Salmon Fishery Enhancement production trends, management issues, and planning efforts

A Presentation to the Alaska Board of Fisheries
Per the Joint Protocol on Salmon Enhancement
#2002-FB-215
3/8/2019

Alaska Department of Fish and Game
Sam Rabung
October 16, 2018, Board of Fisheries meeting

Legal Guidance
Enhanced Production of Salmon
Previous Hatchery Program Reviews
Results of Program to date
March 8, 2019, Board of Fisheries meeting

Enhanced Production Trends
Management Issues
Planning Efforts
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**.
ENHANCED PRODUCTION OF SALMON

North Pacific Production

Statewide Production

Regional Production
Hatchery releases (number)

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.
Statewide Hatchery Releases 1973-2018

- king
- sockeye
- coho
- pink
- chum

Graph showing yearly releases from 1973 to 2018.
SALMON FISHERY ENHANCEMENT REGIONS
Southern Southeast Region Hatchery
Releases 1973-2018

- king
- sockeye
- coho
- pink
- chum
Prince William Sound Region Hatchery Releases 1973-2018

- king
- sockeye
- coho
- pink
- chum
Cook Inlet Region Hatchery Releases 1973-2018

- king
- sockeye
- coho
- pink
- chum
Kodiak Region Hatchery
Releases 1973-2018

- king
- sockeye
- coho
- pink
- chum
Alaska Commercial Salmon Harvest from 1900-2018

![Graph showing commercial salmon harvest from 1900 to 2018 with标注: Statehood 1974, PNP Hatchery Program 1974].

Key:
- Wild Stock Harvest

*Note: The graph illustrates the fluctuations in commercial salmon harvest from 1900 to 2018, highlighting significant events such as statehood and the PNP hatchery program.*
Management of Enhanced Production

Allocation

Mixed stock fishery

Escapement
Commercial Harvest Allocation of Enhanced Production

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
Commercial Harvest Allocation of Enhanced Production

Terminal Harvest Area Management Plans

Special Harvest Area Management Plans

AS 16.10.455
5 AAC 40.990
AS 16.10.455(g)(3) and 5 AAC 40.990(13)

“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;
AS 16.10.455 (g)(2) and 5 AAC 40.990(12)

“special harvest area” means an area designated by the commissioner or the Board of Fisheries where salmon returning to a hatchery may be harvested by the hatchery operators, and, in some situations, by the common property fishery;
NOTES TO DECISIONS

Application of common use clause. — Although salmon are subject to the common use clause of the state Constitution while in the natural waters of the state, by its own terms the common use clause does not apply to hatchery fish in terminal areas. O’Callaghan v. Rue, 996 P.2d 88 (Alaska 2000).
Mixed Stock Fishery Management

Prince William Sound Pink Salmon
Prince William Sound Coghill Sockeye
Basic Salmon Fishery Management

• Early season management decisions based on preseason forecasts
• In-season fishery assessment tools (aerial surveys, foot surveys, weirs, sonar, etc.)
• Management tools include considerations for time (duration/frequency of opportunity), area, and gear type (management/allocation plan)
• Managers tell where and when fishing can occur
Fishery Assessment Tools

- Escapement monitoring (aerial surveys)
- Harvest reporting (fish tickets)
- Biological sampling (otoliths)
Otolith thermal marks

- Applied to hatchery-released salmon
- Unique mark by species and hatchery
- Easily recovered
- Small sample sizes (96 fish) provide stock composition estimates
- Accurate and expedient delivery of information
Otolith Thermal Marks

PINK
SGH13
SOLOMON GULCH
Release Site: SOLOMON GULCH 221-60
Bottle #2, Slide #1
6H

Nice mark, no variants. The last ring may have a doubling effect. There can be a ring before the mark.
Seining the Capes - PWS Southwest District

<table>
<thead>
<tr>
<th>Year</th>
<th>Hatchery</th>
<th>Natural</th>
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<tbody>
<tr>
<td>2013</td>
<td>0.99</td>
<td>0.53</td>
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<tr>
<td>2014</td>
<td>0.98</td>
<td>0.26</td>
</tr>
<tr>
<td>2015</td>
<td>0.95</td>
<td>0.40</td>
</tr>
</tbody>
</table>
Coghill Dist.  
(drift gillnet & purse seine)

Unakwik Dist.  
(drift gillnet & purse seine)

Eastern Dist.  
(purse seine)

Southeastern Dist.  
(purse seine)

Northern Dist.  
(purse seine)

Montague Dist.  
(purse seine)

Port Chalmers Subdistrict  
(drift gillnet & purse seine)

Eshamy Dist.  
(drift & set gillnet)

Northwestern Dist.  
(purse seine)

Southwestern Dist.  
(purse seine)
Management Goals:

- Achieve escapements of wild sockeye
- Harvest wild salmon in excess to escapement needs
- Maximize harvest of hatchery origin chum and sockeye salmon
Escapement

Interception in mixed stock fisheries
Escapement

Strays
ENHANCEMENT PLANNING EFFORTS

Overview of the Regional Planning Teams

Regional Salmon Plans

Annual Management Plans
Alaska’s program is stakeholder driven

- **Regional Planning** and Regional Aquaculture Association statutes were enacted giving oversight over salmon fishery enhancement activities to regional stakeholders, primarily limited entry permit holders.

- The users of the resource within each region 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 working with ADF&G within the **Regional Planning Team (RPT)** process to develop the **regional comprehensive salmon plan**.
Regional Planning Team

AS 16.10.375; 5 AAC 40.300-370

5 AAC 40.340. Regional planning team responsibility.
Each regional planning team shall prepare a regional comprehensive salmon plan, for the appropriate region, to rehabilitate natural stocks and supplement natural production, with provisions for both public and private nonprofit hatcheries. Each region planning team shall consider the needs of all user groups and ensure that the public has opportunity to participate in the development of the comprehensive salmon plan. Each regional comprehensive plan must define regional production goals by species, area, and time. (Eff. 3/31/85, Register 93)
Regional Planning Teams (RPT)

- The RPT is comprised of 6 voting members
- 3 are appointed by the Commissioner of ADF&G
- 3 are appointed by the Regional Aquaculture Association (RAA)
- 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 in their region.
WHAT THE RPT DOES

The RPT meets annually, or as necessary, in order to fulfill its advisory role to the Commissioner of ADF&G on regional salmon fishery enhancement activities by:

1. Drafting the regional salmon plan, and updates, and providing them to the Commissioner for approval;

2. Reviewing hatchery permit applications and alteration requests and making recommendations to the Commissioner;

3. Reviewing hatchery AMPs and making recommendations to the Commissioner.
Regional Planning Team Process

RAA
- Sport
- Commercial
- Subsistence
- Processors
- Tribal
- Local community

RPT

ADF&G Commissioner

ADF&G Staff

Public
Regional Salmon Plans

AS 16.10.375 The commissioner shall designate regions of the state for the purpose of salmon production and have developed and amend as necessary a comprehensive salmon plan for each region, including provisions for both public and private nonprofit hatchery systems. Subject to plan approval by the commissioner, comprehensive salmon plans shall be developed by regional planning teams consisting of department personnel and representatives of the appropriate qualified regional associations formed under AS16.10.380.
Regional Planning Team Process

RPT

Historic harvests, production/harvest goals by species, area, and time.

CSP

Project opportunities to fulfill plan goals and objectives
Salmon fishery enhancement planning in Alaska is described in law (AS 16.10.375) and is the responsibility of Regional Planning Teams (RPTs). RPTs operate as described in regulation (5 AAC 40.300-370) and prepare regional comprehensive salmon plans, provide recommendations on PNF hatchery permit alterations and applications for new hatcheries, and may also review hatchery annual management plans. RPTs are composed of representatives from regional aquaculture associations and ADF&G staff. All RPT meetings are open to the public and public participation is encouraged.

Regional Planning Teams
Regional planning team meeting notices, agendas, and additional materials will be posted below as they become available.

Southeast RPTs
- The next Southeast, Northern, and Joint Southeast Regional Planning Team meetings are scheduled to be held on April 10, 2019, in Juneau. For additional information please contact ChairMan Flip Pryor (flip.pryor@alaska.gov).

Yukon RPT
- The next Yukon Regional Planning Team meeting has not yet been scheduled. For additional information please contact Flip Pryor (flip.pryor@alaska.gov).

Prince William Sound RPT
- The next Prince William Sound Regional Planning Team meeting is scheduled for April 17, 2019, in Cordova. For additional information please contact ChairMan Geoff Clark (geoff.clark@pwsea.com).

Cook Inlet RPT
- The next Cook Inlet Regional Planning Team meeting is scheduled for April 25, 2019, in Kasil. For information please contact ChairMan Ethan Ford (ethan.ford@alaska.gov).

Kodiak RPT
- The next Kodiak Regional Planning Team meeting has not yet been scheduled. For additional information please contact ChairMan Tyler Polum (tyler.polum@alaska.gov).

Chignik RPT
- The next Chignik Regional Planning Team meeting has not yet been scheduled. For additional information please contact ChairMan Chuck McCullum (chuckmccullum@gmail.com).

Kuskokwim RPT
- The next Kuskokwim Regional Planning Team meeting has not yet been scheduled.

Yukon RPT
- The next Yukon Regional Planning Team meeting has not yet been scheduled.

Bering Strait RPT
- The next Norton Sound/Bering Strait Regional Planning Team meeting is tentatively scheduled for November 20, 2019, in Nome. For additional information please contact ChairMan Charlie Lean (charlie@tsedco.com).
Salmon fishery enhancement efforts in Alaska are guided by Comprehensive Salmon Plans, which are prepared by each region’s Regional Planning Teams. These plans document enhancement efforts, set production goals, and identify potential for new projects, and are required by law (AS 16.10.375).

**Comprehensive Salmon Plans**

1. Southeast Alaska Comprehensive Salmon Plan, Phase III (PDF 2,354 kB)
2. Yakutat Comprehensive Salmon Plan: Phase II (PDF 4,236 kB)
3. Prince William Sound/Copper River Regional Comprehensive Salmon Plan, Phase III (PDF 10,133 kB)
4. Cook Inlet Salmon Enhancement Plan, Phase II, 2006-2025 (PDF 9,282 kB)
5. Kodiak Regional Comprehensive Salmon Plan Phase III, 2010-2030 (PDF 3,913 kB)
6. Chignik Regional Comprehensive Salmon Plan, 1992-2001 (PDF 6,246 kB)
7. Alaska Peninsula/Aleutian Islands/Area M Comprehensive Salmon Plan, 1993-2004 (PDF 8,774 kB)
8. Bristol Bay Comprehensive Salmon Plan (PDF 6,942 kB)
9. Yukon River Comprehensive Salmon Plan for Alaska (PDF)
10. Norton Sound/Bering Strait Regional Comprehensive Salmon Plan: Phase II (PDF 4,100 kB)
Annual Management Plan (AMP)

5 AAC 40.840

“This plan must organize and guide the hatchery’s operations, for each calendar year, regarding production goals, broodstock development, and harvest management of hatchery returns.” (3/31/85, Register 93)
Hatcheries Planning

Annual Management Plans

The Annual Management Plan (AMP) outlines each hatchery's planned production for the coming year. This includes egg take goals along with rearing and release activity. The AMPs allow final review of planned activity to insure compliance with previous planning and set a benchmark for end of season review to insure the plan was followed. Alterations to planned activity are allowed in season so long as these changes are formally reviewed and approved prior to execution.

Southern Southeast
- 2018 Southern Southeast Regional Aquaculture Association (SSRAA) AMP (PDF 1,626 kB)
- 2018 Crystal Lake Hatchery AMP (PDF 298 kB)

Northern Southeast
- 2018 Hidden Falls Hatchery AMP (PDF 989 kB)
- 2017 Middle Creek and Sawmill Creek Hatcheries AMP (PDF 1,911 kB)
- 2018 Haines Projects AMP (PDF 539 kB)
- 2018 Macaulay Hatchery AMP (PDF 1,558 kB)
- 2018 Snettisham Hatchery AMP (PDF 440 kB)
- 2017 Port Armstrong Hatchery AMP (PDF 910 kB)
- 2018 Sheldon Jackson Hatchery AMP (PDF 1,105 kB)

Prince William Sound
- 2018 Armin F. Koelmig Hatchery AMP (PDF 926 kB)
- 2018 Carsen Creek Hatchery AMP (PDF 727 kB)
- 2018 Gulkana Hatchery AMP (PDF 384 kB)
- 2018 Main Bay Hatchery AMP (PDF 440 kB)
- 2018 Walti Naasigak Hatchery AMP (PDF 917 kB)
- 2018 Solomon Gulch Hatchery AMP (PDF 495 kB)

Cook Inlet
- 2018 Trail Lakes Hatchery AMP (PDF 1,555 kB)
- 2018 Tutka Bay Lagoon Hatchery AMP (PDF 1,456 kB)
- 2018 Port Graham Hatchery AMP (PDF 610 kB)
- 2018 Eklutna Hatchery AMP (PDF 127 kB)
- 2018 William Jack Hernandez Sport Fish Hatchery AMP (PDF 420 kB)

Kodiak
- 2018 Kitini Bay Hatchery AMP (PDF 1,009 kB)
- 2018 Pillar Creek Hatchery AMP (PDF 1,248 kB)

Interior
- 2018 Ruth Burnett Sport Fish Hatchery AMP (PDF 423 kB)
Thank you