

Salmon Fishery Enhancement in Alaska

**A Presentation to the Alaska Board of Fisheries
10/16/2018**

**Alaska Department of Fish and Game
Sam Rabung, Bill Templin, Jeff Milton**

Part 1

Introduction

Legal Guidance

Enhanced Production of Salmon

Previous Hatchery Program Reviews

Result

Part 2

Sport Fish Statewide Stocking

Part 3

Research

Alaska's contemporary salmon fishery enhancement program has operated since the mid-1970s, and through 2017 has provided about 1.8 billion salmon to the fisheries of the State, resulting in substantial economic value without any obvious negative effects on natural salmon production.

INTRODUCTION

The Need for Salmon Fishery Enhancement

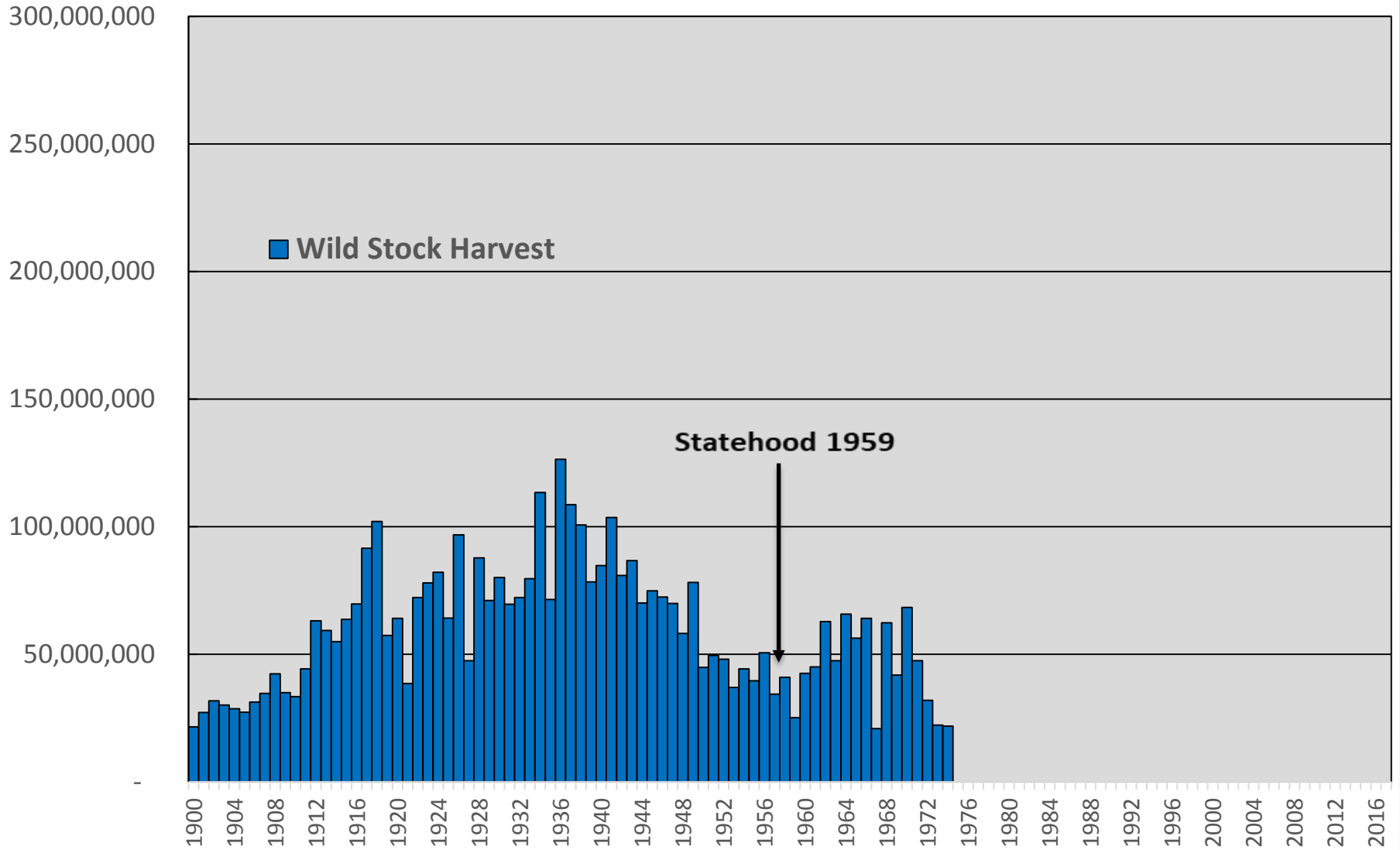
How AK approached Enhancement

Types of Propagation Programs in AK

The Need for a Fishery Enhancement Program

- By statehood in 1959, Alaska's salmon fishery had fallen to its lowest level in 60 years and remained low through the next 15 years
- Salmon abundance was well below both historical levels and the production potential of the habitat, many stocks were depleted and some extirpated
- Economic losses to individual fishermen, coastal communities and the State were considered a disaster
- Effective fishery management alone was not increasing abundance quickly enough

Alaska Commercial Salmon Harvest from 1900-1974



An Integrated Approach to Recovering Alaska's Salmon Fisheries

- **In-season escapement based management of salmon fisheries was adopted with state control of fish and game in 1960**
- **Fisheries Rehabilitation, Enhancement and Development (FRED) Division was created by legislature in 1971**
- **Following a constitutional amendment in 1972, limited entry commercial salmon fishery program was enacted in 1973**
- **The 1972 constitutional amendment also allowed for “the efficient development of aquaculture” in Alaska**

Private Nonprofit Salmon Hatcheries Join The Effort in 1974

CHAPTER 11

AN ACT Authorizing the Operation of Private Nonprofit Salmon
Hatcheries

Be it enacted by the Legislature of the State of Alaska:

Section 1. INTENT. ***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...***

Approved May 16, 1974

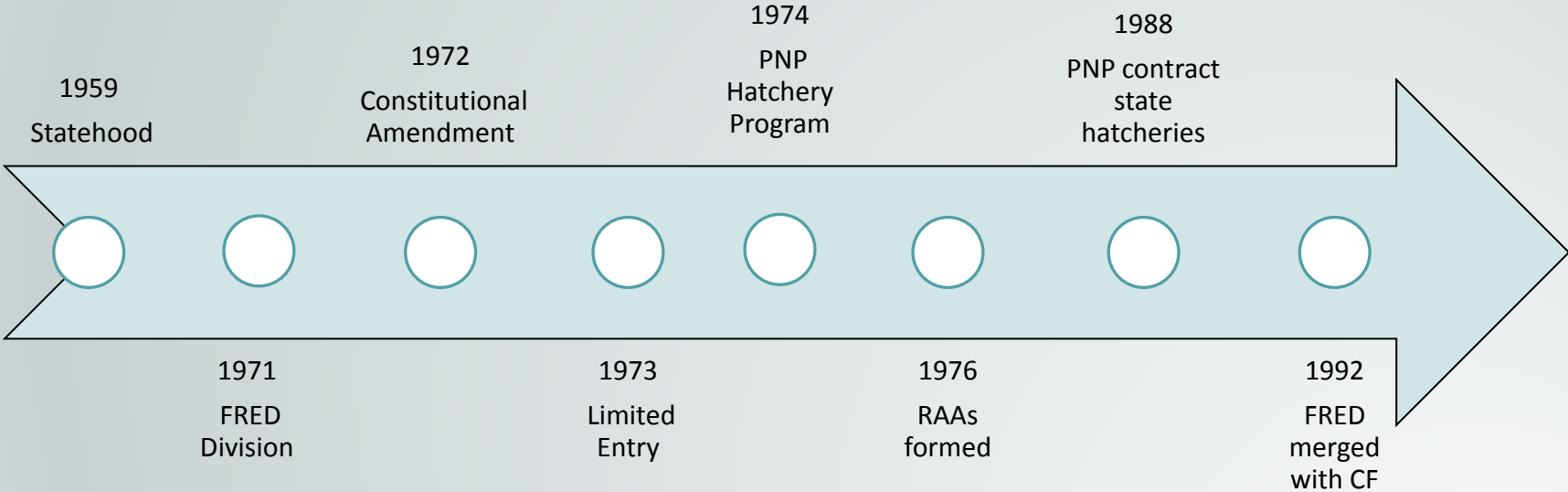
Effective August 14, 1974

The Purpose of Alaska's PNP Salmon Fishery Enhancement Program

**Recovery and support of Alaska's salmon fisheries
and fishing economy**

**Provide an economic engine to support and grow
coastal communities**

Hatchery Program Development Timeline



Current Propagative Program Types

1. **Private Nonprofit - PNP** (CF focus).

Production hatcheries operated by PNP corporations to fulfill regional harvest objectives to **benefit all common property fisheries** and primarily to benefit commercial fisheries

2. **State** (SF focus).

ADF&G Division of Sport Fish operates 2 hatcheries, and contracts additional production to PNPs, to fulfill the statewide sport fish stocking plan objectives for the **primary benefit of sport fishers.** Harvest of these fish by other user groups is incidental

3. **Aquatic Resource Permit** (Sci/Ed).

Projects with a **scientific or educational objective**

LEGAL GUIDANCE

Constitution, Statutes, Regulations, Policies

Permitting

Public Involvement

Funding

ADF&G Mission Statement

To protect, maintain, and improve the fish, game, and aquatic plant resources of the state, and manage their use and development in the best interest of the economy and the well-being of the people of the state, consistent with the sustained yield principle.

Guidance in the State Constitution

Article 8 Natural Resources

- Section 15 – No Exclusive Right of Fishery. Amended in 1972 to provide an exemption to allow for limited entry into any fishery and **“to promote the efficient development of aquaculture in the State.”**

Guidance in Statutes

Title 16 – Fish and Game

- AS 16.05.050. Powers and Duties of Commissioner
- **AS 16.05.092. Fisheries rehabilitation, enhancement and development**
- AS 16.05.221. Boards of fisheries and game
- AS 16.05.730. Management of wild and enhanced stocks of fish
- AS 16.05.851. Hatchery required
- **AS 16.10.375-480. Salmon Hatcheries**
- AS 16.10.500-560. Fisheries Enhancement Loan Program
- AS 16.40.210. Finfish farming prohibited
- AS 16.43.400-440. Special Harvest Area Entry Permits

Title 16 – Fish and Game

Sec. 16.05.092. Fisheries rehabilitation, enhancement, and development.

“The department shall”

“through rehabilitation, enhancement, and development programs do all things necessary to ensure perpetual and increasing production and use of the food resources of state waters and continental shelf areas;”

Title 16 – Fish and Game

Chapter 10, Article 9 - Salmon Hatcheries.

Section

- 375. Regional salmon plans
- 380. Regional associations
- 400. Permits for salmon hatcheries
- 410. Hearings before permit issuance
- 420. Conditions of a permit
- 430. Alteration, suspension, or revocation of permit
- 440. Regulations relating to released fish
- 443. Department assistance and cooperation
- 445. Egg sources
- 450. Sale of salmon and salmon eggs: use of proceeds; quality and price
- 455. Cost recovery fisheries
- 460. Inspection of hatchery
- 470. Annual report
- 480. Contracts for the operation of state hatcheries

Guidance in Regulations

Title 5 – Fish and Game

- 5 AAC 39.220. Policy for the management of mixed stock salmon fisheries
- 5 AAC 39.222. Policy for the management of sustainable salmon fisheries
- **5 AAC 40.005-990 - Private Nonprofit Salmon Hatcheries**
- 5 AAC 41.001-100 Transportation, Possession and Release of Live Fish

Alaska Administrative Code

Title 5. Fish and Game

Chapter 40. Private Nonprofit Salmon Hatcheries.

Article

1. General (5 AAC 40.005 — 5 AAC 40.015)
2. Special Harvest Areas (5 AAC 40.030 — 5 AAC 40.085)
3. Applicability of Regulations (5 AAC 40.100)
4. Permit Application Procedures (5 AAC 40.110 — 5 AAC 40.240)
5. Regional Comprehensive Planning (5 AAC 40.300 — 5 AAC 40.370)
- 6 and 7. (Reserved)
8. General Provisions (5 AAC 40.800 — 5 AAC 40.990)

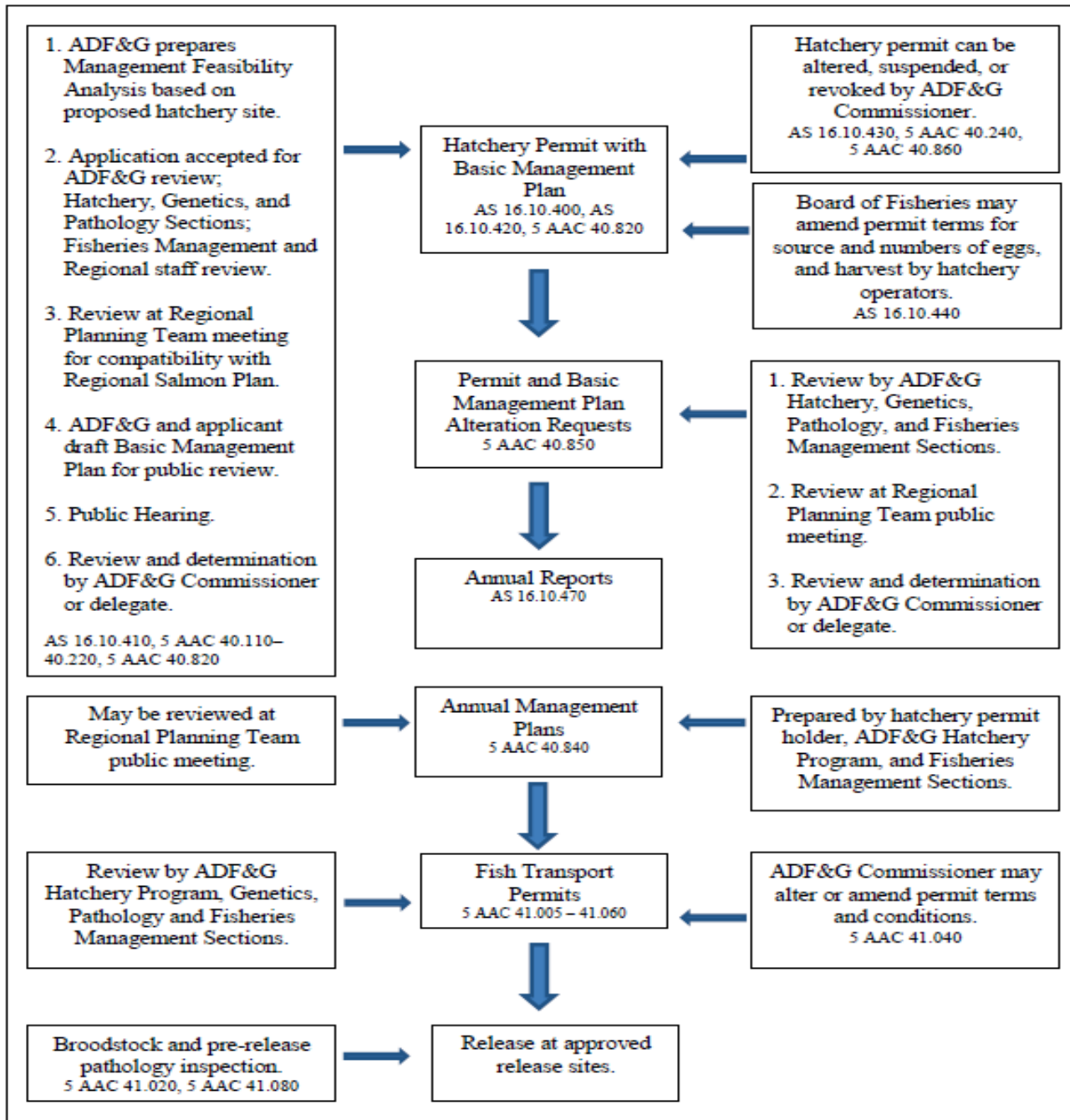
Guidance in Policy

- **Genetic Policy** (1985) and Background to the Genetic Policy (1989)

All other policies have been adopted into regulation

PNP Hatchery Permitting

Private Nonprofit Hatchery Permitting in Alaska

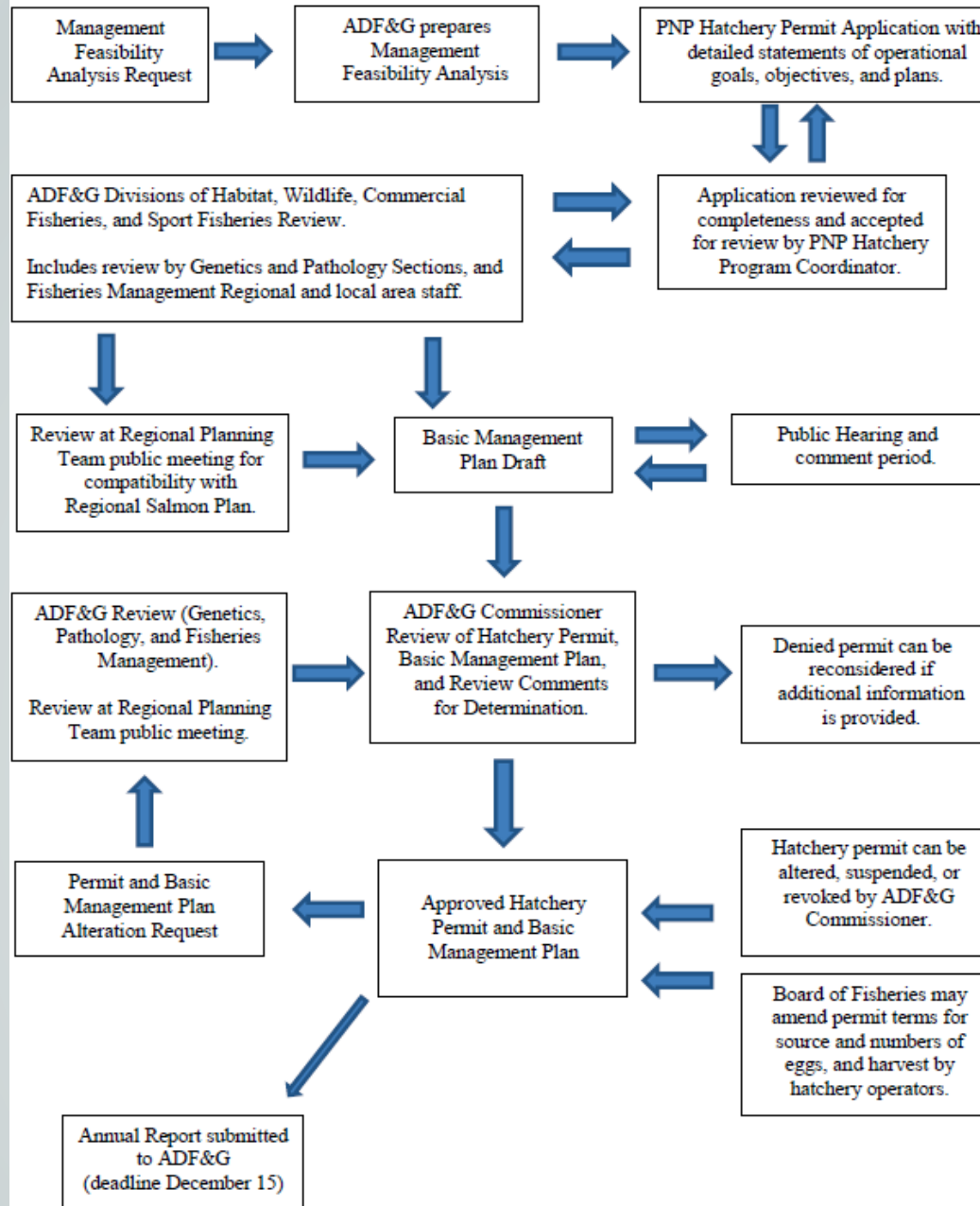


PNP Hatchery Permitting

PNP Hatchery Permit and Basic Management Plan

AS 16.10.400; 5 AAC 40.110-240; 5 AAC 40.820

Private Nonprofit Hatchery Permit Process



PNP Hatchery Permitting

Fish Transport Permit (FTP)

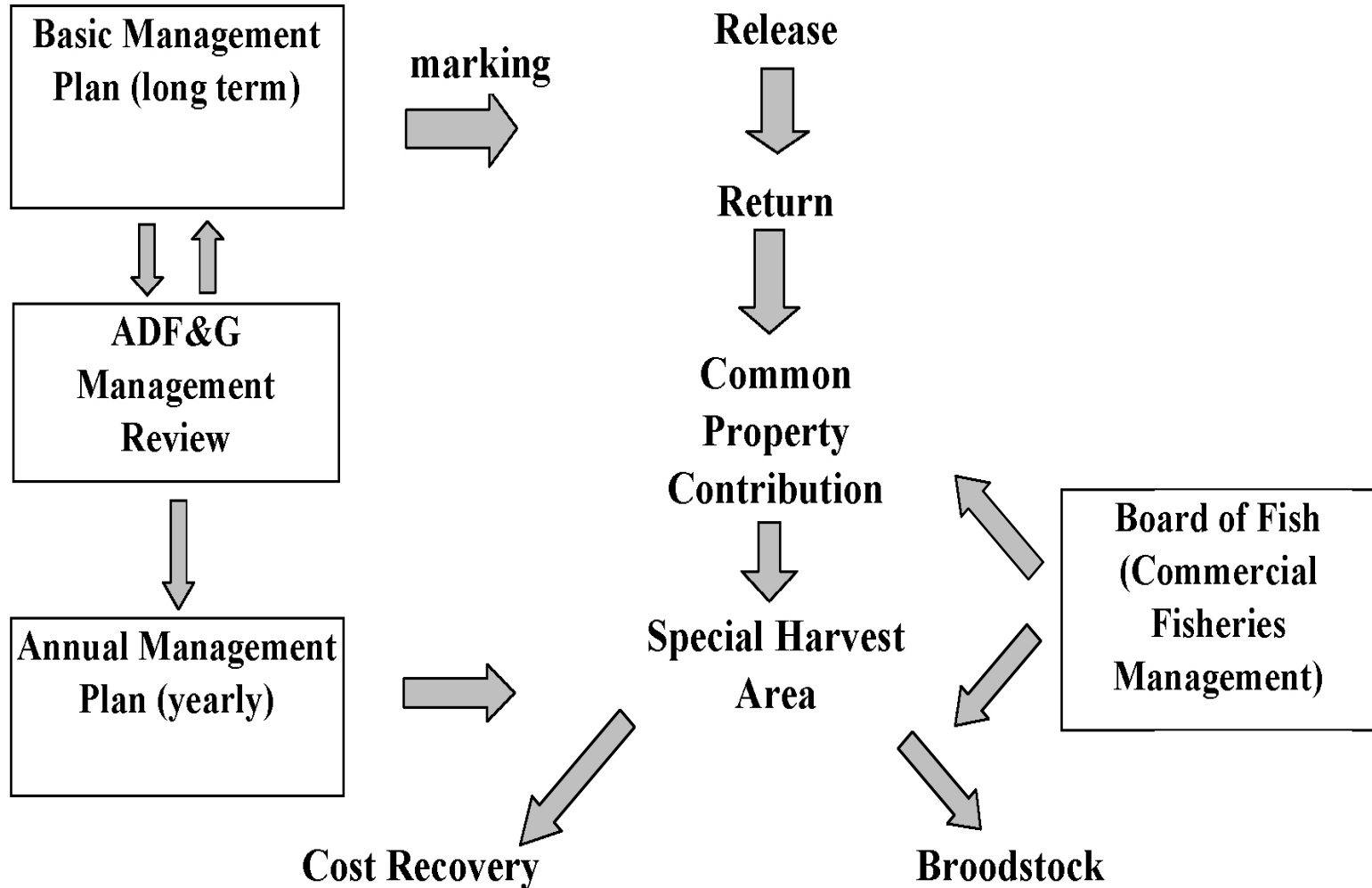
5 AAC 41.005-100

PNP Hatchery Permitting

Annual Management Plan (AMP)

5 AAC 40.840

Management of Returns



PNP Hatchery Permitting

Annual Report

AS 16.10.470

Regional Information Report No. 5J18-02

Alaska Salmon Fisheries Enhancement Annual Report 2017

by
Mark Stopha

On 4/9/2018, Table 10 was revised. The total projected return by facility and species, however, remained essentially the same as the original table.

On 5/31/2018, Table 32 was revised to correct the permitted pink salmon egg capacity for AFK and Solomon Gulch hatcheries for the 2017 season.

March 2018

Alaska Department of Fish and Game

Division of Commercial Fisheries



10/15/2018

28

Public Involvement

Regional Planning Team

AS 16.10.375; 5 AAC 40.300-370

5 AAC 40.340. Regional planning team responsibility.

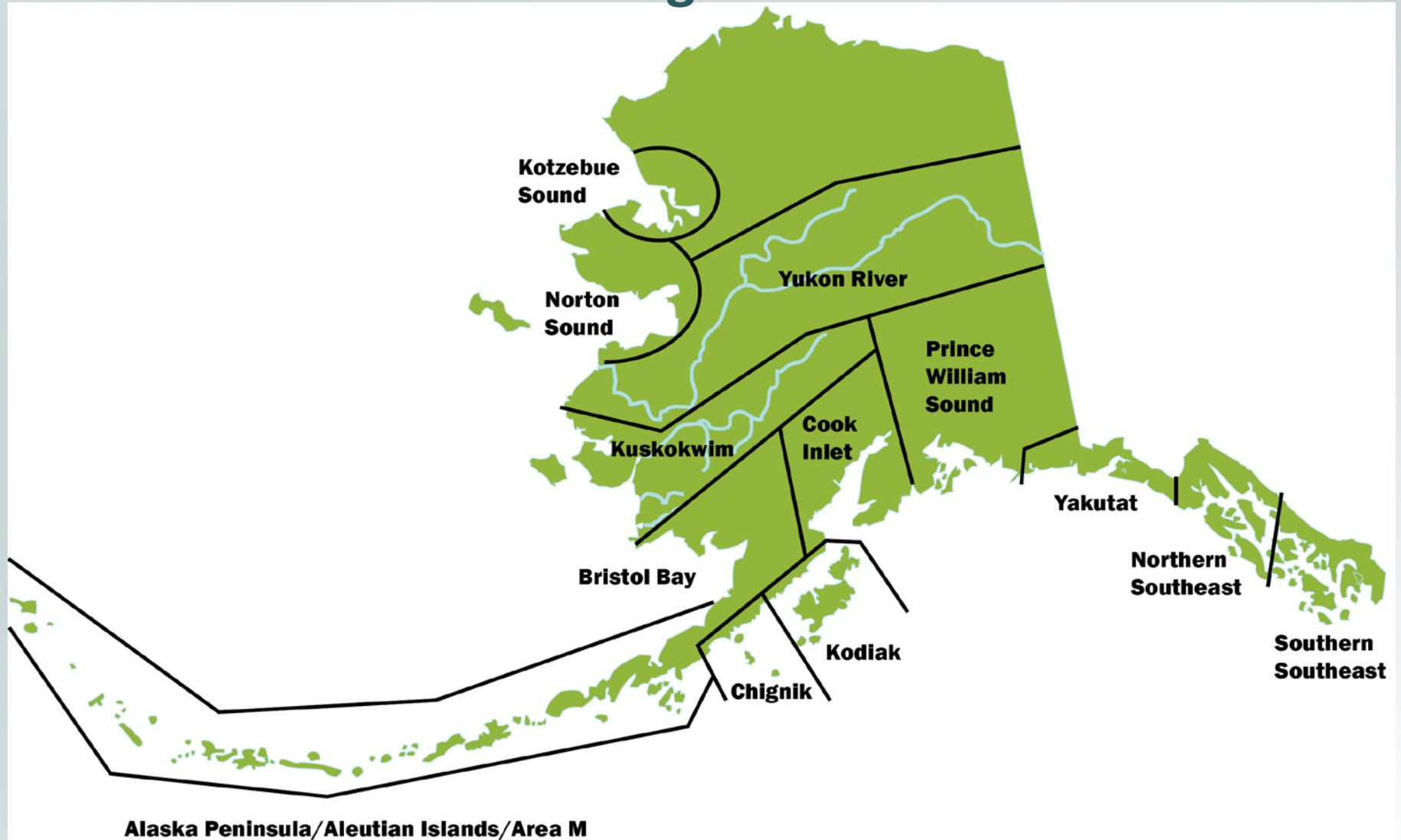
“ensure that the public has opportunity to participate “

Alaska's Program is Stakeholder Driven

The users of the resource determine what fishery enhancement is desirable and the ADF&G determines what is appropriate within their mandate to sustain natural production.

The mechanism for this cooperative effort is the Regional Aquaculture Association (RAA) working with ADF&G within the Regional Planning Team (RPT) process to develop the regional salmon plan.

Alaska Salmon Fishery Enhancement Planning Regions

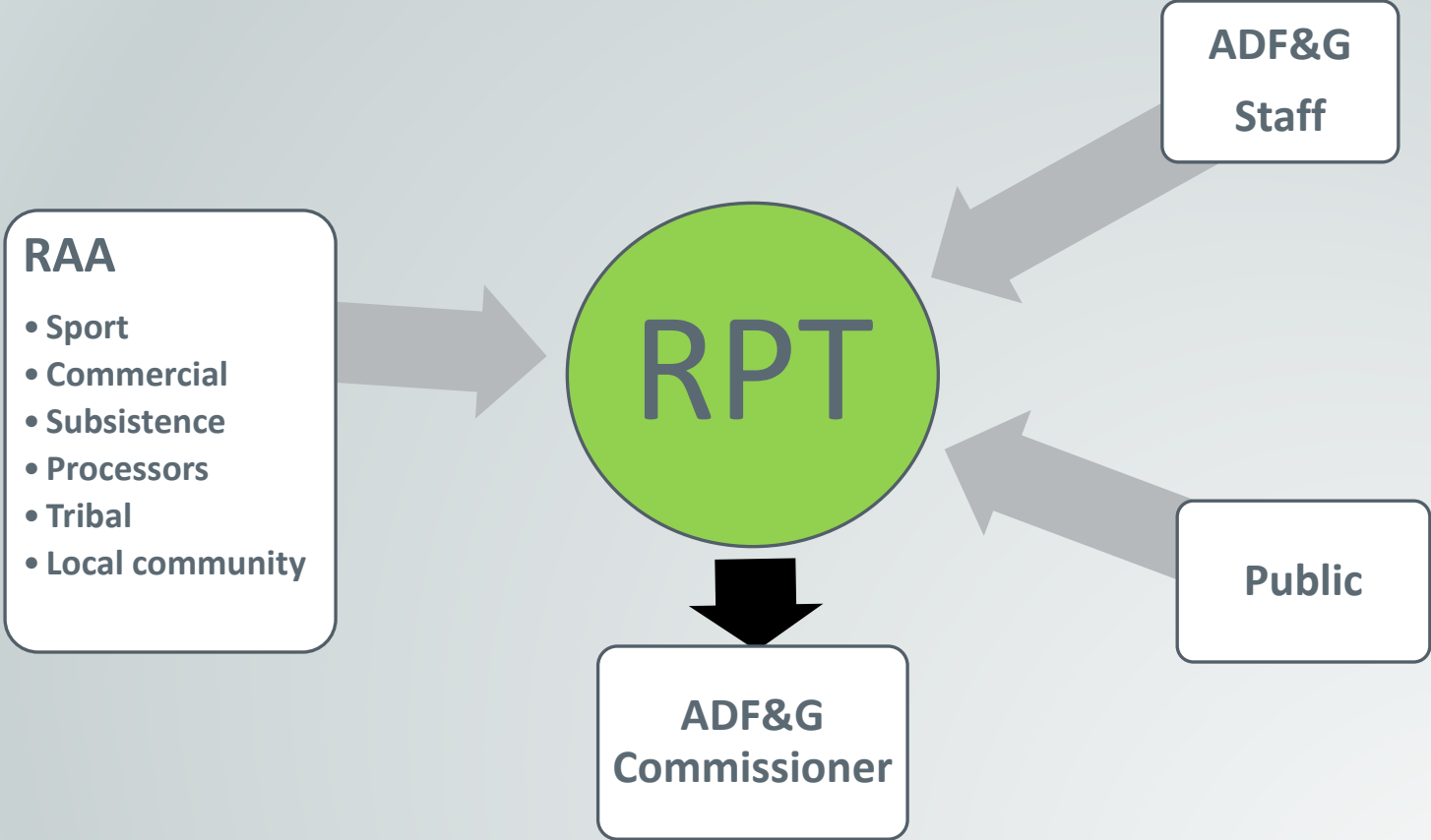


Regional Planning Teams (RPT)

The primary responsibility of the RPT is regional **comprehensive salmon planning.**

The RPT is **advisory to the ADF&G Commissioner** on salmon fishery enhancement planning and permitting within their region.

Regional Planning Team Process



Regional Aquaculture Associations

- AS 16.10.380 - The commissioner shall assist in and encourage the formation of qualified regional aquaculture associations for the purpose of **enhancing salmon production.**

Regional Aquaculture Associations

The ADF&G Commissioner determines an RAA is qualified if it

1. is comprised of associations representative of commercial fishermen in the region;
2. includes representatives of other user groups interested in fisheries within the region who wish to belong; and
3. possesses a board of directors that includes no less than one representative of each user group that belongs to the association.

Public Involvement

Regional Salmon Plan

AS 16.10.375; 5 AAC 40.340-370

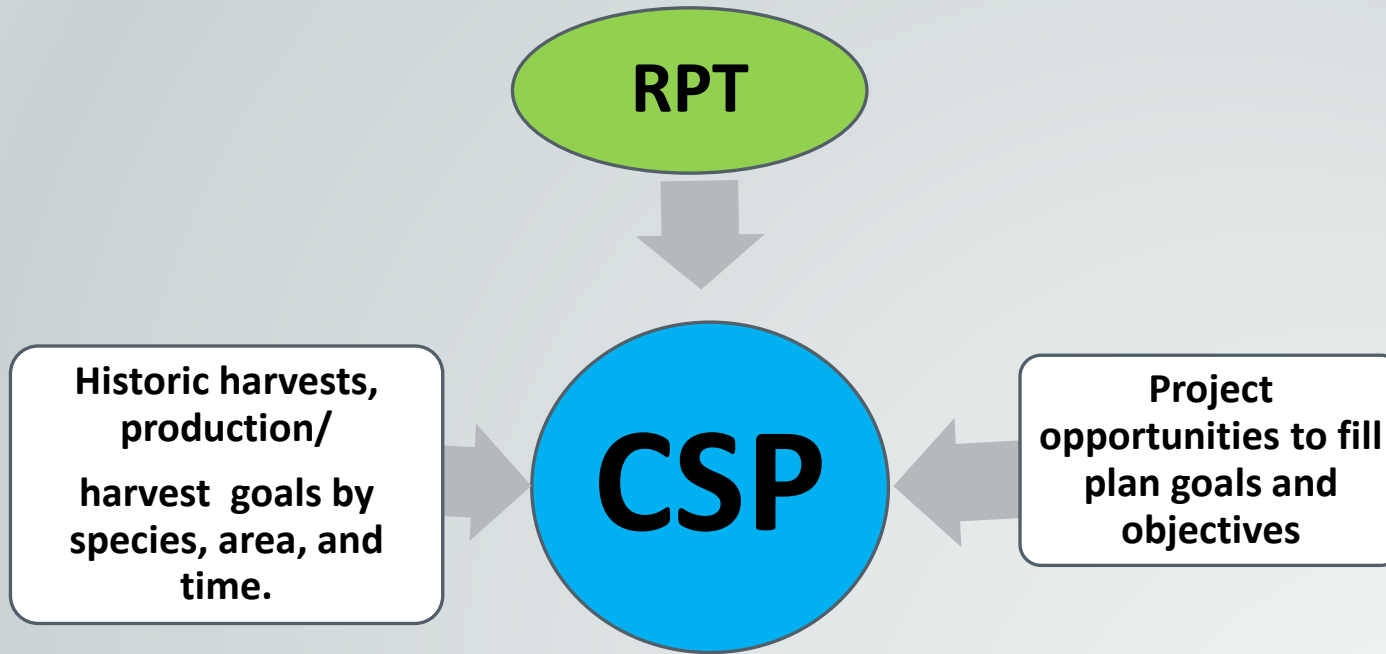
5 AAC 40.360. Public involvement.

“shall encourage public participation”

5 AAC 40.370. Plan approval

“must be distributed for public review.”

Regional Planning Team Process



Public Involvement

PNP Hatchery Permit Application

Sec. 16.10.410. Hearings before permit issuance.

“a public hearing shall be held “

5 AAC 40.210. Public hearing.

“will conduct a public hearing “

Public Involvement

Statewide Sport Fish Stocking Plan

<http://www.adfg.alaska.gov/index.cfm?adfg=fishingSportStockingHatcheries.stockingPlan>

The screenshot shows the Alaska Department of Fish and Game website. The header includes the department logo and name, a search bar, and navigation tabs for Home, Fishing, Hunting, Subsistence, Viewing, Education, Species, Habitat, and Regulations. Below the header is a secondary navigation bar with links for Licenses & Permits, Commercial, Sport, Subsistence, Personal Use, Aquatic Farming, Hatcheries, and Research. The main content area is titled "Hatcheries and Stocking Statewide Stocking Plan" and includes a "Sport Fishing" sidebar with various links. The main text describes the plan's objectives and provides contact information for Andrew Garry.

Alaska Department of Fish and Game

Home Fishing Hunting Subsistence Viewing Education Species Habitat Regulations

Licenses & Permits Commercial Sport Subsistence Personal Use Aquatic Farming Hatcheries Research

Sport Fishing

Sport Fish Home
wefishak
Fishing Information
Alaska Lake Database
Information By Area
Fish Counts
Boating & Angler Access Programs
Hatcheries & Stocking
- Hatcheries
- Fish Stocking Search
- Statewide Stocking Plan
- FAQ
- Lake Stocking Policy
Lake Fishing Info
Proxy Fishing

ADF&G Home » Fishing » Sport » Hatcheries and Stocking

Sign in myADF&G

Hatcheries and Stocking

Statewide Stocking Plan

See what fish the department plans to stock over the next 5 years.

Statewide Stocking Plan

The "Statewide Stocking Plan for Sport Fisheries, 2018" outlines the objectives as well as the numbers and locations of the sport fish stocking efforts by the state hatcheries for the next five years. Approximately 7 million fish are planned for release annually, at hundreds of locations throughout the state for improving sport fish angling opportunities. There has been considerable public input in the development of the long-term stocking plan. In addition, this program is primarily funded with angler dollars through license sales and the Federal Aid to Sport Fish Restoration (Dingell-Johnson/Wallop-Breaux) program. This document is available for public review and comment through January 30, 2018. Any changes or additions to the actions outlined in this plan will be advertised in the media for at least 10 days before they occur. It is available here online for general stocking information.

The PDF file of the plan has been divided into four parts. The introduction explains the overall direction of the program. Sections RI, RII, and RIII, outline program objectives for each of the three Division of Sport Fish management regions. Click on the appropriate link below to view the section in which you are interested.

Any comments on this plan should be sent via email to Andrew Garry at the Department of Fish and Game at: andrew.garry@alaska.gov, or mailed to:

Andrew Garry
William Jack Hernandez Sport Fish Hatchery
941 N. Reeve Blvd.
Anchorage, AK 99501

- [Introduction](#) (1,180 Kb PDF)
- [Region I - Southeast](#) (823 Kb PDF)
- [Region II - Southcentral](#) (1,690 Kb PDF)
- [Region III - Interior](#) (888 Kb PDF)

Like Share

Funding – PNP Hatcheries

Fisheries Enhancement Revolving Loan Fund (FERLF)

Salmon Enhancement Tax (SET) – RAAs only

Cost Recovery Harvest

Contractual Production

Legislative Grants

Fisheries Enhancement Revolving Loan Fund - Program Overview

- Created by the State Legislature in 1976. The goal of the program is to promote the enhancement of the state's fisheries.
- The FERLF is totally self-sufficient and has received no General Fund support since FY94.
- Loaned over \$55 million in the past 10 years alone, most for major infrastructure, replacing 30+ year old facilities, main waterlines, dams, etc.
- As of August 31, 2018: 122 Outstanding Loans; \$89.7 million outstanding; Current Delinquency Rate of 0.0%; Average Loan is \$527,900; Loan Rate is 5% to 9.5%

Source: Alaska Department of Commerce, Community, and Economic Development

Salmon Enhancement Tax

Salmon Enhancement Tax Historical Overview

AS 43.76

DESCRIPTION

The salmon enhancement tax is an elective tax levied on salmon sold in or exported from established aquaculture regions in Alaska. Fishermen pay salmon enhancement taxes to licensed buyers at the time of sale, or to the Division for salmon sold to unlicensed buyers or exported from the region. Buyers remit taxes collected from fishermen to the Division.

RATE

Commercial fishermen elected tax rates for the following regional aquaculture associations:

REGION	RATE	EFFECTIVE
Southern Southeast	3%	1981
Northern Southeast	3%	1981
Cook Inlet	2%	1981
Prince William Sound	2%	1985
Kodiak	2%	1988
Chignik	2%	1991
Yakutat	2%	2013

RETURNS

Buyers file returns and pay the tax monthly. The due date is the last day of the month following the month of purchase. Buyers file returns for bonus payments made to fishermen after the close of the fishing season. Returns for these payments are due with additional taxes by the last day of the month following the bonus payment.

Fishermen selling to unlicensed buyers or exporting from the region file returns and pay taxes annually. The due date is March 31 following the year of sale or export.

EXEMPTIONS

Salmon harvested under a special harvest area permit (typically, salmon harvested on behalf of salmon hatcheries) are exempt from the salmon enhancement tax.

DISPOSITION OF REVENUE

The Division deposits all salmon enhancement tax revenue into the General Fund. Under AS 43.76.025(c), the legislature may appropriate salmon enhancement tax revenue to provide financing for qualified regional aquaculture associations.

HISTORY

The legislature adopted the Salmon Enhancement Act in 1980. The Act authorized a 2% or 3% tax, upon election by commercial fishermen within established aquaculture regions, on salmon transferred to buyers in Alaska. Commercial fishermen in Southern and Northern Southeast aquaculture regions elected a 3% tax and Cook Inlet region elected a 2% tax.

1981 - The legislature amended the Act to subject salmon exported from Alaska to the tax.

1985 - Commercial fishermen in the Prince William Sound aquaculture region elected a 2% tax.

1988 - Commercial fishermen in the Kodiak aquaculture region elected a 2% tax.

1989 - The legislature amended statutes to allow for a 1% tax.

1991 - Commercial fishermen in the Chignik aquaculture region elected a 2% tax.

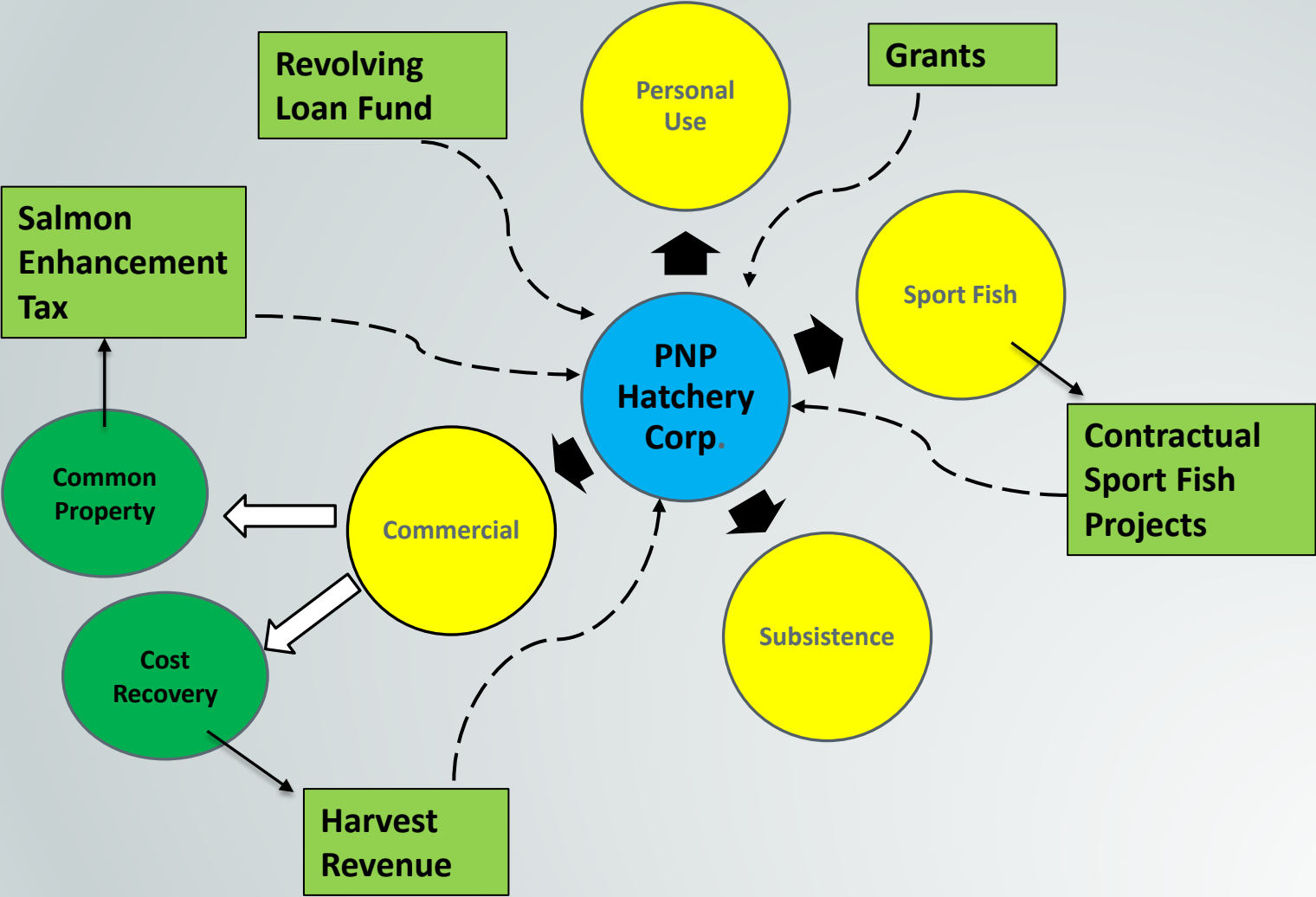
2004 - The legislature authorized additional salmon enhancement tax rates, subject to permit holder elections held by qualified regional associations. In addition to the current 1%, 2%, or 3% options, 10 additional options were made available ranging from 4% to 30%. This legislation clarified who must pay the Salmon Enhancement Tax. When a buyer does not withhold the tax, fishermen must pay the tax with an annual return. The legislation took effect January 1, 2005.

Funding – PNP Hatcheries

Cost recovery harvest of hatchery returns in designated special harvest areas is the largest fund source for PNP hatcheries

Other sources of financial support includes **contractual production** (for sport fish projects) and **legislative grants** (for maintenance of state facilities)

PNP Hatchery Production and Funding



Funding – State Hatcheries

Federal Aid (DJ)

License and Tag Sales (SF Revenue)

General Fund

ENHANCED PRODUCTION OF SALMON

North Pacific Production

Statewide Production

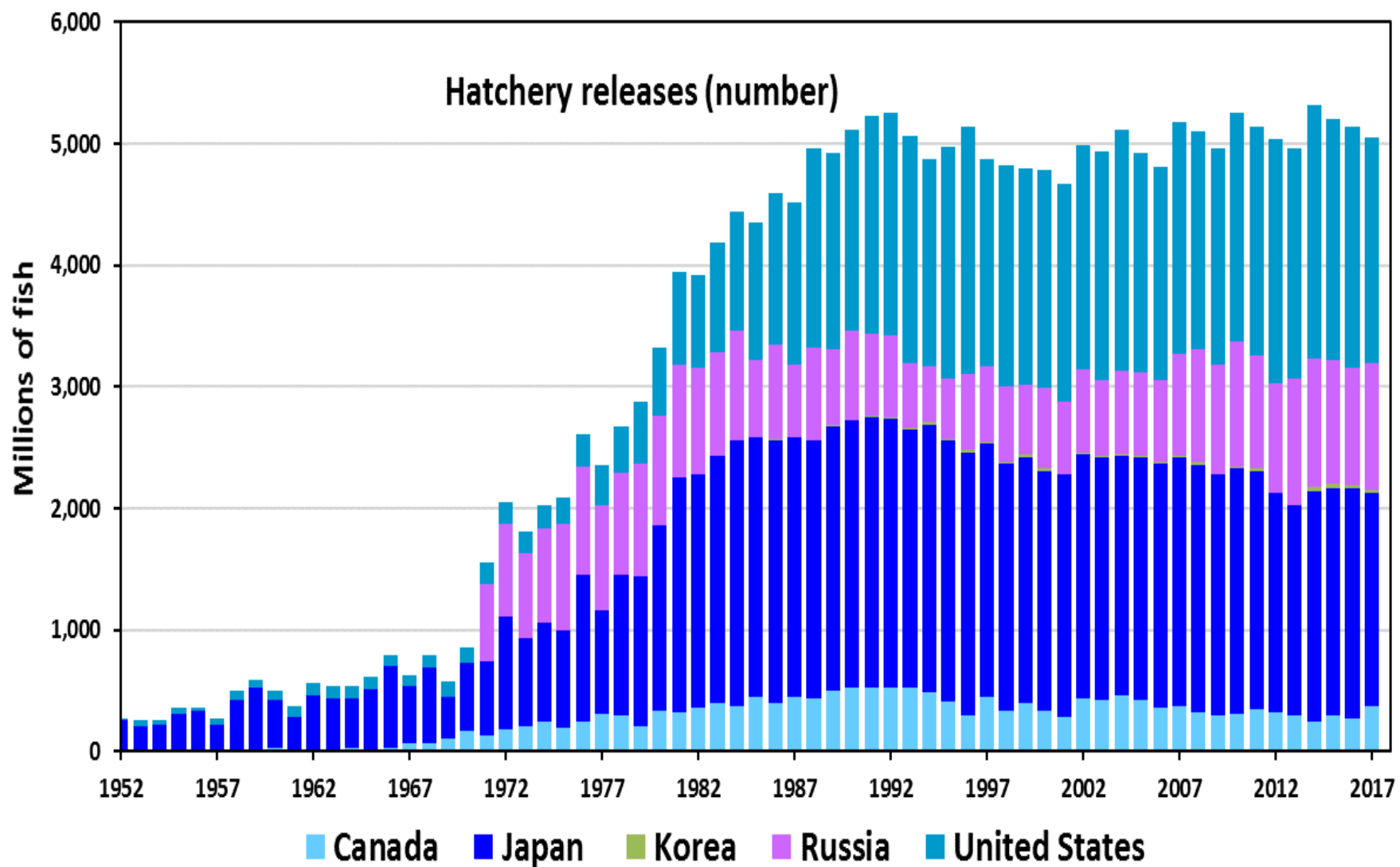
Harvest Allocation

Harvest Value

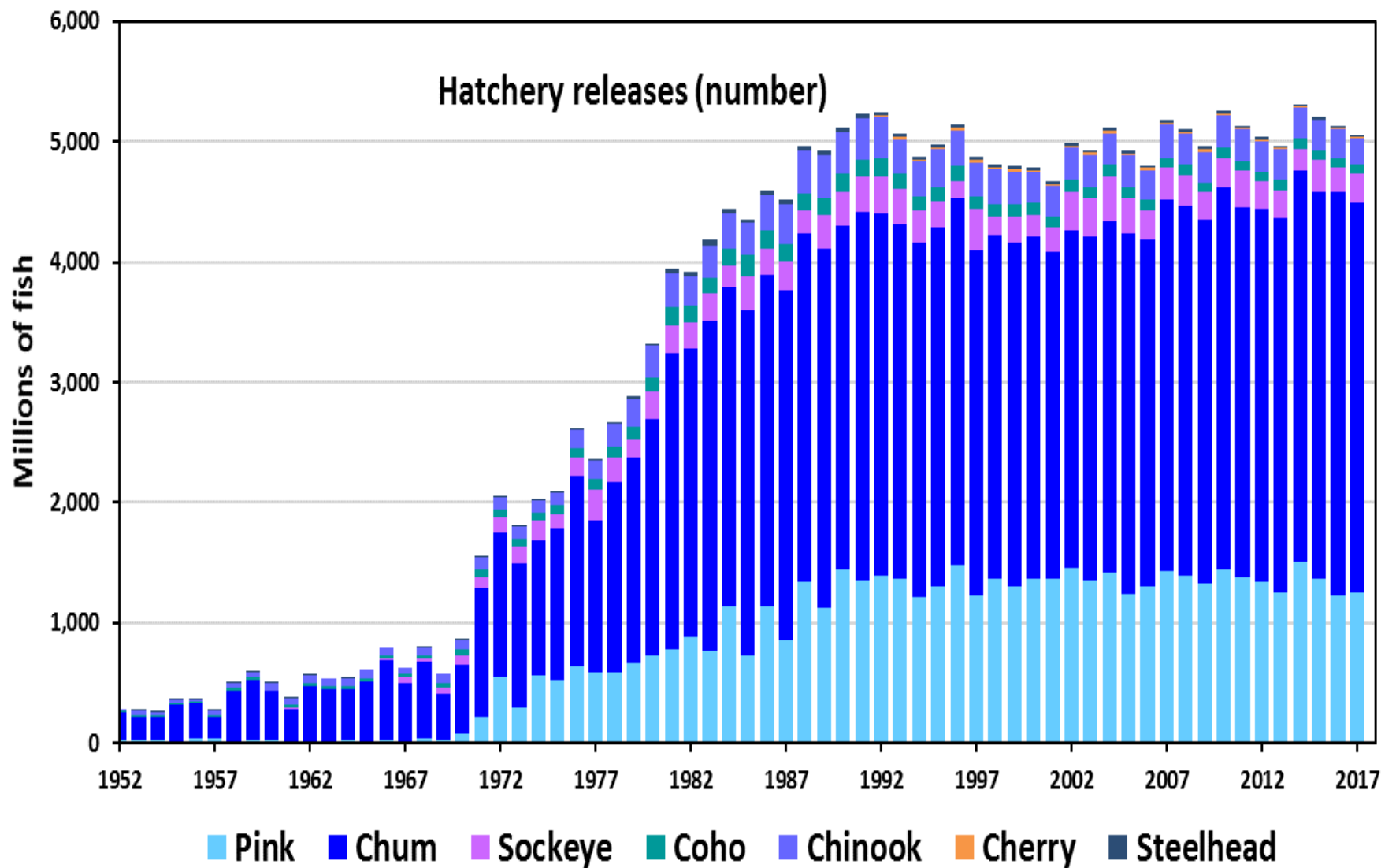
Enhanced Production of Salmon

North Pacific Production

<https://npafc.org/statistics/>



Data Source: North Pacific Anadromous Fish Commission (NPAFC). 2018. NPAFC Pacific salmonid hatchery release statistics (updated 31 July 2018). North Pacific Anadromous Fish Commission, Vancouver. Accessed July, 2018. Available: www.npafc.org

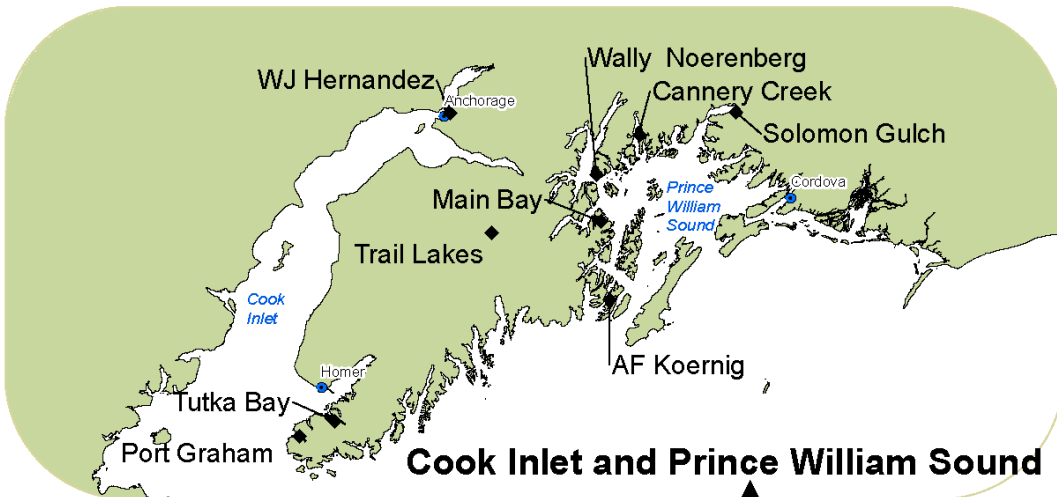


Data Source: North Pacific Anadromous Fish Commission (NPAFC). 2018. NPAFC Pacific salmonid hatchery release statistics (updated 31 July 2018). North Pacific Anadromous Fish Commission, Vancouver. Accessed July, 2018. Available: www.npafc.org

Enhanced Production of Salmon

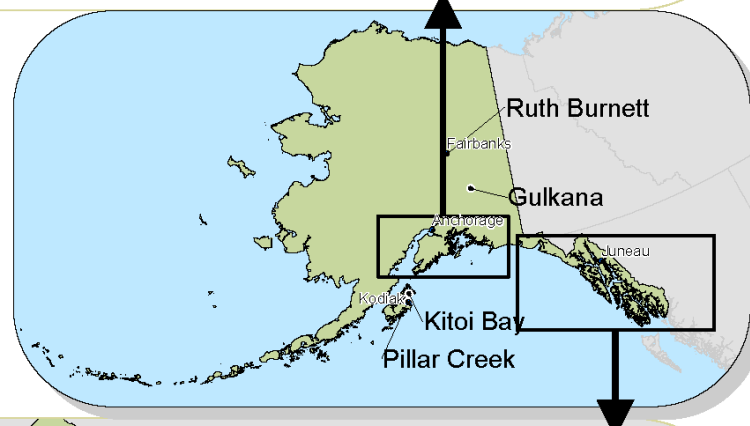
Alaska Production

<http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2018.02.pdf>

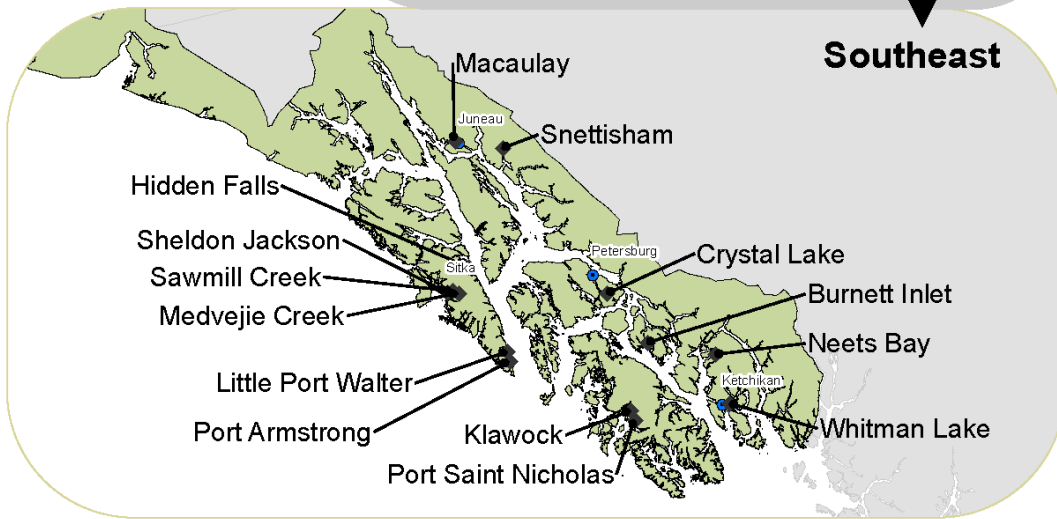


Cook Inlet and Prince William Sound

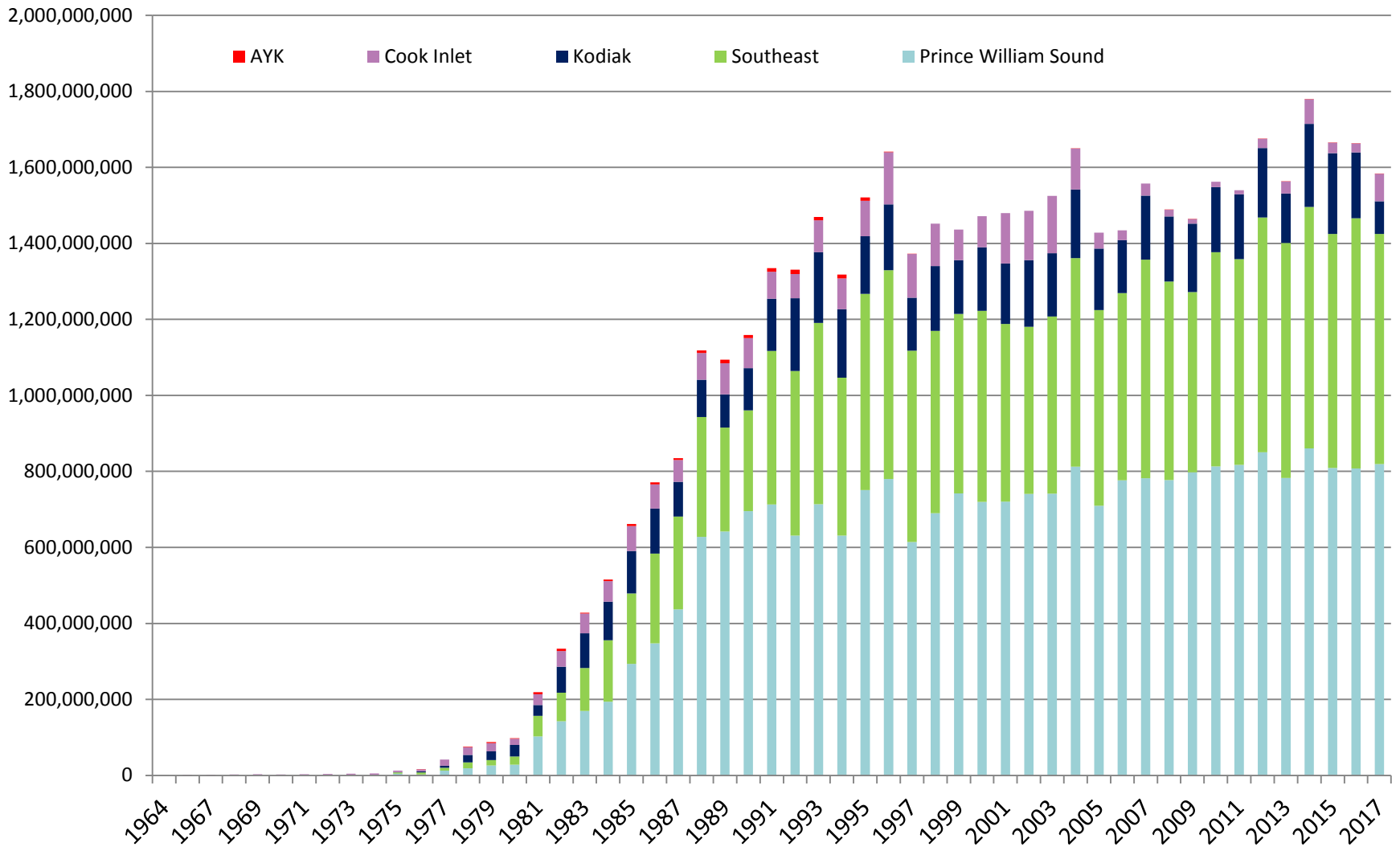
**Locations of
Alaska
Hatcheries**



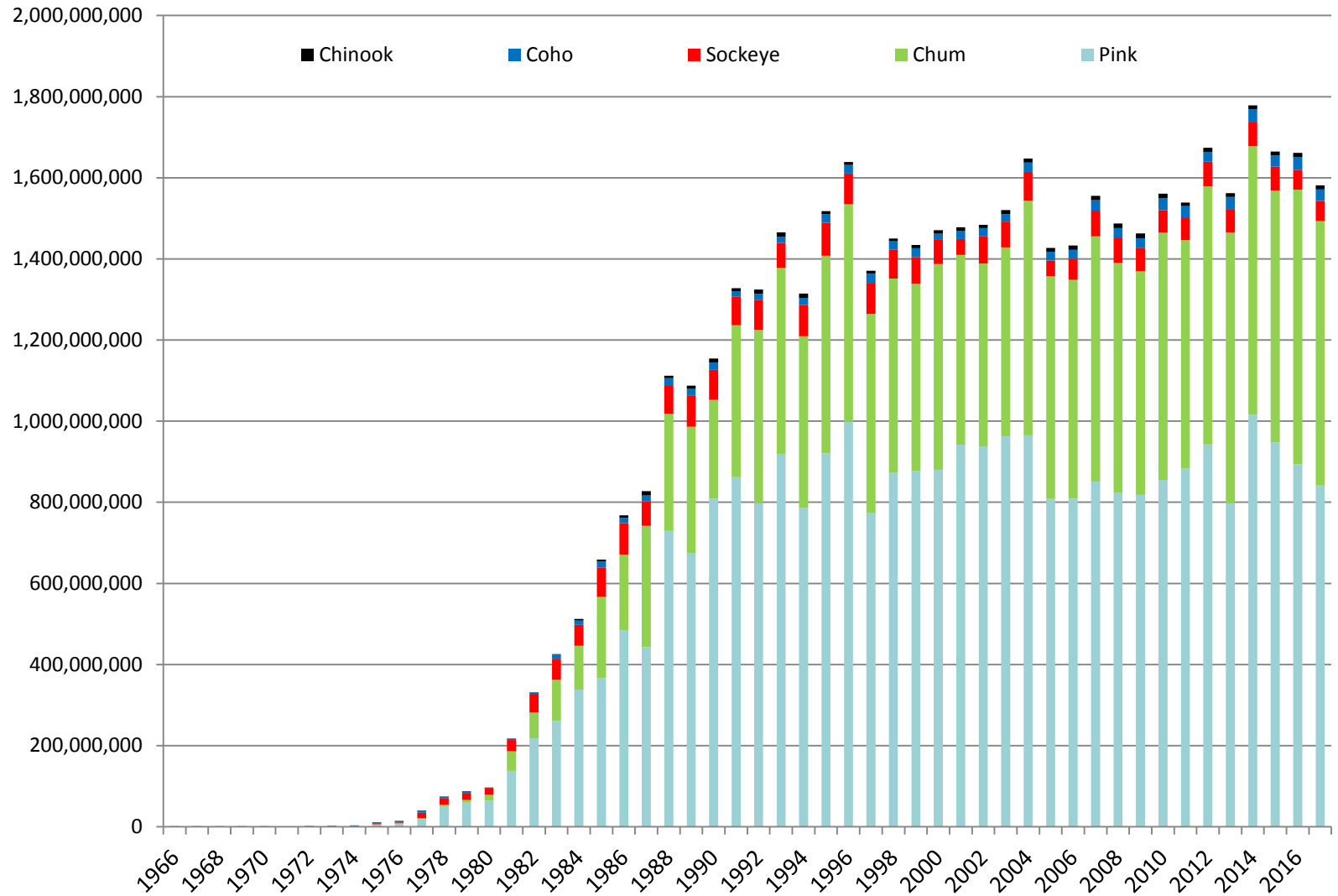
Southeast



Alaska Enhanced Releases by Region 1975 - 2017



Alaska Enhanced Releases by Species 1975 - 2017



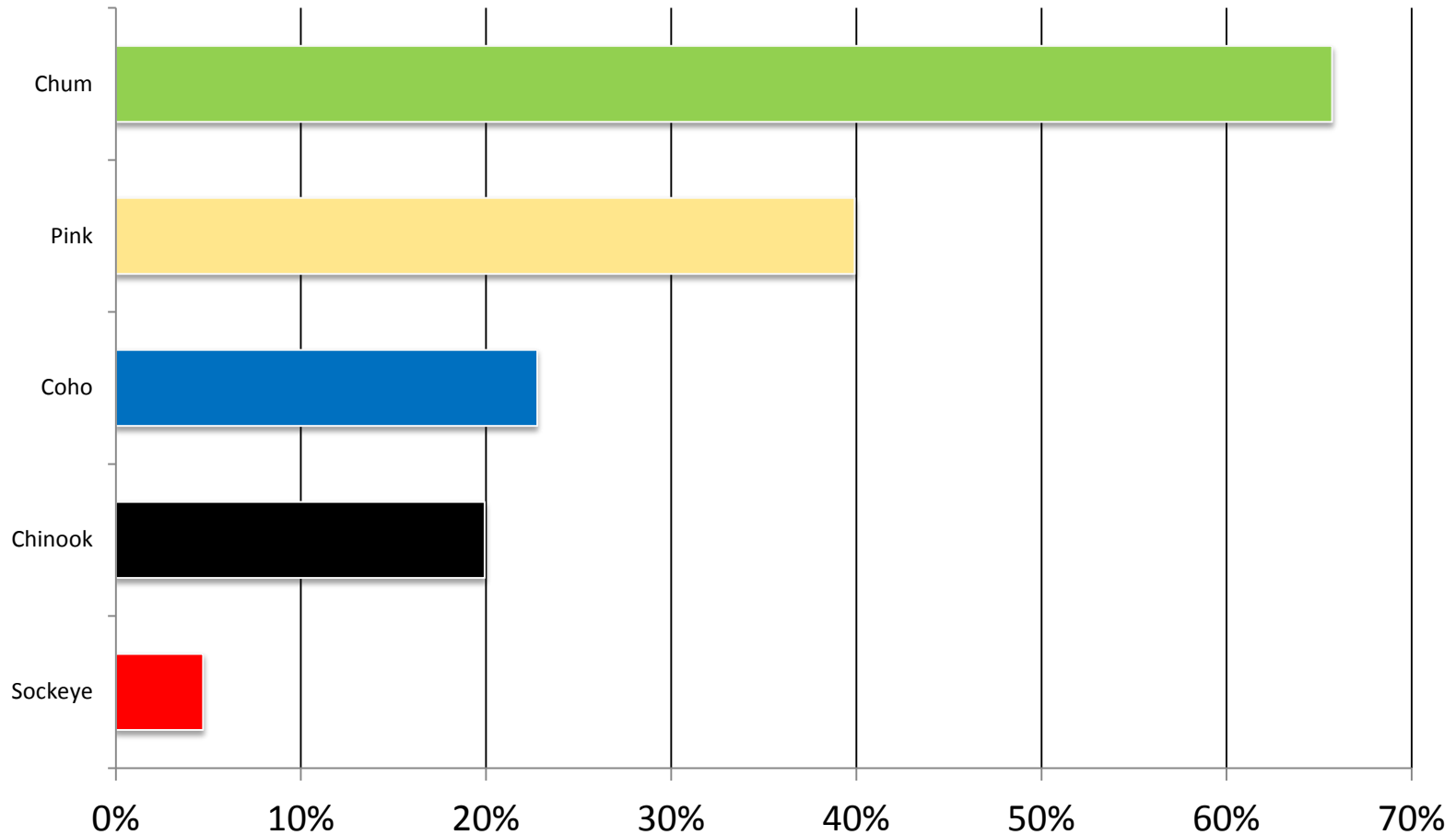
Enhanced Production of Salmon

Alaska Harvest Allocation

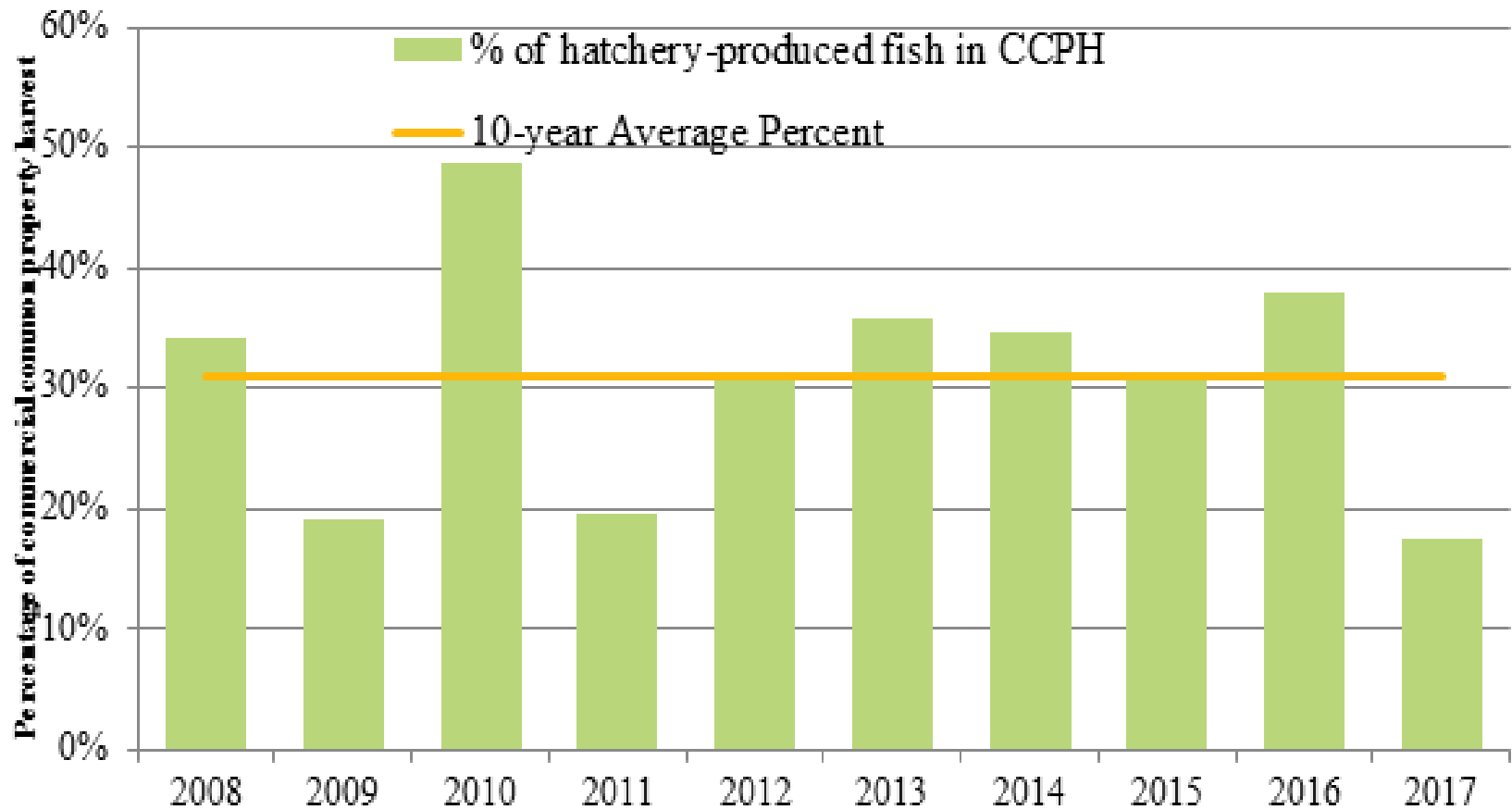
Common Property/Cost Recovery

10 Year Average, 2008-2017

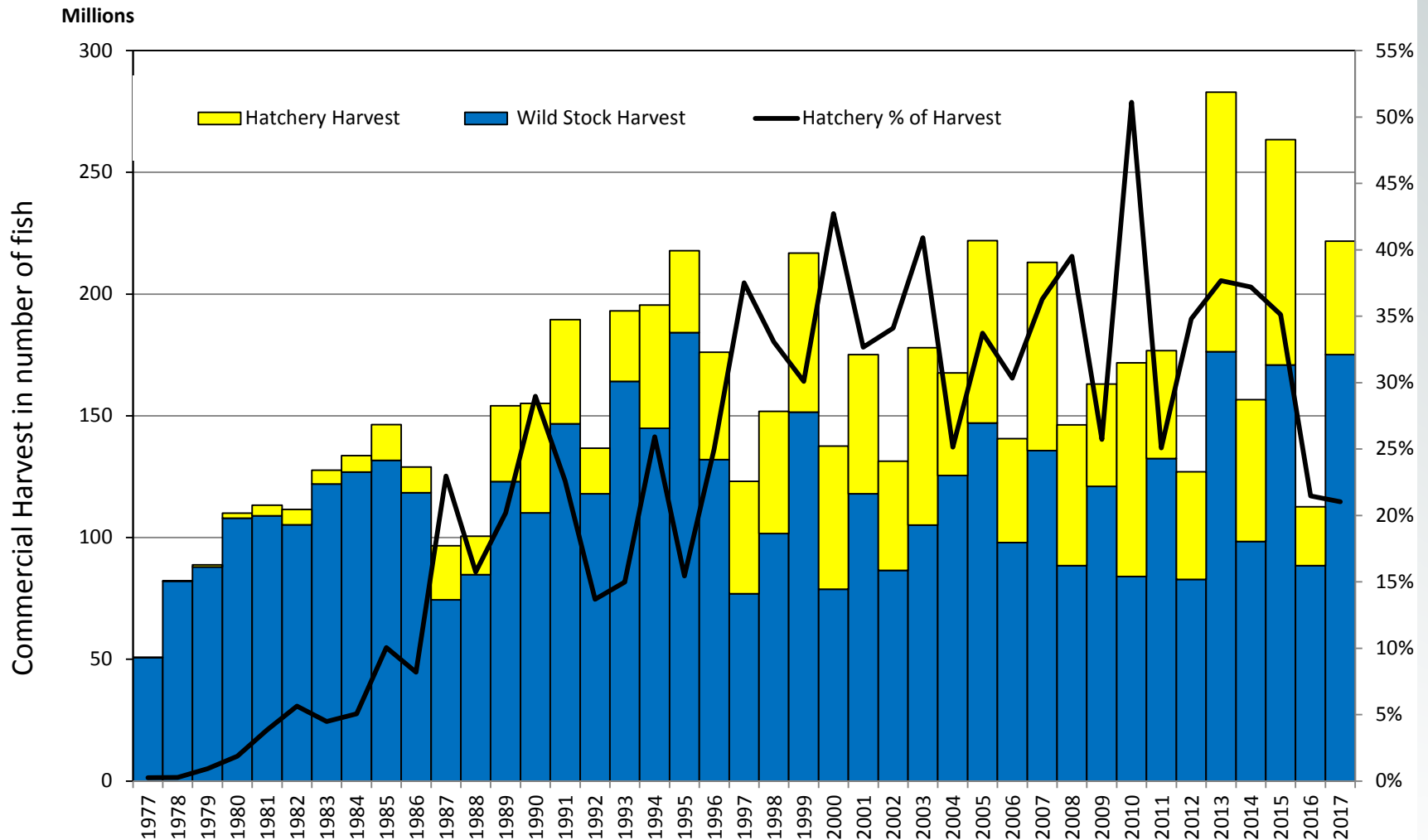
AK Hatchery Percent of the Statewide Harvest by Species



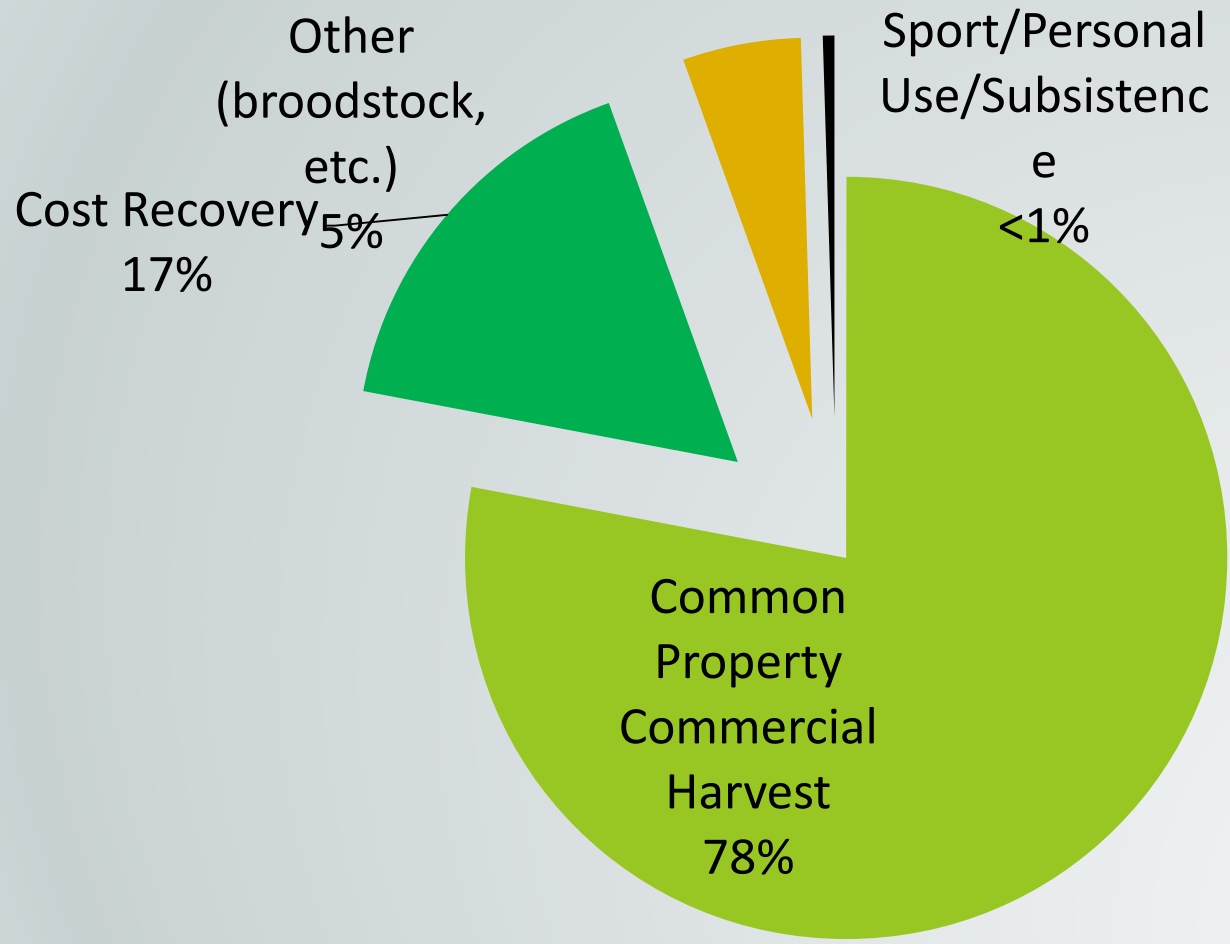
% Hatchery-Produced Salmon in Statewide Commercial Common Property Harvest



Alaska Hatchery-Produced Salmon in Statewide Commercial Common Property Harvest



Average Harvest Distribution of Alaska Hatchery Produced Salmon 2008-2017



Enhanced Production of Salmon

Alaska Commercial Harvest Allocation

Allocation Plans

5 AAC 24.370 - Prince William Sound Management and Salmon Enhancement Allocation Plan

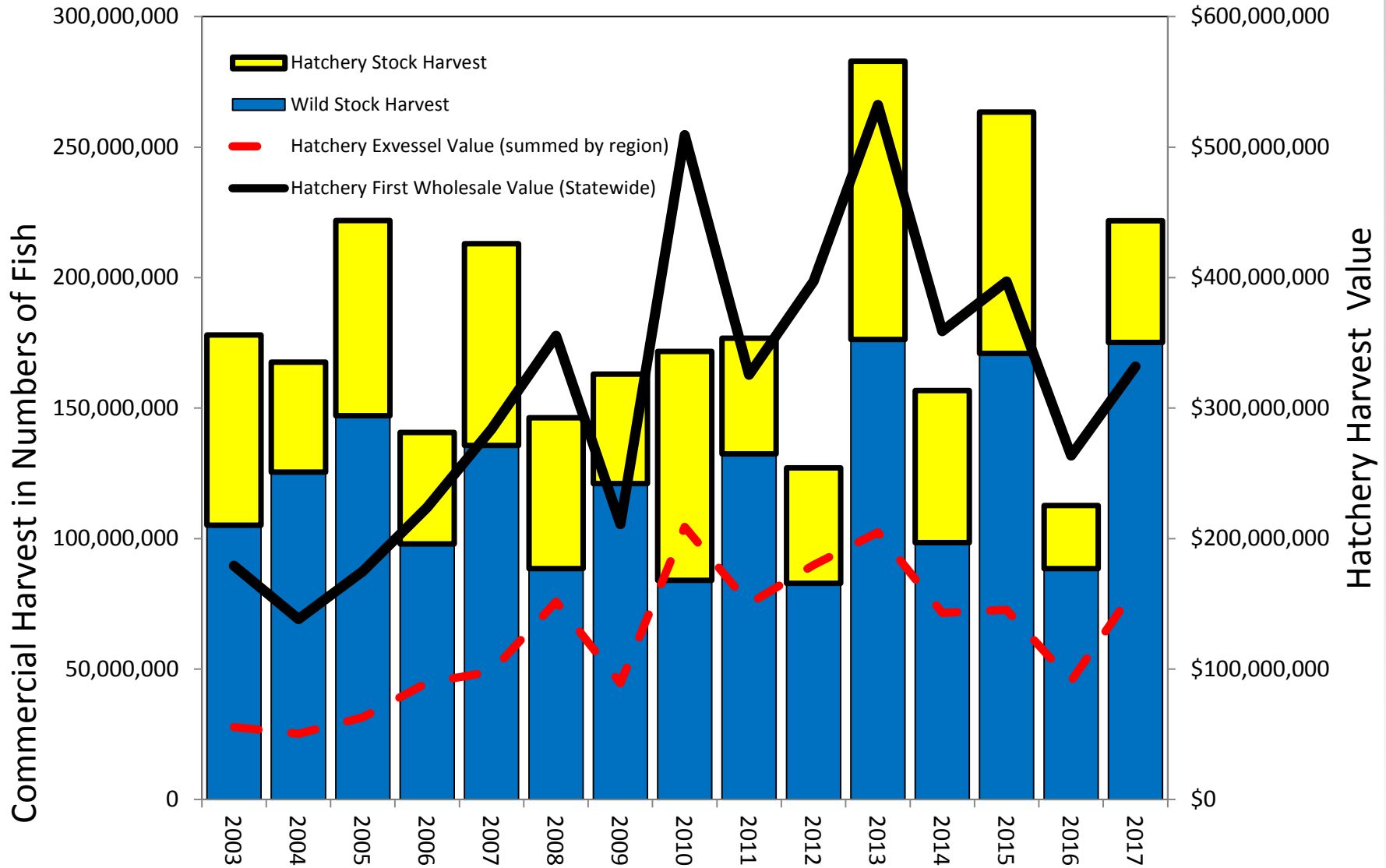
5 AAC 33.364 - Southeastern Alaska Area Enhanced Salmon Allocation Management Plan

Enhanced Production of Salmon

Alaska Harvest Value

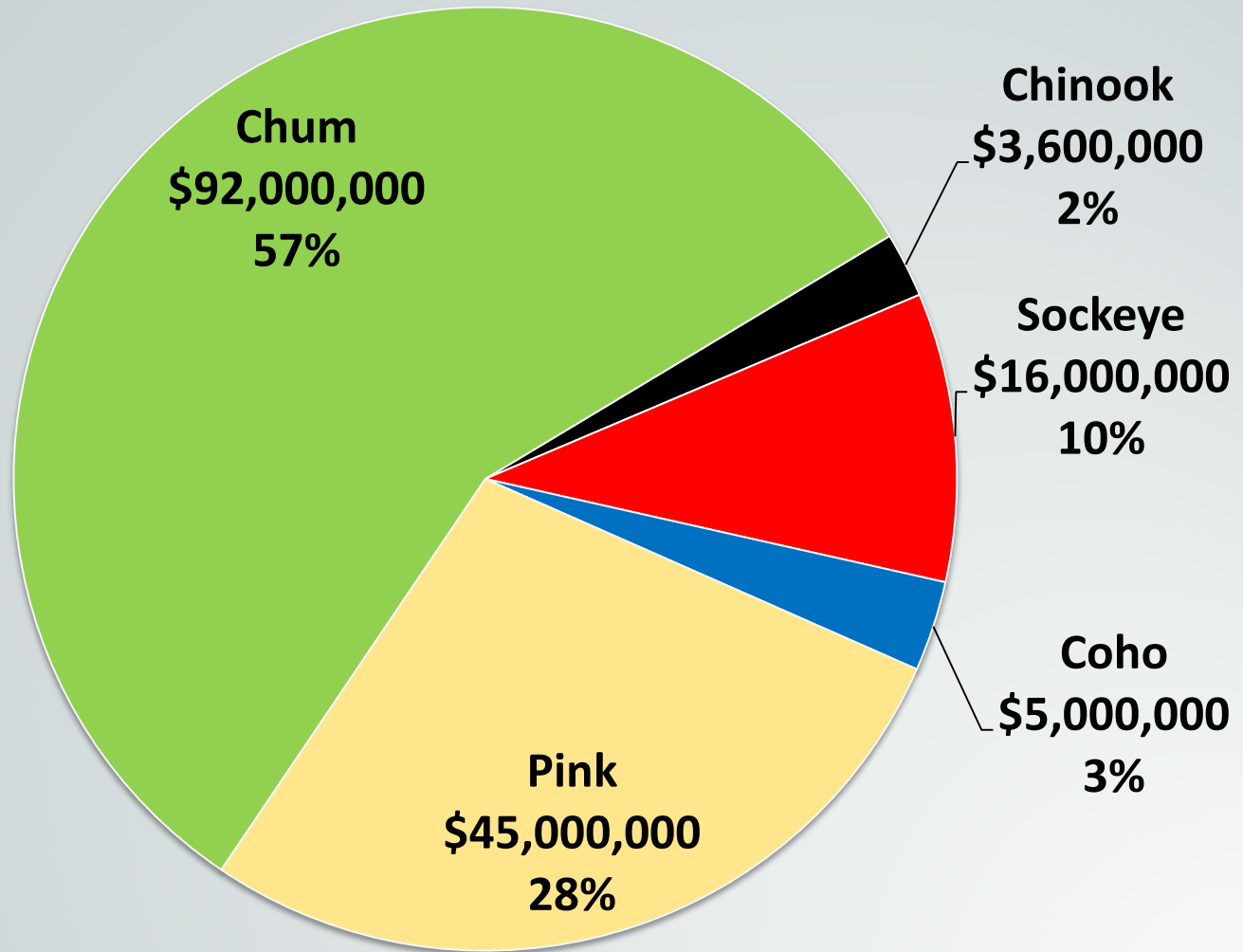
Commercial Ex-vessel/first wholesale

Alaska Commercial Salmon Harvest and Value

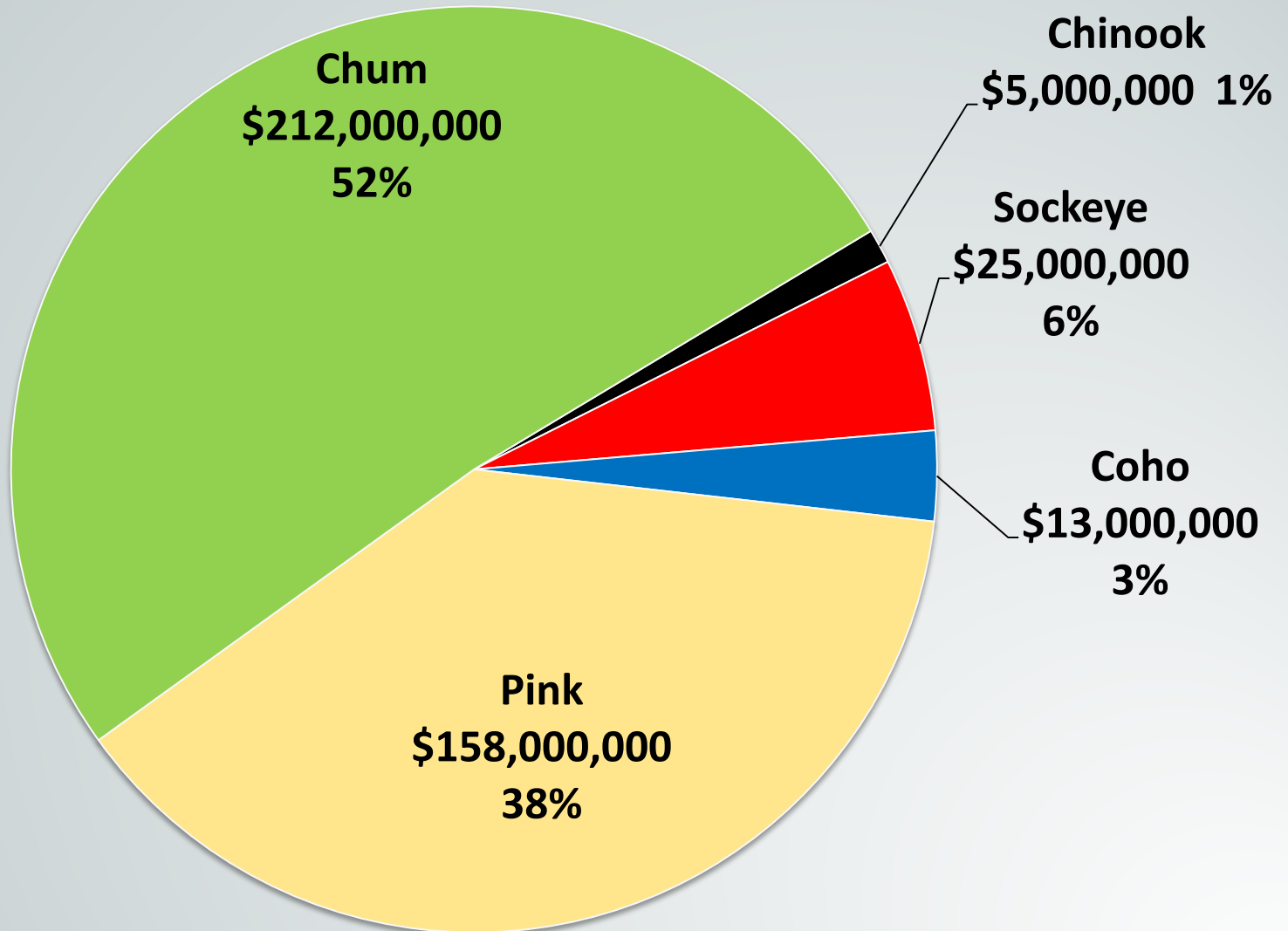


2017 Total Exvessel Hatchery Harvest

Value: \$162,000,000



2017 First Wholesale Hatchery Harvest Value: \$412,000,000



Enhanced Production of Salmon

Alaska Harvest Value

Commercial Fisheries Taxes

<http://www.tax.alaska.gov/programs/programs/index.aspx?60620>

Fisheries Business Tax

Fishery Resource Landing Tax

Seafood Marketing Assessment

Salmon Enhancement Tax

Regional Seafood Development Tax

Enhanced Production of Salmon

Alaska Harvest Value

Sport/Personal Use/Subsistence

Average Estimated Annual Sport, Personal Use and Subsistence Harvest by region from Alaska hatcheries 2008-2017

Region	King	Sockeye	Coho	Pink	Chum	Arctic Char	Grayling	Landlocked Salmon	RBT	Total
Southeast	7,078	3,920	49,781	36	3,519					64,334
Prince William Sound	5	112,395	50,370	21,283	1,000					185,052
Cook Inlet	3,572	26,923	20,378	1,500		695	205	2,373	11,021	66,669
Kodiak	1,661	3,953	4,601	37						10,252
Northern Interior						2,645	1,006	6,353	21,893	31,897
Total	12,316	147,191	125,129	22,856	4,519	3,340	1,211	8,726	32,915	358,204

PREVIOUS AK HATCHERY PROGRAM REVIEWS

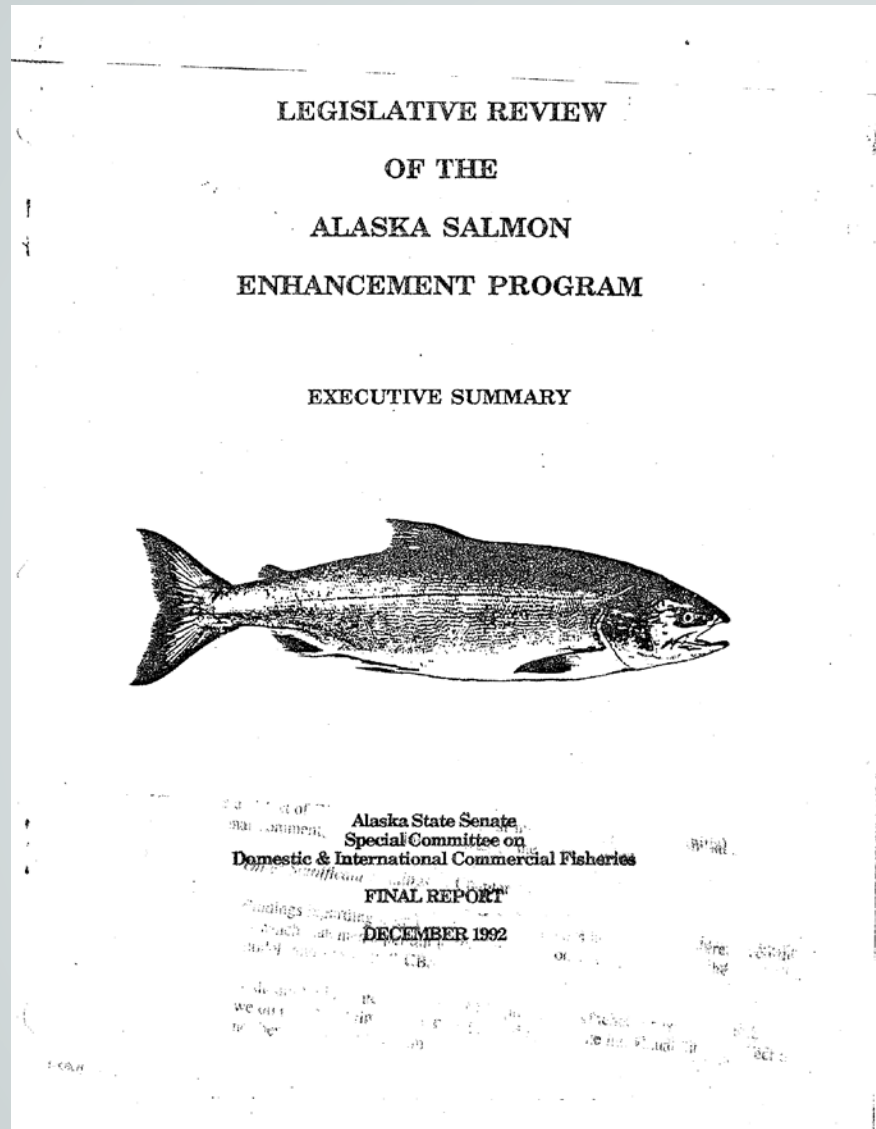
Legislative Review 1991-92

Salmon Industry Response Cabinet 1997

Board of Fisheries 1997-2002

Previous AK Hatchery Program Reviews

Legislative Review 1991-92



Previous AK Hatchery Program Reviews

Salmon Industry Response Cabinet 1997

THE HATCHERY POLICY GROUP

Bob Clasby, Director, Commercial Fisheries Management Division
Jim McMillan, Deputy Director of Credit, AIDEA
Martin Richard, Director, Division of Investments

REPORT TO

THE SALMON INDUSTRY RESPONSE CABINET

William Hensley, Commissioner of Commerce and Economic Development
Mike Irwin, Commissioner of Community and Regional Affairs
Frank Rue, Commissioner of Fish and Game

JANUARY 16, 1997

COMMISSIONER RUE

VOLUME I

Previous AK Hatchery Program Reviews

Board of Fisheries Hatchery Committee 1997 Joint Protocol on Salmon Enhancement 2002

Alaska Board of Fisheries
and
Alaska Department of Fish and Game

Joint Protocol on Salmon Enhancement
#2002-FB-215

Background: In actions taken in January 2001 and June 2002 the Alaska Board of Fisheries stated its intent to institutionalize a public forum to bring a statewide perspective to issues associated with hatchery production of salmon. Accordingly, the department and board agreed to enter into this joint protocol to coordinate department and board interaction on certain aspects of salmon hatchery policy and regulation.

Authorities: The commissioner of the Department of Fish and Game has exclusive authority to issue permits for the construction and operation of salmon hatcheries. The Board of Fisheries has clear authority to regulate access to returning hatchery salmon and to amend, by regulation, the terms of the hatchery permit relating to the source and number of salmon eggs. The Board of Fisheries' authorities also include the harvest of fish by hatchery operators and the specific locations designated by the department for harvest (see AS 16.10.440(b) and Department of Law memorandum to the board dated November 6, 1997).

Statement of Intent: It is the intention of the commissioner of the Department of Fish and Game and the chairman of the Board of Fisheries that meetings be held on a regular basis wherein the department will update the board and the public on management, production, and research relating to Alaska's salmon enhancement program

Protocol: The joint department-board meeting on hatchery described here will take place at a mutually agreeable time and place during regularly scheduled meetings of the board. The meetings will provide a forum for open discussion on a mutually agreed upon agenda of hatchery topics. The agenda may include site-specific as well as regional or statewide hatchery issues. These salmon enhancement meetings will not be open for regulatory actions and no hatchery-related petitions or agenda change requests (ACRs) will be considered as action items. These meetings are open to the public. At its discretion and upon appropriate notice, the board may open the meeting to public comment.

The hatchery meetings will provide an opportunity for the board and the public to receive reports from the department on hatchery issues including: production trends, management issues, updates on hatchery planning efforts, wild and hatchery stock interactions, biological considerations, and research. Requests for report from the department may be made during the board's work session during meeting years when there is a hatchery forum scheduled.

As appropriate, the board and department may agree to invite other state and federal agencies, professional societies, scientists, or industry spokespersons to attend and to contribute information on particular topics, or sponsor other discussions, such as marketing or intrastate effects.

Dated: June 28, 2002


Ed Dersham, Chairman
Alaska Board of Fisheries


Frank Rue, Commissioner
Alaska Department of Fish and Game

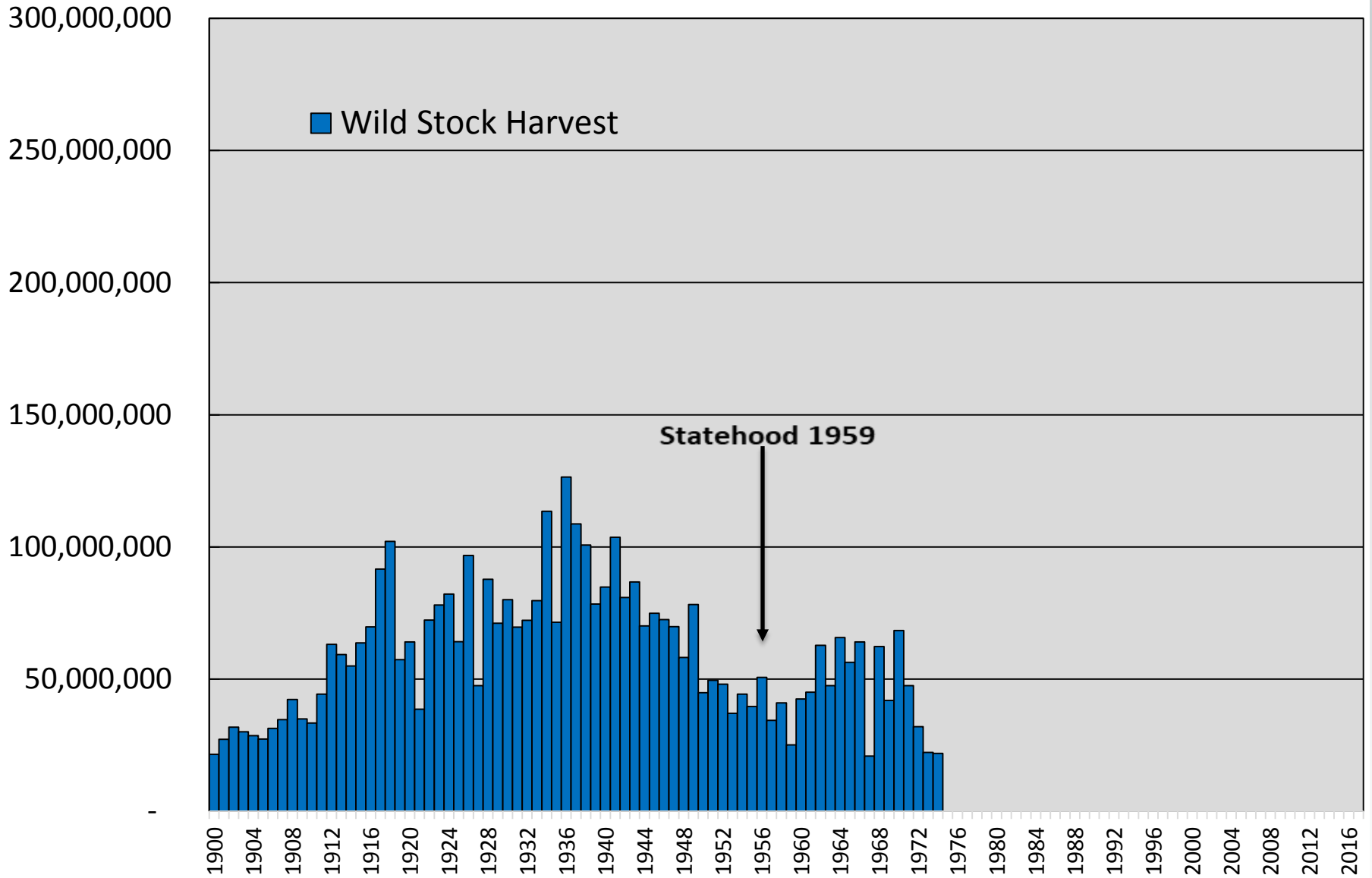
RESULTS

Wild Salmon Harvest 1900-1974

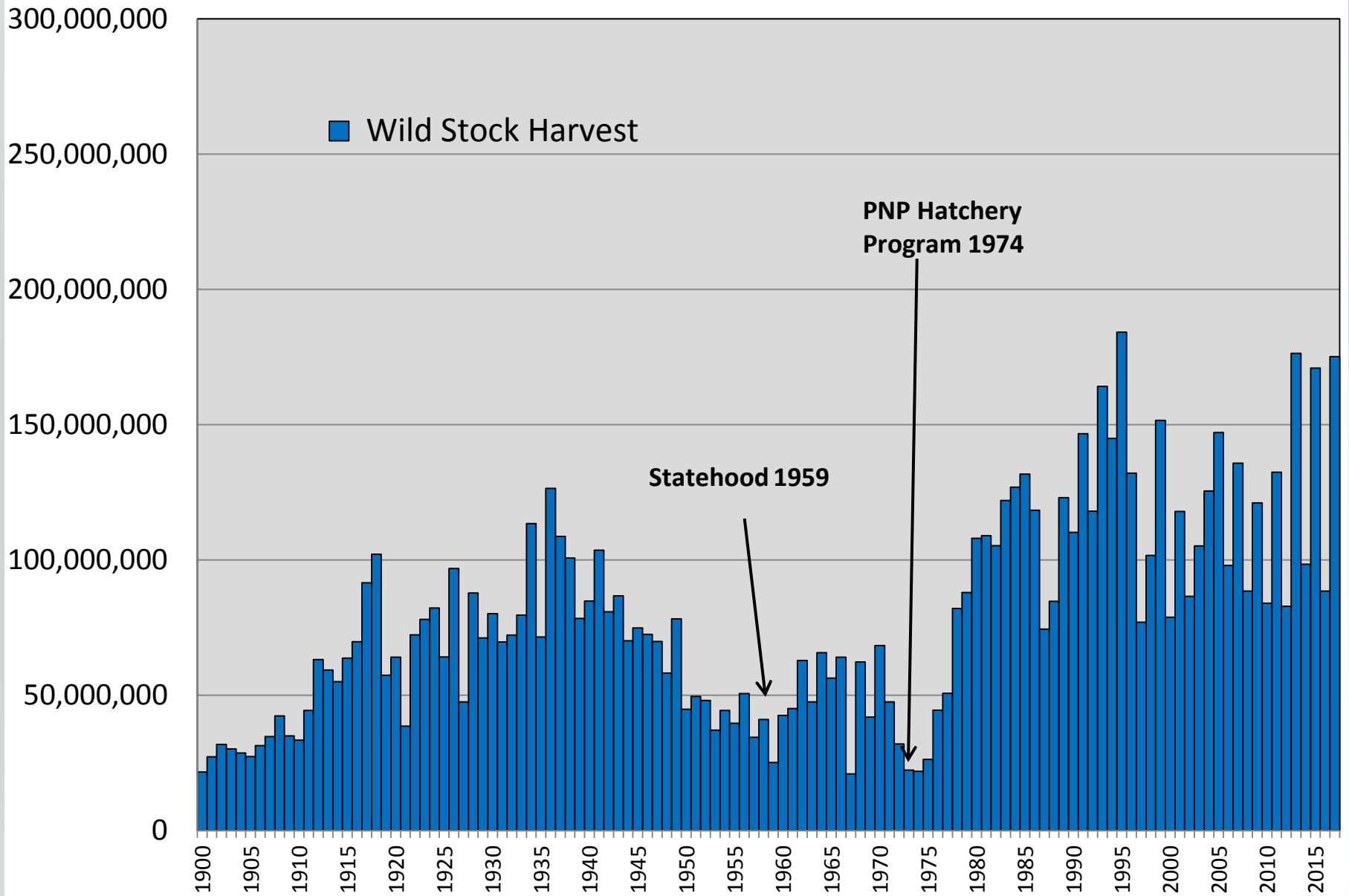
Wild Salmon Harvest 1900-2017

Wild and Enhanced Salmon Harvest 1900-2017

Alaska Commercial Salmon Harvest from 1900-1974



Alaska Commercial Salmon Harvest from 1900-2017



Alaska Commercial Salmon Harvest from 1900-2017

