
FALLERT HATCHERY

A COMPILATION AND SUMMARY OF
IHOT AUDITS FOR FALL CHINOOK,
SPRING CHINOOK, AND COHO

JULY 1998

**HATCHERY EVALUATION REPORT
SUMMARY FOR**

Fallert Creek Hatchery

- **Fall Chinook**
- **Spring Chinook**
- **Coho (S)**

**A Summarized Compilation of Independent Audits Based on
Integrated Hatchery Operations Team (IHOT) Performance
Measures**

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Executive Summary

This report compiles a summary of the findings of three separate Hatchery Evaluation Reports for Fall Chinook, Spring Chinook, and Coho (S) at Fallert Hatchery. The original Hatchery Evaluation Reports, prepared by Montgomery Watson, presented each species and program separately and include the complete findings. Details on the audit compliance status for each species and program are included in the original reports. The Hatchery Evaluation Reports were based upon audits conducted in 1996-1997 as part of a 2-year effort that will include 67 hatcheries and satellite facilities located on the Columbia and Snake River system in Idaho, Oregon, and Washington. The hatchery operating agencies include the U.S Fish and Wildlife Service, Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, and Washington Department of Fish and Wildlife.

The hatchery is located along the Kalama River, 5 miles north of Kalama, Washington. The hatchery is operated by the Washington Department of Fish and Wildlife. The hatchery is used for adult collection, egg incubation, and rearing of tule fall chinook and early coho (Type S). It is also used for the final rearing and release of yearling spring chinook transferred from the Kalama Hatchery.

Background

The audit is being conducted as a requirement of the Northwest Power Planning Council (NPPC) "Strategy for Salmon" and the Columbia River Basin Fish and Wildlife Program. Under the audit, the hatcheries are evaluated against policies and related performance measures developed by the Integrated Hatchery Operations Team (IHOT) in January 1995. IHOT is a multi-agency group established by the NPPC to direct the development of new basinwide standards for managing and operating fish hatcheries. The Bonneville Power Administration (BPA) contracted with Montgomery Watson to act as an independent contractor for the audit.

IHOT has established five basic policies that cover: (1) hatchery coordination, (2) hatchery performance standards, (3) fish health, (4) ecological interaction, and (5) genetics. The audit focuses on all these policies, with the exception of hatchery coordination. These policies are set forth in *Policies and Procedures for Columbia Basin Anadromous Salmonid Hatcheries (IHOT 1995)*, which is the source for the performance measures that are the basis of this audit.

The Audit Process

The audit was based on the facility management's response to a 109-page questionnaire. This audit form was completed through a five-step process in which:

- Information was obtained from headquarters.
- The hatchery manager was asked to fill out and return the audit form.
- A 1-2 day site audit visit was conducted to inspect facilities, review hatchery records, discuss audit form responses, and develop remedial action plans.

- A compliance report was developed to document the compliance status of each performance measure. This report was then shared with the hatchery manager and IHOT representative.
- This hatchery evaluation report was written to document compliance with IHOT performance measures and develop cost estimates for remedial actions when needed.

Fallert Creek Hatchery - Fall Chinook, Spring Chinook, and Coho (S) Results

The Fallert Creek facility includes 1 pond for adult holding (also used for rearing), 8 concrete raceways, 1 rearing pond, and incubation facilities. Fallert Hatchery began operation in 1895 and is one of the oldest hatcheries in the Columbia River Basin. Facilities operations are funded as part of the Mitchell Act - a program to mitigate for fishery losses caused by hydroelectric system development. The goal of the hatchery is to produce lower river fall chinook, spring chinook, and coho that will contribute to NE Pacific and Columbia River Basin commercial and sport fisheries.

FALL CHINOOK

The Fallert Creek Hatchery - Fall Chinook program was in general compliance with most of the performance measures. In the area of program objectives, the hatchery needed to document its adult contribution and smolt-to-adult survival. The audit found that the hatchery was not in compliance with the DO criteria, temperature criteria, water quality monitoring requirements, screening facility requirements, and predation control facilities requirements, pollution control facility requirements, and pathology-free water criteria, which are all facilities requirements. The hatchery needed to develop specific incubation and rearing standards for the IHOT Operations Plan and a smoltification goal and monitoring plan. The hatchery was not meeting the flow and loading criteria for incubation and the density criteria for rearing. The hatchery was not meeting all the alarm, sanitation, and food storage requirements. The hatchery needed to collect an unbiased, representative sample of adults and follow the IHOT requirement for 1:1 spawning. The hatchery did not have a Genetics Monitoring and Evaluation Program.

The specific areas in which the Fallert Creek Hatchery - Fall Chinook program requires remedial actions based on the IHOT performance measures are listed below. These remedial actions are listed in alphabetical order without intent of ranking or otherwise assigning priority:

- Collect an unbiased, representative sample of adults
- Conduct IHOT QA/QC tests for feed preparation
- Construct bird netting for 40,300 sf
- Construct pollution abatement ponds
- Develop alarm log
- Develop an approved genetics M&E plan
- Develop smoltification goal and monitor
- Develop specific incubation and rearing standards for the IHOT Operations Plan
- Document adult contribution
- Document smolt-to-adult survival
- Follow IHOT loading and flow criteria for incubation or revise criteria
- Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat
- Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock
- Follow the IHOT protocol for 1:1 female:male ratio
- Heat 210 gpm of incubation water by 3°F; chill 210 gpm of incubation water by 7°F
- Increase DO by aeration
- Install alarm at intake
- Install telephone pagers
- Modify screens to allow regular cleaning

- Monitor TGP and record
- Provide 34,300 cf of additional earthen pond volume
- Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants

Non-compliance issues resulting from items beyond human control or Performance Measures not relevant to this hatchery were not listed above.

SPRING CHINOOK

The Fallert Creek Hatchery - Spring Chinook program was in general compliance with most of the performance measures. In the area of program objectives, the hatchery was not meeting its adult return. The audit found that the hatchery was not in compliance with the DO criteria, temperature criteria, water quality monitoring requirements, screening facility requirements, and predation control facilities requirements, pollution control facility requirements, and pathology-free water criteria, which are all facilities requirements. The hatchery needed to develop specific rearing standards for the IHOT Operations Plan and a smoltification goal and monitoring plan. The hatchery was not meeting the density and flow criteria for rearing. The hatchery was not meeting all the alarm, sanitation, and food storage requirements. The hatchery did not have a Genetics Monitoring and Evaluation Program.

The specific areas in which the Fallert Creek Hatchery - Spring Chinook program requires remedial actions based on the IHOT performance measures are listed below. These remedial actions are listed in alphabetical order without intent of ranking or otherwise assigning priority:

- Conduct IHOT QA/QC tests for feed preparation
- Construct bird netting for 40,300 sf
- Construct pollution abatement ponds
- Develop alarm log
- Develop an approved genetics M&E plan
- Develop smoltification goal and monitor
- Develop specific rearing standards for the IHOT Operations Plan
- Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat
- Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock
- Increase DO by aeration
- Install alarm at intake
- Install telephone pagers
- Modify screens to allow regular cleaning
- Monitor TGP and record
- Provide 132,000 cf of additional pond volume
- Provide additional 750 gpm of water for the dirt pond or change program
- Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants

Non-compliance issues resulting from items beyond human control or Performance Measures not relevant to this hatchery were not listed above.

COHO (S)

The Fallert Creek Hatchery - Coho (Type S) program was in general compliance with most of the performance measures. In the area of program objectives, the hatchery was not meeting its adult return goal and needed to improve its fry-to-smolt survival. The audit found that the hatchery was not in compliance with the DO criteria, temperature criteria, water quality monitoring requirements, screening facility requirements, and predation control facilities requirements, pollution control facility requirements, and pathology-free water criteria, which are all facilities requirements. The hatchery needed to develop specific incubation and rearing standards for the IHOT Operations Plan and a smoltification goal and monitoring plan. The hatchery was not meeting the flow and loading criteria for incubation and density and flow criteria for rearing. The hatchery was not meeting all the alarm, sanitation, and food storage requirements. The hatchery needed to collect an unbiased, representative sample of adults and follow the IHOT requirement for 1:1 spawning. The hatchery did not have a Genetics Monitoring and Evaluation Program.

The specific areas in which the Fallert Creek Hatchery - Coho (Type S) program requires remedial actions based on the IHOT performance measures are listed below. These remedial actions are listed in alphabetical order without intent of ranking or otherwise assigning priority:

- Collect an unbiased, representative sample of adults
- Conduct IHOT QA/QC tests for feed preparation
- Construct bird netting for 40,300 sf
- Construct pollution abatement ponds
- Develop alarm log
- Develop an approved genetics M&E plan
- Develop smoltification goal and monitor
- Develop specific incubation and rearing standards for the IHOT Operations Plan
- Follow IHOT loading and flow criteria for incubation or revise criteria
- Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat
- Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock
- Follow the IHOT protocol for 1:1 female:male ratio
- Heat 60 gpm of incubation water by 8°F
- Improve adult returns
- Improve inventory procedures for fry-to-smolt survival computations
- Increase DO by aeration
- Install alarm at intake
- Install security alarms
- Install telephone pagers
- Modify screens to allow regular cleaning
- Monitor TGP and record
- Provide 60,000 cf of additional pond volume
- Provide additional 1,100 gpm of water for the raceways or change program
- Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants

Non-compliance issues resulting from items beyond human control or Performance Measures not relevant to this hatchery were not listed above.

Facility Description

Name:	Fallert Creek Hatchery
Stock/Species:	Spring Chinook Fall Chinook Coho (Type S)
Operating Agency:	Washington Department of Fish and Wildlife
Funding Agency:	Mitchell Act (NMFS)
Location:	The hatchery is located along the Kalama River, 5 miles north of Kalama, Washington.
Address:	1404 Kalama River Road Kalama, WA 98625
Hatchery Manager:	Mr. Mark Johnson
Phone:	(360) 673-4400
Fax:	(360) 673-2995
Purpose:	Fallert Hatchery began operation in 1895 and is one of the oldest hatcheries in the Columbia River Basin. Facilities operations are funded as part of the Mitchell Act - a program to mitigate for fishery losses caused by hydroelectric system development. The goal of the hatchery is to produce lower river fall chinook, spring chinook, and coho that will contribute to NE Pacific and Columbia River Basin commercial and sport fisheries.
Production Goal:	<p>Spring Chinook Produce 500,000 yearlings for on-station release</p> <p>Fall Chinook Produce 2,000,000 subyearlings for on-station release Provide eggs/fish to other facilities</p> <p>Coho (Type S) Produce 525,000 yearlings for on-station release Provide eggs/fish to other facilities</p>
Water Supply:	Facility water rights total 15,112 gpm from two sources: Kalama River and Fallert Creek. The hatchery water supply comes from the Kalama River by pumping and from Fallert Creek by gravity flow.

Facilities:

Adult Holding:	1 asphalt adult holding pond (also used for rearing) - 55,000 cf
Incubation:	28 16-tray stack incubators - 448 trays
Early Rearing:	4 deep troughs
Raceways:	8 concrete raceways - 6,400 cf each
Rearing Ponds:	1 gravel pond - 55,000 cf 1 asphalt rearing pond (also used for adult holding) - 55,000 cf
Satellite Facilities:	None

Section 3
Remedial Actions

Based on the compliance status for each performance measure, remedial actions were developed. The required remedial actions are organized into five categories. The types of categories range across a spectrum from those actions that are beyond human control, to those that require a change in agency policy or procedures, to those that involve a significant capital cost to put in place. The following are the five types of remedial actions identified under phase 1 of the audit:

The Five Types of Remedial Actions

Type	Description
1	Non-compliance issues resulting from items beyond human control or Performance Measures not relevant for this hatchery
2	Remedial actions requiring changes in agency policies or procedures
3	Remedial actions requiring changes in monitoring coverage or interval
4	Remedial actions requiring significant capital expenditures
5	Remedial actions that may require significant capital expenditures but are not clearly definable at this time

Remedial Actions at Fallert Creek Hatchery - Fall Chinook, Spring Chinook, and Coho (S)

This section presents the corrective actions required to bring the Fallert Creek Hatchery - Fall Chinook, Spring Chinook, and Coho (S) programs into compliance with IHOT performance measures. The remedial actions described here are suggestions developed by the Montgomery Watson Audit Team. The remedial actions and associated cost estimates have not been analyzed or prioritized by the respective operating agencies, fishery managers, or IHOT. There may be additional remedial actions, not included in this report, proposed by the respective operating agencies. For some non-compliance areas, other remedial actions could be proposed. The required remedial actions are cross-referenced to each IHOT performance measure that was not in compliance. Where appropriate, the costs associated with the remedial actions are also presented (Tables 3a, 3b, and 3c).

The cost estimates presented in this section are based on professional experience from similar projects. In most cases, only a lump-sum figure is presented, and detailed take-off lists have not been prepared. The cost estimates are essentially order of magnitude estimates ($\pm 40\%$).

The suggested remedial activities may also present several levels of action. Optional actions have been listed for several problems. These optional actions are desirable for either operational or safety considerations.

Table 3a. Remedial Actions Required at Fallert Creek Hatchery - Fall Chinook

Remedial Action Required	Cost	PMS¹
Type 1 – Non-compliance issues resulting from items beyond human control or Performance Measures not relevant for this hatchery		
Install security alarms	----	6
Type 2 – Remedial actions requiring changes in agency policies or procedures		
Document adult contribution	----	4a
Document smolt-to-adult survival	----	4h
Develop alarm log	----	6
Conduct IHOT QA/QC tests for feed preparation	----	12
Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat	----	12
Develop specific incubation and rearing standards for the IHOT Operations Plan	----	18-19
Follow IHOT loading and flow criteria for incubation or revise criteria	----	18
Develop smoltification goal and monitor	----	22a1
Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock	----	28
Collect an unbiased, representative sample of adults	----	41
Follow the IHOT protocol for 1:1 female:male ratio	----	42
Develop an approved genetics M&E plan	----	43
Type 3 – Remedial actions requiring changes in monitoring coverage or interval		
Monitor TGP and record	----	5b
Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants	----	5c-5g

¹ PMS are performance measures that were extracted from the IHOT 1995 report.

Remedial Action Required	Cost	PMS ¹
Type 4 - Remedial actions requiring significant capital expenditures		
Heat 210 gpm of incubation water by 3 °F; chill 210 gpm of incubation water by 7 °F	\$180,000	5a
Increase DO by aeration	\$35,000	5b
Install alarm at intake	\$10,000	6
Install telephone pagers	\$5,000	6
Modify screens to allow regular cleaning	\$200,000	10
Construct bird netting for 40,300 sf	\$60,000	11
Construct pollution abatement ponds	\$150,000	14
Provide 34,300 cf of additional earthen pond volume or decrease production	\$75,000	19, 22a2
Type 5 - Remedial actions that may require significant capital expenditures but are not clearly definable at this time		
None	----	

Table 3b. Remedial Actions Required at Fallert Creek Hatchery - Spring Chinook

Remedial Action Required	Cost	PMS ²
Type 1 - Non-compliance issues resulting from items beyond human control or Performance Measures not relevant for this hatchery		
Improve adult returns	----	4g, 4h, 22a4
Install security alarms	----	6
Type 2 - Remedial actions requiring changes in agency policies or procedures		
Develop alarm log	----	6
Conduct IHOT QA/QC tests for feed preparation	----	12

¹ PMS are performance measures that were extracted from the IHOT 1995 report.

² PMS are performance measures that were extracted from the IHOT 1995 report.

Remedial Action Required	Cost	PMS²
Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat	----	12
Develop specific rearing standards for the IHOT Operations Plan	----	18-19
Develop smoltification goal and monitor	----	22a1
Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock	----	28
Develop an approved genetics M&E plan	----	43
Type 3 - Remedial actions requiring changes in monitoring coverage or interval		
Monitor TGP and record	----	5b
Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants	----	5c-5g

Remedial Action Required	Cost	PMS¹
Type 4 - Remedial actions requiring significant capital expenditures		
Increase DO by aeration	\$35,000	5b
Install alarm at intake	\$10,000	6
Install telephone pagers	\$5,000	6
Modify screens to allow regular cleaning	\$200,000	10
Construct bird netting for 40,300 sf	\$60,000	11
Construct pollution abatement ponds	\$150,000	14
Provide additional 750 gpm of water for the dirt pond or change program	\$20,000	19
Provide 132,000 cf of additional pond volume	\$200,000	19, 22a2
Type 5 - Remedial actions that may require significant capital expenditures but are not clearly definable at this time		
None	----	

¹ PMS are performance measures that were extracted from the IHOT 1995 report.

Table 3c. Remedial Actions Required at Fallert Creek Hatchery - Coho (Type S)

Remedial Action Required	Cost	PMS¹
Type 1 - Non-compliance issues resulting from items beyond human control or Performance Measures not relevant for this hatchery		
Improve adult returns	----	4h
Install security alarms	----	6
Type 2 - Remedial actions requiring changes in agency policies or procedures		
Improve inventory procedures for fry-to-smolt survival computations	----	4f
Develop alarm log	----	6
Conduct IHOT QA/QC tests for feed preparation	----	12
Follow IHOT protocols for not leaving buckets of feed or feed containers outside exposed to light or heat	----	12
Develop specific incubation and rearing standards for the IHOT Operations Plan	----	18-19
Follow IHOT loading and flow criteria for incubation or revise criteria	----	18
Develop smoltification goal and monitor	----	22a1
Follow IHOT protocols for sanitizing rearing vessels after fish are removed and prior to introducing a new fish lot or stock	----	28
Collect an unbiased, representative sample of adults	----	41
Follow the IHOT protocol for 1:1 female:male ratio	----	42
Develop an approved genetics M&E plan	----	43
Type 3 – Remedial actions requiring changes in monitoring coverage or interval		
Monitor TGP and record	----	5b
Run analysis for water chemistry parameters, turbidity, alkalinity, hardness, nitrite, and contaminants	----	5c-5g
Remedial Action Required	Cost	PMS²

¹ PMS are performance measures that were extracted from the IHOT 1995 report.

² PMS are performance measures that were extracted from the IHOT 1995 report.

Remedial Action Required	Cost	PMS ¹
Type 4 - Remedial actions requiring significant capital expenditures		
Heat 60 gpm of incubation water by 8 °F	\$40,000	5a
Increase DO by aeration	\$35,000	5b
Install alarm at intake	\$10,000	6
Install telephone pagers	\$5,000	6
Modify screens to allow regular cleaning	\$200,000	10
Construct bird netting for 40,300 sf	\$60,000	11
Construct pollution abatement ponds	\$50,000	14
Provide additional 1,100 gpm of water for the raceways or change program	\$30,000	19
Provide 60,000 cf of additional pond volume	\$75,000	19, 22a2
Type 5 - Remedial actions that may require significant capital expenditures but are not clearly definable at this time		
None	----	

Hatchery Contribution to Fisheries, Spawning Grounds, and Hatcheries

This section presents the audit findings for the Fallert Creek Hatchery - Fall Chinook, Spring Chinook, and Coho (S) programs contribution of adult fish to fisheries, local fisheries, spawning grounds, and hatcheries (Tables 4a, 4b, and 4c). Data is reported by broodyear. A broodyear refers to the adult contribution from the eggs produced from a single group of spawning adults. For some species, this may include fish caught as 2-, 3-, 4-, 5-, and 6-year old fish. Because of the return distribution and data processing delays, the complete adult contribution for a given broodyear may not be available until 4 to 5 years after the fish have been released from the hatchery.

**Table 4a. Adult Contribution to Fisheries, Spawning Grounds, and Hatcheries:
Fallert Creek Hatchery - Fall Chinook**

Year	Fisheries ¹ (Broodyear)	Spawning Grounds ¹ (Broodyear)	Hatchery ¹ (Broodyear)	Total Combined Contribution ² (Broodyear)	Smolt to Adult Survival (percent)
1981					
1982					
1983					
1984					
1985					
1986					
1987					
1988	No data provided	No data provided	No data provided	No data provided	No data provided
1989	No data provided	No data provided	No data provided	No data provided	No data provided
1990	No data provided	No data provided	No data provided	No data provided	No data provided
1991	No data provided	No data provided	No data provided	No data provided	No data provided
1992					

¹ Data obtained from Missing Production Groups Annual Report or from the Regional Mark Information System database.

² Total combined adult contribution; presented when it is not possible to subdivide the contribution into fisheries, spawning grounds, and hatchery contributions.

**Table 4b. Adult Contribution to Fisheries, Spawning Grounds, and Hatcheries:
Fallert Creek Hatchery - Spring Chinook**

Year	Fisheries¹ (Broodyear)	Spawning Grounds¹ (Broodyear)	Hatchery¹ (Broodyear)	Total Combined Contribution² (Broodyear)	Smolt to Adult Survival (percent)
1981					
1982					
1983					
1984					
1985					
1986					
1987					
1988					
1989	167	69	157	393	0.36
1990					
1991					
1992					

**Table 4c. Adult Contribution to Fisheries, Spawning Grounds, and Hatcheries:
Fallert Creek Hatchery - Coho (Type S)**

Year	Fisheries³ (Broodyear)	Spawning Grounds¹ (Broodyear)	Hatchery¹ (Broodyear)	Total Combined Contribution⁴ (Broodyear)	Smolt to Adult Survival (percent)
1981					

¹ Data obtained from Missing Production Groups Annual Report or from the Regional Mark Information System database.

² Total combined adult contribution; presented when it is not possible to subdivide the contribution into fisheries, spawning grounds, and hatchery contributions.

³ Data obtained from Missing Production Groups Annual Report or from the Regional Mark Information System database.

⁴ Total combined adult contribution; presented when it is not possible to subdivide the contribution into fisheries, spawning grounds, and hatchery contributions.

1982					
1983					
1984					
1985					
1986					
1987					
1988	1,373	8	447	1,828	5.94%
1989	58	0	19	77	0.25%
1990	190	0	96	286	0.94%
1991	10	0	72	82	0.26%
1992					

Annual Operating Expenditures

The level and detail of annual operating expenditures varies widely depending on hatchery, operating agency, and funding source. When provided, expenditures were presented in terms of personnel costs, operating costs (power, feed, and supplies), capital costs, indirect costs charged to the federal government, third-party costs, and other costs. These cost components were summed to determine a total hatchery annual cost. Based on discussion with the hatchery manager, the percent of total hatchery costs allocated to a given program was estimated. The total hatchery costs and the percent of hatchery costs allocated to a given program were used to compute the cost of a given program. The total expenditures for the Fallert Creek Hatchery are presented in Table 5 by program. The detailed breakdown of program expenditures for fall chinook, spring chinook, and coho at this hatchery are presented in separate tables (Tables 6a, 6b, and 6c).

Table 5. Annual Operating Expenses - Fallert Creek Hatchery

Program	1994	1995	1996
1. Spring Chinook	\$101,542	\$106,369	\$133,586
2. Fall Chinook	\$36,901	\$53,076	\$55,661
3. Coho (Type S)	\$54,233	\$52,143	\$87,748
4.			
5.			
Total Hatchery Costs	\$192,680	\$211,588	\$276,996

Table 6a. Detailed Expenditures at Fallert Creek Hatchery by Program

Spring Chinook

Component	1994	1995	1996
Personnel Costs			
Operational Costs			
Capital Costs			
Indirect Costs			
Lumped Hatchery Costs ¹	\$192,680	\$211,588	\$276,996
Lumped Third-Party Costs			
Total Hatchery Costs	\$192,680	\$211,588	\$276,996
Source of Funds			
NMFS	100%	100%	100%
Program Production (lb)	70,647	58,800	60,000
Total Production (lb)	134,049	116,964	124,412
Program as Percent of Total	52.7%	50.3%	48.2%
Program Costs	\$101,542	\$106,369	\$133,586

Table 6b. Detailed Expenditures at Fallert Creek Hatchery by Program

Fall Chinook

Component	1994	1995	1996
Personnel Costs			
Operational Costs			
Capital Costs			
Indirect Costs			

¹ When it was not possible to obtain a detailed cost breakdown from an agency or third party, the undivided costs were entered here.

Lumped Hatchery Costs ¹	\$192,680	\$211,588	\$276,996
Lumped Third-Party Costs			
Total Hatchery Costs	\$192,680	\$211,588	\$276,996
Source of Funds			
NMFS	100%	100%	100%
Program Production (lb)	25,672	29,340	39,412
Total Production (lb)	134,049	116,964	124,412
Program as Percent of Total	19.2%	25.1%	20.1%
Program Costs	\$36,901	\$53,076	\$55,661

¹ When it was not possible to obtain a detailed cost breakdown from an agency or third party, the undivided costs were entered here.

**Table 6c. Detailed Expenditures at Fallert Creek Hatchery by Program
Coho (Type S)**

Component	1994	1995	1996
Personnel Costs			
Operational Costs			
Capital Costs			
Indirect Costs			
Lumped Hatchery Costs ¹	\$192,680	\$211,588	\$276,996
Lumped Third-Party Costs			
Total Hatchery Costs	\$192,680	\$211,588	\$276,996
Source of Funds			
NMFS	100%	100%	100%
Program Production (lb)	37,730	28,824	25,000
Total Production (lb)	134,049	116,964	124,412
Program as Percent of Total	28.1%	24.6%	31.7%
Program Costs	\$54,233	\$52,143	\$87,748

¹ When it was not possible to obtain a detailed cost breakdown from an agency or third party, the undivided costs were entered here.