	–	–	–	–	–	142,000
	Cliff Lake	–	–	1,000	–	–	–	–	–	1,000
	Medvejie Creek Hatchery	10,276	–	1,250,000	–	–	–	–	–	1,260,276
	Halibut Point	2,441	–		–	–	–	–	–	2,441
	Bear Cove (SMCH)	–	–	12,000	–	–	–	–	–	12,000
	Deep Inlet (SMCH)	–	–	54,000	–	–	–	–	–	54,000
	Crawfish Inlet (SMCH)	29	–	–	–	681,000	–	–	–	681,000
AKI	Port Armstrong Hatchery	–	–	153,162	884,613	347,516	–	–	–	1,385,291
DIPAC	Macaulay Hatchery	–	–	37,000		909,400	–	–	–	946,400
	Amalga Harbor	–	–	–		–	–	–	–	1,475,800
	Boat Harbor	–	–	–		–	–	–	–	508,100
	Limestone Inlet	–	–	–		–	–	–	–	180,600
	Fish Creek	1,900	–	–	–	–	–	–	–	1,900
	Lena Cove	2,700	–	–	–	–	–	–	–	2,700
	Gastineau Channel	3,790	–	–	–	–	–	–	–	3,790
	Auke Bay	1,300	–	–	–	–	–	–	–	1,300
	Pullen Creek	70	–	–	–	–	–	–	–	70
	Snettisham Hatchery	–	244,700	–	–	–	–	–	–	244,700
	Stikine River	–	[a]	–	–	–	–	–	–	–
	Sweetheart Lake	–	5,800	–	–	–	–	–	–	5,800
	Taku River	–	[a]	–	–	–	–	–	–	–
SSSC	Sheldon Jackson Hatchery	–	–	1,178	55,295	180,000	–	–	–	97,961
NMFS	Little Port Walter	764	–	–	–	–	–	–	–	764
Northern Southeast Total		25,000	251,000	602,000	940,000	9,116,000	–	–	–	8,119,000
Southeast Total		79,000	251,000	1,041,000	940,000	9,116,000	–	–	–	11,427,000

Table 10.–Page 2 of 3.

Region/Operator/Release Site			Chinook	Sockeye	Coho	Pink	Chum	Rainbow Trout	Arctic Char	Landlocked Salmon	Total
Prince William Sound											
	PWSAC	Armin F. Koernig Hatchery	–	–	–	5,350,000	480,000	–	–	–	5,830,000
		Cannery Creek Hatchery	–	–	–	5,518,776	–	–	–	–	5,518,716
		Gulkana I&II Hatchery	–	129,200	–	–	–	–	–	–	129,200
		Main Bay Hatchery	–	759,000	–	–	–	–	–	–	759,000
		Wally Noerenberg Hatchery	–	–	–	4,500,346	3,119,000	–	–	–	7,619,346
		Chenega	663	–	3,726	–	–	–	–	–	4,389
		Cordova	–	–	5,589	–	–	–	–	–	5,589
		Port Chalmers	–	–	–	–	174,000	–	–	–	174,000
		Whittier	–	–	5,589	–	–	–	–	–	5,589
	VFDA	Solomon Gulch Hatchery		–	85,111	16,932,144	–	–	–	–	17,017,255
		Boulder Bay	–	–	873	–	–	–	–	–	873
	ADF&G	Resurrection Bay	2,985	–	17,883	–	–	–	–	–	20,868
		Whittier	1,011	–	–	–	–	–	–	–	1,011
		Cordova Fleming Spit	1,112	–	–	–	–	–	–	–	1,112
	CIAA	Trail Lakes Hatchery	–	–	–	–	–	–	–	–	–
		Bear Lake	–	97,143	10,500	–	–	–	–	–	107,643
Prince William Sound Totals			6,000	1,088,000	129,000	32,301,000	3,773,000				37,297,000
Cook Inlet											
	CIAA	Trail Lakes Hatchery									
		English Bay Lakes	4,650	–	–	–	–	–	–	–	4,650
		Hazel/Leisure	39,483	–	–	–	–	–	–	–	39,483
		Hidden Lake	32,840	–	–	–	–	–	–	–	32,840
		Kirschner Lake	44,600	–	–	–	–	–	–	–	44,600
		Tutka Bay	79,256	–	–	–	–	–	–	–	79,256
		Resurrection Bay		102,584	–	–	–	–	–	–	102,584
		Tutka Bay Lagoon Hatchery	–	–	–	1,735,853	–	–	–	–	1,735,853
		Port Graham Hatchery	–	–	–	181,794	–	–	–	–	181,794
	ADF&G	WJ Hernandez Hatchery	–	–	–	–	–	–	–	–	–
		–	–	–	–	–		20,452	1,376	4,164	25,992
		Eklutna Tailrace	4,249	–	8,555	–	–	–	–	–	12,804
		Deception Creek	2,145	–	–	–	–	–	–	–	2,145
		Ship Creek	3,652	–	17,351	–	–	–	–	–	21,003
		Campbell Creek	–	–	3,608	–	–	–	–	–	3,608
		Bird Creek	–	–	8,879	–	–	–	–	–	8,879
		Crooked Creek	1,459	–	–	–	–	–	–	–	1,459
		Ninilchik River	1,512	–	–	–	–	–	–	–	1,512
		Homer Spit	2,105	–	9,161	–	–	–	–	–	11,266
		Halibut Cove	1,027	–	–	–	–	–	–	–	1,027
		Seldovia	722		–	–	–	–	–	–	722
Cook Inlet Totals			17,000	201,000	48,000	1,918,000	0	20,000	1,400	4,000	2,209,000
Southcentral Total			23,000	1,289,000	177,000	34,219,000	3,773,000	20,000	1,400	4,000	39,506,000

-continued-

Table 10.–Page 3 of 3.

Region/Operator/Release Site		Chinook	Sockeye	Coho	Pink	Chum	Rainbow Trout	Arctic Char	Landlocked Salmon	Total
Arctic-Yukon-Kuskokwim										
ADF&G	Ruth Burnett Hatchery	–	–	–	–	–	–	–	–	–
	Region III Stocked Lakes[c]	–	–	–	–	–	46,638	3,620	10,285	60,543
Arctic-Yukon-Kuskokwim Total							47,000	3,600	10,000	61,000
Kodiak										
KRAA	Kitoi Bay Hatchery	–	55,819	140,000	2,500,000	300,000	–	–	–	2,995,819
	Crescent Lake	–	–	1,200	–	–	–	–	–	1,200
	Katmai	–	–	1,200	–	–	–	–	–	1,200
	Pillar Creek Hatchery	–	–	3,400	–	–	–	–	–	–
	Monashka Creek	–	–	3,300	–	–	–	–	–	3,300
	Island Lake	–	–	2,200	–	–	–	–	–	2,200
	Mission Beach	–	–	900	–	–	–	–	–	900
	Crescent Lake	–	2,800	–	–	–	–	–	–	12,500
	Hidden Lake	–	12,500	–	–	–	–	–	–	274,000
	Spiridon L/Telrod Cove	–	274,000	–	–	–	–	–	–	12,300
	Anton Larsen Bay	–	12,300	–	–	–	–	–	–	4,100
	Ouzinkie Village	–	4,100	–	–	–	–	–	–	10,000
	Kodiak Road System	3,240	10,000	–	–	–	–	–	–	3,240
Westward/Kodiak Total		3,240	372,000	152,000	2,500,000	300,000	–	–	–	3,327,000
Statewide Total		105,000	1,911,000	1,371,000	37,659,000	13,189,000	67,000	5,000	14,000	54,000,000

[a] Not available in time for publication.
[b] Southcentral Alaska Lakes (e.g., Matanuska Valley)
[c] Northcentral Alaska Lakes (Fairbanks area). An additional 5,790 arctic grayling are expected for harvest in Region III lakes in 2018.

Table 11.–Details of the estimated Chinook salmon returns to Alaska fisheries enhancement projects, as reported by operators, 2017.

Region	Area	Agency	Hatchery	Project	Common Property Harvest				Broodstock	Cost Recovery	Other	Total Return
					Seine	Gillnet	Troll	Sp/PU/S[a]				
Southeast												
	Southern Southeast											
		SSRAA	Crystal Lake	Crystal Lake	–	160	481	1,500	1,982	–	–	4,123
				Anita Bay	4,436	6,653	989	30	–	–	–	12,108
				City Cr	–	915	225	30	–	–	–	1,170
			Neets Bay	Neets Bay	2,441	2,337	1,679	1,355	–	4,250		12,062
			Whitman Lake	Whitman Lake	20	530	1,050	1,776	1,591	1,412	822	7,201
			Deer Mountain	Deer Mountain	8	83	54	111	–		–	256
			Port Saint Nicholas	Port Saint Nicholas	12	40	335	125	–	1,384	–	1,896
				Coffman Cove	65	342	129	37	–		–	573
	Southern Southeast Total				7,000	11,000	5,000	5,000	3,600	7,000	822	39,000
	Northern Southeast											
		NSRAA	Hidden Falls	Hidden Falls	73	35	168	10	344	3	16	649
			Medvejie Creek	Medvejie Creek	678	1,360	1,646	435	2,835	361	1,405	8,720
				Halibut Point	183	211	442	176			744	1,756
				Crawfish Inlet	–	–	–	–	–	1	–	1
		AKI	Port Armstrong	Port Armstrong	17	15	260	18		391	52	753
		DIPAC	Macaulay	Macaulay Hatchery	66	995	159	1,419	2,247	154	611	5,651
				Skagway site	–	49	1	1	–	–	–	–
		FED	Little Port Walter	L Port Walter	5	34	44	44	1,143	–	186	2,036
	Northern Southeast Total				1,000	3,000	3,000	2,000	7,000	910	3,000	20,000
Southeast Total					8,000	14,000	8,000	7,000	10,000	8,000	4,000	59,000
Southcentral												
	Cook Inlet											
		ADF&G	WJ Hernandez	Crooked Cr	–	–	–	–	460	–	531	991
				Deception Cr	–	–	–	–	286	–	233	519
				Eklutna Tailrace	–	–	–	651		–		651
				Ninilchik R	–	–	–	–	147	–	337	484
				Ship Creek	–	–	–	1,204		–	620	2,988
	Cook Inlet Total							2,000	2,000	0	2,000	6,000
Southcentral Total								2,000	2,000	0	2,000	6,000
Kodiak/Westward												
	Kodiak											
		KRAA	Pillar Creek	Kodiak Road Sys Lakes	–	–	–	1,300	75	–	–	1,375
	Kodiak Total				–	–	–	1,300	75	–	–	1,375
Kodiak/Westward Total					–	–	–	1,000	75	–	–	1,000
Statewide Total					8,000	14,000	8,000	10,000	12,000	8,000	6,000	66,000

[a] Sp/PU/S is the sum of the sport, personal use, and subsistence harvest.

Table 12.–Details of the estimated sockeye salmon returns to Alaska fisheries enhancement projects, as reported by operators, 2017.

Region	Area	Agency	Hatchery	Project	Common Property Harvest				Broodstock	Cost Recovery	Other	Total Return
					Seine	Gillnet	Troll	Sp/PU/S[a]				
Southeast												
		DIPAC	Snettisham	Snettisham	10,030	49,719	–	42	6,394	134,053	1,331	201,569
				Sweetheart L	1,959	1,772	–	4,245	–	–	–	7,976
				Stikine R	–	7,152	–	–	–	–	25,484	34,216
				Taku R	–	6,124	–	–	–	–	7,695	13,819
Southeast Total					12,000	64,800	–	4,300	6,400	134,000	1,300	257,580
Southcentral												
	Prince William Sound											
		PWSAC	Gulkana I and II	Gulkana	–	32,292	–	11,947	8,873	–	9,242	62,354
			Main Bay	Main Bay	44,365	647,116	–	1,500	9,458	–	39,077	741,516
	Prince William Sound Total				44,365	679,408	–	13,447	18,331	–	48,319	–
	Cook Inlet											
		CIAA	Trail Lakes	Bear L	–	–	–	10,000	3,741	24,257	16,985	54,983
				English Bay Lk	–	–	–	–	–	–	3,790	3,790
				Hidden L	–	4,388		2,300	985	250	9,271	17,194
				Kirschner L	5,720	–	–	–	–	24,001	–	29,721
				Leisure/Hazel L	4,330	–	–	1,150	–	2,929	–	8,409
				Tutka Bay	17,006	16,712		1,000	5,319	34,709	–	74,746
				Shell L	–	–	–	–	39	–	535	574
	Cook Inlet Total				27,056	21,100	–	14,450	10,084	86,146	30,581	189,417
Southcentral Total					71,000	701,000	–	28,000	28,000	86,000	79,000	993,000
Kodiak/Westward												
	Kodiak											
		KRAA	Kitoi Bay	Kitoi Bay	12,317	–	–	–	–	342	660	13,319
			Pillar Creek	Spiridon L	55,265	233,525		1,000	–	54,098		343,888
				Hidden L	21,301	–	–	–	–	–	–	21,301
	Kodiak Total				67,582	233,525	–	1,000	–	54,440	660	378,508
Kodiak/Westward Total					89,000	234,000	–	1,000	–	54,000	660	379,000
Statewide Total					172,000	999,000	–	33,000	36,000	275,000	114,000	1,600,000

[a] Sp/PU/S is the sum of the sport, personal use, and subsistence harvest.

b Taku and Stikine River

Table 13.–Details of the estimated coho salmon returns to Alaska fisheries enhancement projects, as reported by operators, 2017.

					Common Property Harvest							
Region	Area	Agency	Hatchery	Project	Seine	Gillnet	Troll	Sp/PU/S[s]	Broodstock	Cost Recovery	Other	Total Return
Southeast	Southern Southeast											
		SSRAA	Burnett Inlet	Burnett Inlet	350	2,465	2,840	449	3,028	4,274	–	13,406
				Neck L	134	3,354	3,776	3,562	–	9,214	–	20,040
			Crystal Lake	Crystal Lake	375	660	5,720	800	3,666		–	11,221
			Neets Bay	Neets Bay	141	2,119	11,732	1,140	1,823	588	2,300	19,843
			Whitman Lake	Whitman Lake	137	505	5,335	776	2,556	1,395	–	10,704
				Anita Bay	30	2,431	1,330	115	–	–	–	3,906
				Nakat Inlet	254	14,477	8,400	869	–	–	–	24,000
			Klawock River	Klawock Lake	4,724		109,684	8,520	4,295	50,445	23,731	201,399
			Tamgas Cr[b]	Tamgas Cr	388	5,403	17,766	1,082	–	–	–	24,639
	Southern Southeast Total				6,533	31,414	166,583	17,313	15,368	65,916	26,031	329,158
	Northern Southeast											
		NSRAA	Hidden Falls	Hidden Falls	7,746	–	18,877	1,318	5,555	615	4,984	39,095
				Deer Lake	3,544	–	59,843	4,196	–	46,174	14,962	128,719
				Parry Lake	–	–	783	–	–	–	–	783
				Cliff Lake	–	–	369	–	–	–	–	369
			Sawmill Creek	Deep Inlet	8,401	3,622	35,361	2,819		446	288	50,937
				Medvejie Creek	866	347	12,149	1,362	6,696	91	2,585	24,096
		AKI	Port Armstrong	Port Armstrong	1,570		86,042	3,356	7,461	56,735	54,094	209,258
		DIPAC	Macaulay	Macaulay Hatchery	908	1,663	5,031	3,283	587	2,177	637	14,286
		SSSC	Sheldon Jackson	Sheldon Jackson	35	101	1,404	545	175	39	1,067	3,366
	Northern Southeast Total				23,070	5,733	219,859	16,879	20,474	106,277	78,617	470,909
Southeast Total					30,000	32,000	386,000	34,000	36,000	172,000	105,000	800,000
Southcentral	Prince William Sound											
		PWSAC	W Noerenberg	Lake Bay	–	–	–	100	3,814	–	–	3,914
				Chenega	–	–	–	110	–	–	–	110
				Cordova	–	–	–	175	–	–	–	175
				Whittier	–	–	–	120	–	–	–	120
		VFDA	Solomon Gulch	Solomon Gulch	16,838			23,204	1,383	30,307	61	71,793
	Prince William Sound Total				16,838	-	-	23,709	5,197	30,307	61	76,112
Cook Inlet		CIAA	Trail Lakes	Bear L	–	–	–	5,184	548	3	2,182	7,917
		ADF&G	WJ Hernandez	Bird Cr	–	–	–	1,973	–	–	154	2,127
				Eklutna Tailrace	–	–	–	2,050	–	–	–	2,050
				Ship Creek	–	–	–	3,519	1,132	–	1,503	6,154
				Resurrection Bay	–	–	–	–	187	–	–	187
	Cook Inlet Total				–	–	–	12,726	1,867	3	3,839	18,435
Southcentral Total					17,000	–	–	36,000	7,000	30,000	4,000	95,000
Kodiak	Kodiak	KRAA	Kitoi Bay	Kitoi Bay	13,405	–	–	250	1,533	15,317	1,245	31,750
			Pillar Creek	Kodiak Road Sys Lakes		–	–	14,800	134	–	–	14,934
	Kodiak Total				13,400	–	–	15,000	1,700	15,300	1,245	46,700
Statewide Total					**60,000**	**37,000**	**386,000**	**86,000**	**45,000**	**218,000**	**110,000**	**940,000**

[a] Sp/PU/S is the sum of the sport, personal use, and subsistence harvest.

[b] Tamgas Creek Hatchery data from ADF&G Mark, Age and Tag lab database.

Table 14.–Details of the estimated pink salmon returns to Alaska fisheries enhancement projects, as reported by operators, 2017.

Region	Area	Agency	Hatchery	Project	Common Property Harvest				Broodstock	Cost Recovery	Other	Total Return
					Seine	Gillnet	Troll	Sp/PU/S[a]				
Southeast												
	Northern Southeast											
		NSRAA	Medvejie Creek	Medvejie Creek	–	–	–	–	256	–	50	306
		AKI	Port Armstrong	Port Armstrong	646,091	–	–	–	145,267	543,188	70,000	1,404,546
		SSSC	Sheldon Jackson	Sheldon Jackson		–	–	–	4,784	47,502	16,818	69,104
Southeast Total					646,000	–	–	–	150,000	591,000	87,000	1,474,000
Southcentral												
	Prince William Sound											
		PWSAC	Armin F Koernig	Sawmill Bay	3,075,510	24,855	–	–	350,618	1,523,433	5,000	4,979,416
			Cannery Creek	Cannery Creek	6,105,805	33,148	–	–	419,804	141,805	5,425	6,705,987
			W Noerenberg	Lake Bay	1,400,827	46,926	–	–	349,084	721,337	3,000	2,521,174
		VFDA	Solomon Gulch	Solomon Gulch	13,082,350		–	9,438	376,853	1,191,715	63,293	14,723,649
	Prince William Sound Total				23,664,492	104,929	–	9,438	1,496,359	3,578,290	76,718	28,930,226
Cook Inlet												
		CIAA	Tutka Bay	Tutka Bay	84,627	4,964		2,000	267,913	110,152	53,637	523,293
			Port Graham	Port Graham	8,375	165		500	69,249		227	78,516
	Cook Inlet Total				93,002	5,129	0	2,500	337,162	110,152	53,864	601,809
Southcentral Total					23,757,000	110,000	0	12,000	1,834,000	3,688,000	131,000	29,532,000
Kodiak/Westward												
	Kodiak											
		KRAA	Kitoi Bay	Kitoi Bay	230,099	–	–	–	516,957	1,767,322	74,000	2,588,378
Kodiak/Westward Total					230,099	–	–	–	516,957	1,767,322	74,000	2,588,378
Statewide Total					25,000,000	110,000		12,000	2,500,000	6,000,000	291,000	34,000,000

[a] Sp/PU/S is the sum of the sport, personal use, and subsistence harvest.

Table 15.–Details of the estimated chum salmon returns to Alaska fisheries enhancement projects, as reported by operators, 2017.

Region	Area	Agency	Hatchery	Project	Common Property Harvest				Broodstock	Cost Recovery	Other	Total Return
					Seine	Gillnet	Troll	Sp/PU/S[a]				
Southeast												
	Southern Southeast											
		SSRAA	Burnett Inlet	BI Summer	1,746	13,700	–	–	6,094	200	–	21,740
				BI Fall	350	20,725	–	–	3,847	15,079	–	40,001
				Anita Bay	215,880	262,935	2,980	–	–	–	–	481,795
			Neets Bay	NB Summer	152,341	107,238	246,948		130,653	531,016	25,247	1,193,443
				NB Fall	4,910	6,954	5,887		6,049	47,574	6,951	78,325
				Nakat Inlet	1,100	16,731		–	–	–	–	17,831
			Whitman Lake	Kendrick Bay	588,040	58,050	415	–	–	–	–	646,505
				Nakat Inlet	12,820	201,920		–	–	–	–	214,740
	Southern Southeast Total				977,187	688,253	256,230	0	146,643	593,869	32,198	2,694,380
	Northern Southeast											
		NSRAA	Haines Projects	Haines Projects	–	12,408	–	–	–	–	18,612	31,020
			Hidden Falls	Hidden Falls	199,803		1		196,938	26,180	10,775	433,697
				Southeast Cove	–	–	–	–	–	49,502	–	49,502
			State of Alaska[b]	Southeast Cove	–	–	–	–	–	17,969	–	17,969
			Medvejie Creek	Medvejie Creek	810,502	296,656	111,870		90,337	180,934	-3,457	1,486,842
		AKI	Port Armstrong	Port Armstrong	41,810	–	–	–	34,503	318,039	15,000	409,352
		DIPAC	Macaulay	Gastineau Channel	49,383	689,440	387	5,000	174,348	747,397	41,829	1,707,784
				Amalga Harbor	563,440	600,877	390	–	–	555,794		1,720,501
				Boat Harbor	25,315	849,940	198	–	–	–	–	875,453
				Limestone Inlet	7,940	266,567	62	–	–	–	–	274,569
		SSSC	Sheldon Jackson	Sheldon Jackson	35,960	2,774	1,579	–	4,591	18,079	4,314	67,297
				Deep Inlet	112,726	41,259	15,559	–	12,564	25,165		206,792
	Northern Southeast Total				1,846,879	2,759,921	130,046	5,000	513,281	1,939,059	86,592	7,280,778
Southeast Total					2,824,000	3,448,000	386,000	5,000	660,000	2,533,000	119,000	9,975,000
Southcentral												
	Prince William Sound											
		PWSAC	W Noerenberg	Lake Bay	1,072,399	2,156,920	–	1,000	153,628	584,393	2,000	3,970,340
				Port Chalmers	242,486	3,040	–	–	–	–	–	245,526
			Armin F Koernig	Sawmill Bay	428,226	61,385	–	–	–	–	–	489,611
	Prince William Sound Total				1,743,111	2,221,345	–	1,000	153,628	584,393	2,000	4,705,477
Kodiak/Westward												
	Kodiak											
		KRAA	Kitoi Bay	Kitoi Bay	147,989	–	–	–	62,713	3,951	6,441	221,094
Kodiak/Westward Total					147,989	–	–	–	62,713	3,951	6,441	221,094
Statewide Total					**4,700,000**	**5,700,000**	**386,000**	**6,000**	**876,000**	**3,100,000**	**127,000**	**14,900,000**

[a] Sp/PU/S is the sum of the sport, personal use, and subsistence harvest.

[b] State of Alaska repossessed Gunnuk Creek Hatchery and split the cost recovery harvest with NSRAA by agreement.

Table 16.–Sport harvest of freshwater hatchery-produced fish to Alaska fisheries enhancement projects as reported by operators, 2017.

Region	Area	Agency	Hatchery	Project	Species	Sport Harvest
Southcentral						
	Cook Inlet					
		ADF&G	WJ Hernandez	WJH Region II Lakes	Arctic Char	1,373
					Arctic Grayling	377
					Landlocked Salmon	4,164
					Rainbow Trout	20,452
Southcentral Total						26,000
Arctic/Yukon/Kuskokwim						
		ADF&G	Ruth Burnett	Ruth Burnett	Arctic Char	1,078
					Arctic Grayling	729
					Landlocked Salmon	3,760
					Rainbow Trout	15,978
Arctic/Yukon/Kuskokwim Total						22,000
Statewide Total						48,000

Table 17.–Summary of salmon production of eggs collected in 2017 from Fish Resource Permits issued by the Alaska Department of Fish and Game. The egg number represented is the maximal number allowed to be collected, but not necessarily the number allowed to be released, by the issued permit for the project.

Bioenhancement Research Permits

Eggs collected under this type of propagation permit are for bioenhancement research by accredited institutions of higher learning and cooperative governmental projects.

Area	Permittee	Stock/Species	Maximum number allowed to be collected
Southeast			
	NOAA Little Port Walter	Keta River king at LPW	400,000 eggs
	NOAA Little Port Walter	Unuk River king at LPW	400,000 eggs
	NOAA Little Port Walter	Keta River king	40 spawning pair
	US Forest Service	Taku River coho	100,000 eggs
Arctic-Yukon-Kuskokwim			
	Native Village of White Mountain	Boston Creek king	20 spawning pair
	Native Village of White Mountain	Niukluk River coho	30 spawning pair
	Norton Sound Economic Development Corporation	North River chum	20 spawning pair
	Norton Sound Economic Development Corporation	Snake River chum	250 spawning pair
	Norton Sound Economic Development Corporation	Snake River coho	63 spawning pair
	Norton Sound Economic Development Corporation	Solomon River chum	60 spawning pair
	Norton Sound Economic Development Corporation	Unalakleet River king	20 spawning pair

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Educational and Vocational Permits

Eggs collected under this type of propagation permit are for educational and vocational purposes.

Area	Permittee	Stock/Species	Maximum number allowed to be collected
Southeast			
	Juneau-Douglas High School	Dredge Lake coho	5,000 eggs
	Petersburg High School	5 Mile Creek pink	50,000 eggs
	Petersburg High School	Blind Slough coho	50,000 eggs
Westward			
	Unalaska City School	Iliuliuk River coho	5 spawning pair

Scientific and Educational Permits

Eggs collected under this type of propagation permit are for Classroom Incubation Projects and in most cases are provided by hatcheries and not released. Resultant fry can be released at approved locations.

Area	Permittee	Species	Maximum number to be collected
Southeast			
	Fawn Mountain Elementary	coho	150
	Haines Middle School	chum	500
	Ketchikan Charter School	coho	150
	Taiya Inlet Watershed Council	pink	500
	Tongass School of Arts and Sciences	coho	100
	Point Higgins Elementary	coho	75
Southcentral			
	ADF&G Lobby (Public)	coho	500
	ADF&G Soldotna Lobby	coho	500
	Airport Heights Elementary	coho	500
	Alpenglow Elementary	coho	500
	American Charter	coho	500
	Anchor Lutheran School	coho	500
	Aquarian Elementary	coho	500
	Aurora Borealis	coho	500
	Bartlett High School	coho	500
	Baxter Elementary	coho	500
	Bear Valley Elementary	coho	500
	Benny Benson	coho	500

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Table 17.–Page 3 of 6.

Area	Permittee	Species	Maximum number to be collected
Southcentral (continued)			
	Big Lake Elementary	coho	500
	Bowman Elementary	coho	500
	Butte Elementary	coho	500
	Campbell Elementary	coho	500
	Chapman Elementary	coho	500
	Chester Valley Elementary	coho	500
	Chinook Elementary	coho	500
	Chugiak Elementary	coho	500
	Chugiak High School	coho	500
	Clark Middle School	coho	500
	Colony High	coho	500
	Colony Middle	coho	500
	Connections School	coho	500
	Cook Inlet Academy	coho	500
	Cooper Landing	coho	500
	Copper River Watershed Project	coho	500
	Cottonwood Elementary	coho	500
	Creekside Park	coho	500
	Dena'ina	coho	500
	Denali Montessori Elementary	coho	500
	Dimond High School	coho	500
	Eagle Academy Charter School	coho	500
	Eagle River Elementary	coho	500
	Eagle River High School	coho	500
	East Anchorage High School	coho	500
	Fairview Elementary	coho	500
	Finger Lake Elementary	coho	500
	Fireweed Academy	coho	500
	Fronteras Charter	coho	500
	Girdwood K–8 School	coho	500
	Gladys Wood Elementary	coho	500
	Government Hill Elementary	coho	500
	Grace Christian Elementary School	coho	500
	Gruening Middle School	coho	500
	Hanshew Middle School	coho	500
	Hermon Hutchens	chum	500
	Homer Flex High School	coho	500
	Homestead Elementary	coho	500
	IDEA Home School	coho	500
	Igiugig School	coho	500

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Table 17.–Page 4 of 6.

Area	Permittee	Species	Maximum number to be collected
Southcentral (continued)			
	Inlet View Elementary	coho	500
	Kaleidoscope Elementary	coho	500
	Kalifornsky Beach Elementary	coho	500
	Kasuun Elementary	coho	500
	Kellogg FIELD	coho	500
	Kenai Central High School	coho	500
	Kenai Middle School	coho	500
	Kincaid Elementary	coho	500
	Knik Elementary	coho	500
	Kokhanok School	coho	500
	Lake Hood Elementary	coho	500
	Lake Otis Elementary	coho	500
	Larson Elementary	coho	500
	Machetanz Elementary	coho	500
	McLaughlin School	coho	500
	Meadow Lakes Elementary	coho	500
	Midnight Suns Charter	coho	500
	Mirror Lake Middle School	coho	500
	Mt. View Elementary (Anchorage)	coho	500
	Mt. View Elementary (Soldotna)	coho	500
	Muldoon Elementary	coho	500
	Nikiski North Star Elementary	coho	500
	Nikolaevsk Elementary	coho	500
	Ninilchik School	coho	500
	Ocean View Elementary	coho	500
	O'Malley School	coho	500
	Polaris School	coho	500
	Port Graham School	pink	500
	Ptarmigan Elementary	coho	500
	Rabbit Creek Elementary	coho	500
	Ravenwood Elementary	coho	500
	Razdolna School	coho	500
	Redoubt Elementary School	coho	500
	Rilke Schule	coho	500
	Rogers Park Elementary	coho	500
	Scenic Park	coho	500
	Service High School	coho	500
	Seward Elementary School	coho	500
	Seward Middle School	coho	500
	Shaw Elementary	coho	500

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Table 17.–Page 5 of 6.

Area	Permittee	Species	Maximum number to be collected
Southcentral (continued)			
	Sherrod Elementary	coho	500
	Showshoe Elementary	coho	500
	Soldotna Elementary School	coho	500
	Soldotna Prep Middle School	coho	500
	South High School	coho	500
	St John Orthodox Christain School	coho	500
	Steller Secondary School	coho	500
	Sterling Elementary School	coho	500
	STREAM	coho	500
	Susitna Elementary	coho	500
	Swanson Elementary	coho	500
	Talkeetna Elementary	coho	500
	Tanaina Elementary	coho	500
	Teeland Middle	coho	500
	The Study School	coho	500
	Turnagain Elementary	coho	500
	Tustumena Elementary	coho	500
	Ursa Major Elementary	coho	500
	Ursa Minor Elementary	coho	500
	Voznesenka School	coho	500
	Wasilla High	coho	500
	West High School	coho	500
	West Homer Elementary	coho	500
	Whaley School	coho	500
	William Tyson Elementary	coho	500
	Willow Crest	coho	500
	Willow Elementary	coho	500
	Winterberry	coho	500
	Ya Ne Da Ah School	coho	500
Arctic-Yukon-Kuskokwim			
	Aniguiin School	coho	500
	Delta Elementary	coho	500
	Delta Greely School	coho	500
	Jack Egnaty Sr School	coho	500
	Newhalen School	coho	250
	Pearl Creek Elementary	coho	500
	Russian Mission School	coho	200
	Scammon Bay	pink	200
	Tanalian School	coho	300
	Ticasuk Brown Elementary	coho	500

Table 17.–Page 6 of 6.

Area	Permittee	Species	Maximum number to be collected
Arctic-Yukon-Kuskokwim (continued)			
	Two Rivers School	coho	500
	University Park Elementary	coho	500
	Watershed Charter	coho	500
	Weller Elementary	coho	500
Westward			
	Main Elementary School	coho	500
	Chignik Lake School	coho	500
	East Elementary School	coho	500
	Kodiak Christian School	coho	500
	Kodiak High School	coho	500
	North Star Elementary School	coho	500
	Peterson Elementary School	coho	500
	Pribilof School District	coho	500
	Sand Point School	pink/coho	500
	St. Mary's School	coho	500

Table 18.–Summary of anadromous salmon production (all species) from Alaska hatcheries and fisheries enhancement projects, in millions, 1972–2017.

Year	Egg Takes	Fry Releases	Total Returns
1972	2	2	–
1973	4	2	–
1974	9	3	–
1975	36	11	–
1976	61	13	–
1977	100	41	–
1978	134	75	–
1979	153	87	2
1980	299	96	3
1981	475	217	5
1982	548	365	7
1983	647	419	7
1984	829	512	8
1985	997	659	17
1986	1,025	763	13
1987	1,388	814	25
1988	1,341	1,115	18
1989	1,419	1,087	35
1990	1,602	1,154	49
1991	1,635	1,319	49
1992	1,725	1,324	23
1993	1,685	1,465	33
1994	1,759	1,299	56
1995	1,913	1,503	37
1996	1,688	1,638	50
1997	1,730	1,477	51
1998	1,773	1,451	56
1999	1,847	1,434	72
2000	1,734	1,470	63
2001	1,804	1,478	62
2002	1,866	1,484	49
2003	1,933	1,521	80
2004	1,734	1,648	46
2005	1,705	1,427	81
2006	1,822	1,433	47
2007	1,724	1,560	80
2008	1,661	1,487	60
2009	1,783	1,463	45
2010	1,808	1,561	91
2011	1,912	1,539	48
2012	1,744	1,674	47
2013	2,005	1,551	111
2014	1,908	1,765	62
2015	1,983	1,748	97
2016	1,892	1,661	27
2017	2,188	1,588	51
Total	60,035	48,401	1,765

Table 19.–Summary of Chinook salmon production from Alaska hatcheries and fisheries enhancement projects, 1972–2017.

Year	Egg Takes (millions)	Fry Releases (millions)	Total Returns (thousands)
1972	0	0	0
1973	0	0	0
1974	0	1	0
1975	1	0	0
1976	1	0	0
1977	3	1	0
1978	2	1	0
1979	2	1	3
1980	3	1	7
1981	1	1	5
1982	3	1	12
1983	7	2	13
1984	10	4	21
1985	19	4	26
1986	16	6	40
1987	17	8	94
1988	18	9	75
1989	15	8	78
1990	17	10	118
1991	20	7	174
1992	13	10	132
1993	12	12	112
1994	13	10	127
1995	14	7	169
1996	12	7	166
1997	12	7	150
1998	13	7	104
1999	12	8	114
2000	12	8	174
2001	14	9	188
2002	19	8	157
2003	15	10	159
2004	16	10	207
2005	15	10	139
2006	17	10	108
2007	17	11	137
2008	18	11	140
2009	17	12	116
2010	13	11	106
2011	13	8	131
2012	11	10	93
2013	14	9	124
2014	14	9	92
2015	14	9	113
2016	12	11	72
2017	14	9	66
Total	520	307	4,062

Table 20.–Summary of sockeye salmon production from Alaska hatcheries and fisheries enhancement projects, 1972–2017.

Year	Egg Takes (millions)	Fry Releases (millions)	Total Returns (thousands)
1972	0	0	0
1973	2	0	0
1974	2	1	0
1975	8	1	0
1976	24	2	0
1977	19	14	27
1978	35	16	13
1979	30	17	318
1980	38	15	700
1981	51	28	401
1982	59	45	56
1983	68	53	210
1984	86	52	382
1985	108	73	754
1986	102	77	1,296
1987	107	60	992
1988	107	69	1,651
1989	112	77	2,037
1990	99	74	4,165
1991	113	70	5,432
1992	104	74	4,185
1993	122	61	5,139
1994	114	78	4,177
1995	115	81	1,505
1996	127	75	2,911
1997	97	77	3,304
1998	95	71	2,488
1999	91	66	3,588
2000	73	60	2,076
2001	89	39	3,329
2002	92	67	3,645
2003	94	64	4,750
2004	60	71	3,554
2005	81	39	2,761
2006	92	53	2,618
2007	83	63	2,347
2008	79	61	1,781
2009	80	57	1,791
2010	81	56	2,548
2011	91	54	3,036
2012	86	61	2,642
2013	83	57	2,351
2014	75	60	2,718
2015	68	59	2,500
2016	73	49	1,800
2017	68	50	1,600
Total	3,483	2,347	93,579

Table 21.–Summary of coho salmon production from Alaska hatcheries and fisheries enhancement projects, 1972–2017.

Year	Egg Takes (millions)	Fry Releases (millions)	Total Returns (thousands)
1972	2	2	0
1973	2	2	0
1974	1	2	0
1975	7	4	0
1976	5	3	0
1977	5	5	13
1978	6	3	0
1979	4	3	71
1980	4	2	21
1981	8	3	55
1982	17	3	108
1983	17	10	96
1984	21	11	180
1985	21	15	309
1986	22	13	659
1987	26	15	455
1988	28	19	287
1989	24	16	503
1990	22	18	946
1991	24	14	1,287
1992	21	15	1,397
1993	25	15	1,023
1994	28	18	1,327
1995	27	21	1,313
1996	30	21	1,369
1997	34	23	1,088
1998	29	21	1,393
1999	23	22	1,542
2000	33	15	1,655
2001	32	20	1,799
2002	35	21	2,120
2003	38	19	1,495
2004	33	23	1,203
2005	33	22	1,444
2006	36	22	1,361
2007	34	26	1,133
2008	40	25	1,453
2009	39	24	1,152
2010	35	29	1,359
2011	42	30	1,420
2012	41	25	973
2013	36	28	1,743
2014	41	28	2,058
2015	36	31	1,200
2016	41	28	790
2017	41	28	920
Total	1,149	760	40,719

Table 22.–Summary of pink salmon production from Alaska hatcheries and fisheries enhancement projects, 1973–2017.

Year	Egg Takes (millions)	Fry Releases (millions)	Total Returns (thousands)
1973	1	0	0
1974	5	0	0
1975	15	5	6
1976	23	4	8
1977	66	18	147
1978	79	50	202
1979	91	60	1,224
1980	181	64	2,318
1981	328	140	4,396
1982	344	252	6,610
1983	406	261	5,939
1984	443	338	5,866
1985	604	366	14,158
1986	511	484	8,739
1987	859	432	21,860
1988	797	730	13,767
1989	975	675	31,476
1990	1,013	811	41,631
1991	998	862	39,493
1992	1,077	797	14,429
1993	1,031	919	20,497
1994	1,076	787	41,055
1995	1,162	921	24,770
1996	929	999	29,214
1997	1,064	892	33,957
1998	1,119	873	38,651
1999	1,085	878	51,973
2000	1,074	880	40,395
2001	1,101	942	47,247
2002	1,168	938	30,835
2003	1,108	962	59,773
2004	960	965	30,565
2005	949	808	69,076
2006	964	809	26,702
2007	952	851	64,308
2008	908	823	43,411
2009	943	818	29,276
2010	979	855	73,849
2011	1,023	883	31,623
2012	861	943	27,999
2013	1,133	798	91,790
2014	1,059	1,016	49,123
2015	1,082	948	81,000
2016	968	894	13,000
2017	1,242	841	34,000
Total	34,755	28,594	1,296,359

Table 23.–Summary of chum salmon production from Alaska hatcheries and fisheries enhancement projects, 1974–2017.

Year	Egg Takes (millions)	Fry Releases (millions)	Total Returns (thousands)
1974	1	0	0
1975	5	1	0
1976	7	2	0
1977	8	3	0
1978	12	4	3
1979	26	7	6
1980	74	13	16
1981	87	46	53
1982	125	63	153
1983	149	94	301
1984	269	108	1,809
1985	245	201	1,404
1986	374	182	1,939
1987	380	298	1,963
1988	392	289	2,653
1989	294	310	1,347
1990	450	241	2,037
1991	480	365	2,181
1992	510	428	3,094
1993	496	459	6,707
1994	529	407	8,989
1995	596	473	9,533
1996	590	535	16,353
1997	524	478	12,761
1998	517	479	13,407
1999	636	461	15,073
2000	541	508	18,806
2001	568	467	9,166
2002	551	451	12,568
2003	679	466	13,710
2004	665	578	10,939
2005	627	549	7,558
2006	714	539	15,714
2007	639	609	12,338
2008	615	567	13,655
2009	705	552	12,670
2010	700	609	12,955
2011	743	563	11,627
2012	743	635	15,544
2013	739	659	15,377
2014	720	651	8,041
2015	786	701	13,000
2016	795	677	11,500
2017	820	648	14,300
Total	20,125	16,379	331,249

Table 24.–Summary of commercial harvest of salmon from Alaska fisheries enhancement projects, 1977–2017.

Year	Total Commercial Harvest[a]	Total Cost Recovery Harvest	Commercial Common Property Harvest	Hatchery-Produced Fish in Commercial Common Property Harvest	% Hatchery-Produced Fish in Total Commercial Harvest	% Hatchery-Produced Fish in Commercial Common Property Harvest
1977	50,811,833	108,718	50,703,115	17,183	0%	0%
1978	82,288,581	114,188	82,174,393	2,976	0%	0%
1979	88,761,967	253,303	88,508,664	581,717	1%	1%
1980	110,012,352	346,834	109,665,518	1,710,649	2%	2%
1981	113,332,999	856,408	112,476,591	3,501,065	4%	3%
1982	111,579,999	1,363,885	110,216,114	4,893,392	6%	4%
1983	127,706,450	856,231	126,850,219	4,873,509	4%	4%
1984	133,643,554	1,043,376	132,600,178	5,730,203	5%	4%
1985	144,727,522	1,853,789	142,873,733	12,863,193	10%	9%
1986	126,855,975	1,211,675	125,644,300	9,152,099	8%	7%
1987	95,985,203	4,181,289	91,803,914	17,927,502	23%	20%
1988	99,440,378	2,498,927	96,941,451	12,815,060	15%	13%
1989	151,138,707	15,012,919	136,125,788	16,063,656	21%	12%
1990	153,223,849	10,387,952	142,835,897	34,372,132	29%	24%
1991	183,957,665	13,169,033	170,788,632	29,400,303	23%	17%
1992	135,386,575	7,255,121	128,131,454	11,357,589	14%	9%
1993	191,209,924	4,853,221	186,356,703	23,822,544	15%	13%
1994	194,505,686	15,916,251	178,589,435	34,688,288	26%	19%
1995	215,199,444	9,285,469	205,913,975	24,364,031	16%	12%
1996	173,033,261	14,657,121	158,376,140	29,199,550	25%	18%
1997	122,047,351	19,410,252	102,637,099	26,780,072	38%	26%
1998	150,090,563	15,649,068	134,441,495	34,553,704	33%	26%
1999	215,180,312	22,607,626	192,572,686	42,656,151	30%	22%
2000	135,897,068	18,981,236	116,915,832	39,780,299	43%	34%
2001	172,628,831	18,443,777	154,185,054	38,500,563	33%	25%
2002	128,681,747	19,067,521	109,614,226	25,743,907	35%	23%
2003	159,887,885	22,936,739	136,951,146	49,881,589	46%	36%
2004	164,996,265	22,015,463	142,980,802	20,106,465	26%	14%
2005	219,699,789	21,262,577	198,437,212	53,566,262	34%	27%
2006	139,935,798	18,942,107	120,993,691	23,723,769	30%	20%
2007	211,522,916	19,601,350	191,921,566	57,682,118	37%	30%
2008	144,910,315	12,898,100	132,012,215	44,920,941	40%	34%
2009	160,855,846	13,789,128	147,066,718	28,139,180	26%	19%
2010	169,171,088	10,463,516	158,707,572	77,324,429	52%	49%
2011	175,961,536	12,153,913	163,807,623	32,209,873	25%	20%
2012	125,911,498	7,326,714	118,584,784	36,903,254	35%	31%
2013	280,312,950	9,480,010	270,832,940	97,104,919	38%	36%
2014	154,272,301	7,466,365	146,805,936	50,811,844	38%	35%
2015	263,872,586	14,553,280	249,319,306	78,014,204	35%	31%
2016	109,078,586	8,165,000	100,913,586	16,146,000	22%	16%
2017	221,749,117	9,421,367	212,327,750	37,199,308	21%	18%

Source: Total commercial harvest 1977–1984 from ADF&G HQ fish ticket staff. 1985–2017 from OceanAK statewide salmon fishticket database [URL not publicly available]. Cost recovery and common property hatchery harvest from PNP annual reports in the PNP hatchery database.

[a] Total commercial harvest by all commercial gear types, including fish harvested for cost recovery.

Table 25.–Summary of statewide commercial harvest (including cost recovery) of hatchery-produced salmon from Alaska's fisheries enhancement projects, 1977–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1977	0	183	0	125,718	0	125,901
1978	42	720	0	127,188	2,214	130,164
1979	445	300,758	0	532,303	1,514	835,020
1980	4,388	638,408	102	1,406,028	8,557	2,057,483
1981	1,504	362,326	48,857	3,904,308	39,972	4,356,967
1982	3,352	27,590	84,033	6,067,429	73,869	6,256,273
1983	1,175	158,000	80,820	5,256,149	209,771	5,705,915
1984	5,234	236,762	135,524	4,838,680	1,549,559	6,765,759
1985	10,039	447,448	196,502	12,891,224	1,118,379	14,663,592
1986	14,120	872,507	388,535	7,630,445	1,330,333	10,235,940
1987	22,691	613,433	171,542	19,819,167	1,378,464	22,005,297
1988	28,886	1,001,421	117,108	12,099,427	1,952,956	15,199,798
1989	35,150	1,342,578	278,886	28,403,238	955,802	31,015,654
1990	64,859	1,366,025	680,922	39,580,126	1,487,413	43,179,345
1991	71,754	2,289,246	922,466	36,247,398	1,848,535	41,379,399
1992	54,661	1,498,967	1,037,831	12,220,536	2,398,376	17,210,371
1993	56,404	2,062,422	620,872	18,023,439	5,918,512	26,681,649
1994	43,417	1,610,445	1,024,048	38,814,084	7,977,027	49,469,021
1995	79,366	1,075,191	839,924	22,714,552	8,641,336	33,350,369
1996	89,354	2,317,366	930,894	26,178,537	13,974,597	43,490,748
1997	66,039	2,499,554	720,746	30,982,804	11,758,168	46,027,311
1998	35,965	1,882,080	944,447	34,564,050	12,622,840	50,049,382
1999	46,792	2,568,488	1,180,020	47,193,297	14,144,492	65,133,089
2000	81,955	1,520,601	1,179,919	38,191,003	17,684,623	58,658,101
2001	91,462	2,498,569	1,244,963	44,616,086	8,358,543	56,809,623
2002	85,837	2,749,665	1,576,037	28,443,301	11,813,552	44,638,703
2003	88,938	3,694,840	1,102,260	55,071,886	12,764,879	72,721,118
2004	118,583	2,669,905	834,124	28,309,396	10,057,578	41,989,586
2005	72,998	1,972,236	1,021,934	64,949,983	6,655,453	74,672,604
2006	54,854	2,135,578	1,032,130	24,773,517	14,543,841	42,539,920
2007	83,889	2,033,337	809,108	62,677,909	11,473,819	77,078,062
2008	97,145	1,510,062	1,123,080	42,075,688	12,820,747	57,626,722
2009	82,786	1,534,343	813,392	27,483,685	11,765,847	41,680,053
2010	73,593	2,060,770	916,856	72,484,852	11,854,282	87,390,353
2011	101,092	2,673,023	1,073,289	29,876,986	10,255,648	43,980,038
2012	71,923	2,304,090	677,976	26,699,246	14,109,316	43,862,551
2013	95,570	1,801,171	1,517,608	88,942,840	14,227,394	106,584,583
2014	66,173	2,294,284	1,772,277	47,234,781	6,881,646	58,249,161
2015	77,495	2,319,615	936,259	77,896,371	11,327,248	92,556,988
2016	43,861	1,758,419	536,275	11,526,801	9,914,308	23,779,664
2017	42,045	1,447,642	625,758	30,234,269	14,270,961	46,620,675
Total	2,165,836	64,150,068	29,197,324	1,211,108,727	300,172,371	1,606,762,952

Source: ADF&G PNP hatchery database.

Table 26.–Summary of commercial harvest (including cost recovery) of hatchery-produced salmon from Southeast Alaska fisheries enhancement projects, 1977–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1977	–	–	–	108,173	–	108,173
1978	–	–	–	–	2,214	2,214
1979	445	–	–	33,555	1,514	35,514
1980	4,388	–	–	500	5,627	10,515
1981	1,504	–	47,823	139,000	3,286	191,613
1982	3,352	–	82,458	16,568	64,874	167,252
1983	1,175	–	78,918	163,494	196,523	440,110
1984	5,234	–	134,482	235,694	1,465,670	1,841,080
1985	10,039	–	180,821	911,977	931,267	2,034,104
1986	14,045	18,600	378,044	116,114	1,035,304	1,562,107
1987	22,486	36,000	134,157	1,370,029	1,236,283	2,798,955
1988	28,585	20,400	38,414	124,571	1,251,471	1,463,441
1989	34,810	36,672	68,258	859,426	596,879	1,596,045
1990	64,464	113,400	445,739	1,319,810	785,933	2,729,346
1991	71,440	112,332	764,941	1,774,348	1,190,607	3,913,668
1992	52,375	188,126	840,323	3,515,448	2,114,365	6,710,637
1993	53,040	363,468	549,540	688,861	4,663,502	6,318,411
1994	42,222	171,702	850,474	5,787,031	6,938,082	13,789,511
1995	77,090	211,343	646,138	1,530,366	7,595,023	10,059,960
1996	87,724	482,314	705,874	2,009,727	11,861,241	15,146,880
1997	65,115	352,567	545,079	2,447,974	9,866,592	13,277,327
1998	34,987	237,127	730,391	2,235,834	11,553,028	14,791,367
1999	46,792	137,872	976,683	4,087,903	11,386,520	16,635,770
2000	81,955	259,611	562,678	438,750	12,689,973	14,032,967
2001	91,462	390,365	911,015	2,346,847	5,642,197	9,381,886
2002	85,780	120,106	1,321,514	1,924,064	5,613,259	9,064,723
2003	88,166	118,894	884,519	929,740	8,947,620	10,968,939
2004	116,575	555,871	641,779	1,464,011	8,072,702	10,850,938
2005	72,372	240,060	641,025	1,582,244	4,644,569	7,180,270
2006	54,215	377,440	522,774	528,023	12,332,015	13,814,467
2007	83,422	188,510	517,172	1,218,852	7,693,535	9,701,491
2008	97,145	114,047	704,464	173,914	7,984,314	9,073,884
2009	82,756	137,017	619,570	1,318,308	8,687,058	10,844,709
2010	73,593	91,202	765,192	1,198,717	7,593,846	9,722,550
2011	101,092	170,087	796,221	1,339,987	8,284,698	10,692,085
2012	71,923	218,926	618,549	340,783	10,493,980	11,744,161
2013	95,570	179,181	1,206,772	2,500,909	10,489,177	14,471,609
2014	66,173	216,118	1,360,945	511,684	5,733,451	7,888,371
2015	77,495	145,456	822,191	527,887	9,145,108	10,718,137
2016	43,861	277,819	515,812	358,762	6,919,733	8,115,987
2017	42,041	211,774	570,985	1,287,528	9,743,777	11,856,105
Total	2,146,908	6,494,407	22,181,734	49,467,413	225,456,817	305,747,279

Source: ADF&G PNP hatchery database.

Table 27.–Summary of commercial harvest (including cost recovery) of hatchery-produced salmon from Prince William Sound fisheries enhancement projects, 1977–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1977	–	183	–	17,545	–	17,728
1978	–	720	–	114,188	–	114,908
1979	–	900	–	498,748	–	499,648
1980	–	350	–	1,405,528	2,930	1,408,808
1981	–	3,600	–	2,138,544	36,686	2,178,830
1982	–	3,600	–	5,679,161	1,569	5,684,330
1983	–	6,600	–	4,385,455	13,108	4,405,163
1984	–	5,318	–	4,037,386	82,991	4,125,695
1985	–	31,955	–	8,067,647	64,137	8,163,739
1986	–	30,404	3,263	6,792,641	199,077	7,025,385
1987	100	47,347	23,640	17,304,638	127,397	17,503,122
1988	231	92,552	66,452	10,533,495	524,894	11,217,624
1989	340	175,643	202,497	20,173,723	341,374	20,893,577
1990	235	73,917	218,455	37,553,433	643,123	38,489,163
1991	184	582,200	129,270	32,870,650	250,408	33,832,712
1992	1,311	644,020	192,062	7,479,216	237,546	8,554,155
1993	2,045	502,536	43,635	4,418,071	1,177,483	6,143,770
1994	1,195	300,248	116,745	29,409,289	939,605	30,767,082
1995	891	367,560	139,430	14,246,639	662,712	15,417,232
1996	588	899,555	166,824	22,751,594	2,076,445	25,895,006
1997	924	1,463,155	62,944	24,686,332	1,878,810	28,092,165
1998	978	768,074	45,585	24,760,828	1,031,706	26,607,171
1999	–	440,326	80,249	37,968,264	2,617,072	41,105,911
2000	–	490,077	478,633	33,040,270	4,690,867	38,699,847
2001	–	972,582	175,083	28,466,847	2,499,721	32,114,233
2002	–	1,163,539	36,232	18,771,143	6,111,569	26,082,483
2003	–	1,571,592	76,843	46,935,174	3,351,054	51,934,663
2004	–	694,501	46,578	20,422,252	1,745,266	22,908,597
2005	–	517,890	227,644	47,620,680	1,919,070	50,285,284
2006	–	1,183,213	340,551	19,835,604	2,034,278	23,393,646
2007	–	1,234,571	166,107	53,461,389	3,559,558	58,421,625
2008	–	856,523	297,900	39,783,382	4,743,408	45,681,213
2009	–	949,481	39,260	17,225,812	2,977,790	21,192,343
2010	–	1,510,501	37,989	68,047,457	4,069,152	73,665,099
2011	–	1,757,043	206,733	26,362,128	1,650,418	29,976,322
2012	–	1,622,566	11,074	23,390,393	3,396,596	28,420,629
2013	–	1,041,824	258,104	74,616,332	3,640,837	79,557,097
2014	–	1,494,284	180,742	40,921,607	1,102,613	43,699,246
2015	–	1,660,967	74,728	70,375,473	2,138,730	74,249,898
2016	–	1,030,867	8,653	9,930,534	2,924,763	13,894,817
2017	–	723,773	25,888	26,714,899	4,420,141	31,884,701
Total	9,022	26,916,557	4,179,793	983,214,391	69,884,904	1,084,204,667

Table 28.–Summary of commercial harvest (including cost recovery) of hatchery-produced salmon from Cook Inlet fisheries enhancement projects, in thousands of fish, 1978–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1978	42	–	–	–	–	42
1979	–	299,858	–	–	–	299,858
1980	–	638,058	102	–	–	638,160
1981	–	358,726	1,034	963,350	–	1,323,110
1982	–	23,990	1,575	181,400	7,426	214,391
1983	–	151,400	1,902	577,200	140	730,642
1984	–	231,444	1,042	230,000	898	463,384
1985	–	415,493	3,681	463,600	1,875	884,649
1986	–	808,503	6,628	380,190	23,152	1,218,473
1987	–	521,349	13,745	84,500	5,313	624,907
1988	–	676,669	8,642	836,000	8,423	1,529,734
1989	–	330,263	8,131	877,600	4,560	1,220,554
1990	160	378,708	11,728	167,400	49,257	607,253
1991	130	483,514	18,546	204,800	25,801	732,791
1992	975	388,021	4,706	373,577	2,933	770,212
1993	1,319	497,376	11,681	637,807	38,002	1,186,185
1994	–	256,977	10,045	1,563,101	74,725	1,904,848
1995	1,385	324,248	4,121	2,423,894	110,962	2,864,610
1996	1,042	425,118	1,346	442,816	22,711	893,033
1997	–	274,873	3,783	2,637,370	1,745	2,917,771
1998	–	192,548	18,638	1,295,388	106	1,506,680
1999	–	1,150,784	7,188	1,080,130	–	2,238,102
2000	–	310,815	5,370	1,052,285	–	1,368,470
2001	–	724,095	7,133	530,265	–	1,261,493
2002	57	840,439	9,032	1,051,320	–	1,900,848
2003	772	1,204,972	5,849	619,079	–	1,830,672
2004	2,008	1,142,202	7,631	2,460,712	–	3,612,553
2005	626	999,050	1,536	2,143,317	–	3,144,529
2006	639	460,023	600	251,781	–	713,043
2007	467	402,332	48	112,801	–	515,648
2008	–	223,062	350	–	–	223,412
2009	30	201,778	–	–	–	201,808
2010	–	148,478	–	–	–	148,478
2011	–	254,223	–	–	–	254,223
2012	–	138,961	–	–	–	138,961
2013	–	118,069	–	66,581	–	184,650
2014	–	209,311	–	25,430	–	234,741
2015	–	209,789	–	2,166,733	–	2,376,522
2016	–	218,624	–	84,002	–	302,626
2017	4	135,709	201	211,822	246	347,982
Total	9,656	16,769,852	176,014	26,196,251	378,275	43,530,048

Table 29.–Summary of commercial harvest (including cost recovery) of hatchery-produced salmon from Kodiak fisheries enhancement projects, in thousands of fish, 1981–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1981	–	–	–	663,414	–	663,414
1982	–	–	–	190,300	–	190,300
1983	–	–	–	130,000	–	130,000
1984	–	–	–	335,600	–	335,600
1985	–	–	12,000	3,448,000	121,100	3,581,100
1986	75	15,000	600	341,500	70,300	427,475
1987	105	8,737	–	1,060,000	3,860	1,072,702
1988	70	211,800	3,600	605,361	150,967	971,798
1989	–	800,000	–	6,492,489	–	7,292,489
1990	–	800,000	5,000	539,483	4,100	1,348,583
1991	–	1,111,200	9,709	1,397,600	361,719	2,880,228
1992	–	278,800	740	852,295	3,532	1,135,367
1993	–	699,042	16,016	12,278,700	34,525	13,028,283
1994	–	881,518	46,784	2,054,663	5,007	2,987,972
1995	–	172,040	50,235	4,513,653	215,311	4,951,239
1996	–	510,379	56,850	974,400	14,200	1,555,829
1997	–	408,959	108,940	1,211,128	11,021	1,740,048
1998	–	684,331	149,833	6,272,000	38,000	7,144,164
1999	–	839,506	115,900	4,057,000	140,900	5,153,306
2000	–	460,098	133,238	3,659,698	303,783	4,556,817
2001	–	411,527	151,732	13,272,127	216,625	14,052,011
2002	–	625,581	209,259	6,696,774	88,724	7,620,338
2003	–	799,382	135,049	6,587,893	466,205	7,988,529
2004	–	277,331	138,136	3,962,421	239,610	4,617,498
2005	–	215,236	151,729	13,603,742	91,814	14,062,521
2006	–	114,902	168,205	4,158,109	177,548	4,618,764
2007	–	207,924	125,781	7,884,867	220,726	8,439,298
2008	–	316,430	120,366	2,118,392	93,025	2,648,213
2009	–	246,067	154,562	8,939,565	100,999	9,441,193
2010	–	310,589	113,675	3,238,678	191,284	3,854,226
2011	–	491,670	70,335	2,174,871	320,532	3,057,408
2012	–	323,637	48,353	2,968,070	218,740	3,558,800
2013	–	462,097	52,732	11,759,018	97,380	12,371,227
2014	–	374,571	230,590	5,776,060	45,582	6,426,803
2015	–	303,403	39,340	4,826,278	43,410	5,212,431
2016	–	231,109	11,810	1,153,503	69,812	1,466,234
2017	–	376,386	26,684	2,020,020	154,222	2,558,011
Total	250	13,969,252	2,659,783	152,217,672	4,314,563	173,161,520

Table 30.–Actively operated Alaska hatcheries contact information, 2017.

[a]	Agency	Address	City, State, Zip	Office phone	Hatchery	Hatchery Manager	Director	Email
Southern Southeast								
R	SSRAA	14 Borch Street	Ketchikan, AK 99901	(907) 225-9605			Dave Landis	davidl@ssraa.org
				(907) 254-1242	Burnett Inlet	Jon Thorington		burnettinlet@starband.net
				(907) 650-7077	Crystal Lake[b]	Loren Thompson		loren.crystallake@gmail.com
				(907) 225-8790	Neets Bay	Craig Parry		neetsbay@ssraa.org
				(907) 225-2635	Whitman Lake	Jay Creasy		whitman@kpunet.net
				(907) 225-9606	Deer Mountain	Matt Allen		deermountain@ssraa.org
				(907)-247-8790	Neck Lake Project	Ron Parsley, Jr.		necklake@ssraa.org
				(907) 755-2231	Klawock River[b]	Jeff Lundberg		jlundberg@hughes.net
					Port Saint Nicholas	Jeff Lundberg		jlundberg@hughes.net
F	MIC	PO Box 8	Metlakatla, AK 99929	(907) 886-3150	Tamgas Creek[c]	Steve Leask		sdleask91@gmail.com
Northern Southeast								
R	NSRAA	1308 Sawmill Cr. Rd	Sitka, AK 99835	(907) 747-6850			Steve Reifenstuhl	steve_reifenstuhl@nsraa.org
				(907) 725-0995	Hidden Falls[b]	Jon Pearce		jon_pearce@nsraa.org
				(907) 738-1438	Medvejie Creek	Adam Olson		adam_olson@nsraa.org
				(907) 747-5863	Sawmill Creek	Rebecca Olson		rebecca_olson@nsraa.org
N	AKI	PO Box 21990	Juneau, AK 99802	(907) 586-3443			Bart Watson	aki@ak.net
				(907) 568-2228	Port Armstrong	Ben Contag		portarmstrong@starband.net
N	DIPAC	2697 Channel Dr.	Juneau, AK 99801	(907) 463-5114			Eric Prestegard	Eric_prestegard@dipac.net
				(907) 463-5114	Macaulay Salmon	Charlie Currit		charlie_currit@dipac.net
				(907) 463-5115	Snettisham[b]	Kevin Steck		kevin_steck@dipac.net
N	SSSC	834 Lincoln St	Sitka, AK 99835	(907) 747-8878	Sheldon Jackson	Angie Bowers	Lisa Busch	lbusch@sitkascience.org abowers@sitkascience.org
F	NMFS	17109 Lena Point Loop Rd	Juneau, AK 99801	(907) 789-6047	Little Port Walter[d]	John Eiler	Andrew Gray	john.eiler@noaa.gov andrew.gray@noaa.gov

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[a]	Agency	Address	City, State, Zip	Office phone	Hatchery	Hatchery Manager	Director	Email
Prince William Sound								
R	PWSAC	PO Box 1110	Cordova, AK 99574	(907) 424-7511			Casey Campbell	pwsac@ak.net
					AF Koernig	Don Orlando		afk.pwsac@ak.net
					Cannery Creek[b]	Jon Palmer		cch.pwsac@ak.net
					Gulkana[b]	Steve Hilton		gkh.cvinternet@ak.net
					Main Bay[b]	Jason Myhrer		mbh.pwsac@ak.net
					W Noerenberg	Chris Kelley		wnh.pwsac@ak.net
N	VFDA	PO Box 125	Valdez, AK 99686	(907) 835-4874			Mike Wells	vfdamike@valdezfisheries.com
				(907) 835-1329	Solomon Gulch	Rob Unger		sghatchery@cvinternet.net
Cook Inlet								
R	CIAA	40610 Kalifornsky Beach Rd	Kenai, AK 99611	(907) 283-5761			Gary Fandrei	gfandrei@ciaanet.org
				(907) 288-3688	Trail Lakes[b]	Kristin Bates		kbates_tlh@ciaanet.org
				(866) 309-0640	Tutka Bay Lagoon[b]	Wendy Perry		wperry_tblh@ciaanet.org
				(907) 283-5761	Port Graham	Mike McWaters		mmcwaters_pgh@ciaanet.org
Kodiak								
R	KRAA	104 Center Street Suite 205	Kodiak, AK 99615	(907) 486-6555			Tina Fairbanks	kraa.fairbanks@gci.net kraa@gci.net
				(907) 743-0617	Kitoi Bay[b]	Randy Mason		kitoi@gci.net
				(907) 486-4730	Pillar Creek[b]	Alan Seale		pch@gci.net
S	ADF&G, Division of Sport Fish						Jeff Milton	jeffery.milton@alaska.gov
	941 N. Reeve Blvd.		Anchorage, AK 99501	(907) 269-0296	WJ Hernandez	Andrea Tesch		andrea.tesch@alaska.gov
	1150 Wilbur Street		Fairbanks, AK 99701	(907) 451-2661	Ruth Burnett	Gary George		gary.george@alaska.gov

[a] R=Regional Aquaculture Association PNP hatchery, N=Nonregional Association PNP hatchery, F=Federal/Bureau of Indian Affairs hatchery, S=State hatchery.

[b] State owned facility contracted to the private sector to operate.

[c] Federally recognized tribal reservation hatchery.

[d] Hatchery research facility.

Table 31.–Active Alaska hatcheries, 2017.

[a]	Agency	Corporate name	Hatchery	PNP Permit #	PNP permit issued	Species permitted	Web Site
Southern Southeast							
R	SSRAA	Southern Southeast Regional Aquaculture Assoc.	Burnett Inlet	40	9/30/1997	sockeye, coho, chum	www.ssraa.org
			Crystal Lake[b]	NA		Chinook, coho	
			Neets Bay	19	6/17/1983	chum, coho, Chinook	
			Whitman Lake	8	3/9/1978	chum, coho, Chinook	
			Klawock River[b]	47	7/1/2016	coho, sockeye	
			Port Saint Nicholas	43	6/25/2004	Chinook, chum	
			Deer Mountain	49	08/17/2017	Chinook	
F	MIC	Tamgas Creek Hatchery	Tamgas Creek[c]	NA		chum, coho, Chinook, sockeye	
Northern Southeast							
R	NSRAA	Northern Southeast Regional Aquaculture Assoc.	Hidden Falls[b]	28	6/22/1988	chum, Chinook, coho	www.nsraa.org
			Medvejie Creek	16	8/17/1981	chum, coho, Chinook, pink	
			Sawmill Creek	44	3/11/2007	Coho, chum	
N	AKI	Armstrong-Keta, Inc.	Port Armstrong	13	2/23/1981	pink, chum, Chinook, coho	www.armstrongketa.org
N	DIPAC	Douglas Island Pink and Chum, Inc.	Macaulay	25	6/3/1987	chum, coho, Chinook	www.dipac.net
			Snettisham[b]	39	7/15/1996	sockeye	
N	SSSC	Sitka Sound Science Center	Sheldon Jackson	45	4/13/2011	pink, chum, coho	www.sitkasoundsciencecenter.org
F	NMFS	National Marine Fisheries Service	Little Port Walter[d]	NA		Chinook	www.afsc.noaa.gov/ABL/MSI/msi_lpw.htm
Prince William Sound							
R	PWSAC	Prince William Sound Aquaculture Association	AF Koernig	2	9/29/1975	pink, chum	www.pwsac@ak.net
			Cannery Creek[b]	26	6/22/1988	pink	
			Gulkana[b]	42	7/5/2000	sockeye	
			Main Bay[b]	31	4/17/2001	sockeye	
			W Noerenberg	20	6/17/1983	pink, chum, Chinook, coho	
N	VFDA	Valdez Fisheries Development Association, Incorporated	Solomon Gulch	15	6/26/1981	pink, coho, Chinook	https://www.valdezfisheries.org/

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[a] Agency	Corporate name	Hatchery	PNP Permit #	PNP permit issued	Species permitted	Web Site
Cook Inlet						
R CIAA	Cook Inlet Aquaculture Association	Trail Lakes[b]	27	6/22/1988	sockeye, coho, Chinook	www.ciaanet.org
		Tutka Bay Lagoon[b]	32	1/3/1994	pink, sockeye	
		Port Graham	46	1/14/2014	pink	
S ADF&G	Alaska Department of Fish and Game	WJ Hernandez[c]	NA		char, grayling, rainbow trout, Chinook, coho	www.adfg.alaska.gov
Kodiak						
R KRAA	Kodiak Regional Aquaculture Association	Kitoi Bay[b]	29	7/5/1988	pink, chum, coho, sockeye	
		Pillar Creek[b]	41	5/1/1998	sockeye, coho, Chinook, rainbow trout	www.kraakodiak.org
Arctic-Yukon-Kuskokwim						
S ADF&G	Alaska Department of Fish and Game	Ruth Burnett	NA		char, grayling, rainbow trout, Chinook, coho	www.adfg.alaska.gov

[a] R=Regional Aquaculture Association PNP hatchery, N=Nonregional Association PNP hatchery, F=Federal/Bureau of Indian Affairs hatchery, S=State hatchery.

[b] State owned facility contracted to the private sector to operate.

[c] Federally recognized tribal reservation hatchery.

[d] Hatchery research facility.

Table 32.–Permitted capacity of Alaska private nonprofit hatcheries, in millions of eggs, 2017.

Region/Area	Corp.	Hatchery	Chinook	Sockeye	Coho	Pink	Chum	Other	Total
Southeast									
Southern Southeast	SSRAA	Burnett Inlet	–	2.70	4.50	–	66.00	–	73.20
		Crystal Lake[a]	4.00	–	0.25	–		–	4.25
		Neets Bay	2.00	–	5.00	–	102.70	–	109.70
		Whitman Lake	2.10	–	7.00	–	44.30	–	53.40
	KTHC	Deer Mountain	0.60	–		–	–	–	0.60
		Klawock River	–	1.00	5.00	–	–	–	6.0
		Port Saint Nicholas	0.77			–	8.0	–	8.77
	Southern Southeast Total		9.47	3.70	21.75	–	221.00	–	255.92
Northern Southeast	NSRAA	Haines projects[b]	–	2.00		–	4.80	–	6.80
		Hidden Falls	3.80	–	7.70	–	101.00[c]	–	112.50
		Medvejie Creek	5.20	–	3.30	0.30	77.00	–	85.80
		Sawmill Creek	–	–	4.33		30.00	–	34.33
	AKI	Port Armstrong[d]	2.00	–	5.00	105.00	60.00	–	172.00
	DIPAC	Macaulay	1.25	–	1.50	–	125.00	0.025	127.78
		Snettisham	–	33.50	–	–	–	–	33.50
	KNFC	Gunnuk Creek[b]	–	–	0.50	20.00	65.00	–	85.50
	SSSC	Sheldon Jackson	–	–	0.25	3.00	12.00	–	15.25
	Northern Southeast Total		12.25	35.50	22.58	128.30	474.80	0.025	673.46
Southeast Totals			21.72	39.20	44.33	128.30	695.80	0.025	929.38
Southcentral	Prince William Sound								
	PWSAC	Armin F. Koernig	–	–	–	162.00	34.00	–	196.00
		Cannery Creek	–	–	–	187.00	–	–	187.00
		Gulkana	–	36.75	–	–	–	–	36.75
		Main Bay	–	12.40	–	–	–	–	12.40
		Wally Noerenberg	4.00	–	4.00	148.00	131.00	–	287.00
	VFDA	Solomon Gulch	0.30	–	2.00	270.00	–	–	272.30
	Prince William Sound Totals		4.30	49.15	6.00	767.00	165.00		991.45
	Cook Inlet								
	CIAA	Eklutna[b]	–	18.00	0.16	–	–	–	18.16
		Trail Lakes	4.00	30.00	6.00	–	–	–	40.00
		Tutka Bay	–	0.66	–	125.00	–	–	125.66
		Port Graham	–	–	–	125.00	–	–	125.00
	Cook Inlet Totals		4.00	48.66	6.16	250.00	–	–	308.82
Southcentral Totals			8.30	97.81	12.16	1,017.00	165.00		– 1,300.27
Kodiak/Westward	Kodiak								
	KRAA	Kitoi Bay	–	0.85	2.30	215.00	36.00	–	254.15
		Pillar Creek	0.45	20.00	0.50	–	–	0.092	21.04
Kodiak/Westward Totals			0.45	20.85	2.80	215.00	36.00	0.092	275.19
Statewide Total			30.47	157.86	59.67	1,360.30	896.80	0.12	2,504.84

[a] Crystal Lake Hatchery is a state-owned facility under contract to SSRAA; it does not have a PNP permit or permitted capacity, but operates under the Statewide Sport Fish Stocking Plan.

[b] Inactive

[c] A conditional additional capacity of 55 million chum salmon eggs can also be produced at Hidden Falls Hatchery to continue the Gunnuk Creek Hatchery releases at Southeast Cove. The conditional capacity cannot be in addition to the Gunnuk Creek Hatchery capacity. Gunnuk Creek Hatchery is not currently operational.

[d] Port Armstrong can take up to 5.0 million Chinook and coho salmon eggs in combination, not to exceed 2.0 million Chinook salmon eggs.

Table 33.–Alaska salmon fisheries enhancement program timeline of events.

Year	Event	No. of state operated hatcheries	No. of PNP owned or operated hatcheries	No. of federal hatcheries
1934	Federal research station Little Port Walter constructed	–	–	1
1950	Federal hatchery at Auke Creek constructed	–	–	2
1953	1 territorial hatchery constructed at Kitoi Bay	1	–	–
1954	1 territorial hatchery constructed at Deer Mountain	2	–	–
1958	1 territorial hatchery constructed at Fort Richardson	3	–	–
1959	Statehood. Alaska becomes the 49th US state.	–	–	–
1965	1 state hatchery constructed at Fire Lake	4	–	–
1969	1 state hatchery constructed at Crystal Lake	5	–	–
1971	Fisheries Rehabilitation, Enhancement and Development Division created by Legislature	–	–	–
1973	2 state hatcheries constructed (Crooked Creek and Gulkana)	7	–	–
	State enhancement projects at Starrigavan and Halibut Cove started	–	–	–
	Limited Entry law enacted, creating fishery limitations for the purpose of conservation.	–	–	–
1974	2 state hatcheries constructed (Beaver Falls and East Creek)	9	–	–
	Legislature authorizes permitting for PNP corporations to operate hatcheries.	–	–	–
1975	4 PNP permits issued [Perry Island (#1), Port San Juan [renamed Armin F. Koernig Hatchery in 1985] (#2), Sheldon Jackson (#3), and Sandy Bay (#4)]	–	4	–
	2 state hatcheries constructed (Big Lake and Tutka Bay Lagoon)	11	–	–
1976	AS 16.10.375 passed, designating regions for regional planning teams and enhancing salmon	–	–	–
	1 state hatchery constructed at Elmendorf	12	–	–
	2 PNP permits issued [Burnett Inlet (#5) and Kowee Creek (#6)]	–	6	–
1977	1 PNP permit issued to Gunnuk Creek (#7)	–	7	–
	2 state hatcheries constructed (Klawock River and Russell Creek)	14	–	–
	State enhancement project at Karluk Lake started	–	–	–
1978	1 PNP permit issued to Whitman Lake (#8)	–	8	–
	2 state hatcheries constructed (Cannery Creek and Hidden Falls)	16	–	–
1979	3 PNP permits issued [Salmon Creek (#9), Meyers Chuck (#10), Sheep Creek (#11)]	–	11	–
	1 state hatchery constructed (Snettisham)	17	–	–
	1 state hatchery closed (Fire Lake)	16	–	–
1980	1 PNP permit issued to Burro Creek (#12)	–	12	–
	2 state hatcheries constructed (Clear and Main Bay)	18	–	–
	1 hatchery at Tamgas Creek constructed (Metlakatla Indian Community/Bureau of Indian Affairs)	–	–	3

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Year	Event	No. of state operated hatcheries	No. of PNP owned or operated hatcheries	No. of federal hatcheries
1981	1 state hatchery closed (East Creek)	17	12	3
	2 state hatcheries constructed (Sikusuilaq and Trail Lakes)	19	–	–
	1 PNP hatchery permit rescinded & new permit issued to new operator at Salmon Creek [#9, new #14]	–	12	–
	3 PNP permits issued [Port Armstrong (#13), Solomon Gulch (#15), Medvejie Creek (#16)]	–	15	–
1982	2 PNP permits issued [Eklutna (#17) and Favorite Bay (#18)]	–	17	–
1983	3 PNP permits issued [Neets Bay (#19), Esther Island [renamed Wally Noerenberg Hatchery in 1990] (#20), Crittenden Creek (#22)]	–	20	–
	1 state hatchery completed (Broodstock Development Center)	20	–	–
1984	1 PNP permit issued to Santa Anna (#21)	–	21	–
1985	1 PNP permit issued to Port Camden (#23)	–	22	–
1986	1 PNP permit issued to [Beaver Falls (#24) jointly operated ADF&G/SSRAA]	19	23	–
1987	1 PNP permit issued to Gastineau [renamed Macaulay Salmon Hatchery in 2000 (#25)]	–	24	–
1988	4 state hatcheries contracted to private sector (Cannery Creek, Trail Lakes, Hidden Falls, Kitoi Bay)	15	–	–
	4 PNP permits issued [Cannery Creek (#26), Trail Lakes (#27), Hidden Falls (#28), Kitoi Bay (#29)]	–	28	–
	1 state hatchery constructed (Pillar Creek)	16		–
	1 PNP permit rescinded [Sandy Bay PNP (#4)]	–	27	–
	1 PNP permit rescinded [Salmon Creek (#14)]	–	26	–
1990	CSHB432 becomes law (AS 16.40.210) prohibiting finfish farming in Alaska	–	–	–
	1 PNP permit issued to Bell Island (#30)	–	27	–
1991	5 state hatcheries contracted to private sector [Beaver Falls (#24)-already operated by PNP , Main Bay, Tutka, Pillar Creek, Gulkana]	12	31	–
	2 PNP permits issued [Main Bay (#31), Tutka (#32)]	–	–	–
	Portions of 6 state hatcheries paid for by private or federal funds	–	–	–
1992	1 state hatchery closed (Russell Creek)	11	–	–
	2 PNP permits issued [Port Graham (#33), Haines projects (#34)]	–	33	–
	1 PNP permit revoked [Meyers Chuck (#10)]	–	32	–

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Year	Event	No. of state operated hatcheries	No. of PNP owned or operated hatcheries	No. of federal hatcheries
1992	3 state hatcheries transferred from Commercial Fisheries Management and Development to Sport Fish Division (Broodstock Development Center, Elmendorf, and Ft. Richardson)	11	32	3
1993	Fisheries Rehabilitation, Enhancement and Development Division merged with the Commercial Fisheries Division to form the Commercial Fisheries Management and Development Division	–	–	–
	2 state hatcheries contracted to private sector (Crooked Creek and Klawock River)	9	34	
	1 state hatchery closed (Big Lake)	8	–	–
1994	1 state hatchery conveyed (Deer Mountain)	7	–	–
	3 PNP permits issued [Crooked Creek (#35), Klawock River (#36), Deer Mountain (#37)]		35	
	Ft. Richardson Hatchery merged with Broodstock Development Center	6	–	–
1995	1 PNP hatchery permit rescinded and new permit issued to new operator at Klawock River (#36, new #38)	–	35	–
	1 state hatchery transferred from Division of Commercial Fisheries Management & Development to Division of Sport Fish (Crystal Lake)	–	–	–
	1 state hatchery closed (Sikusuilaq)	5		
1996	1 state hatchery contracted to private sector [Snettisham (#39)]	4	36	
	1 state hatchery transferred from Commercial Fisheries Management and Development Division to Sport Fish Division (Clear)	–	–	–
	3 PNP permits revoked [Crittenden Creek (#22), Santa Anna (#21), and Favorite Bay (#18)]	–	33	–
1997	1 state hatchery closed (Clear)	3		–
	2 state contracted (PNP) hatcheries closed [Beaver Falls (#24), Crooked Creek (#35)]	–	31	–
	1 PNP hatchery rescinded & new permit issued to new operator at Burnett Inlet (#5, new #40)	–	31	–
1998	1 PNP hatchery permit issued [Pillar Creek (#41), already operating under contract]	–	–	–
2000	1 state hatchery contracted to private sector [Crystal Lake Hatchery (PNP permit not issued)]	2	32	–
	1 PNP hatchery permit rescinded [Port Camden (# 23)]	–	31	–
	1 PNP hatchery permit issued [Gulkana (#42), already operating under contract]	–		–
2001	1 PNP hatchery permit rescinded [Kowee Creek (#6)]	–	30	–
2004	1 PNP hatchery permit issued [Port Saint Nicholas (#43)]	–	31	–
2007	1 PNP hatchery permit issued [Sawmill Creek (#44)]	–	32	–
2008	1 PNP hatchery permit rescinded [Burro Creek (#12)]	–	31	–

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Year	Event	No. of state operated hatcheries	No. of PNP owned or operated hatcheries	No. of federal hatcheries
2011	1 PNP hatchery permit rescinded & new permit issued to new operator at Sheldon Jackson (#3, new #45)	–	31	–
	1 state hatchery closed (Elmendorf), 1 state hatchery opened (William Jack Hernandez)	2	–	–
2012	1 state hatchery opened (Ruth Burnett)	3	–	–
	1 PNP hatchery permit rescinded (#33) and a new permit issued to new operator at Port Graham (#46)	–	31	–
2014	1 state hatchery closed (Fort Richardson)	2	31	–
2015	1 PNP Hatchery, Sheep Creek in Juneau, permit was voluntarily rescinded.	–	30	–
2016	1 PNP hatchery permit rescinded (#38) and a new permit issued to new operator at Klawock River (#47)	–	30	–
2016	1 PNP hatchery permit rescinded (#43) and a new permit issued to new operator at Port St. Nicholas (#48)	–	–	–
2017	1 PNP hatchery permit rescinded (#37) and a new permit issued to new operator at Deer Mountain (#49)	2	30	3

Notes: Six PNP hatchery facilities are permitted but currently inactive: Gunnuk Creek Hatchery (Kake), Perry Island Hatchery (Prince William Sound), Bell Island Hatchery (southern Southeast Alaska), Eklutna Hatchery (Eklutna), and Haines Projects Hatchery (Haines).

Note: There are 11 state-owned hatcheries that are contracted to PNP operators.

Note: Of the 3 federal facilities, 2 are hatchery research: Little Port Walter (active), and Auke Creek Hatchery (inactive), and 1 hatchery facility at Metlakatla is a tribal hatchery.