



Production Trends and Planning Efforts

# Alaska Fishery Enhancement Program

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Alaska Board of Fisheries Hatchery Committee Meeting – Tab 1  
March 7, 2020  
Anchorage

## OUTLINE

### 1. Production Trends

Annual Report

Statewide Trends

Regional Trends

Anticipated Future Production

Forecasted Returns

New Programs

### 2. Planning Efforts

Annual Management Plans

Purpose

Process

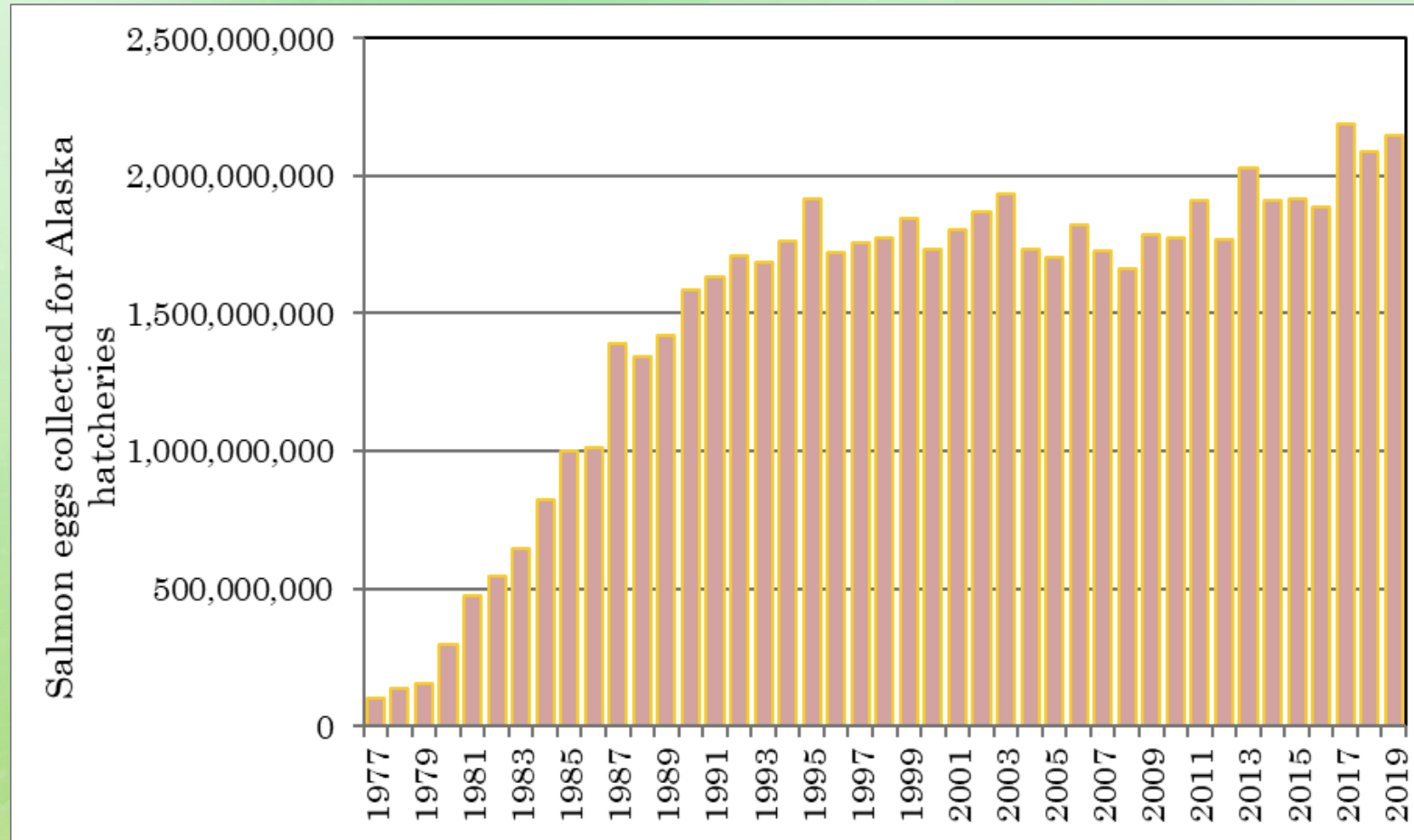
# Hatchery Annual Report

- Nonprofit Hatchery Permit requires an Annual Report no later than December 15 each year.
- Division of Sport Fish Hatcheries also submit annual reports.
- Must include information pertaining to:
  - Species
  - Broodstock source
  - Broodstock numbers
  - Number of eggs taken and fry produced
  - Adult returns attributable to the hatchery
    - Cost recovery harvest
    - Common property contribution (commercial, sport, personal use, and subsistence)
    - Escapement, if required
- AS 16.10.470

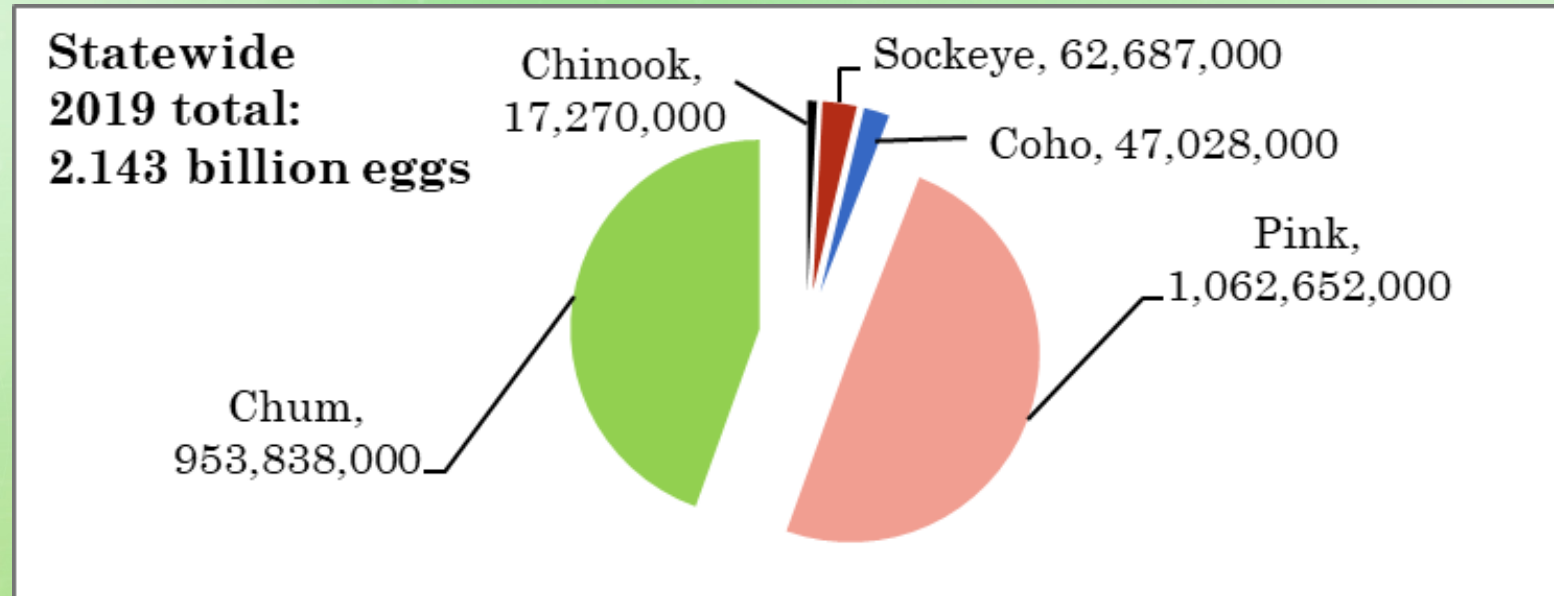
# Hatchery Annual Report

- Provides department oversight to ensure production is as permitted
- Prepare Department Season Summaries and Annual Fishery Management Reports
- Prepare ADF&G Harvest Projections for the subsequent year
- Prepare a comprehensive annual report for the legislature (AS 16.05.092)
  - <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2020.04.pdf>
- Provide to Dept. of Commerce per 5 AAC 40.890
  - Fisheries Enhancement Loan Program (AS 16.10.500-16.10.560)
- Economic Interests
  - One example, McDowell Group Economic Reports
- Research
  - Correlations with hatchery production

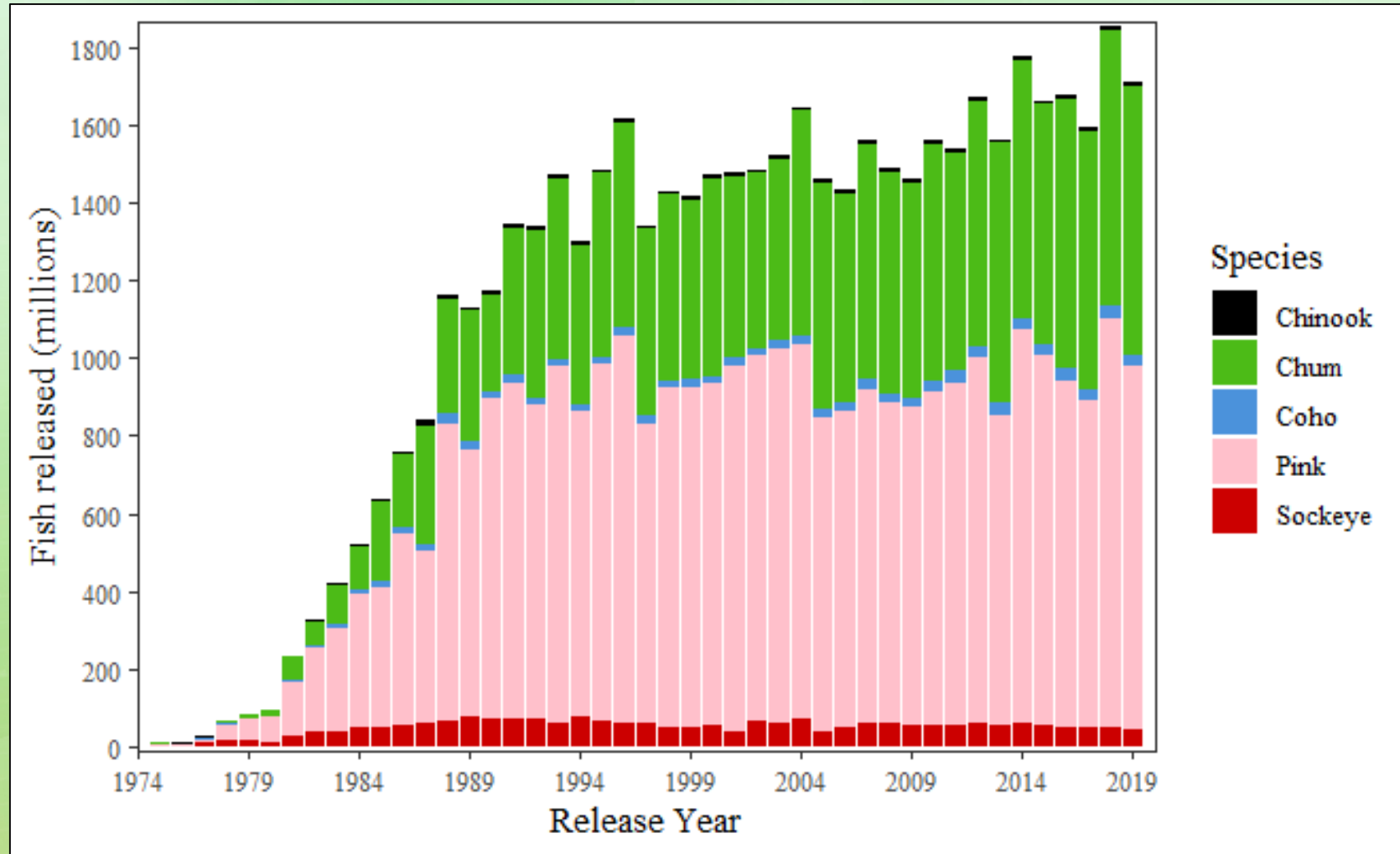
# Statewide Salmon Eggs Collected 1977-2019



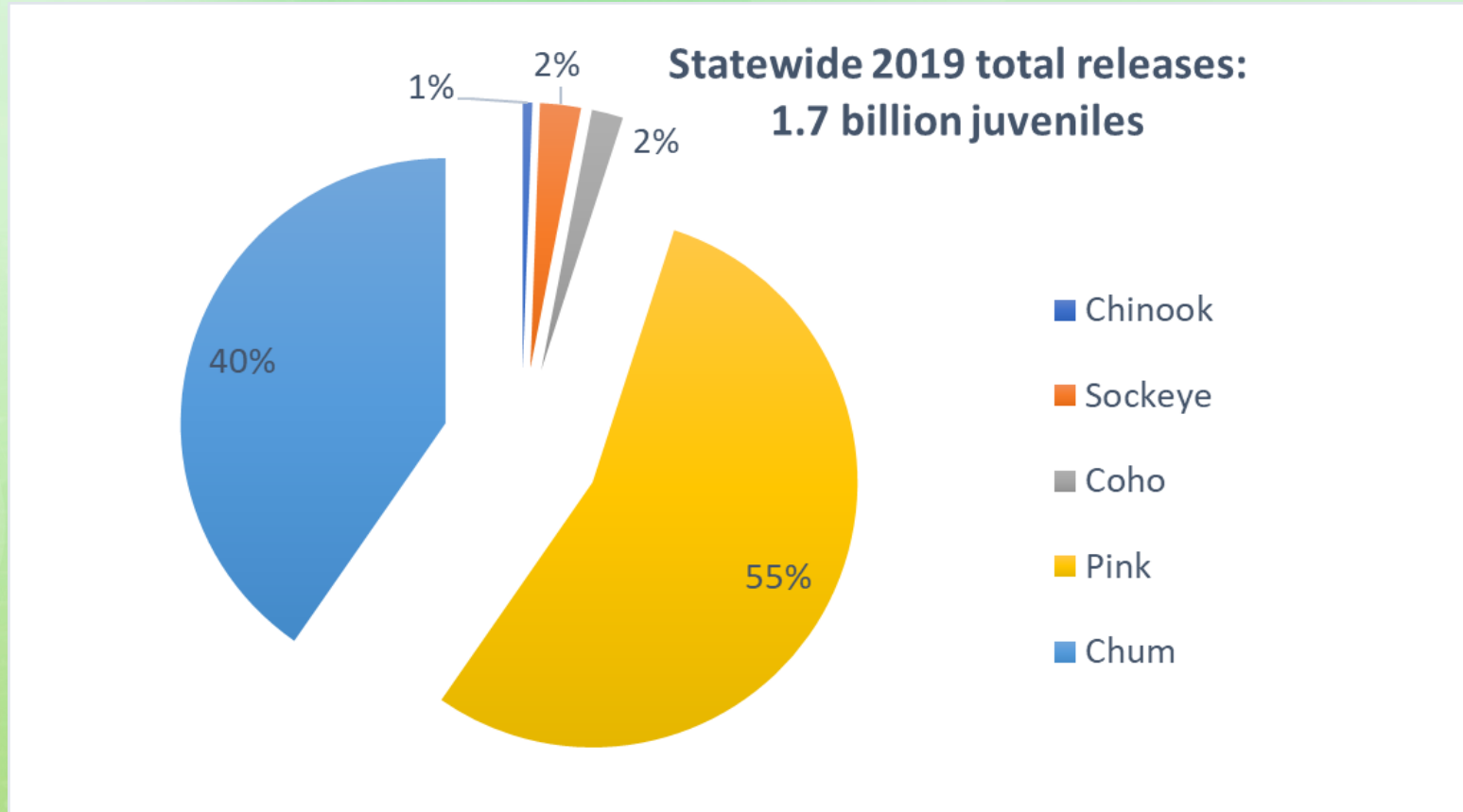
# Statewide Salmon Eggs Collected, 2019



# Statewide Releases 1974-2019

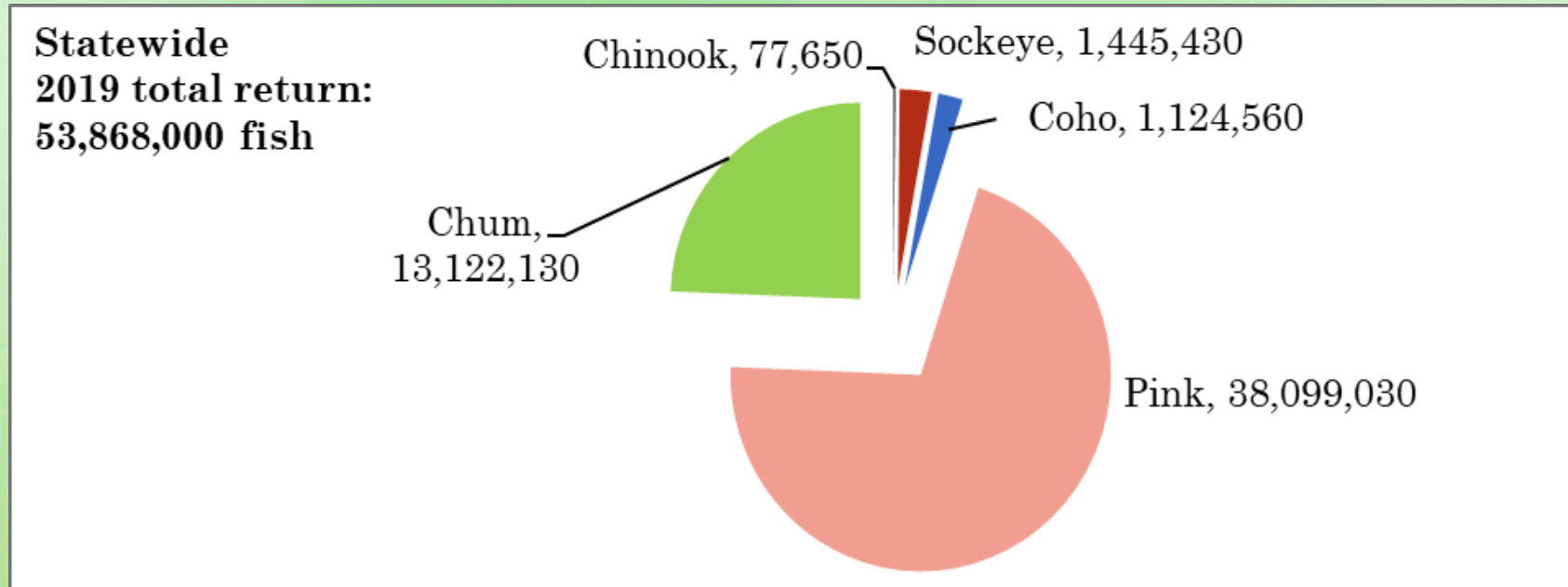


# Statewide Releases 2019

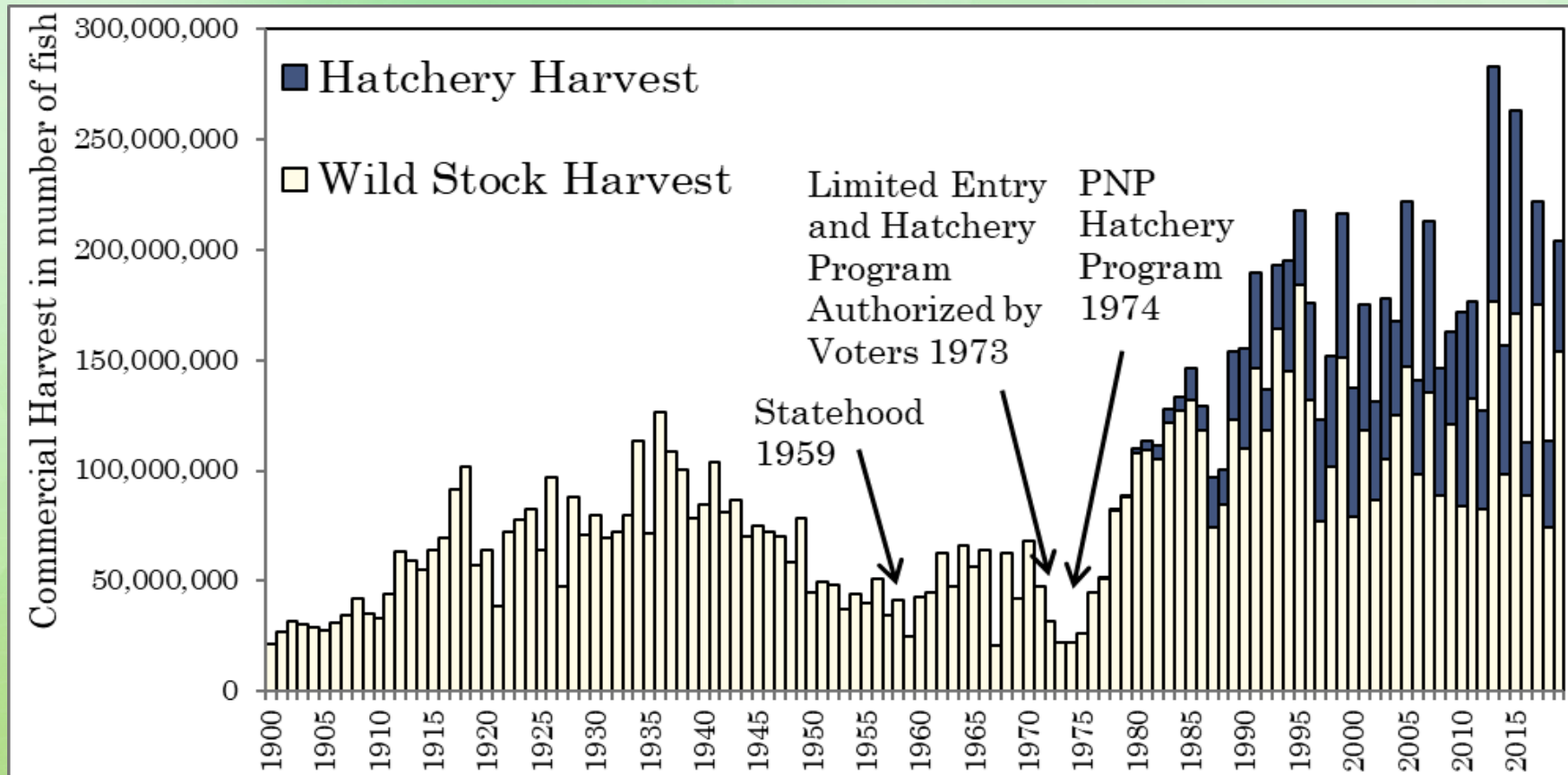




# Statewide Total Hatchery Return 2019

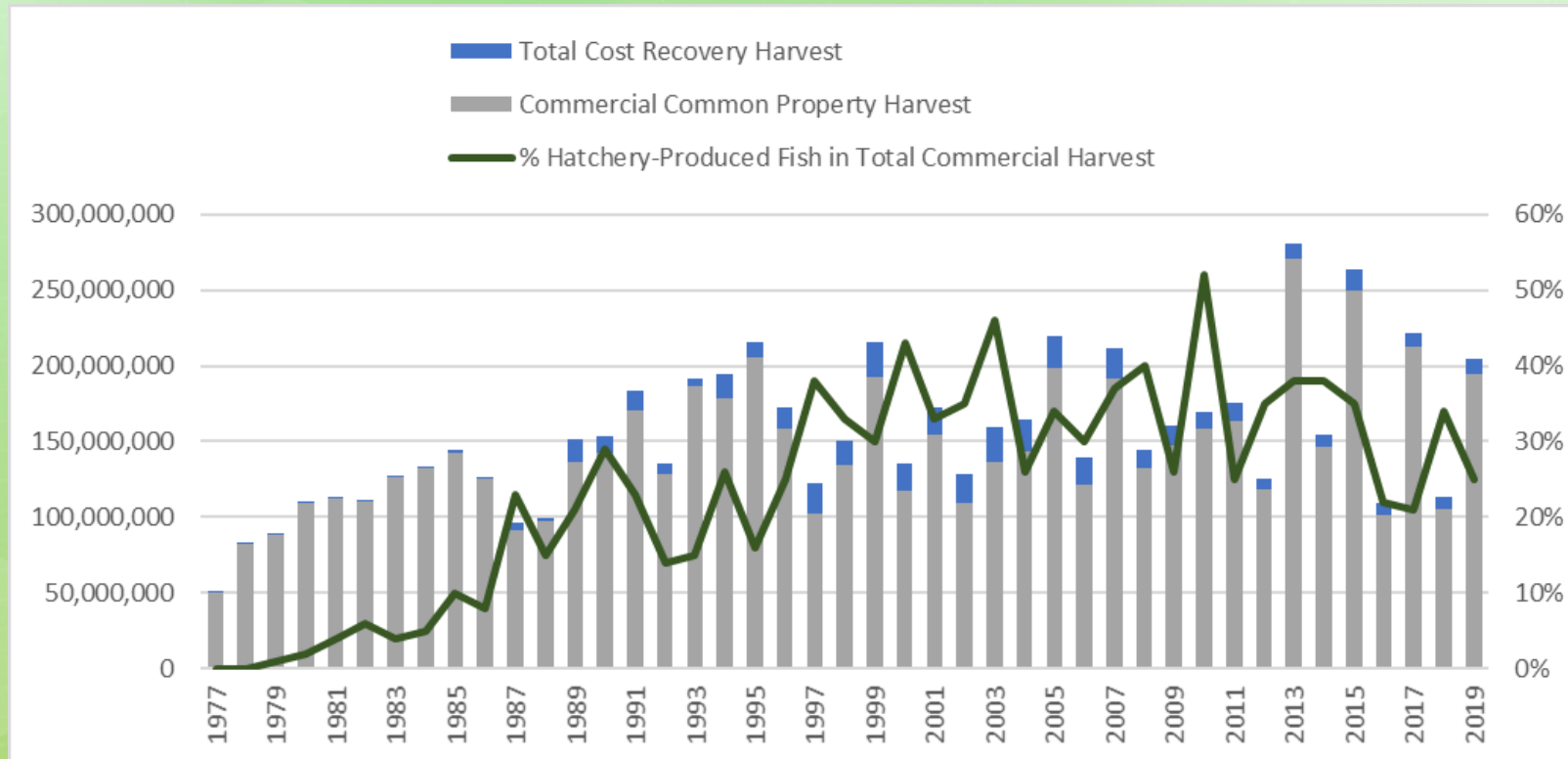


# Statewide Commercial Harvest 1900-2019



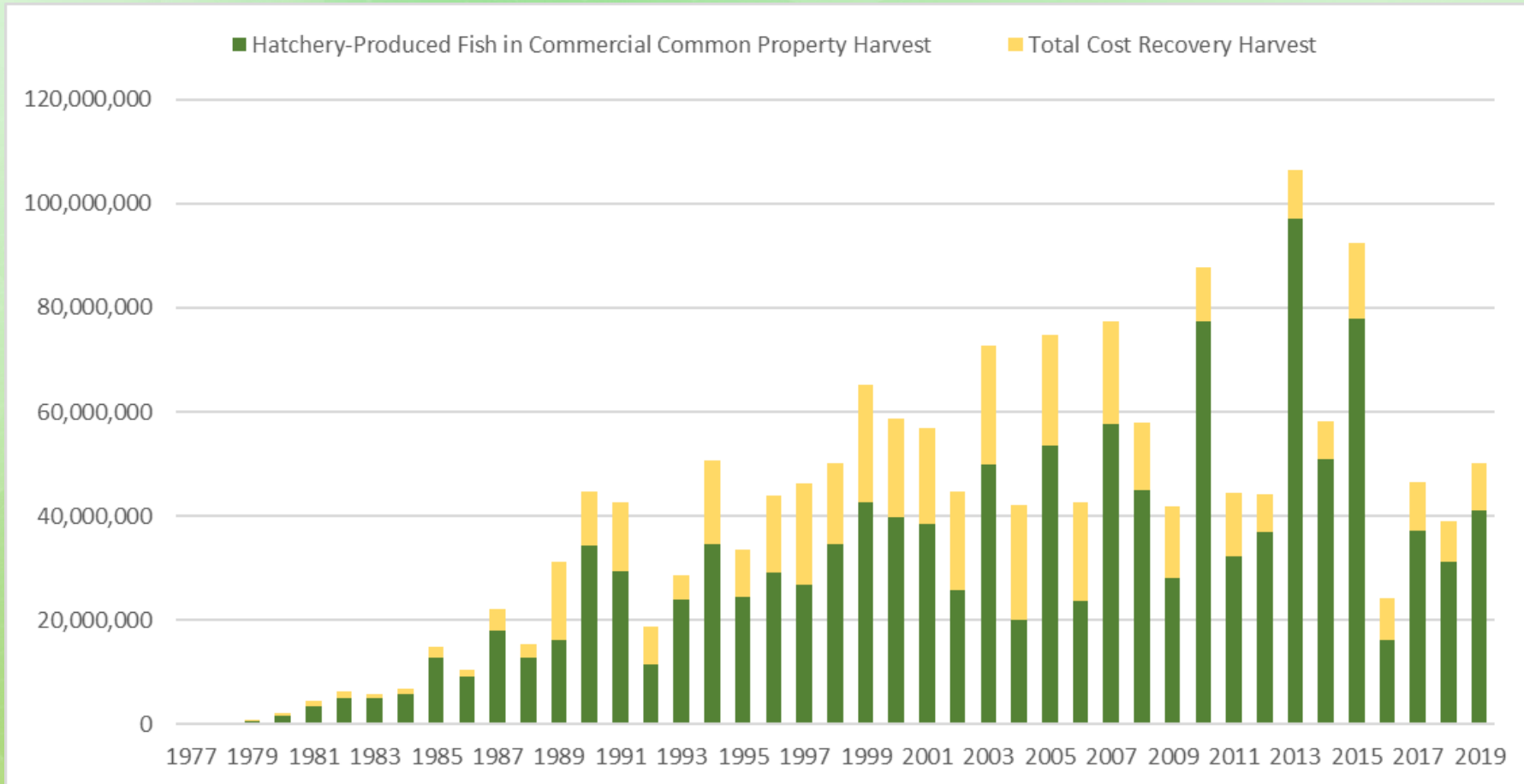
# Statewide Commercial Fishery Contribution

- The commercial salmon fishery:
  - (1) the commercial common property fisheries open to fishermen holding salmon permits
  - (2) cost recovery fisheries, harvested by PNP hatcheries with permits.
- The 2019 hatchery contribution was 25% of the statewide commercial salmon harvest.



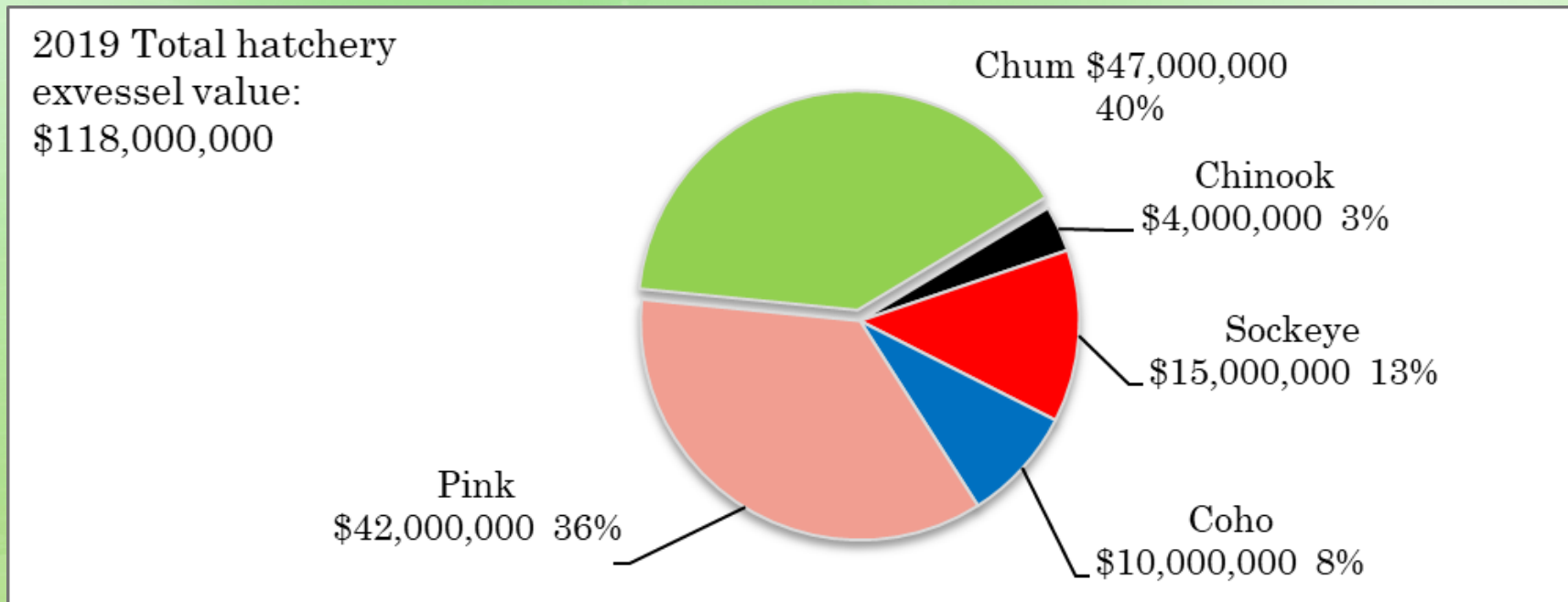
# Statewide Commercial Fishery Contribution

In 2019, 50 million hatchery-produced salmon in the commercial fishery.  
The 2019 commercial harvest of hatchery-produced salmon ranked 13<sup>th</sup> since 1977.



# Statewide Commercial Fishery Contribution 2019

Hatchery Contribution 18% of the statewide commercial harvest exvessel value.

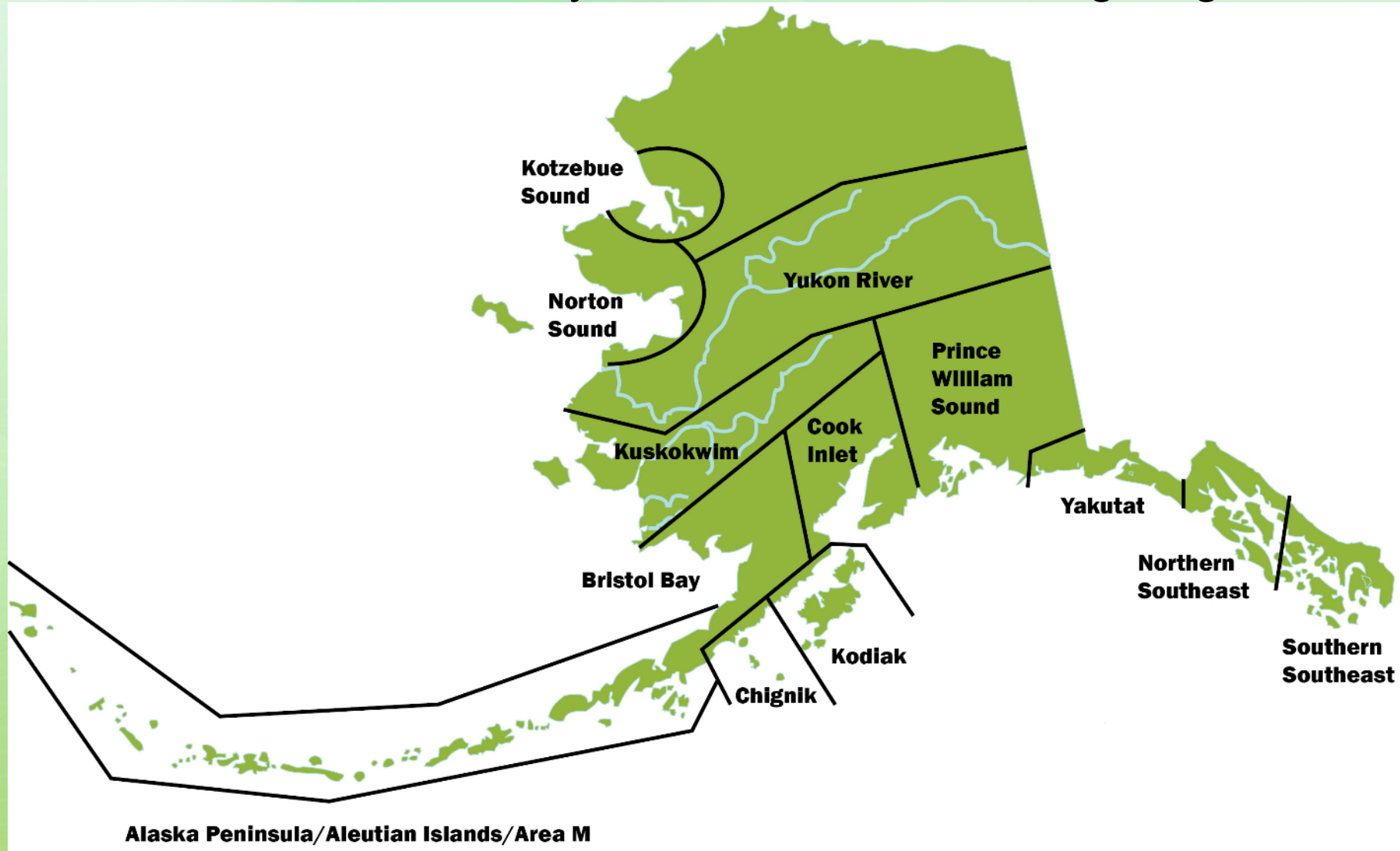


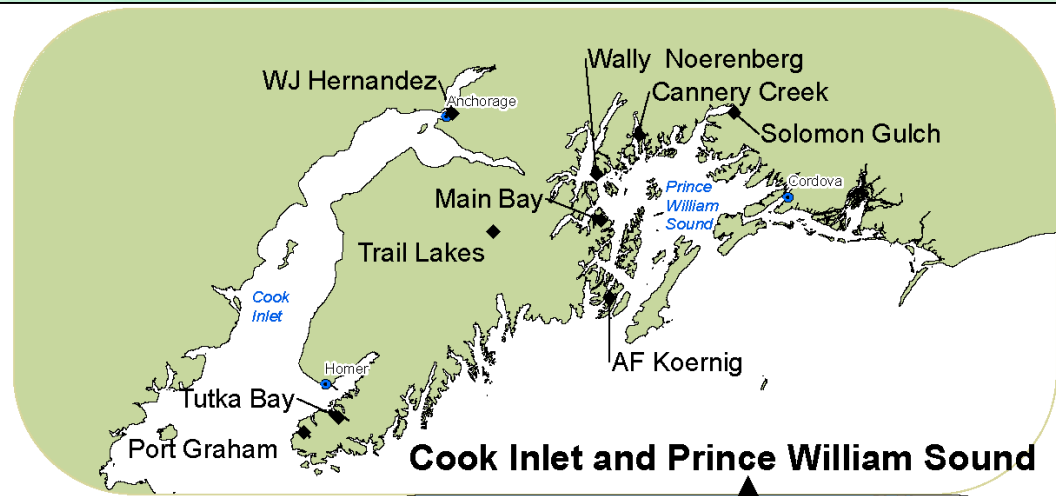
# Statewide Sport, Personal Use, and Subsistence Harvest 2019

An additional 233,500 hatchery-produced fish were harvested by sport, personal use, and subsistence users in 2019.

- 119,000 coho salmon
- 39,000 sockeye salmon
- 15,000 Chinook salmon
- 12,000 pink salmon
- 2,000 chum salmon
- 1,000 grayling
- 9,000 landlocked salmon
- 2,300 arctic char
- 35,000 rainbow trout

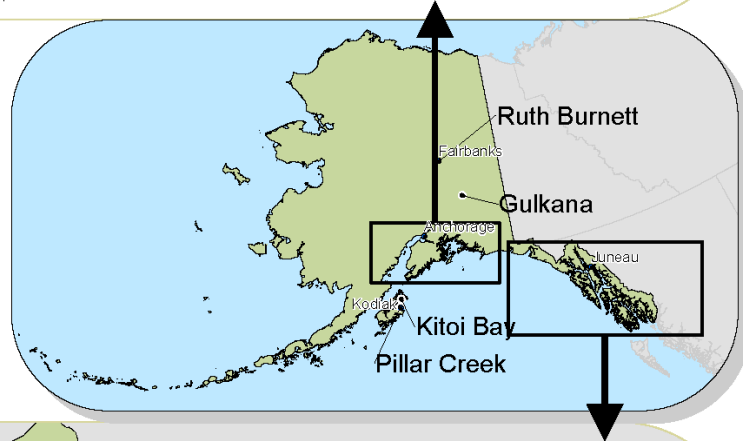
# Alaska Salmon Fishery Enhancement Planning Regions



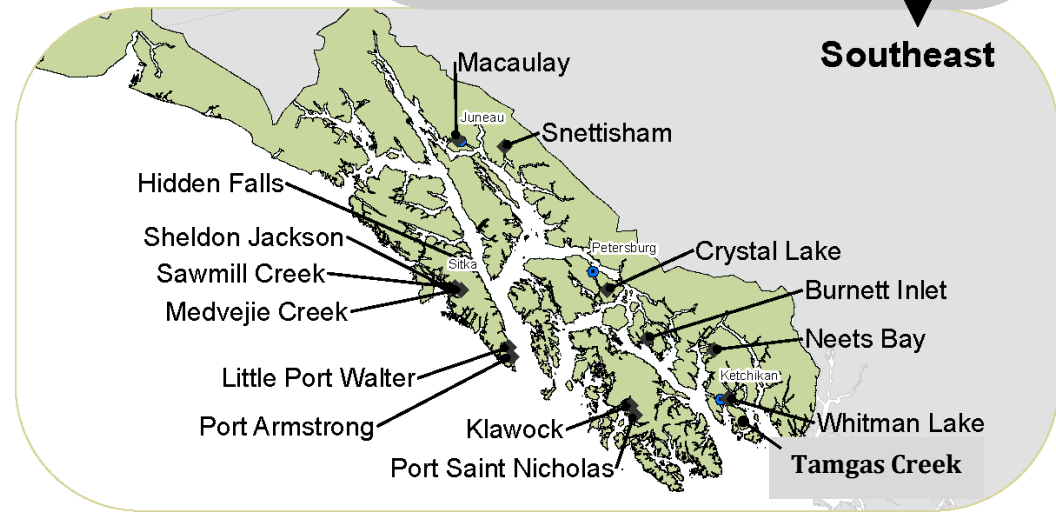


**Cook Inlet and Prince William Sound**

**Locations of  
Alaska  
Hatcheries**



**Southeast**

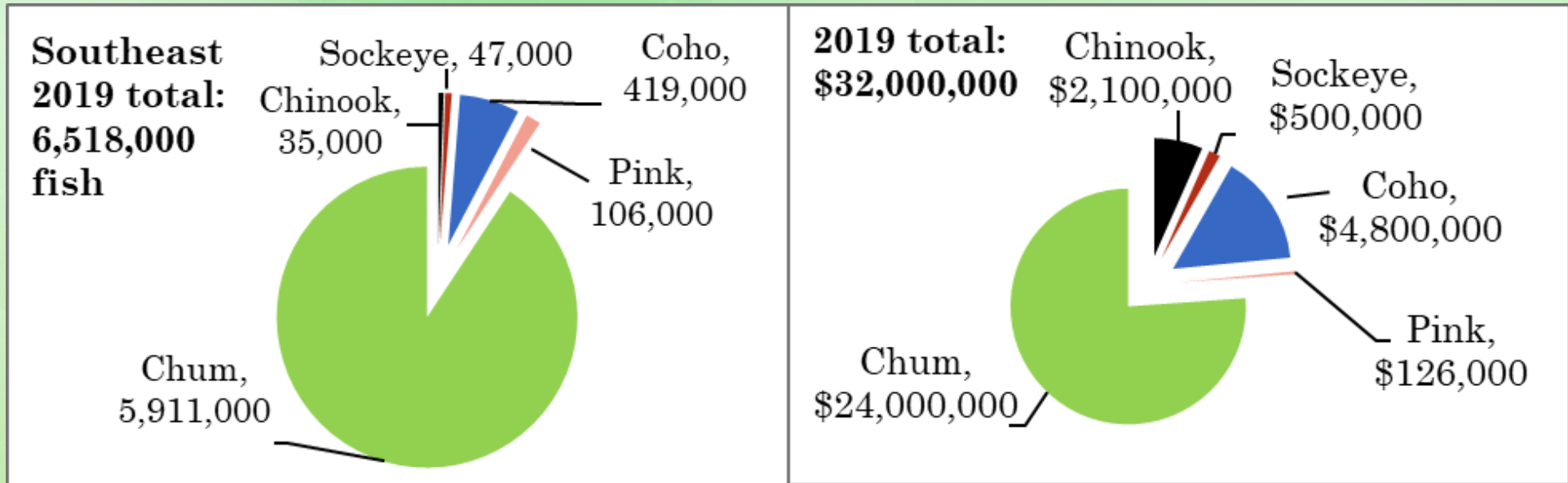




# Regional Production

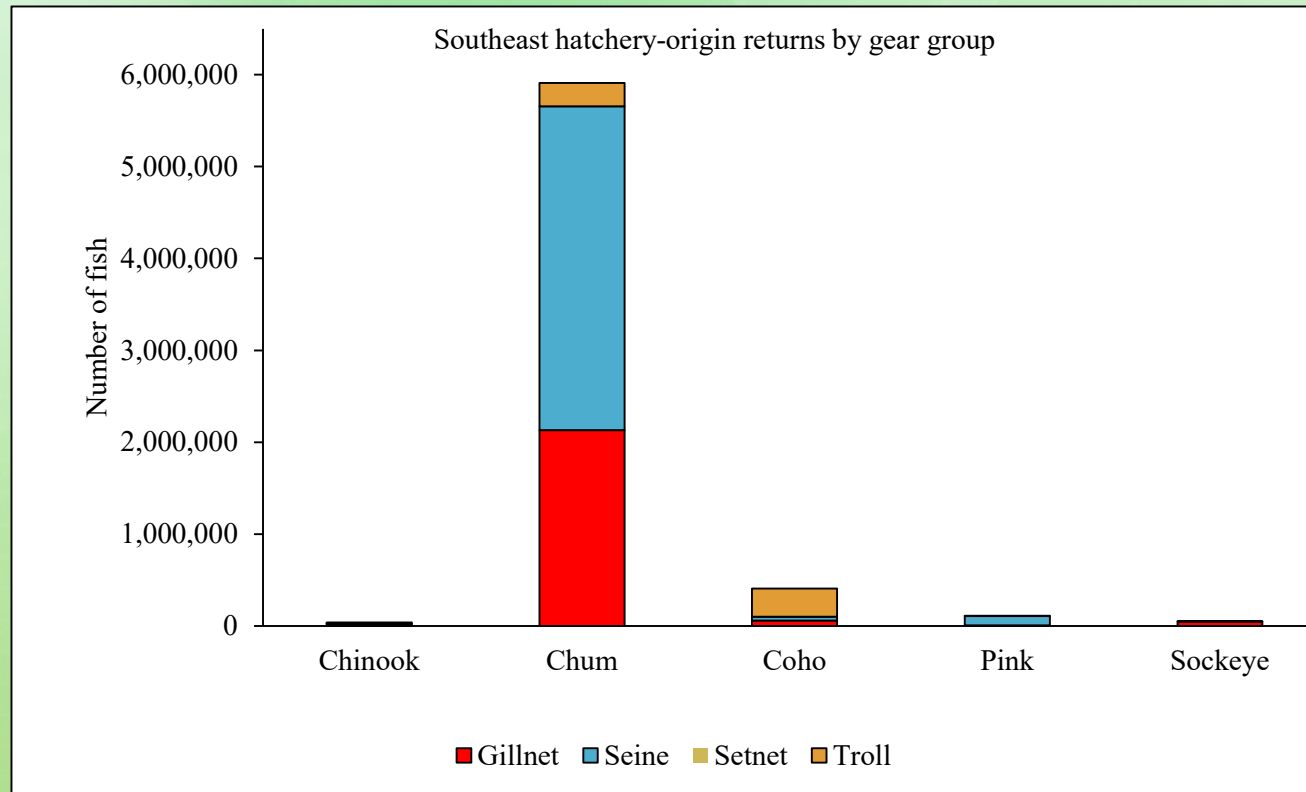
- Hatcheries in Alaska are currently permitted to take a total of 2.6 billion eggs.
- Prince William Sound 1.019 billion eggs
- Southeast 975.1 million eggs
- Cook Inlet 309 million eggs
- Kodiak 275 million eggs
- Hatcheries do not always take their permitted capacity due to:
  - low numbers of returning salmon
  - shifting program priorities
  - building their rearing capacity
  - other reasons.

# SOUTHEAST



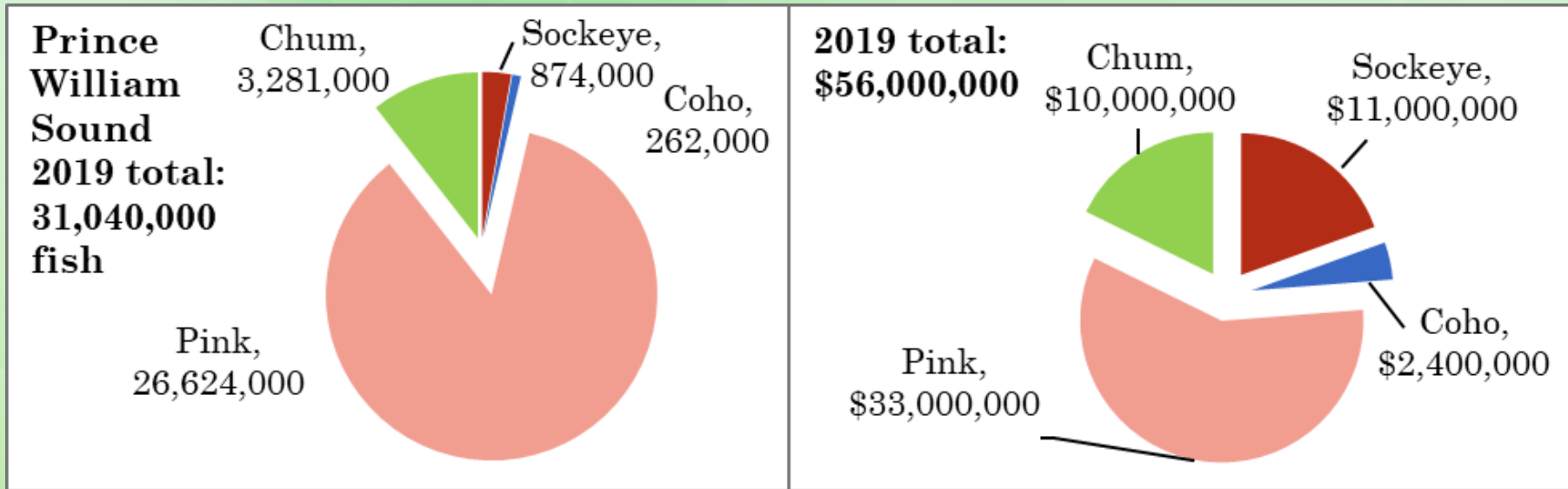
Commercial common property hatchery harvest in numbers of fish and exvessel value of commercial common property hatchery harvest in Southeast, 2019.

# SOUTHEAST



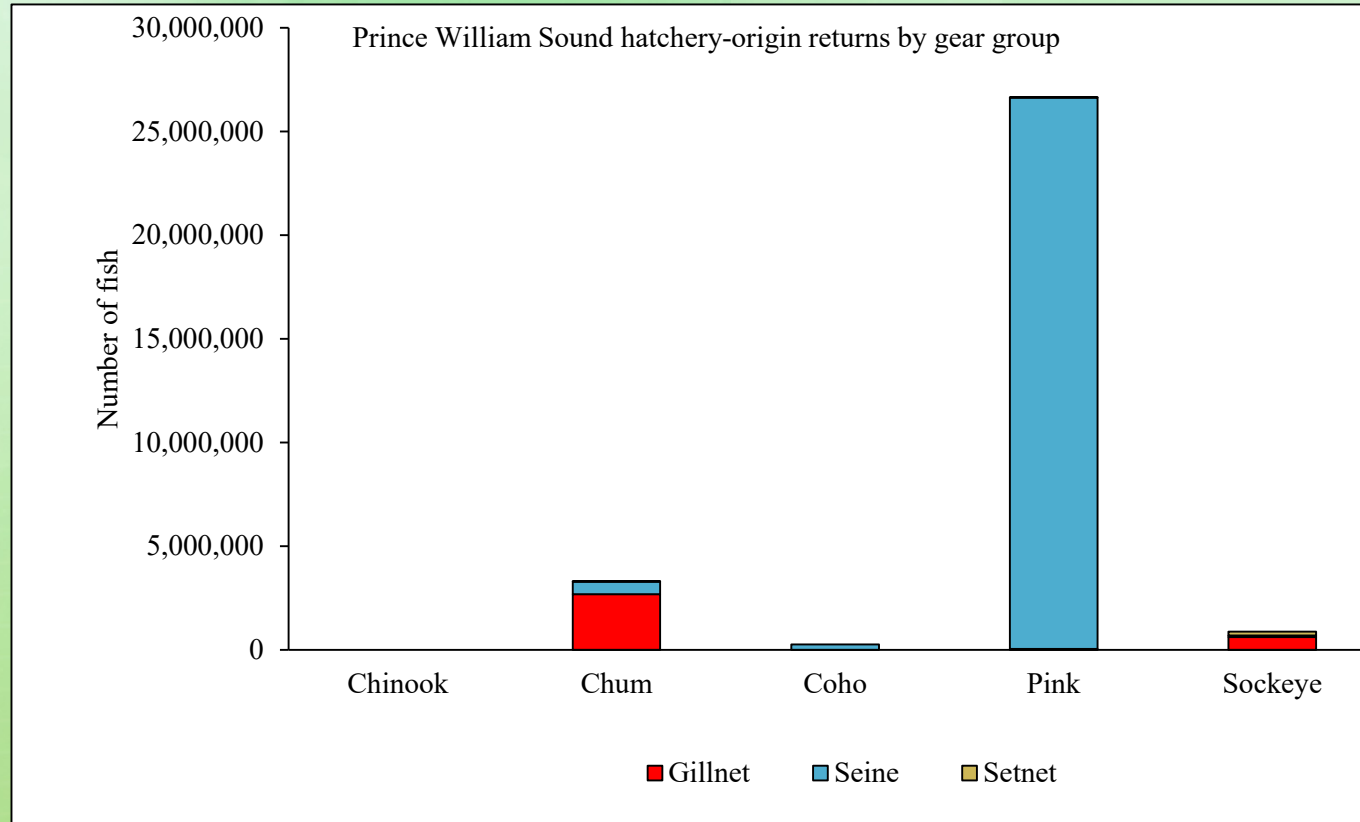
The 6.5 million hatchery-produced salmon harvested in the Southeast commercial common property fishery accounted for 61% of the total common property commercial catch in the region in 2019.

# PRINCE WILLIAM SOUND



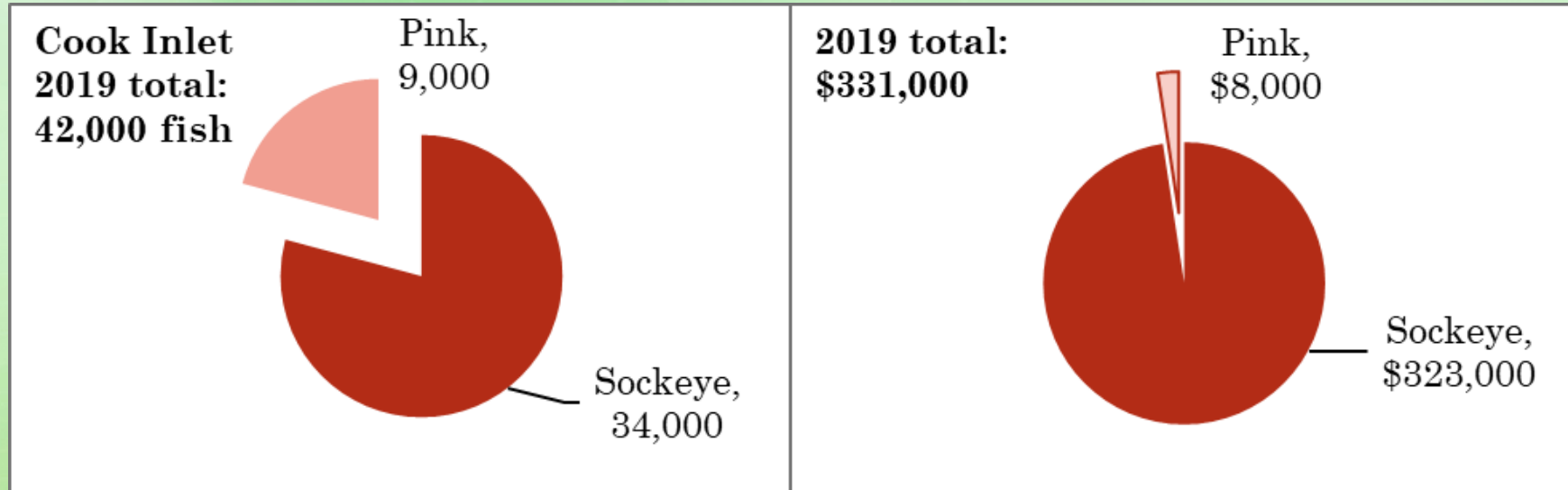
Commercial common property hatchery harvest in numbers of fish and exvessel value of commercial common property hatchery harvest in Prince William Sound, 2019.

# PRINCE WILLIAM SOUND



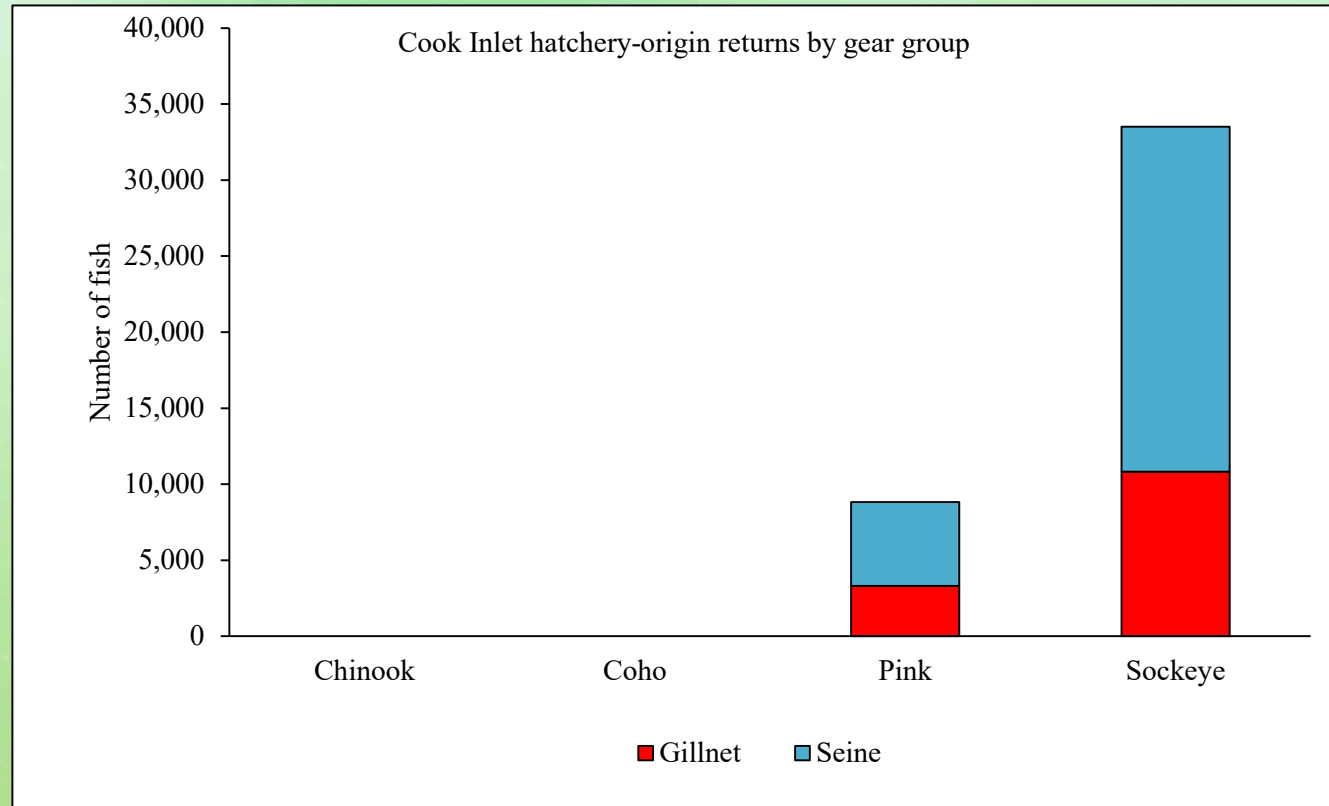
The 31 million hatchery-produced salmon harvested in the Prince William Sound commercial common property fishery accounted for 61% of the total common property commercial catch in the region in 2019.

# COOK INLET



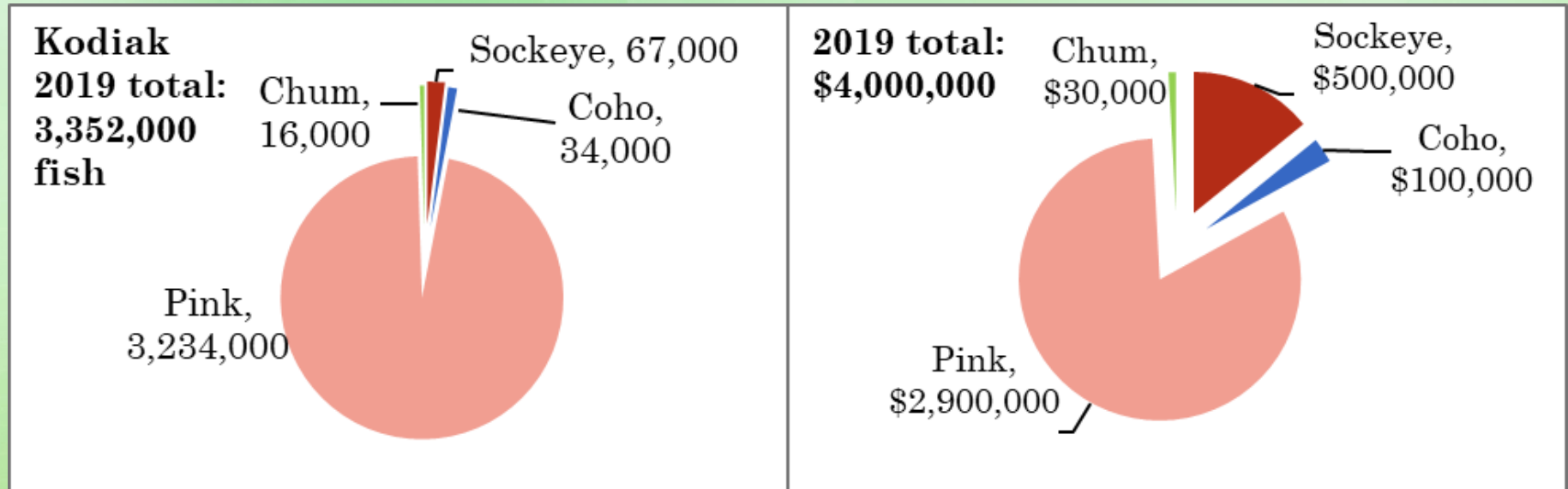
Commercial common property hatchery harvest in numbers of fish and exvessel value of commercial common property hatchery harvest in Cook Inlet, 2019.

# COOK INLET



The 42,000 hatchery-produced salmon harvested in the Cook Inlet commercial common property fishery accounted for 1% of the commercial common property catch in the region in 2019.

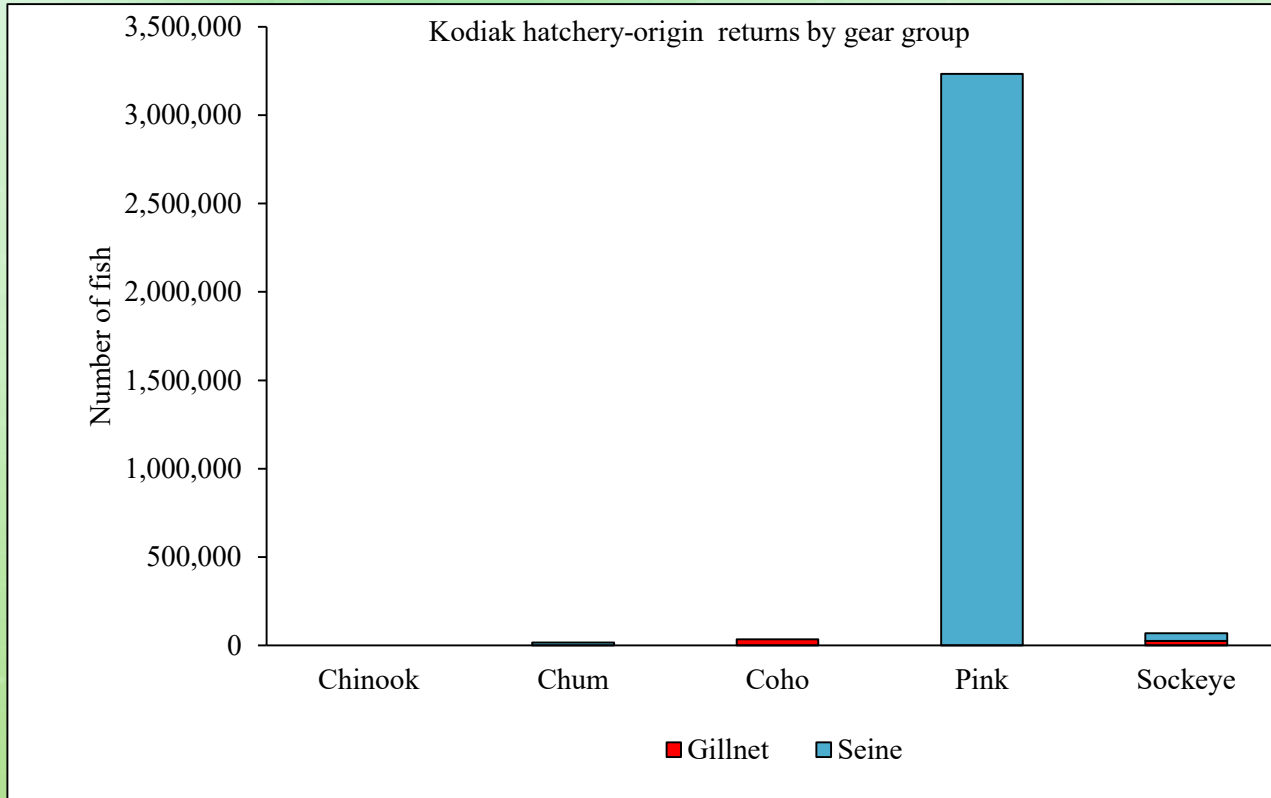
# KODIAK



Commercial common property hatchery harvest in numbers of fish and exvessel value of commercial common property hatchery harvest in Kodiak, 2019.



# KODIAK



The 3.4 million hatchery-produced salmon harvested in the Kodiak commercial common property fishery accounted for 10% of the total common property commercial salmon catch in 2019.

# Changes in Production

- Permit Alteration Request (PAR)
  - PNP Corporation Board of Directors Decision
  - Requests must be received by February 15 of the calendar year that the proposed alteration is to occur
    - Commissioner may extend the deadline if the request is justified by extraordinary circumstances or emergency
  - Management, pathology, genetics, and Aquaculture sections review
  - Regional Planning Team Spring Meeting review
    - Early March – End of April
  - Commissioner Decision April - May
  - 5 AAC 40.850

## New Production Southern Southeast

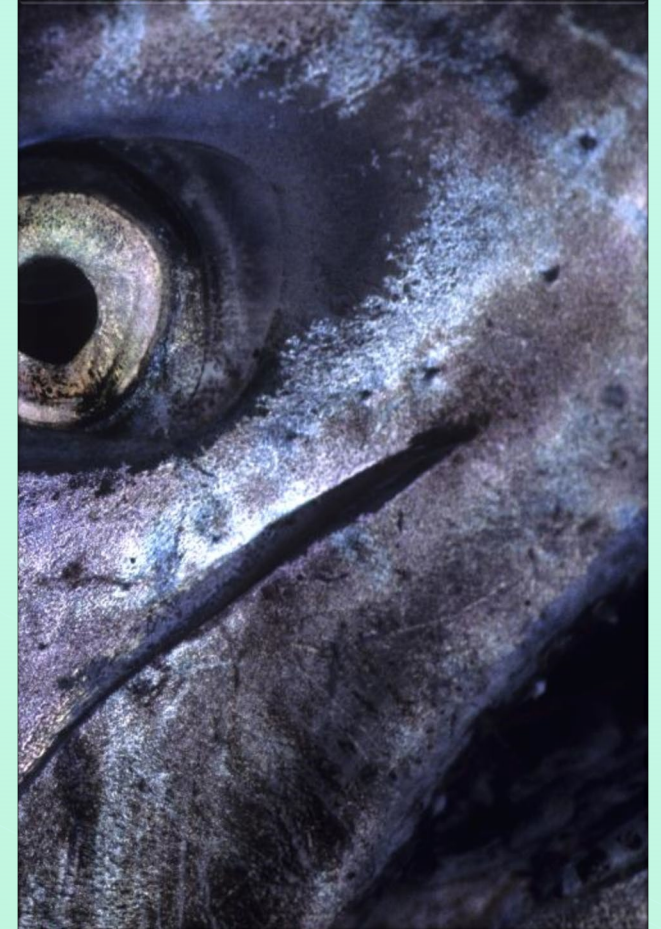
Renewed Ketchikan Creek Chinook and Ketchikan area rainbow trout lake stocking program.

Port Asumcion chum and coho salmon (new site)

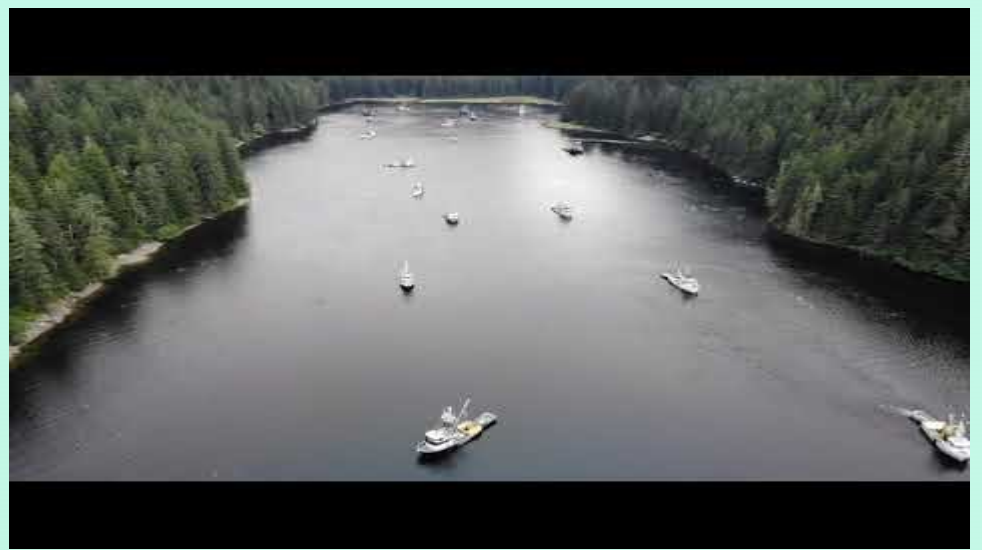
Shifted coho production from Burnett Inlet to Whitman Lake

Shifted chum production from Neets Bay to Burnett Inlet

Increase in Burnett Inlet summer and fall runs of chum salmon.



## New Production Northern Southeast



Kai Malicoat, <https://youtu.be/hvxlyoHq2IE>

- Crawfish Inlet chum and king salmon (new site)
- King salmon at Gunnuk Creek near Kake (new site)
- Gunnuk Creek Hatchery chum salmon restarted after closing in 2014.
- Juneau area rainbow trout
- Thomas Bay chum salmon (new site)
- Shifted a portion of chum salmon from Hidden Falls Hatchery to Medvejie Creek Hatchery (Sitka)
- New chum salmon release sites permitted due to low marine survivals at Hidden Falls Hatchery.
- No increases in permitted capacity of chum salmon releases.

## New Production Prince William Sound

Relocate Chinook and coho program from New Chenega (Crab Bay) to Old Chenega (Chenega Cove)

This will allow more sport and personal use harvest opportunity by moving it away from the commercial seine fishery that occurs adjacent to Chenega.

## New Production Kodiak

2013

Ouzinkie Village and Anton Larson Bay added as a new sockeye salmon remote release sites.

# 2020 Permit Alteration Requests

- 2019 Pending Decision
  - Hidden Falls Hatchery
    - New Release Chinook salmon at Southeast Cove near Kake, Southeast Alaska.
    - No change in permitted capacity.
- 2020
  - Whitman Lake Hatchery
    - Allowing all chum salmon eggs for Kendrick Bay to be incubated at WLH.
  - Burnett Inlet Hatchery
    - Allowing all chum salmon eggs for Nakat Inlet to be incubated at BIH.
  - Each program currently incubates and hatches at two facilities.
  - No change in overall capacity or release.

## Projected hatchery return in 2020

- **52 million salmon total**
- 35 million pink salmon
- 13 million chum salmon
- 2.2 million sockeye salmon
- 1.2 million coho salmon
- 100,000 Chinook salmon



A dramatic sunset over a body of water. The sun is low on the horizon, partially obscured by dark, heavy clouds, creating a golden glow that reflects on the water. In the foreground, a small white boat with a mast is on the water. The background features a range of dark mountains under a cloudy sky. The overall mood is serene and contemplative.

**QUESTIONS?**



# Planning Efforts

## OUTLINE

- Annual Management Plan
  - What it is
  - Why it happens
  - How it happens
  - Who is involved
- Private Nonprofit Corporations
  - Structure
  - Fiscal Planning

# Annual Management Plan (AMP)

- The department will prepare, in conjunction with the permit holder, an annual management plan to guide and condition hatchery operations.
- The plan must organize and guide the hatchery's operations regarding production goals, broodstock development, and harvest management of hatchery returns.
- The AMP must be consistent with the hatchery permit and Basic Management Plan.
- 5 AAC 40.840

# Annual Management Plan

- Current year's egg-take goals
- Juvenile releases and remaining fish inventory
- Expected adult returns
- Harvest management plans for all fisheries
- Fish Transport Permits required
- Production strategies
- Evaluation plans (marking, sampling, etc.)

# Annual Management Plan

## The Process

- PNP Coordinator requests draft AMPs for the current year
- PNPs and Division of Sport Fish submit draft AMPs
- ADF&G Review
  - Permitting
  - Hatchery returns management
- Regional Planning Team may review
- Approved AMPs are available on our website:  
<http://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesPlanning.annual>

## Terms Defined

- Private Nonprofit Corporations (PNPs) operate hatcheries
- A PNP Corporation may be called a:
  - Regional Corporation
  - Nonregional Corporation.
- What's the difference?

# REGIONAL AQUACULTURE ASSOCIATION

- Regional Corporation = Regional Aquaculture Association (RAA)
- An RAA may form a PNP corporation to operate a hatchery
- RAAs exist for many of Alaska's salmon planning regions
- Can only be one RAA designated per region
- Must have a board of directors that includes representatives for:
  - commercial salmon fishing permit holders
  - representatives of other stakeholder groups such as sport and subsistence harvesters, processors, and city officials.
- AS 16.10.380

# PRIVATE NONPROFIT CORPORATION

- PNP hatchery operator not the RAA = Nonregional Corporation
- PNP Board of Directors establish hatchery production goals and oversee business operations.
- Executive Committees
- Finance, Production Planning, Board Development, Cost recovery, among other committees.
- PNP Corporation oversight provided by the Alaska Nonprofit Corporation Act (AS 10.20)
- ADF&G has no oversight on PNP Corporation Board Structure

# Southern Southeast Regional Aquaculture Association

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (21)

- Seine Representatives (4)
- Gillnet Representatives (4)
- Power Troll Representatives (4)
- Hand Troll Representative (1)
- Processor Appointee
- Sport Fish Appointee
- Chamber of Commerce
- Municipality
- Subsistence Appointee
- Native Corporation Appointee
- Public at Large (2)

<https://ssraa.org/board-of-directors/>



# Northern Southeast Regional Aquaculture Association

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (25)

- At Large Troll
- Conservation
- Subsistence
- Municipality
- At Large Seine (5)
- At Large Gillnet (5)
- Processor
- Interested Person (2)
- At Large Power Troll (2)
- Native Organization
- Crew Member (2)
- Sports
- Rural Troll
- Sitka Power Troll

[nsraa.org](http://nsraa.org)

# The Southeast Nonregional Corporations

## Armstrong Keta, Inc.

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (9)

<https://www.armstrongketa.org/>

## Sitka Sound Science Center

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (7)

<https://sitkascience.org/visit/hatchery/>

## Douglas Island Pink and Chum (DIPAC)

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (13)

<http://www.dipac.net/board>

# Prince William Sound Aquaculture Corporation

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (45)

- Drift gillnet (10)
- Seine (10)
- Dual permit (6)
- Set gillnet seat
- 18 designated representatives from municipalities, native associations, processors, sport fisheries, personal use fisheries, and subsistence users.

<https://pwsac.com/board-of-directors/>

# Prince William Sound Nonregional Corporation

## Valdez Fisheries Development Association

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (7)

<https://www.valdezfisheries.org/about-vfda/board-of-directors/>



# Cook Inlet Aquaculture Association

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (28)

- Cook Inlet Fishermen's Fund (2)
- Cook Inlet Seiners Association (2)
- Inlet Wide Commercial Fishermen  
Representatives (5)
- Kenai Peninsula Fisherman's Association (2)
- North Pacific Fisheries Association (2)
- Northern District Set Netters of Cook Inlet (2)
- United Cook Inlet Drifters Association (2)
- City of Homer (1)
- City of Kachemak (1)
- City of Seward (1)
- Cook Inlet Region, Inc. (1)
- Kenai Peninsula Borough (1)
- Matanuska-Susitna Borough (1)
- Municipality of Anchorage (1)
- Processor Representative (3)
- Port Graham/Nanwalek Representative (1)

<https://www.ciaanet.org/about/staff/>

# Kodiak Regional Aquaculture Association

Private Nonprofit Corporation

Board of Directors, representatives of stakeholder in the area (28)

- Purse Seine (4)
- Westside Set Net South
- Westside Set Net North
- Beach Seine
- Set Net At-Large
- Alitak Set Net
- Subsistence
- Any Gear At-Large (2)
- Marketing
- Sport Fish
- Processor

<https://kraa.org/about/board-of-directors/>

# PRODUCTION PLANNING

- Tradeoffs between the costs of production and the value of fish at harvest that make some salmon more economical to produce than others.
- Hatchery production is limited by the available freshwater capacity, freshwater rearing space, rearing time, and costs of production.
- Costs of production include feed, the rearing facility, and facility operations.
- The value of the fish at harvest is limited by the value of fish at return and the number of fish that return.

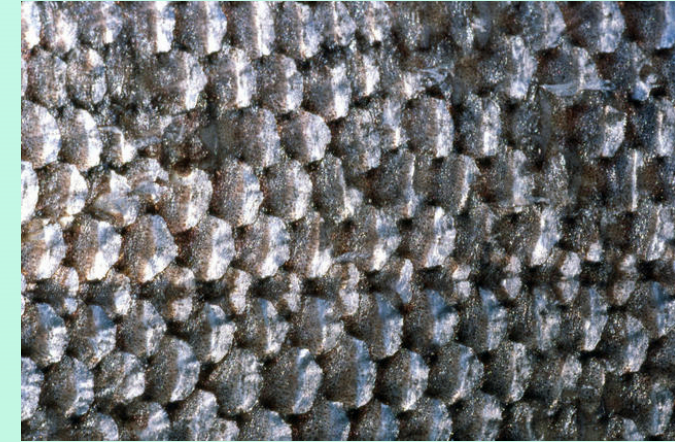
- Pink salmon are the most economical to rear
  - short rearing time, one winter in the hatchery
  - shortest life cycle of Pacific salmon, two years
  - provide a quick return on investment
  - provide the highest economic return for the production costs

## Fish Economics





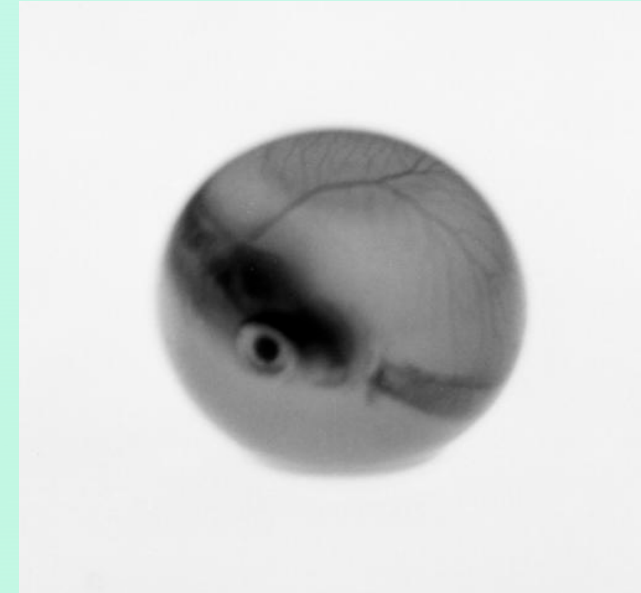
## Fish Economics



- Chum salmon
  - short rearing time, one winter in the hatchery
  - have a life cycle of three to four year at sea
  - longer return on investment
- Pink and chum salmon are the bulk of Alaska hatchery production because they have the highest return on investment for the cost of production.
- Pink and chum salmon have high market demand.



## Fish Economics



- Chinook, sockeye, and coho salmon are the least economical to produce
  - Long rearing times at the hatchery, typically a year or more
  - Longer life cycles, so they have a long return on investment
- Chinook, sockeye, and coho salmon have higher prices per pound at harvest
- A longer rearing time means that they are expensive, therefore lower production numbers

## Terminal Harvest Areas

THA: "terminal harvest area" means an area designated by the commissioner, Board of Fisheries regulation, or department emergency order where hatchery returns have achieved a reasonable degree of segregation from naturally occurring stocks and may be harvested by the common property fishery without adverse effects.

SHA: "special harvest area" means an area designated by the commissioner or the Board of Fisheries regulation where hatchery returns are to be harvested by the hatchery operators, and, in some situations by the common property fishery.

5 AAC 40.990

An SHA may also be designated by emergency orders issued by the commissioner.

5 AAC 40.005

# Terminal and Special Harvest Area Opportunity

- Segregation of hatchery-origin and naturally spawned returns
- Fishery objectives for wild stocks, such as salmon escapement goals
- Increase in fishing opportunities.
  - When wild stock production provides surplus fish for harvest, fishers may target those fish during open fishing periods in traditional fishing areas.
  - When those fishing periods close, fishers can move to the hatchery release sites that remain open and continue fishing there until the wild stock areas reopen.
- 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.
- Hatchery terminal areas provide the fishing fleet with more time and area to fish.

# Cost Recovery Harvest

## **AS 16.10.455. Cost Recovery Fisheries. (a)(1)**

A hatchery permit holder may harvest salmon for a facility in a special harvest area through agents, or employees of or persons under contract with the permit holder as provided under a permit from the department or regulations of the Board of Fisheries.

- Issued Special Harvest Area (SHA) Entry Permit
- SHA Entry Permits allow for fish ticket reporting



# Cost Recovery Harvest

## AS 16.10.455. Cost Recovery Fisheries. (a)(2)

A hatchery permit holder may harvest salmon for a facility in a terminal harvest area through the common property fishery under this section.

- FISHERY ASSESSMENT



Fishery Assessment  
Hidden Falls Terminal Harvest Area  
Southeast Alaska

# Cost Recovery Harvest



NSRAA  
Beach Seining Chinook  
Medvejie Hatchery



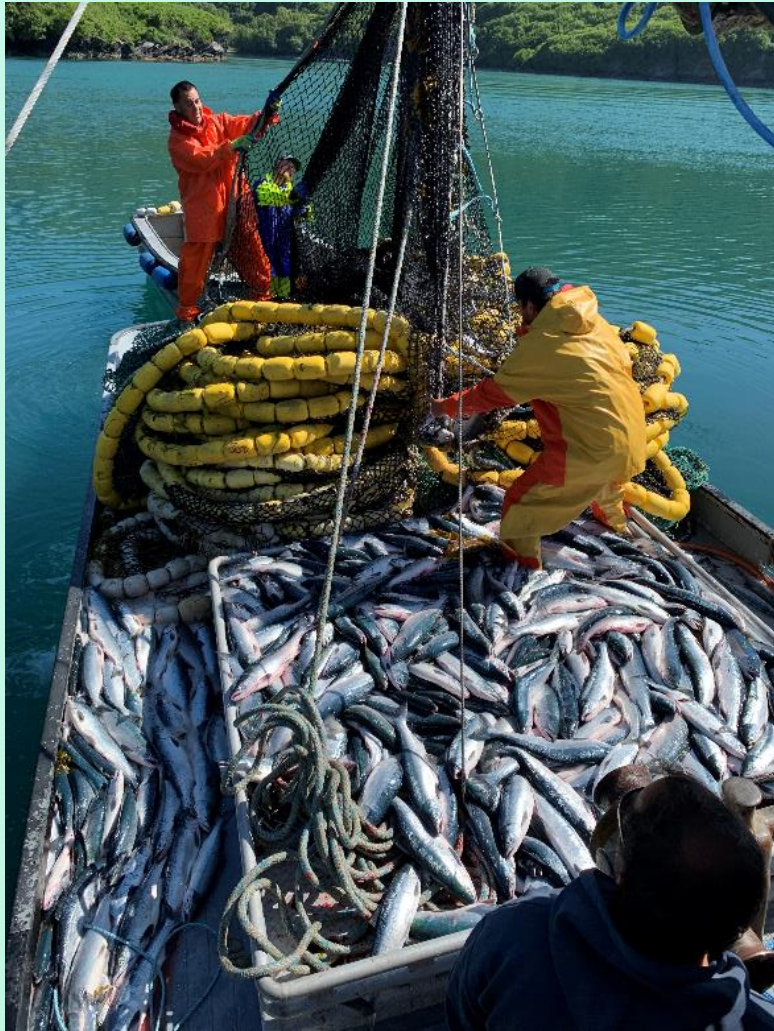
NSRAA  
Seining chum

# Cost Recovery Harvest



SSRAA  
Neck Lake Cost Recovery  
Program  
Snow Pass Coho  
Prince of Wales Island





KRAA  
Spiridon sockeye

## Cost Recovery Harvest



KRAA  
Kitoi Bay

# Cost Recovery Harvest

## Use of Cost Recovery Harvest revenue by PNP Hatchery Operators

- Reasonable Operating Costs, including:
  - Debt Retirement
  - Expanding Facilities
  - Salmon Rehabilitation Projects
  - Fisheries Research
  
- “Shall Expend the Remaining Funds on Other Fisheries Activities of the RAA”

AS 16.10.450 Sale of salmon and salmon eggs; use of proceeds

# Cost Recovery Harvest

## What happens when CR goals are not met?

- PNPs must make business decisions to remain viable
- Each corporation has unique needs
- Options:
  - budget cuts
  - prioritization of projects
  - elimination of programs that may change contribution to user groups
  - Fisheries Enhancement Revolving Loan Fund

# PNP Funding Sources

## **Fisheries Enhancement Revolving Loan Fund**

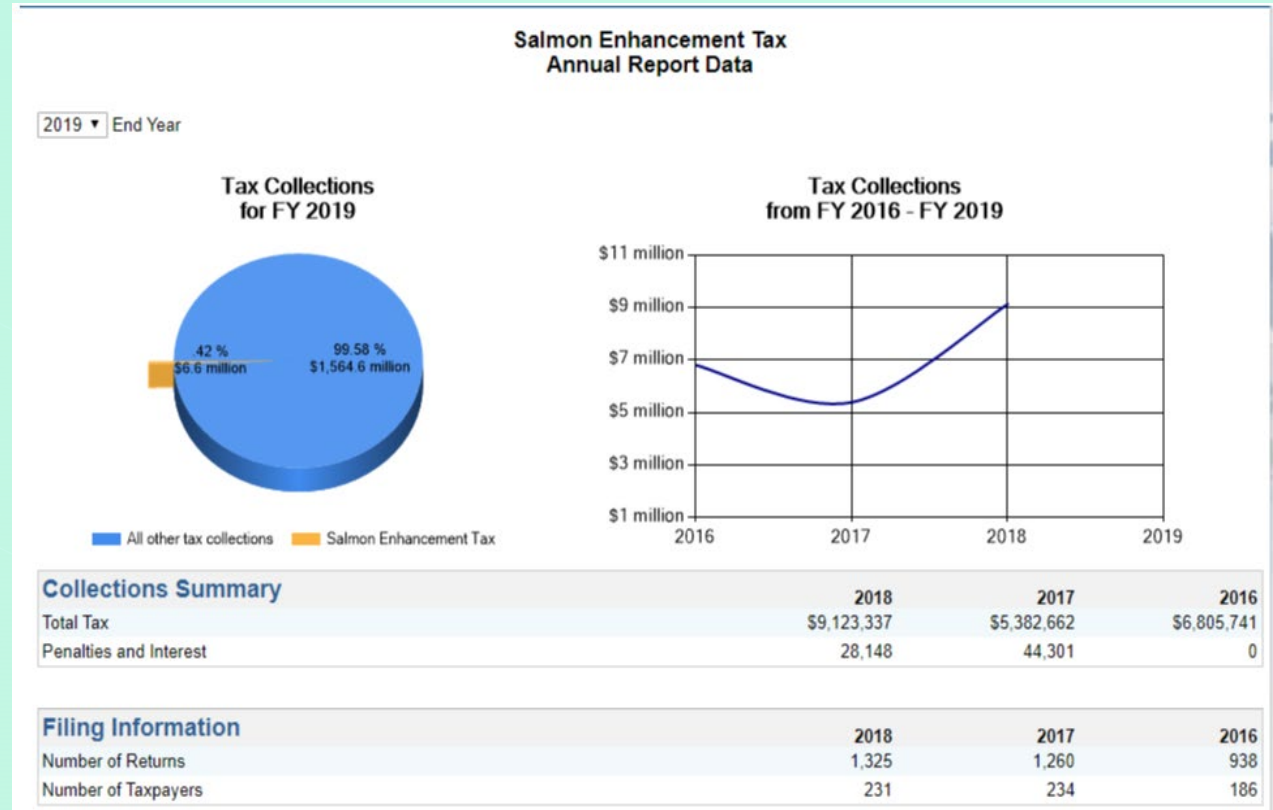
- Qualified PNP corporations with PNP Hatchery Permit
- For planning, construction, and operations of fish hatchery facilities
- Must be secured by collateral, which may include a lien on buildings, equipment, machinery, land, marketable securities, approved assignment of enhancement tax receipts, or sale of surplus fish from the hatchery.
- The Department of Commerce, Community and Economic Development
- The Division of Economic Development

**AS 16.10.500-560**

# PNP Funding Sources

## Salmon enhancement tax (SET)

- Commercial Fishermen vote to self impose a tax on the sale of all salmon in their region
- Distributed to the RAA to finance hatchery operations or other enhancement and rehabilitation activities.
- Nonregional PNP operators do not receive salmon enhancement tax funds; only RAAs receive the tax funds.



Source: Alaska Dept. of Revenue Tax Division

<http://tax.alaska.gov/programs/programs/reports/AnnualData.aspx?60632>

# Funding Sources

## PNP to PNP – Southeast Alaska

- Southeast Alaska salmon enhancement program has evolved substantially since inception in the 1970s.
- Fully integrated salmon enhancement community that supports fishermen whose permits allow harvest anywhere in Southeast.
- Diversification of financial burden
  - DIPAC granting excess cost recovery revenue to SSRAA, POWHA and NSRAA.
  - SSRAA acted as a financial conduit and mentor of POWHA, eventually assuming their debt.

# QUESTIONS?

