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February 24, 2011

MEMORANDUM

TO: Fish and Wildlife Committee members

FROM: Mark Fritsch, project implementation manager

SUBJECT: Step 1 review of the *Snake River Sockeye Captive Propagation*, Project 2007-402-00. *Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program.*

PROPOSED ACTION

- I. The staff recommends that the Fish and Wildlife Committee approve the *Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program* to proceed with Step 2 activities.
- II. Staff further recommends that the Fish and Wildlife Committee call for additional information from IDFG to address the six issues raised by the independent peer review for consideration during the Step 2 review

SIGNIFICANCE

On December 12, 2010, the Idaho Department of Fish and Game (IDFG) submitted to the Council as part of the Three-Step Review Process a master plan for the *Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program*, as part of Project 2007-402-00, *Snake River Sockeye Captive Propagation*.

The master plan proposes to implement the next phase in the Snake River Sockeye Captive Broodstock Program by constructing the Springfield Hatchery near the town of Springfield in Bingham County, Idaho. The master plan addresses the needs as directed in the 2008 Federal Columbia River Power System (FCRPS) Biological Opinion (*Idaho et al. 2008*) and the 2008 Memorandum of Agreement (MOA) between the State of Idaho and the FCRPS Action Agencies.

The next phase of the Snake River Sockeye Captive Broodstock Program is to construct the hatchery, which will expand the juvenile-fish production component of the program to produce between 500,000 and 1 million full-term smolts annually for release in the Upper Salmon River

Subbasin in the Sawtooth basin. This production is intended to build on the captive broodstock phase and respond to population re-colonization goals in Redfish, Pettit, and Alturas lakes.

BUDGETARY/ECONOMIC IMPACTS

Overview of Step 1 Project Costs

The program costs presented in the Step 1 Master Plan are consistent with Council's Three Step Review Process. It is important to note that these conceptual costs are a planning baseline from which to refine future costs, evaluate alternatives as the proposed project progresses through the preliminary (Step 2) and final (Step 3) design phases, and implementation. Future cost estimates for both operations and capital construction generally follow the principals for inflation and cost escalation described by the Independent Economic Analysis Board in their white paper on Project Cost Escalation Standards (IEAB document 2007-2). IDFG intends to continue to seek input and review by Bonneville, the Council and IDFG's planning team through the Step 2 and 3 processes.

Project costs provided in the Step 1 Master Plan were based on the proposed programs and conceptual designs. IDFG is proposing to construct new facilities at the Springfield, Idaho site. Cost estimates for facility planning and design, construction, acquisition of capital equipment, environmental compliance, operations and maintenance and research, monitoring, and evaluation are presented for each of the hatchery facilities. A summary of key project expenditures (see Attachment 1) and a summary of future costs projected from Fiscal Year 2010 through Fiscal Year 2020 (see Attachment 2) are provided in the Master Plan and at the end of this document.

Capital and expense funds for the conservation hatchery development including planning, operation and maintenance, acquisition, and construction totaling \$20,465,279¹ are reserved in MOA budgets between the State of Idaho and the FCRPS Action Agencies.

Key Expenditures by Program Area

The summary of key expenditures by step and program area (see Attachment 1) provides an approximate overview of future costs for planned programs as presented in the Step 1 Master Plan. The estimated one-time costs by program area are as follows:

- Planning & Design Step 1- \$298,405 (cost to date for the Step 1 Master Plan as submitted)
- Planning & Design Step 2 - \$500,000
 - Environmental Compliance Step 2 (Permitting, Environmental Assessment, Other) \$136,733
- Planning & Design Step 3 - \$400,000
- Construction - \$13,579,929
- Capital Equipment \$218,249²

¹ This is for Fiscal Year 2008 - 2017 at \$13,350,000 capital and \$7,215,279 expense funds.

² Reflects costs associated with various equipment for office, laboratory and water systems.

The total budget for the conceptual planning associated with the Master Plan is about \$298,405. This figure is an estimate that includes conceptual planning, engineering, and development of the Step 1 Master Plan.

The preliminary planning and design stage, intended to meet the Council's Step 2 requirements, is designed to identify any major difficulties or concerns with the program and facility designs. Step 2 design work should provide sufficient detail and specifics to ensure that the intent and scope of the Step 1 conceptual design work can be met and to refine the cost estimates further. Step 2 will include refinement of scientific information, environmental compliance, and ESA reviews. A placeholder of about \$500,000 has been identified for Step 2 preliminary planning, environmental compliance, site investigations and design. Initiation of this work is proposed in Fiscal Year 2011. This budget includes costs for drilling test wells, surveying and other investigative geotechnical work.

A placeholder of about \$400,000 has been identified for the Step 3 final planning and design stage. It is anticipated that this work will begin in Fiscal Year 2011. Refinement of the Step 3 budget will occur in Step 2 during development of the preliminary design.

The total estimated conceptual construction budget for the Springfield Hatchery as outlined in the master plan is \$13,579,929.³ The budget estimate used master planning guidance of +/- 35 to 50 percent and will be refined as part of the next submittals associated with Steps 2 and 3.

The operations and maintenance (O&M) budgets for the project from Fiscal Year 2007 through Fiscal Year 2010 for the ongoing phase of the program (i.e., captive broodstock phase) averaged \$1,588,000 (combined IDFG, SBT, NOAA and ODFW)⁴. The monitoring and evaluation (M&E) budgets for the program from Fiscal Year 2007 through Fiscal Year 2010 averaged \$961,000 (combined IDFG and SBT).

Future cost estimates for O&M at Springfield Hatchery is estimated to be about \$769,794 annually. Related M&E expenses are estimated to be \$323,019 annually. These estimates are in 2013 and 2114 dollars to reflect the anticipated construction and when these activities would be incurred, respectively. The Master Plan shows these costs escalated at 3 percent annually through 2020.

The estimated 10-year costs to operate the Springfield Hatchery from Fiscal Year 2010 through Fiscal Year 2020 are presented in Attachment 2. The estimated costs are allocated to the fiscal year in which the expense likely will occur. Costs for each program area are escalated to the year in which they are expected to occur. This estimated cost summary assumes planning and implementation of new facilities occur in 2012 through 2013. As previously noted, consistent with Step 1 of the Council's step process, cost estimates at this stage are conceptual. The IDFG will be refining these estimates during the Step 2 and Step 3 planning phases. The 10-year

³ This cost does not reflect anticipated needs of the NOAA Manchester Research Station and Burley Creek fish facilities at approximately \$350,000 to meet productions needs as outlined in the Master Plan and previous actions (also see Footnote #7).

⁴ All Snake River sockeye actions funded through the Program are addresses through Project #2007-402-00, *Snake River Sockeye Captive Propagation*.

estimated cost summary is designed to be a planning tool and will be updated as costs are refined.

BACKGROUND

The current run of sockeye into the Snake River is one of three remaining populations in the Columbia River Basin; the other two populations, Okanogan Lake sockeye salmon and Wenatchee Lake sockeye salmon, are located in tributaries of the upper Columbia River.

Historically, five Sawtooth Basin lakes (Redfish, Alturas, Pettit, Stanley, and Yellowbelly) in the Upper Salmon River subbasin supported sockeye salmon. Historically, it was estimated that as many as 40,000 sockeye returned to the Upper Salmon River subbasin in some years. However, by 1962, sockeye salmon were no longer returning to Stanley, Pettit, and Yellowbelly lakes. By 1990, Redfish Lake was the only historical spawning, and nursery lake still supporting a remnant anadromous run.

In response to this precipitous decline of Snake River sockeye salmon a petition was submitted in 1990 by the Shoshone-Bannock Tribes and in 1991 the sockeye were listed as endangered under the Endangered Species Act (ESA). In that same year, the IDFG initiated a captive broodstock program to maintain and prevent the extinction this species.

The conservation efforts for Idaho sockeye focus on Redfish, Alturas, and Pettit lakes in the Sawtooth Basin located within the Sawtooth National Recreation Area. The lakes are glacial-carved and range in elevation from 6,512 to 7,014 feet, receive runoff from the Sawtooth and Smoky mountains, are considered ultra-oligotrophic, and lie in the headwaters area of the Salmon River watershed. The Salmon River flows into the Snake River, which in turn flows into the Columbia River, which drains into the Pacific Ocean. The Sawtooth valley is approximately 900 river miles from the mouth of the Columbia River. Redfish Lake is the largest of the three lakes, Pettit Lake is the smallest, and Alturas Lake is intermediate in surface area. Additionally, Redfish Lake supports the species' southernmost population within its recognized range.

Snake River sockeye rearing and spawning habitat in the Sawtooth Basin is considered to be in excellent condition as it is in an area that has experienced limited human impacts. Ongoing effects are related to recreational activities such as hiking, river rafting, fishing and hunting. A number of homes have been built around Redfish, Alturas and Pettit lakes and area parks, campgrounds and boat launches are popular destinations.

At the time of the initial listing in 1991, the greatest in-basin habitat problem faced by the ESU was probably the lack of access to any of the lakes but Redfish. The fish barriers on Alturas and Pettit Lake creeks (an irrigation intake and a concrete rough fish barrier, respectively) were modified to facilitate passage of anadromous sockeye into these historical habitats in the early 1990s.

Although access to the spawning and rearing lakes is now considered functional, large portions of the migration corridor in the mainstem Salmon River may periodically reach high temperatures in July and August and negatively impact the ability of adult sockeye salmon to

reach spawning locations. To evaluate this uncertainty, the USFWS and NOAA's Northwest Fisheries Science Center have proposed a multi-year study to evaluate the migration survival of adult Snake River sockeye salmon from Lower Granite Dam to the Sawtooth Basin. Information generated by this project is expected to help inform decision making about when to consider trapping and transporting adult sockeye salmon to natal spawning areas. In addition, a new project is currently being reviewed that would characterize migration and survival of juvenile Snake River sockeye salmon between the upper Salmon River and Lower Granite Dam⁵. This project will provide information to managers on the relative success of juvenile release strategies employed by the sockeye salmon captive broodstock program.

In addition, the Salmon River Subbasin Plan identifies a list of problem statements, biological objectives, and strategies. The strategies and monitoring activities outlined in the Master Plan for the Springfield Hatchery sockeye program would contribute to meeting a number of the biological objectives identified in the Salmon River Subbasin Plan.

IDFG has submitted a proposed draft Snake River Sockeye Salmon Recovery Strategy to NOAA Fisheries for consideration in recovery planning. This strategy recommends incorporating hatchery facilities, captive broodstock technology, genetic support, and a comprehensive monitoring and evaluation plan to maintain the current population and rebuild the number of naturally produced anadromous sockeye in the basin.

1. History and objectives of the Snake River Sockeye Captive Broodstock Program

The IDFG initiated the captive broodstock and research efforts in 1991 and received Fish and Wildlife Program funding that same year (Project 1991-072-00). Initially, to guard against catastrophic loss at any one brood facility, the captive broodstock component of the program was duplicated at facilities in Idaho (IDFG Eagle Fish Hatchery) and Washington (NOAA Manchester Research Station and Burley Creek fish hatcheries) to provide eyed eggs to meet project conservation needs. The IDFG Sawtooth Hatchery and the ODFW Oxbow Fish Hatchery (near Cascade Locks, Oregon) currently provide 100 percent of the smolt production rearing space for this program. To date, broodstocks have been established from wild anadromous adults, wild residual sockeye salmon, hatchery-produced anadromous adults, and full-term hatchery-produced adults.

Current production of Snake River sockeye salmon is restricted, due to capacity, to broodstock maintenance at facilities in Idaho (IDFG Eagle hatchery) and Washington (NOAA facilities); insufficient incubation and rearing space continues to limit production of a necessary full-term smolt program. This limitation has prevented the current program from growing beyond the conservation phase (Table 1).

⁵ Project #2010-076-00, *Characterizing migration and survival for juvenile Snake River sockeye salmon between the upper Salmon River basin and Lower Granite Dam.*

Table 1. Annual distribution of SR sockeye eggs under *current* operations.

Facility (Strategy)	Current Number of Eyed Eggs
IDFG Eagle (Replacement Brood)	1,000
NOAA Facilities (Replacement Brood)	500
NOAA Facilities (Adult Release)	500
Basin Lakes (Egg-Boxes)	50,000
IDFG Sawtooth (Pre-Smolt Releases)	80,000
ODFW Oxbow (Smolt Releases)	100,000
IDFG (Smolt Releases)	120,000
Total	352,000

Coordination of recovery efforts is carried out under the guidance of the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC), a team of technical experts representing the IDFG, NOAA Fisheries, and the Shoshone-Bannock Tribes. Further coordination takes place at the federal level through the ESA Section 10 permitting process. The Bonneville Power Administration provides coordination for the SBSTOC process.

Since 1995, the Shoshone Bannock Tribes have been supplementing nitrogen and phosphorus, and controlling non-native kokanee salmon competitors (i.e., for food resources) in the Sawtooth Basin lakes. Based on annual water quality criteria and biological sampling, this management strategy appears to be increasing the carrying capacities of the lakes for rearing juvenile Snake River sockeye salmon as part of the recovery effort.

In 1999, the first hatchery-produced anadromous sockeye salmon returned to the program. In that year, seven age-3 adults (six males and one female) were trapped at weirs in the Sawtooth subbasin. In 2000, the program experienced its first significant return of hatchery-produced adults when 257 sockeye salmon returned to collection facilities on Redfish Lake Creek and the upper Salmon River at the IDFG Sawtooth Fish Hatchery. Between 2001 and 2010, over 2,929 hatchery-produced sockeye salmon adults returned to the Sawtooth Basin (Table 2).

Table 2. Hatchery and natural sockeye returns to Redfish Lake, 1999-2010.

Return Year	Total Return	Natural Return⁶	Hatchery Return	Observed (Not Trapped)	Naturals Kept for Broodstock	Hatchery Kept for Broodstock
1999	7	0	7	0	0	7
2000	257	10	233	14	4	39
2001	26	4	19	3	0	9
2002	22	6	9	7	0	0
2003	3	0	2	1	0	2
2004	27	4	20	3	4	20

⁶ Adult returns from natural production from Redfish, Alturas and Pettit lakes.

Return Year	Total Return	Natural Return⁶	Hatchery Return	Observed (Not Trapped)	Naturals Kept for Broodstock	Hatchery Kept for Broodstock
2005	6	2	4	0	2	4
2006	3	1	2	0	1	2
2007	4	3	1	0	3	1
2008	650	142	457	51	25	48
2009	833	85	732	16	63	84
2010	1,355	178	1,144	33	84	13

The existing captive broodstock program has stabilized the population and prevented an almost certain extinction of this species in Idaho. The adoption of state-of-the-art artificial propagation techniques for the conservation of endangered stocks allowed the program to produce large numbers of spawnable fish in the first generation and rapidly increase the abundance of offspring available for restoration releases in the Sawtooth Valley lakes.

II. Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program

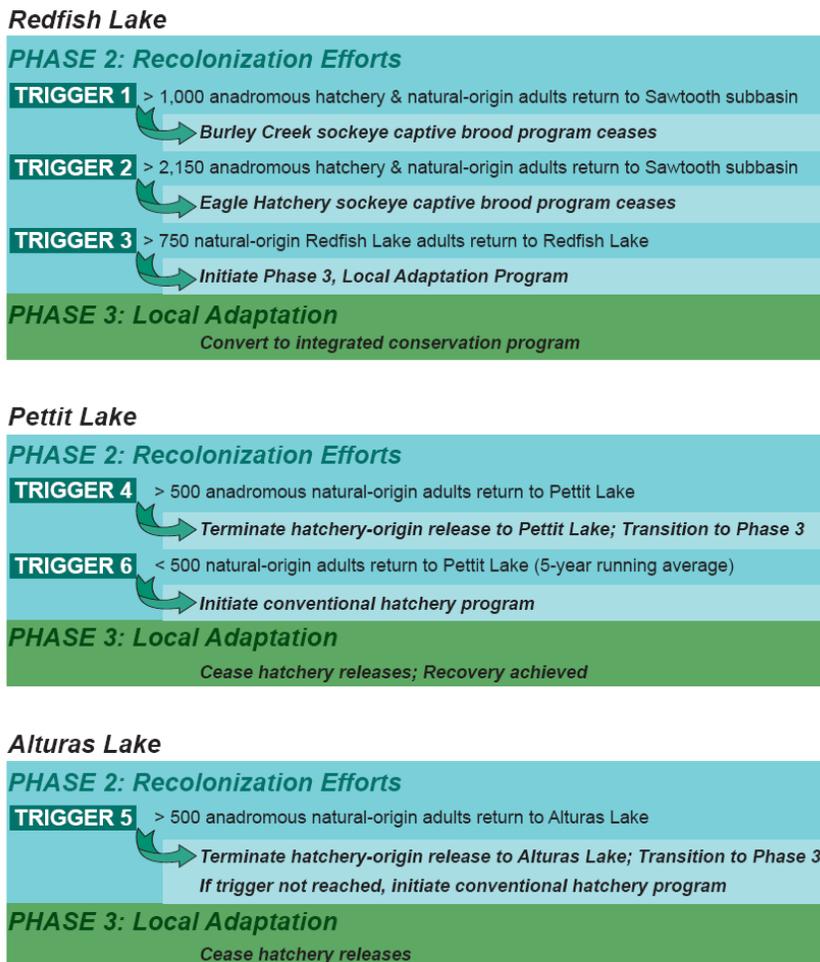
To date, the Snake River sockeye program's goal has been to conserve and slow the loss of the genetic diversity and prevent extinction. In fact, program genetic protocols have maintained over 93 percent of the original genetic diversity of the founding populations. As outlined above, the program is supported by a variety of facilities in three states. Adult collection facilities are in the upper Salmon River watershed; incubation and rearing facilities are at Eagle and Sawtooth hatcheries in Idaho, at the Manchester Research Station and Burley Creek Hatchery in Washington, and at Oxbow Hatchery in Oregon.

The Springfield Hatchery Master Plan addresses the next phase in the Snake River Sockeye Captive Brood Program through construction of a new sockeye smolt production hatchery and implementation of associated program management goals. The first phase of the program, the captive broodstock phase, has achieved sufficient success that the IDFG is proposing to initiate the next phase of population re-colonization. To address this next phase in recovery, increased production capacity is required to accomplish re-colonization of Sawtooth Basin lakes. The proposed Springfield Hatchery will not only centralize the production of sockeye, but also provide the needed flexibility to meet the capacity needs of the recovery effort.

The biological goal described in the Master Plan is to increase the number of adults spawning naturally in the basin. The survival boost afforded by sockeye smolt releases from the proposed Springfield Hatchery is expected to produce adults in excess to the broodstock needs that would be used for this purpose. Currently, NOAA-Fisheries' interim delisting criteria for this population is 2,000 naturally produced sockeye over at least two consecutive generations. To meet NOAA Fisheries' recovery criteria, 1,000 of these fish must be produced in Redfish Lake and 500 each in two additional lakes. In the long term, the IDFG goal is to re-establish a natural population (i.e., local adaptation phase) that can be de-listed and even provide treaty and sport harvest opportunities.

The phased approach designed by IDFG is based on key criteria and escapement triggers that are built on the success of the current captive broodstock phase. The next phase outlined in the Master Plan is the local adaptation phase based on the production potential of the three key nursery lakes. The rationale behind this approach will ensure that the critical life history diversity and past efforts are respected (Figure 1).

Figure 1. Program Management Triggers.



In the re-colonization phase, the existing captive broodstock program will be transitioned to conventional hatchery production that uses anadromous adults as broodstock. Sufficient numbers of anadromous adults have been returning to begin developing this conventional hatchery program. The primary objectives of re-colonization will be for gene banking and generating anadromous adults to re-colonize available habitat. Adequate and consistent returns of anadromous adults will allow managers to eventually phase out the use of Redfish Lake captive broodstock (starting with the NOAA activities). Following success in Redfish Lake, re-colonization efforts will expand into Pettit and Alturas lakes.

Sockeye production will increase up to 1 million smolts (at 10-20 fish per pound). All fish released from the program will be marked by removal of the adipose fin. A subset of the release will be tagged with a coded-wire tag (250,000) and PIT tag (50,000). These tags will allow

managers to calculate harvest rates in fisheries and determine adult and juvenile survival rates through the FCRPS.

The 1 million sockeye smolts required for the re-colonization phase will be produced at the proposed Springfield Hatchery. Although this site is many miles from the Sawtooth Basin, it offers a number of advantages, such as having a high quality and available source of groundwater. In addition, hatchery effluent will not discharge to waters that support anadromous fish production, preventing potential viral and bacterial pathogens from hatchery operations entering streams that support ESA-listed populations. The preferred collection point for re-colonization-phase broodstock will initially be the Redfish Lake weir. Collecting fish here would prevent the program from collecting adults bound for Pettit and Alturas lakes. The re-colonization phase may also include the collection of anadromous adults at Lower Granite Dam; this strategy is currently being evaluated as one possible means to increase the total number of potential spawners returning to the Sawtooth Basin.

Facilities

The proposed sequencing of the Snake River sockeye program from a captive broodstock program to the re-colonization phase and finally to the local adaptation phase in available habitats will require increasing the available rearing space for smolt production. The proposed method for this transition is to produce significant numbers of adults in excess to broodstock needs. The proposed smolt program at the Springfield Hatchery would be capable of meeting the 500,000 to 1 million smolt goal identified in the FCRPS Biological Opinion and in the Idaho Fish Accord.

Program expansion at the Eagle Fish Hatchery was completed (2009) and modifications are currently underway at NOAA facilities to accommodate the increased number of captive spawners needed to source a Springfield smolt production program⁷. Captive broodstock rearing would be increased to approximately 1,000 – 1,200 adults annually to provide the estimated 1,300,000 eyed eggs needed to source both Springfield and existing in-basin release strategies.

As proposed in the *Springfield Sockeye Hatchery Master Plan*, new facilities required to accomplish this include a new hatchery building with egg incubation stacks, 18 indoor early rearing troughs, 24 outdoor raceways, and all supporting facilities including three new residences for operators. Key attributes of the Springfield site are sufficient high quality groundwater, full isolation from other salmonids, adequate space to develop sockeye-appropriate facilities, and an already permitted land use type⁸.

⁷ On June 14, 2006 and August 14, 2007 the Council approved within-year requests for Eagle Fish Hatchery and ODFW Oxbow Hatchery modifications to meet the expectations of the FCRPS BiOp and the UPA for the Redfish Lake sockeye salmon. NOAA modifications were addressed as part of the process that consolidated the projects and addressed the UPA needs in 2008.

⁸ In addition, IDFG proposes to adopt a design/build approach following completion of the Step 2 (progress review/preliminary phase) review. IDFG would like to competitively solicit a construction firm to work in partnership with the design engineers and fish culturists to develop the Step 3 final design.

As the number of returning anadromous adults increase over time in the re-colonization phase operations, captive broodstock production would decrease as spawning protocols begin to incorporate a greater number of anadromous spawners (ultimately transition to a “conventional” hatchery program using anadromous adults as broodstock). As this transition occurs, the existing brood facilities would be transitioned from NOAA facilities first, then the captive broodstocking efforts at Eagle Fish Hatchery; all captive broodstocking activities could potentially be eliminated when the five-year running average of hatchery- and natural-origin anadromous adults to the Sawtooth Basin exceeds 2,150 adults.

III. Major Project Review (The Three-Step Process)

On December 12, 2010 the Council received a Master Plan from Idaho Department of Fish and Game intended to initiate the review process (i.e., Major Project Review) associated with a proposed hatchery master plan. The Master Plan (Step 1- conceptual phase) was titled *Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program* and is a component of Project 2007-402-00, *Snake River Sockeye Captive Propagation*.

On December 22, 2010 the Master Plan and the associated support documents were submitted to the Independent Scientific Review Panel (ISRP) for review, and on February 7, 2011 the ISRP provided its review summary and recommendation (ISRP Document 2011-2). The ISRP found that the master plan met scientific review criteria “qualified.”

The ISRP found the Master Plan to be well written and addressed a challenging situation in the recovery of these endangered species. Though the ISRP found the master plan met review requirements for proceeding to Step 2 (progress review/preliminary phase) the panel requested responses to six qualifying issues during the Step 2 review:

1. Clarify the plan for using anadromous hatchery, natural, and captive-reared adults for escapement and production at Springfield Hatchery during the transition from the proposed conservation phase to the re-colonization phase.
2. Provide a comparison of the program with release goals and explain the justification for the preferred alternative in terms of achieving the recovery and restoration goals of the anticipated Snake River sockeye recovery plan.
3. Discuss the characteristics (“quality”) of the smolts to be produced and what will constitute a smolt with survival capability in terms of ecological fit?
4. Additional detail and understanding is needed to justify a plan for natural escapement when hatchery and natural adults are in the range of 800 to 1,200 fish.
5. Develop an experimental management plan, with sufficient monitoring, to evaluate lake carrying capacity. This should be incorporated into the trigger points and decision framework for determining smolt release numbers, natural escapement targets, and PNI.

6. The ISRP recommends that other species not be reared in the facility, in order to restrict opportunities for disease transmission.

ANALYSIS

The IDFG provided a master plan that adequately defended the need for actions to transition the Snake River sockeye salmon program from the current conservation phase to a program that is intended to initiate the recovery of this endangered species. The Council has contributed, since 1992, to a program that has prevented a species from going extinct. This has not been an easy task and the IDFG, NOAA and the SBSTOC need to be recognized for this effort. The opportunity now exists to initiate the next phase and the submitted master plan has provided the necessary detail so that the ISRP has recommended that it move forward to the progress review/preliminary phase (Step 2) step.

The proposed new Springfield facilities will include a hatchery building with egg incubation stacks, 18 indoor early-rearing troughs, 24 outdoor raceways, and all supporting facilities including three new residences for operators. The Springfield site is desirable because of the quantity and quality of groundwater, full isolation from other anadromous salmonids, and because it provides an opportunity to use an existing permitted land use type.

The ISRP recognizes the need to proceed toward establishing a self-sustaining hatchery population as outlined and reviewed in the master plan, and supports this program moving to Step 2 activities (e.g., preliminary design and environmental review). This recommendation from the ISRP is made with the understanding that the IDFG will address the six issues raised by the ISRP in the Step 2 submittal.

Based on the ISRP review, the Council staff recommends that the Fish and Wildlife Committee approve the *Springfield Sockeye Hatchery Master Plan for the Snake River Sockeye Program* to proceed with Step 2 activities. This recommendation is subject to the requirement that the IDFG addresses the six issues raised by the ISRP as part of the Step 2 submittal.

Attachment 1. Summary of Key Expenditures by Program Area assuming that work proceeds as outlined in the Master Plan.

Program Area	Estimated Cost	Occurrence	Level of Certainty
Planning & Design Step 1*	\$298,405	One Time	Contract to develop Step 1 Master Plan
Planning & Design Step 2**	\$500,000	One Time	Placeholder (less than concept)
Planning & Design Step 3***	\$400,000	One Time	Placeholder (less than concept)
Construction	\$13,579,928	One Time	Concept (+/- 35% to 50%) (escalated to 2012 dollars)
Capital Equipment	\$218,249	One Time	Concept (+/- 35% to 50%) (escalated to 2013 dollars)
Environmental Compliance Step 2 (Permitting, EA, Other)	\$136,733	One Time	Concept (+/- 35% to 50%) Completed during Step 2 (2011 dollars)
Land Purchases, Leases & Easements****	\$4,750,000	One Time	Expenditure complete
Annual Operations & Maintenance / Springfield Hatchery Programs	\$769,795	Annual	Concept (+/- 35%) (escalated to 2013 dollars)
Monitoring & Evaluation*****	\$286,998	Annual	Concept (+/- 35%) (escalated to 2014 dollars)

Notes and Assumptions:

* Shows the actual contract figure for completion of a Step 1 Master Plan

** Shows an estimated placeholder cost estimate based on the conceptual construction cost

*** Shows an estimated placeholder cost estimate based on the conceptual construction cost

**** Land cost was \$1.96 million; remainder went to a trust fund totaling \$2.79 million with IDFG to offset the loss of the Springfield site as a resident (trout) fish production facility for Idaho

***** Monitoring and Evaluation includes annual tagging costs of over ~\$125,000

Attachment 2: Ten year summary of future costs - FY 2010 to FY 2020.

Program Area	Fiscal Year										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
A. Land Purchases, Leases and Easements											
A.1. Land Purchases, Leases and Easements	\$4,750,000										
B. Planning and Design											
B.1. Step 1: Concept Engineering, Planning	\$298,405										
B.2. Step 2: Prelim Engineering, Planning, Environmental Compliance		\$500,000									
B.3. Step 3: Final Engineering, Planning			\$400,000								
C. Construction											
C.1. Estimated Construction Costs			\$6,789,964	\$6,789,964							
D. Capital Equipment											
D.1. Capital Equipment				\$218,249							
E. Environmental Compliance											
E.1. Environmental Compliance		\$125,000	\$11,733								
F. Operations and Maintenance											
F.1. Springfield Hatchery Programs				\$769,795	\$792,889	\$816,676	\$841,176	\$866,411	\$892,404	\$919,176	\$946,751
G. Monitoring and Evaluation											
G.1. Monitoring and Evaluation Program					\$323,019	\$332,709	\$342,690	\$352,971	\$363,560	\$374,467	\$385,701
Total Estimated Capital Costs	\$5,048,405	\$625,000	\$7,201,696	\$7,008,212	\$0						
Total Estimated O&M Costs	\$0	\$0	\$0	\$769,795	\$1,115,908	\$1,149,385	\$1,183,866	\$1,219,382	\$1,255,964	\$1,293,643	\$1,332,452
Total Estimated Costs	\$5,048,405	\$625,000	\$7,201,696	\$7,778,008	\$1,115,908	\$1,149,385	\$1,183,866	\$1,219,382	\$1,255,964	\$1,293,643	\$1,332,452

Notes and Assumptions:

- A.1. Land Purchases, Leases and Easements (land purchase is complete at a cost of \$1.96 million; see Section 8.2)
- B.1. Step 1 Planning (based on current expenditures to complete planning)
- B.2. Step 2 Planning based on percentage of estimated construction costs (escalated to FY 2011 dollars)
- B.3. Step 3 Planning based on percentage of estimated construction costs (escalated to FY 2012 dollars)
- C.1. Estimated Construction Costs assume 50% occurs in FY 2012 and 50% in FY 2013 (escalated from FY 2010 to mid FY 2012 dollars)
- D.1. Capital Equipment, estimated lump sum for equipment items not shown in construction estimate (escalated from FY 2010 to FY 2013 dollars)
- E.1. Environmental Compliance Costs (assumes 90% of expenses occur in FY 2011 and 10% of expenses in FY 2012) (escalated from FY 2010 to FY 2011 dollars)
- F.1. O&M Cost Springfield Hatchery Program (costs escalated at 3% annually from 2010 dollars) assumes start-up in FY 2013
- G.1. Monitoring and evaluation program (costs escalated at 3% annually from 2010 dollars) assumes start-up in FY 2014

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