



State of Washington  
**DEPARTMENT OF FISH AND WILDLIFE**

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December 20, 2013

Mr. Keenan Konopaski  
Legislative Auditor  
Joint Legislative Audit and Review Committee  
1300 Quince Street SE  
Olympia, Washington 98504

Dear Mr. Konopaski:

**Subject: Washington Department of Fish and Wildlife Fish Production Cost Analysis Plan for Washington State Hatcheries**

Thank you for the opportunity for the Washington Department of Fish and Wildlife (WDFW) to submit our fish production cost analysis plan for Washington State hatcheries to the Joint Legislative Audit and Review Committee (JLARC).

This cost analysis plan is submitted in response to JLARC's recommendation included in your report published February 20, 2013, "*Trout Production: Estimates Suggest Price Competitive Options are Available.*"

*"WDFW should develop a plan to determine the most cost effective approaches to use to meet the Department's stocking objectives. This plan should include a process to collect fish production cost data by fish species and size at each of the WDFW's hatcheries. This cost data should be stated in a manner that allows for reasonable comparisons to private sector prices. The Department should report to the Legislature on this plan by December 2013.*

*At a minimum, cost data should reflect those developed in the Spokane hatchery case study discussed in the audit report. The plan should identify how the analysis performed at Spokane could be replicated at other WDFW hatcheries to generate fish production cost data by species and size at each hatchery. The plan should also include how to identify the related operating, capital, and overhead costs and how to identify the disparities that cause variations in costs among the hatcheries."*

Development of a plan to determine the most cost effective approaches to meet the Department's stocking objectives is consistent to and aligns with the WDFW Fish Program's 2013-15 Strategic

Mr. Keenan Konopaski

December 20, 2013

Page 2

Initiatives. This recommendation supports the agency's efforts to provide sustainable fishing opportunities, while improving business practices.

Thank you for the opportunity to submit our fish production costs analysis plan for Washington State hatcheries. We look forward to receiving your feedback.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip Anderson", with a long horizontal flourish extending to the right.

Philip Anderson  
Director

Enclosure

cc: Jim Scott, Assistant Director, Fish Program

State of Washington  
Department of Fish and Wildlife

**Fish Production Cost Analysis Plan  
For Washington State Hatcheries**

Presented to the  
Washington State Legislature and the Joint Legislative Audit and Review Committee

December 2013

## **Washington Department of Fish and Wildlife**

*1100 Washington Street SE  
Olympia, Washington 98501-1091  
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## **MISSION, VISION, AND GOALS**

### **Our Mission**

To preserve, protect and perpetuate fish, wildlife, and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.

### **Vision**

Conservation of Washington's fish and wildlife resources and ecosystems.

### **Department Goals**

To achieve its mission, WDFW will continue to focus its activities on the following four goals:

#### **Goal 1:**

Conserve and protect native fish and wildlife

#### **Goal 2:**

Provide sustainable fishing, hunting, and other wildlife-related recreational and commercial experiences

#### **Goal 3:**

Promote a healthy economy, protect community character, maintain an overall high quality of life, and deliver high-quality customer service

#### **Goal 4:**

Build an effective and efficient organization by supporting our workforce, improving business processes, and investing in technology

# TABLE OF CONTENTS

|   |    |
|---|----|
| BACKGROUND .....  | 1  |
| JLARC Audit Recommendation .....  | 2  |
| WDFW Response.....  | 2  |
| WDFW FISH PRODUCTION COST ANALYSIS PLAN (FishCAP).....                                  | 2  |
| Methodology .....   | 2  |
| Performance Period.....   | 3  |
| WDFW Hatcheries.....  | 3  |
| Fish Species .....  | 3  |
| Funding Sources.....  | 4  |
| STEP 1: IDENTIFICATION OF FISH PRODUCTION BY SPECIES, BY SIZE, AND BY<br>HATCHERY ..... | 6  |
| STEP 2: COST ANALYSIS .....   | 8  |
| NEXT STEPS: .....   | 14 |
| Implementation of the Plan – Application Statewide .....                                | 14 |
| Database Application to Fish Production and Cost .....                                  | 14 |
| FISHCAP UTILIZATION.....  | 14 |
| APPENDIX  |    |

## BACKGROUND

Washington Department of Fish and Wildlife (WDFW) releases over 9.4 million trout and 145 million salmon and steelhead each year, which provide 13.4 million angler days of recreation annually (2012). It is estimated that WDFW benefits Washington's economy each year generating \$3.8 billion for commercial fishing<sup>1</sup> and \$1.1 billion for sport fishing.<sup>2</sup> WDFW fish hatcheries provide sizeable economic benefits not just to anglers, but to all constituents, directly contributing to 28,000 jobs statewide. The benefit of the state's hatchery system to the economy varies by region and is influenced by the species and number of fish produced.

WDFW operates 83 hatcheries, in direct support of these economic activities, producing fish that benefit commercial and recreational fisheries, and to fulfill obligations to maintain tribal usual and accustomed fishing rights. Operation of these hatcheries also contributes to fish recovery efforts under the Endangered Species Act. Fish hatchery activities include the entire fish production cycle, raising fish from eggs until release age and then collecting more eggs upon their return. Before release, hatchery fish are marked so they can be readily identified as "hatchery" fish.

In the 2012 Supplemental Operating Budget (3ESHB 2127), the Joint Legislative Audit and Review Committee (JLARC) was directed by the Legislature to identify the availability of alternative approaches to trout production and to compare WDFW production costs with the costs of the alternatives. The Department currently uses five alternatives for trout production including:

- Leasing state owned hatchery facilities to a private company;
- Purchasing trout from a contracted private company;
- Co-op agreements with county public utility districts, nonprofit groups, and an institute of higher education;
- Tribal and/or Federal partnerships; and
- No cost cooperative agreements with other states

On February 20, 2013, JLARC published their report entitled, "*Trout Production: Estimates Suggest Price Competitive Options are Available.*" The report summarized JLARC's audit findings, comparing the trout production costs of WDFW to those of a private company. The results, based on a case study conducted for trout production at WDFW's Spokane Hatchery, showed that the estimated cost for supplying catchable-sized (11" to 13") trout was similar between WDFW and the private company. In order to see if these price comparisons could be applied more broadly, JLARC recommended that WDFW develop a plan to identify the production costs for all species and sizes at each of WDFW's hatcheries.

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<sup>1</sup> Source: National Oceanic and Atmospheric Association, *Fisheries Economics of the United States*, 2006

<sup>2</sup> Source: U. S. Fish and Wildlife Service, *2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation*.

## **JLARC Audit Recommendation**

The results of the audit led to a single recommendation for WDFW. The JLARC recommendation states:

*“WDFW should develop a plan to determine the most cost effective approaches to use to meet the Department’s stocking objectives. This plan should include a process to collect fish production cost data by fish species and size at each of WDFW’s hatcheries. This cost data should be stated in a manner that allows for reasonable comparisons to private sector prices. The Department should report to the Legislature on this plan by December 2013.*

*At a minimum, cost data should reflect those developed in the Spokane hatchery case study discussed in the audit report. The plan should identify how the analysis performed at Spokane could be replicated at other WDFW hatcheries to generate fish production cost data by species and size at each hatchery. The plan should also include how to identify the related operating, capital, and overhead costs and how to identify the disparities that cause variations in costs among the hatcheries.”*

## **WDFW Response**

WDFW agrees that the ability to determine fish production costs by species, size, and facility is a valuable management tool. Development of a plan to determine the most cost effective approaches to meet the Department’s stocking objectives is consistent to and aligns with the WDFW Fish Program’s 2013-15 Strategic Initiatives. This recommendation supports the agency’s efforts to provide sustainable fishing opportunities, while improving business practices.

## **WDFW FISH PRODUCTION COST ANALYSIS PLAN (FishCAP)**

### **Methodology**

The Fish Production Cost Analysis Plan (FishCAP) is based on the Spokane model utilized in the 2012 JLARC analysis of WDFW trout production. FishCAP takes advantage of numerous individual (or independent) databases utilized by individual hatcheries and will allow us to apply costs by species across all hatcheries.

Major WDFW resources utilized to collect production and cost data include:

- **WDFW Future Brood Document**
  - *The Future Brood Document (FBD) is a pre-season planning document for fish hatchery production in Washington State for the upcoming brood stock collection and fish-rearing season (July 1 – June 30). The FBD is coordinated between WDFW, the Northwest Indian Fisheries Commission (NWIFC), Puget Sound, Washington Coast and Columbia River treaty tribes and United States Fish and Wildlife Service for the operation of fish hatcheries throughout the state. Hatchery production by volunteers, schools, and Regional Fisheries Enhancement Groups are represented by WDFW. The purpose of the document is to detail agreed to production goals and plans for hatcheries. The document represents goals and actuals for egg-takes, transfers, and releases.*

- **WDFW FishBooks**
  - *FishBooks is a web-based data entry system used by WDFW fish hatcheries' staff. The application was launched in August 2008. FishBooks captures detailed hatchery information including; adult fish returning to hatcheries, spawns, egg-takes, transfers of fish and eggs, and fish releases. Fish hatchery workers also track details of incubation and rearing activities including; mortalities, sampling information, and records of feed used. The application standardizes all hatchery data collected throughout the state and allows for real-time sharing of information with headquarters and regional staff. FishBooks reduces the amount of paper used, printing and mailing costs, and produces one set of numbers, which eliminates duplicate databases. Production numbers and feed amounts for each hatchery from FishBooks will be applied to the JLARC directed cost production analysis.*
  
- **Department of Enterprise Systems Enterprise Reporting System**
  - *Enterprise Reporting Systems is a tool used to run reports from AFRS, which is the state-owned accounting system used by all state agencies and higher-education institutions in the state of Washington. AFRS system performs all aspects of the accounting process: the general ledger, accounts receivable, accounts payable, balance sheets, etc.*

Detailed estimated cost breakdowns for each size of fish will include the costs of labor, fish feed, utilities, trucking, capital/maintenance, other (i.e. supplies and materials, permits, etc.), capitol costs, and overhead at state funded hatcheries. Data collected will include other species, in addition to trout, such as salmon and steelhead, and warmwater species.

### **Performance Period**

Implementation of this plan will provide fish production numbers and costs in alignment with the state fiscal year timeframe (July 1 – June 30).

### **WDFW Hatcheries**

See Appendix A

### **Fish Species**

WDFW produces numerous species of fish. Resident freshwater species produced include trout (rainbow, tiger, eastern brook, brown, golden, cutthroat), kokanee, and warmwater fish.

Anadromous species include (Chinook, Coho, chum, and pink salmon) and steelhead.

All species of fish raised in WDFW hatcheries will be evaluated.



## Funding Sources

WDFW utilizes a wide variety of funding sources to accomplish our fish production and stocking objectives<sup>3</sup>. Those sources include:

- **001-011/012 General Fund-State**
  - *The general fund is used by the state of Washington to account for the financial activities of the general government not required to be accounted for in another account.*
  
- **104-130 Wildlife Fund-State**
  - *Established in 1947 under the authority of RCW 77.12.170, the State Wildlife Account funds the protection of state wildlife, certain administrative costs for Department of Licensing, and administration and enforcement of state game laws. Revenue sources include: the sale of licenses; permits; tags and stamps; application fees; administrative penalties; fees for personalized license plates; excise taxes; donations; contributions; gifts or grants; auction and raffle revenue; and interest income.(Office of Financial Management)*
  
- **104-TPF Wildlife Fund-State Two-Pole Fund (TPF)**
  - *License holders must purchase a two-pole stamp to use a second pole when fishing. The proceeds from the sale of the two-pole stamp are deposited into the state wildlife account. Revenue is used for the operation and maintenance of state-owned fish hatcheries.(Washington State Legislature)*
  
- **02R-090 Aquatic Lands Enhancement Account (ALEA)**
  - *In 1984, the Washington State Legislature created ALEA to ensure that money generated from aquatic lands was used to protect and enhance those lands. ALEA grants may be used for the acquisition, improvement, or protection of aquatic lands for public purposes. They also may be used to provide or improve public access to the waterfront. ALEA is funded almost entirely by revenue generated by the Washington State Department of Natural Resources' management of state-owned aquatic lands. Revenue sources include leases on state-owned waterfront sites and sale of harvest rights for geoduck clams. (Washington State Recreation and Conservation Office)*
  
- **071-090 Warmwater Game Fish Account (WWGF)**
  - *Per RCW 77.44.050: Moneys in the (WWGF) account are subject to legislative appropriation and shall be used for the purpose of funding the warmwater game fish enhancement program, including the development of warmwater pond and lake habitat, culture of warmwater game fish, improvement of warmwater fish habitat, management of warmwater fish*

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<sup>3</sup> State funded production may be supplemented by donation or support from local community based fishing organizations and tribes.

*populations, and other practical activities that will improve the fishing for warmwater fish (WDFW).*

- **04M-1M0 Puget Sound Recreational Fisheries Enhancement Account (PSRFE)**
  - *WDFW deposits a portion of each saltwater and combination fishing license fee into the fisheries account. The Department calculates deposits based on the percentage of recreational anglers who report in the annual survey that they fished for salmon or marine bottomfish in Puget Sound or Lake Washington. The funds in this account may be used only for recreational fisheries enhancement activities identified in state law (RCW 77.105) as being within the scope of the Recreational Salmon and Marine Fish Enhancement Program. (WDFW)*
  
- **001-020 Federal – Dingell-Johnson (DJ)**
  - *The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson Act, adopted by Congress on August 9, 1950, was modeled after the Pittman-Robertson Act, and aimed at creating a similar program for the management, conservation, and restoration of fishery resources. Funds to support the Federal Aid in Sport Fish Restoration programs are received from excise taxes on fishing equipment, fish finders, motorboat fuels, small engine fuels, and import duties. State agencies that sell fishing licenses are the only entities eligible to receive grant funds. Each state's share is based 60 percent on the number of its licensed anglers and 40 percent on the size of its land and water area. Program funds are used by state fish and wildlife agencies for sport fish management, boating access, and aquatic education projects (WDFW).*
  
- **057-1 State Building Construction Account (Capital)**
  - *The State Building Construction Account primarily uses borrowed money generated by state bond sales to fund items that benefit future users. For example, the benefits of a state hatchery facility will last 30 years or more. These types of purchases are made with bonds paid off over 30 years and spread the cost over the life of the acquisition or facility (WDFW).*

Steps needed for completion of FishCAP include:

(1) Identification of Fish Production by Species, by Size, and by Hatchery. During the last two years, WDFW has completed a comprehensive review of its trout program to ensure it is producing and releasing the right species, the right number, at the right time, at the right size, and at the right location to maximize angler participation. WDFW views the cost analysis by species by size by hatchery for all species another step forward in its current and ongoing efforts to make the “best-use” of our recreational fishing license revenue. It is imperative to identify the quantity, size, and species of all fish produced and released at each hatchery to determine the most cost-effective ways to reach WDFW fish stocking objectives, and to ensure continual cost effective operations.

(2) Cost Analysis. The importance of Washington's fish production program has been underscored by the challenging economic environment of recent years. Simply put, WDFW cannot be successful over the long-term without a successful trout and salmon program generating strong recreational fishing license sales. The cost analysis will be used as a tool by WDFW to further increase the effectiveness of Washington's fish production programs.

## STEP 1: IDENTIFICATION OF FISH PRODUCTION BY SPECIES, BY SIZE, AND BY HATCHERY

Fish production groups will be identified at each hatchery by species and size of fish during a state fiscal year (July 1 – June 30). This will include fish that are released into state waters, transferred to other facilities, or fish that will remain at the hatchery for additional rearing to be released in future fiscal years (e.g. some trout production includes four year old broodstock).

### Step 1-A: Identify Species (Released, Transferred, or Remaining at the Hatchery at Fiscal Close)

Most hatcheries produce multiple species of fish to optimize production capability at the facility and to best support statewide fish stocking objectives. During a fiscal year, fish are released or transferred, while other fish remain at the hatchery to be released or transferred the following year. Fish species produced at each facility will be identified in the plan by a specific Brood Code. The Brood Code provides identification by species (i.e. rainbow trout, Chinook), Run (i.e. spring for Chinook, summer or winter for steelhead), stock (i.e. identification of the source of the eggs, such as Goldendale for Goldendale Hatchery rainbow trout, or Tokul for Tokul Creek Hatchery stock steelhead), brood year (the calendar year when the eggs are taken from the female fish), and brood origin (the parentage of the fish, i.e. whether hatchery parents, wild parents, or a mix of both).

| FY2012 Actuals                 |  |   |  |                       |                     |                   |          |           |  |                            |
|--------------------------------|--|---|--|-----------------------|---------------------|-------------------|----------|-----------|--|----------------------------|
|                                |  |   |  |                       |                     |                   |          |           |  | Program or Facility Budget |
|                                |  |   |  |                       |                     |                   |          |           |  | \$223,767                  |
| B                              | C  | D   | E  | F                     | G                   | H                 | I        | J         | K  | L                          |
| Species Planted or Transferred | # Fish Planted/Transferred or End of Fiscal Year | Fpp at Plant/Transfer or End of Fiscal Year | Pounds at Plant/Transfer or End of Fiscal Year | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery, i.e. sthd) | Other                      |
| GT:NA.MOUN:2011:H              | 1,425  | 352.0                                       | 4  | 0.01%                 | \$9                 | \$2               | \$0      | \$2       | \$0  | \$0                        |
| CT:WS.TWIN:2011:H              | 5,167  | 373.0                                       | 14   | 0.02%                 | \$29                | \$20              | \$40     | \$6       | \$0  | \$1                        |
| RB:NA.MOUN:2011:H              | 4,632  | 220.0                                       | 21   | 0.04%                 | \$44                | \$37              | \$20     | \$9       | \$0  | \$2                        |
| KO:NA.WHAL:2010:H              | 100,464  | 104.0                                       | 966  | 1.61%                 | \$2,029             | \$453             | \$215    | \$433     | \$0  | \$95                       |
| KO:NA.WHAL:2011:H              | 127,200  | 200.0                                       | 636  | 1.06%                 | \$1,336             | \$304             | \$215    | \$285     | \$0  | \$63                       |
| RB:NA.GOLD:2009:H              | 7,012  | 1.3   | 5,394  | 8.97%                 | \$11,332            | \$2,249           | \$977    | \$2,415   | \$0  | \$531                      |
| RB:NA.GOLD:2010:H              | 98,205   | 2.4   | 40,919   | 68.03%                | \$85,967            | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030                    |
| RB:NA.GOLD:2011:H              | 34,925   | 55.0  | 635  | 1.06%                 | \$1,334             | \$660             | \$50     | \$284     | \$0  | \$63                       |
| RB:NA.GOLD:2011:H              | 128,000  | 800.0                                       | 160  | 0.27%                 | \$336               | \$50              | \$27     | \$72      | \$0  | \$16                       |

Step1-A. Species of fish will be identified utilizing a Brood Code ID. Brood Code provides easy identification by Species, Run, Stock, Brood Year, and Brood Origin

**Step 1-B: Identify Number of Fish (Released, Transferred, or Remaining at the Hatchery at Fiscal Close)**

This is the number of fish released into state waters, transferred to another hatchery during the fiscal year, and/or fish remaining at the hatchery beyond fiscal close.

| FY2012 Actuals                 |  |   |  |                       |                     |                            |          |           |  |         |
|--------------------------------|--|---|--|-----------------------|---------------------|----------------------------|----------|-----------|--|---------|
|                                |  |   |  |                       |                     | Program or Facility Budget |          |           |  |         |
|                                |  |   |  |                       |                     | \$223,767                  |          |           |  |         |
| B                              | C  | D   | E  | F                     | G                   | H                          | I        | J         | K  | L       |
| Species Planted or Transferred | # Fish Planted/Transferred or End of Fiscal Year | Fpp at Plant/Transfer or End of Fiscal Year | Pounds at Plant/Transfer or End of Fiscal Year | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs          | Trucking | Utilities | Fish Marking (funded at hatchery, i.e. sthd) | Other   |
| GT:NA:MOUN:2011:H              | 1,425  | 352.0                                       | 4  | 0.01%                 | \$9                 | \$2                        | \$0      | \$2       | \$0  | \$0     |
| CT:WS:TWIN:2011:H              | 5,167  | 373.0                                       | 14   | 0.02%                 | \$29                | \$20                       | \$40     | \$6       | \$0  | \$1     |
| RB:NA:MOUN:2011:H              | 4,632  | 220.0                                       | 21   | 0.04%                 | \$44                | \$37                       | \$20     | \$9       | \$0  | \$2     |
| KO:NA:WHAL:2010:H              | 100,464  | 104.0                                       | 966  | 1.61%                 | \$2,029             | \$453                      | \$215    | \$433     | \$0  | \$95    |
| KO:NA:WHAL:2011:H              | 127,200  | 200.0                                       | 636  | 1.06%                 | \$1,336             | \$304                      | \$215    | \$285     | \$0  | \$63    |
| RB:NA:GOLD:2009:H              | 7,012  | 1.3   | 5,394  | 8.97%                 | \$11,332            | \$2,249                    | \$977    | \$2,415   | \$0  | \$531   |
| RB:NA:GOLD:2010:H              | 98,205   | 2.4   | 40,919   | 68.03%                | \$85,967            | \$19,399                   | \$8,791  | \$18,321  | \$0  | \$4,030 |
| RB:NA:GOLD:2011:H              | 34,925   | 55.0  | 635  | 1.06%                 | \$1,334             | \$660                      | \$50     | \$284     | \$0  | \$63    |
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Step 1-B. This is the number of fish released into state waters, transferred to another hatchery during the fiscal year, and/or fish remaining at the hatchery at fiscal close.

**Step 1-C: Identify Size (Fish per Pound at time of Release, Transfer, or at the end of the Fiscal Year)**

Fish per pound is used to identify a size grouping of each species. This value is the average fish per pound by Brood Code that were released, transferred, or remained at the hatchery. The various sizes of fish produced statewide will be categorized by size groups for reporting purpose (e.g. fry (newly hatched), fingerling (approximately the size of your finger), and catchables (at a size to provide fishing opportunity)).

| FY2012 Actuals                 |  |   |  |                       |                     |                            |          |           |  |         |
|--------------------------------|--|---|--|-----------------------|---------------------|----------------------------|----------|-----------|--|---------|
|                                |  |   |  |                       |                     | Program or Facility Budget |          |           |  |         |
|                                |  |   |  |                       |                     | \$223,767                  |          |           |  |         |
| B                              | C  | D   | E  | F                     | G                   | H                          | I        | J         | K  | L       |
| Species Planted or Transferred | # Fish Planted/Transferred or End of Fiscal Year | Fpp at Plant/Transfer or End of Fiscal Year | Pounds at Plant/Transfer or End of Fiscal Year | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs          | Trucking | Utilities | Fish Marking (funded at hatchery, i.e. sthd) | Other   |
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Step 1-C. Fish per pound is used to identify a size grouping of each species. The various sizes of fish produced statewide will be categorized by size groups for reporting purpose (e.g. fry (newly hatched), fingerling (approximately the size of your finger), and catchables (at a size to provide fishing opportunity)).

### Step 1-D: Calculate Pounds of Fish (at Release, Transfer, or at the End of the Fiscal Year)

The pounds of fish by Brood Code at release, transfer, or at the end of the fiscal year is calculated by dividing the number of fish released, transferred, or remaining at the hatchery at the end of the fiscal year(Step 1-B) by the fish per pound at release, transfer, or remained on-station at fiscal close (Step 1-C).

| FY2012 Actuals                 |  |   |  |                       |                     |                   |                            |           |  |         |
|--------------------------------|--|---|--|-----------------------|---------------------|-------------------|----------------------------|-----------|--|---------|
|                                |  |   |  |                       |                     |                   |                            |           |  |         |
|                                |  |   |  |                       |                     |                   | Program or Facility Budget |           |  |         |
|                                |  |   |  |                       |                     |                   | \$223,767                  |           |  |         |
| B                              | C  | D   | E  | F                     | G                   | H                 | I                          | J         | K  | L       |
| Species Planted or Transferred | # Fish Planted/Transferred or End of Fiscal Year | Fpp at Plant/Transfer or End of Fiscal Year | Pounds at Plant/Transfer or End of Fiscal Year | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking                   | Utilities | Fish Marking (funded at hatchery, i.e. sthd) | Other   |
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| KO:NA:WHAL:2011:H              | 127,200  | 200.0                                       | 636  | 1.06%                 | \$1,336             | \$304             | \$215                      | \$285     | \$0  | \$63    |
| RB:NA:GOLD:2009:H              | 7,012  | 1.3   | 5,394  | 8.97%                 | \$11,332            | \$2,249           | \$977                      | \$2,415   | \$0  | \$531   |
| RB:NA:GOLD:2010:H              | 98,205   | 2.4   | 40,919   | 68.03%                | \$85,967            | \$19,399          | \$8,791                    | \$18,321  | \$0  | \$4,030 |
| RB:NA:GOLD:2011:H              | 34,925   | 55.0  | 635  | 1.06%                 | \$1,334             | \$660             | \$50                       | \$284     | \$0  | \$63    |
| RB:NA:GOLD:2011:H              | 128,000  | 800.0                                       | 160  | 0.27%                 | \$336               | \$50              | \$27                       | \$72      | \$0  | \$16    |

Step 1-D. The pounds of fish by Brood Code at release, transfer, or at the end of the fiscal year is calculated by dividing the number of fish released, transferred, or remaining at the hatchery at the end of the fiscal year(Step 1-B) by the fish per pound at release, transfer, or at end of the fiscal year (Step 1-C).

### Step 1-E: Calculate Percentage of Hatchery Program

The pounds of fish by Brood Code (Step 1-D) are divided into the total pounds of production at the hatchery to determine the percentage of the overall hatchery program. This percentage will be used in the cost analysis to proportion out specific operational costs (e.g. labor, utilities, etc.).

| FY2012 Actuals                 |  |   |  |                       |                     |                   |                            |           |  |         |
|--------------------------------|--|---|--|-----------------------|---------------------|-------------------|----------------------------|-----------|--|---------|
|                                |  |   |  |                       |                     |                   |                            |           |  |         |
|                                |  |   |  |                       |                     |                   | Program or Facility Budget |           |  |         |
|                                |  |   |  |                       |                     |                   | \$223,767                  |           |  |         |
| B                              | C  | D   | E  | F                     | G                   | H                 | I                          | J         | K  | L       |
| Species Planted or Transferred | # Fish Planted/Transferred or End of Fiscal Year | Fpp at Plant/Transfer or End of Fiscal Year | Pounds at Plant/Transfer or End of Fiscal Year | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking                   | Utilities | Fish Marking (funded at hatchery, i.e. sthd) | Other   |
| GT:NA:MOUN:2011:H              | 1,425  | 352.0                                       | 4  | 0.01%                 | \$9                 | \$2               | \$0                        | \$2       | \$0  | \$0     |
| CT:WS:TWIN:2011:H              | 5,167  | 373.0                                       | 14   | 0.02%                 | \$29                | \$20              | \$40                       | \$6       | \$0  | \$1     |
| RB:NA:MOUN:2011:H              | 4,632  | 220.0                                       | 21   | 0.04%                 | \$44                | \$37              | \$20                       | \$9       | \$0  | \$2     |
| KO:NA:WHAL:2010:H              | 100,464  | 104.0                                       | 966  | 1.61%                 | \$2,029             | \$453             | \$215                      | \$433     | \$0  | \$95    |
| KO:NA:WHAL:2011:H              | 127,200  | 200.0                                       | 636  | 1.06%                 | \$1,336             | \$304             | \$215                      | \$285     | \$0  | \$63    |
| RB:NA:GOLD:2009:H              | 7,012  | 1.3   | 5,394  | 8.97%                 | \$11,332            | \$2,249           | \$977                      | \$2,415   | \$0  | \$531   |
| RB:NA:GOLD:2010:H              | 98,205   | 2.4   | 40,919   | 68.03%                | \$85,967            | \$19,399          | \$8,791                    | \$18,321  | \$0  | \$4,030 |
| RB:NA:GOLD:2011:H              | 34,925   | 55.0  | 635  | 1.06%                 | \$1,334             | \$660             | \$50                       | \$284     | \$0  | \$63    |
| RB:NA:GOLD:2011:H              | 128,000  | 800.0                                       | 160  | 0.27%                 | \$336               | \$50              | \$27                       | \$72      | \$0  | \$16    |

Step 1-E. This percentage will be used in the cost analysis to proportion out specific operational costs (e.g. labor, utilities, etc.).

## STEP 2: COST ANALYSIS

The Cost Production by Species model developed to estimate the overall cost of production by species of fish and size group will be completed by staff at each state-funded facility. The basic

premise of the Cost Production by Species model, based on the Spokane model, first described in the 2013 JLARC report, is an allocation of costs proportioned by pounds of production. The analysis performed at Spokane was centered on trout production, and the model has been improved to better-fit application to all fish species production, including salmon and steelhead. Feed and trucking costs, for example, are not strictly proportional to pounds produced, so a more detailed dissection of costs is necessary to arrive at a more accurate cost per fish.

The model is comprised of two worksheets: (1) Fish Feed Usage and Costs - to calculate feed costs by species by size of fish; and (2) Cost Production By Species - to calculate the production cost for each species of fish by each size group at state-funded facilities.

**Step 2-A: Identify Feed Fed by Species and Size Group**

The feed cost worksheet is used to identify the pounds and cost of each type of feed that was fed to individual groups of fish. This information will be summarized and transferred to the Feed column of the Cost Production by Species worksheet. Costs vary by diet formulations, medicated feed types, and size of feed.

| Species and Size at Plant or Transfer | Sum of Total Cost w/ Tax |
|---------------------------------------|--------------------------|
| KO:NA:WHAL:2011:H<br>200              | \$ 812.02                |
| GT:NA:MOUN:2011:H<br>352              | \$ 3.05                  |
| CT:WS:TWIN:2011:H<br>373              | \$ 27.46                 |
| KO:NA:WHAL:2010:H<br>104              | \$ 604.15                |
| RB:NA:GOLD:2009:H<br>1.3              | \$ 3,000.26              |
| RB:NA:GOLD:2010:H<br>2.4              | \$ 28,752.51             |
| RB:NA:GOLD:2011:H<br>55               | \$ 4,406.60              |
| RB:NA:MOUN:2012:H<br>300              | \$ 67.13                 |
| RB:NA:MOUN:2011:H<br>2.2              | \$ 2,287.24              |
| <b>Grand Total</b>                    | <b>\$ 39,960.40</b>      |

Step2-A (a). Feed costs will be summarized captured and summarized

| FY2012 Actuals                       |                       |                   |                   |          |           |  |         |                                    |                           |               |   |  |
|--------------------------------------|-----------------------|-------------------|-------------------|----------|-----------|--|---------|------------------------------------|---------------------------|---------------|---|--|
| Program or Facility Budget \$223,767 |                       |                   |                   |          |           |  |         |                                    |                           |               |   |  |
| B                                    | F                     | G                 | H                 | I        | J         | K  | L       | P                                  | Q                         | S             | T   |  |
| Species Planted or Transferred       | % of Hatchery Program | Salaries/Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. stnd) | Other   | Hatchery Maintenance (Hqrs Budget) | Fish Health (Hqrs Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT.NA.MOUN.2011.H                    | 0.01%                 | \$9               | \$2               | \$0      | \$2       | \$0  | \$0     | \$6                                | \$1                       | \$8           | \$2                                       | \$2  |
| CT.WS.TWIN.2011.H                    | 0.02%                 | \$29              | \$20              | \$40     | \$6       | \$0  | \$1     | \$20                               | \$3                       | \$28          | \$8                                       | \$14                                       |
| RB.NA.MOUN.2011.H                    | 0.04%                 | \$44              | \$37              | \$20     | \$9       | \$0  | \$2     | \$30                               | \$4                       | \$42          | \$10                                      | \$13                                       |
| KO.NA.WHAL.2010.H                    | 1.61%                 | \$2,029           | \$453             | \$215    | \$433     | \$0  | \$95    | \$1,397                            | \$186                     | \$1,927       | \$421                                     | \$489                                      |
| KO.NA.WHAL.2011.H                    | 1.06%                 | \$1,334           | \$304             | \$215    | \$285     | \$0  | \$63    | \$920                              | \$122                     | \$1,269       | \$280                                     | \$335                                      |
| RB.NA.GOLD.2009.H                    | 8.97%                 | \$11,332          | \$2,249           | \$977    | \$2,415   | \$0  | \$531   | \$7,802                            | \$1,038                   | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB.NA.GOLD.2010.H                    | 68.03%                | \$85,967          | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030 | \$59,190                           | \$7,878                   | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB.NA.GOLD.2011.H                    | 1.06%                 | \$1,334           | \$660             | \$50     | \$284     | \$0  | \$63    | \$919                              | \$122                     | \$1,267       | \$272                                     | \$305                                      |
| RB.NA.GOLD.2011.H                    | 0.27%                 | \$336             | \$50              | \$27     | \$72      | \$0  | \$16    | \$231                              | \$31                      | \$319         | \$69                                      | \$80                                       |

Step 2-A (b). The summary of feed costs will be transferred to the Feed column of the Cost Production by Species worksheet.

**Step 2-B: Apply Salaries and Benefits**

Hatchery salaries and benefits (i.e.: labor) costs will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).

| FY2012 Actuals                 |                       |                     |                            |          |           |  |         |                                    |                           |               |   |  |
|--------------------------------|-----------------------|---------------------|----------------------------|----------|-----------|--|---------|------------------------------------|---------------------------|---------------|---|--|
|                                |                       |                     | Program or Facility Budget |          |           |  |         |                                    |                           |               |   |  |
|                                |                       |                     | \$223,767                  |          |           |  |         |                                    |                           |               |   |  |
| B                              | F                     | G                   | H                          | I        | J         | K  | L       | P                                  | Q                         |               | S   | T  |
| Species Planted or Transferred | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs          | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs Budget) | Fish Health (Hqrs Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H              | 0.01%                 | \$9                 | \$2                        | \$0      | \$2       | \$0  | \$0     | \$6                                | \$1                       | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H              | 0.02%                 | \$29                | \$20                       | \$40     | \$6       | \$0  | \$1     | \$20                               | \$3                       | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H              | 0.04%                 | \$44                | \$37                       | \$20     | \$9       | \$0  | \$2     | \$30                               | \$4                       | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H              | 1.61%                 | \$2,029             | \$453                      | \$215    | \$433     | \$0  | \$95    | \$1,397                            | \$186                     | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H              | 1.06%                 | \$1,336             | \$304                      | \$215    | \$285     | \$0  | \$63    | \$920                              | \$122                     | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H              | 8.97%                 | \$11,332            | \$2,249                    | \$977    | \$2,415   | \$0  | \$531   | \$7,802                            | \$1,038                   | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H              | 68.03%                | \$85,967            | \$19,399                   | \$8,791  | \$18,321  | \$0  | \$4,030 | \$59,190                           | \$7,878                   | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H              | 1.06%                 | \$1,334             | \$660                      | \$50     | \$284     | \$0  | \$63    | \$919                              | \$122                     | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H              | 0.27%                 | \$36                | \$50                       | \$27     | \$72      | \$0  | \$16    | \$231                              | \$31                      | \$319         | \$69                                      | \$80                                       |

Step 2-B. Hatchery salaries and benefits costs will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).

### Step 2-C: Apply Trucking Costs

Trucking costs funded at the hatchery to transport fish to other hatcheries and/or off-station release sites will be distributed across the groups of fish moved during the fiscal year. Some trucking costs are also funded by the Capital and Asset Management Program (CAMP).

| FY2012 Actuals                 |                       |                     |                            |          |           |  |         |                                    |                           |               |   |  |
|--------------------------------|-----------------------|---------------------|----------------------------|----------|-----------|--|---------|------------------------------------|---------------------------|---------------|---|--|
|                                |                       |                     | Program or Facility Budget |          |           |  |         |                                    |                           |               |   |  |
|                                |                       |                     | \$223,767                  |          |           |  |         |                                    |                           |               |   |  |
| B                              | F                     | G                   | H                          | I        | J         | K  | L       | P                                  | Q                         |               | S   | T  |
| Species Planted or Transferred | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs          | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs Budget) | Fish Health (Hqrs Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H              | 0.01%                 | \$9                 | \$2                        | \$0      | \$2       | \$0  | \$0     | \$6                                | \$1                       | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H              | 0.02%                 | \$29                | \$20                       | \$40     | \$6       | \$0  | \$1     | \$20                               | \$3                       | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H              | 0.04%                 | \$44                | \$37                       | \$20     | \$9       | \$0  | \$2     | \$30                               | \$4                       | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H              | 1.61%                 | \$2,029             | \$453                      | \$215    | \$433     | \$0  | \$95    | \$1,397                            | \$186                     | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H              | 1.06%                 | \$1,336             | \$304                      | \$215    | \$285     | \$0  | \$63    | \$920                              | \$122                     | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H              | 8.97%                 | \$11,332            | \$2,249                    | \$977    | \$2,415   | \$0  | \$531   | \$7,802                            | \$1,038                   | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H              | 68.03%                | \$85,967            | \$19,399                   | \$8,791  | \$18,321  | \$0  | \$4,030 | \$59,190                           | \$7,878                   | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H              | 1.06%                 | \$1,334             | \$660                      | \$50     | \$284     | \$0  | \$63    | \$919                              | \$122                     | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H              | 0.27%                 | \$36                | \$50                       | \$27     | \$72      | \$0  | \$16    | \$231                              | \$31                      | \$319         | \$69                                      | \$80                                       |

Step 2-C. Trucking costs will be distributed across the groups of fish moved during the fiscal year.

### Step 2-D: Apply Utilities Costs

Annual hatchery utility costs (e.g. electricity, water, refuse) will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).

| FY2012 Actuals  |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
|---|-----------------------|---------------------|-------------------|----------|-----------|--|---------|-------------------------------------|----------------------------|---------------|---|--|
| <div style="text-align: center;">           Program or Facility Budget<br/> <b>\$223,767</b> </div> |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| B   | F                     | G                   | H                 | I        | J         | K  | L       | P                                   | Q                          | S             | T   |  |
| Species Planted or Transferred  | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs. Budget) | Fish Health (Hqrs. Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H   | 0.01%                 | \$9                 | \$2               | \$0      | \$2       | \$0  | \$0     | \$6                                 | \$1                        | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H   | 0.02%                 | \$29                | \$20              | \$40     | \$6       | \$0  | \$1     | \$20                                | \$3                        | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H   | 0.04%                 | \$44                | \$37              | \$20     | \$9       | \$0  | \$2     | \$30                                | \$4                        | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H   | 1.61%                 | \$2,029             | \$453             | \$215    | \$433     | \$0  | \$95    | \$1,397                             | \$186                      | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H   | 1.06%                 | \$1,336             | \$304             | \$215    | \$285     | \$0  | \$63    | \$920                               | \$122                      | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H   | 8.97%                 | \$11,332            | \$2,249           | \$977    | \$2,415   | \$0  | \$531   | \$7,802                             | \$1,038                    | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H   | 68.03%                | \$85,967            | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030 | \$59,190                            | \$7,878                    | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H   | 1.06%                 | \$1,334             | \$660             | \$50     | \$284     | \$0  | \$63    | \$919                               | \$122                      | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H   | 0.27%                 | \$336               | \$50              | \$27     | \$72      | \$0  | \$16    | \$231                               | \$31                       | \$319         | \$69                                      | \$80                                       |

Step 2-D. Annual utility costs will be distributed across each group of fish based upon their percentage of the hatchery program (step 1-E).

### Step 2-E: Apply Mass Marking/Coded-Wire Tagging Costs

Under state law, all Chinook, Coho, and steelhead intended for harvest are required to be mass marked. Mass marking involves clipping the adipose fin of the fish to provide anglers an easy way to identify hatchery fish. Actual application and support costs to mass mark (i.e.: adipose fin clip) and coded-wire tag specific groups of salmon and steelhead will be captured on the worksheets where applicable.

| FY2012 Actuals  |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
|---|-----------------------|---------------------|-------------------|----------|-----------|--|---------|-------------------------------------|----------------------------|---------------|---|--|
| <div style="text-align: center;">           Program or Facility Budget<br/> <b>\$223,767</b> </div> |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| B   | F                     | G                   | H                 | I        | J         | K  | L       | P                                   | Q                          | S             | T   |  |
| Species Planted or Transferred  | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs. Budget) | Fish Health (Hqrs. Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H   | 0.01%                 | \$9                 | \$2               | \$0      | \$2       | \$0  | \$0     | \$6                                 | \$1                        | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H   | 0.02%                 | \$29                | \$20              | \$40     | \$6       | \$0  | \$1     | \$20                                | \$3                        | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H   | 0.04%                 | \$44                | \$37              | \$20     | \$9       | \$0  | \$2     | \$30                                | \$4                        | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H   | 1.61%                 | \$2,029             | \$453             | \$215    | \$433     | \$0  | \$95    | \$1,397                             | \$186                      | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H   | 1.06%                 | \$1,336             | \$304             | \$215    | \$285     | \$0  | \$63    | \$920                               | \$122                      | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H   | 8.97%                 | \$11,332            | \$2,249           | \$977    | \$2,415   | \$0  | \$531   | \$7,802                             | \$1,038                    | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H   | 68.03%                | \$85,967            | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030 | \$59,190                            | \$7,878                    | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H   | 1.06%                 | \$1,334             | \$660             | \$50     | \$284     | \$0  | \$63    | \$919                               | \$122                      | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H   | 0.27%                 | \$336               | \$50              | \$27     | \$72      | \$0  | \$16    | \$231                               | \$31                       | \$319         | \$69                                      | \$80                                       |

Step 2-E. Actual application and support costs to mass mark (i.e.: adipose fin clip) and coded-wire tag specific groups of salmon and steelhead will be captured on the worksheets where applicable.

### Step 2-F: Apply Other Costs

Other operating costs (e.g. supplies and materials, permits, etc.) will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).



| FY2012 Actuals                 |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
|--------------------------------|-----------------------|---------------------|-------------------|----------|-----------|--|---------|-------------------------------------|----------------------------|---------------|---|--|
| Program or Facility Budget     |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| \$223,767                      |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| B                              | F                     | G                   | H                 | I        | J         | K  | L       | P                                   | Q                          | S             | T   |  |
| Species Planted or Transferrec | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs. Budget) | Fish Health (Hqrs. Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H              | 0.01%                 | \$9                 | \$2               | \$0      | \$2       | \$0  | \$0     | \$6                                 | \$1                        | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H              | 0.02%                 | \$29                | \$20              | \$40     | \$6       | \$0  | \$1     | \$0                                 | \$3                        | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H              | 0.04%                 | \$44                | \$37              | \$20     | \$9       | \$0  | \$2     | \$0                                 | \$4                        | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H              | 1.61%                 | \$2,029             | \$453             | \$215    | \$433     | \$0  | \$95    | \$1,397                             | \$186                      | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H              | 1.06%                 | \$1,336             | \$304             | \$215    | \$285     | \$0  | \$63    | \$20                                | \$122                      | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H              | 8.97%                 | \$11,332            | \$2,249           | \$977    | \$2,415   | \$0  | \$531   | \$7,802                             | \$1,038                    | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H              | 68.03%                | \$85,967            | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030 | \$9,190                             | \$7,878                    | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H              | 1.06%                 | \$1,334             | \$660             | \$50     | \$284     | \$0  | \$63    | \$919                               | \$122                      | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H              | 0.27%                 | \$336               | \$50              | \$27     | \$72      | \$0  | \$16    | \$231                               | \$31                       | \$319         | \$69                                      | \$80                                       |

Step 2-F. Other operating costs will be distributed across each group of fish based on their percentage of the hatchery program (1-E).

### Step 2-G: Apply Hatchery Maintenance Costs

Hatchery maintenance costs will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).

| FY2012 Actuals                 |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
|--------------------------------|-----------------------|---------------------|-------------------|----------|-----------|--|---------|-------------------------------------|----------------------------|---------------|---|--|
| Program or Facility Budget     |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| \$223,767                      |                       |                     |                   |          |           |  |         |                                     |                            |               |   |  |
| B                              | F                     | G                   | H                 | I        | J         | K  | L       | P                                   | Q                          | S             | T   |  |
| Species Planted or Transferrec | % of Hatchery Program | Salaries / Benefits | Actual Feed Costs | Trucking | Utilities | Fish Marking (funded at hatchery; i.e. sthd) | Other   | Hatchery Maintenance (Hqrs. Budget) | Fish Health (Hqrs. Budget) | Capitol Costs | Overhead / Admin for State Funds @ 18.48% | Overhead / Admin for DJ Trout Fed @ 23.51% |
| GT:NA.MOUN:2011:H              | 0.01%                 | \$9                 | \$2               | \$0      | \$2       | \$0  | \$0     | \$6                                 | \$1                        | \$8           | \$2                                       | \$2  |
| CT:WS.TWIN:2011:H              | 0.02%                 | \$29                | \$20              | \$40     | \$6       | \$0  | \$1     | \$0                                 | \$3                        | \$28          | \$8                                       | \$14                                       |
| RB:NA.MOUN:2011:H              | 0.04%                 | \$44                | \$37              | \$20     | \$9       | \$0  | \$2     | \$0                                 | \$4                        | \$42          | \$10                                      | \$13                                       |
| KO:NA.WHAL:2010:H              | 1.61%                 | \$2,029             | \$453             | \$215    | \$433     | \$0  | \$95    | \$1,397                             | \$186                      | \$1,927       | \$421                                     | \$489                                      |
| KO:NA.WHAL:2011:H              | 1.06%                 | \$1,336             | \$304             | \$215    | \$285     | \$0  | \$63    | \$920                               | \$122                      | \$1,269       | \$280                                     | \$335                                      |
| RB:NA.GOLD:2009:H              | 8.97%                 | \$11,332            | \$2,249           | \$977    | \$2,415   | \$0  | \$531   | \$7,802                             | \$1,038                    | \$10,762      | \$2,339                                   | \$2,690                                    |
| RB:NA.GOLD:2010:H              | 68.03%                | \$85,967            | \$19,399          | \$8,791  | \$18,321  | \$0  | \$4,030 | \$9,190                             | \$7,878                    | \$81,641      | \$17,805                                  | \$20,649                                   |
| RB:NA.GOLD:2011:H              | 1.06%                 | \$1,334             | \$660             | \$50     | \$284     | \$0  | \$63    | \$919                               | \$122                      | \$1,267       | \$272                                     | \$305                                      |
| RB:NA.GOLD:2011:H              | 0.27%                 | \$336               | \$50              | \$27     | \$72      | \$0  | \$16    | \$231                               | \$31                       | \$319         | \$69                                      | \$80                                       |

Step 2-G. Hatchery maintenance costs will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).

### Step 2-H: Apply Fish Health Costs

The WDFW Fish Health Unit maintains a fish health laboratory that processes samples taken from fish at all facilities operated by WDFW. Fish health costs will be distributed across each group of fish based on their percentage of the hatchery program (step 1-E).



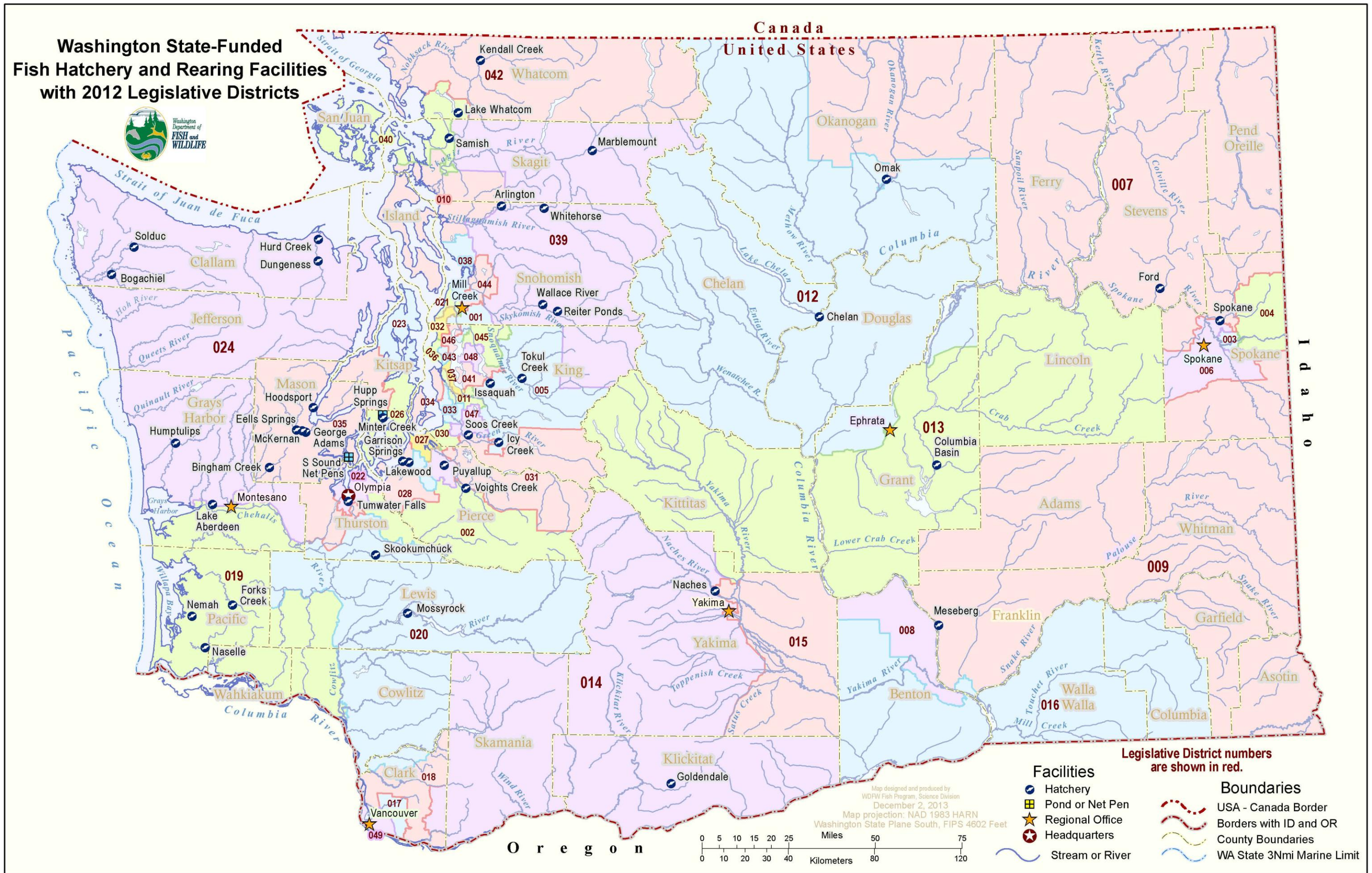


After the preliminary implementation of FishCAP as described above for Fiscal Year 2012, the model will be reviewed for improvements and will be modified or updated as needed. Once modified, the FishCAP will be applied by WDFW on an annual or biennial basis to provide the most up-to-date production and cost information for fish produced at hatcheries in the State of Washington. Information gathered from this tool will be an invaluable resource to hatchery staff, agency management, decision makers, and to Washington's anglers.

**APPENDIX A**



# Washington State-Funded Fish Hatchery and Rearing Facilities with 2012 Legislative Districts



### Facilities

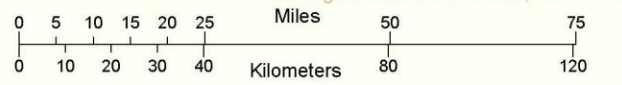
- Hatchery
- Pond or Net Pen
- Regional Office
- Headquarters
- Stream or River

### Legislative District numbers are shown in red.

### Boundaries

- USA - Canada Border
- Borders with ID and OR
- County Boundaries
- WA State 3Nmi Marine Limit

Map designed and produced by  
 WDFW Fish Program, Science Division  
 December 2, 2013  
 Map projection: NAD 1983 HARN  
 Washington State Plane South, FIPS 4602 Feet



O r e g o n

I d a h o