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MEMORANDUM

TO: Council Members

FROM: Peter Paquet, Manager Wildlife & Resident Fish

SUBJECT: Hatchery Scientific Review Group (HSRG) Alternatives

DISSCUSSION

At the February, 2010 Fish and Wildlife Committee meeting, Council directed staff to develop alternatives for addressing the recommendations of the Hatchery Scientific Review Group (HSRG).

The HSRG presented its final report to Congress (<http://hatcheryreform.us>) in March 2009. The report offers a foundation for hatchery reform, to help salmon and steelhead hatcheries in the Columbia River meet conservation and sustainable harvest goals. In order to address these twin goals, the HSRG determined that both harvest and hatchery reforms are needed

The HSRG report recommends principles for hatchery management based on: 1) setting clear goals; 2) scientific defensibility; and 3) monitoring, evaluation and adaptive management. By applying these principles, the HSRG demonstrates how the Columbia Basin hatchery system can be managed consistent with conservation goals, while still providing sustainable economic benefits from salmon harvest.

The HSRG concluded that in order for hatcheries to contribute to harvest on a sustainable basis, they must be operated in a manner that is compatible with conservation goals for salmon and steelhead resources at both the local and regional levels. These conclusions imply that hatcheries must be managed consistent with basic biological principles and viewed as integral components of the affected ecosystems.

The most central aspect of the HSRG approach involves genetic management, where hatchery broodstocks need to be managed as either genetically segregated from or integrated with natural populations. To guide this genetic management, the HSRG has developed standards that

must be met—or preferably exceeded—regarding the level of hatchery influence on natural populations under either type of hatchery program. The HSRG has also provided methods for meeting those standards (see Attachment 1).

The 2009 Fish and Wildlife Program contains several references to the HSRG recommendations (see Attachment 1), including language that states that the Council will consider adoption of the HSRG recommendations when completed.

The purpose of this briefing is to explore several alternatives for addressing this issue. The subject is important at this time since the region is about to enter into several processes which will focus on reviewing hatchery programs and facilities and it will be necessary to determine how and to what extent the HSRG recommendations will be considered for use in these processes. Staff will brief Council members on several alternatives including:

1. Initiating an amendment process to consider the adoption of the HSRG.
2. Initiating an Independent Scientific Advisory Board review of the HSRG “Report to Congress on Columbia River Basin Hatchery Reform”.
3. Ask the Independent Scientific Review Panel (ISRP) to take into account the recommendations of the HSRG when reviewing hatchery proposals.
4. Through the ISRP review process seek the assistance of the HSRG for the review of artificial production projects.

To provide a framework for the discussion staff has prepared a summary of relevant background material and options (Attachment 1).

Attachment 1

Options for Consideration of HSRG Recommendations

I. Background

A. Current Fish & Wildlife Program Language on Artificial Production

1. General

a) A critical issue facing the region is determining how artificial production activities can play a role in providing significant harvest opportunities throughout the basin while also protecting and rebuilding naturally spawning populations.

b) Artificial production must be used in a manner consistent with ecologically based scientific principles for fish recovery.

c) Fish raised in hatcheries for harvest should have a minimal impact on naturally spawning fish.

d) Fish reared for the purpose of supplementing the recovery of a wild population should clearly benefit that population.

2. Standards

a) The purpose and use of artificial production must be considered in the context of the ecological environment in which it will be used.

b) Artificial production must be implemented within an experimental, adaptive-management design that includes an aggressive program to evaluate the risks and benefits and addresses scientific uncertainties.

c) Hatcheries must be operated in a manner that recognizes that they exist within ecological systems whose behavior is constrained by larger-scale basin, regional, and global factors.

d) A diversity of life history types and species needs to be maintained in order to sustain a system of populations in the face of environmental variation.

e) Naturally selected populations should provide the model for successful artificially reared populations, in regard to population structure, mating protocol, behavior, growth, morphology, nutrient cycling, and other biological characteristics.

f) The entities authorizing or managing an artificial production facility or program should explicitly identify whether the artificial production product is intended for the purpose of augmentation, mitigation, restoration, preservation, research, or some combination of those purposes for each population.

g) Decisions on the use of the artificial production tool need to be made in the context of deciding on fish and wildlife goals, objectives, and strategies at the subbasin and province levels.

h) Appropriate risk management needs to be maintained in using the tool of artificial production.

i) Production for harvest is a legitimate management objective of artificial production, but to minimize adverse impacts on natural populations associated with harvest management of artificially produced populations, harvest rates and practices must be dictated by the requirements to sustain naturally spawning populations.

3. References to HSRG

a) The science on this issue is far from settled.

The Council will consider standards for maintaining both integrated and segregated hatchery programs, and standards for the proportion of wild fish returning to spawn that are necessary to maintain the genetic integrity of local populations, based on the recommendations from the Hatchery Scientific Review Group due in early 2009.

b) Congress initiated the Columbia River Hatchery Reform Project in 2006. Part of that project is a Hatchery Scientific Review Group (HSRG) established to review hatchery and wild stocks in the basin and determine ways to improve management practices to meet conservation goals while providing for sustainable fisheries.

c) The review process encompasses all anadromous hatchery programs in the Columbia River Basin.

d) In 2009, the HSRG is scheduled to make recommendations for changes in hatchery and harvest practices consistent with regional conservation and harvest goals.

e) The HSRG's recommendations will include standards for maintaining both integrated and segregated hatchery programs, including standards to indicate the proportion of wild fish returning to spawn that are necessary to maintain the genetic integrity of local populations.

f) The Council will consider adoption of the HSRG recommendations into the Program when completed.

g) The Council will consider, among other things, the U.S. v. Oregon Management Plan, the Pacific Salmon Treaty, tribal trust and treaty rights, and recovery plans in deciding whether to incorporate HSRG recommendations into the Program.

II. Scope of HSRG Recommendations

A. General Recommendations

1. Overreaching Conclusions

- a) · Manage hatchery broodstocks to achieve proper genetic integration with, or segregation from, natural populations;*
- b) · Promote local adaptation of natural and hatchery populations;*
- c) · Minimize adverse ecological interactions between hatchery- and natural-origin fish;*
- d) · Minimize effects of hatchery facilities on the ecosystem in which they operate; and*
- e) · Maximize the survival of hatchery fish.*

2. Principles

- a) Develop Clear, Specific, Quantifiable Harvest and Conservation Goals for Natural and Hatchery Populations within an “All H” Context*
- b) Design and Operate Hatchery Programs in a Scientifically Defensible Manner*
- c) Monitor, Evaluate and Adaptively Manage Hatchery Programs*

B. Specific Recommendations

1. Systemwide

- a) Develop Clear, Specific, Quantifiable Harvest and Conservation Goals for Natural and Hatchery Populations within an “All H” Context*

Recommendation 1: Express conservation goals in terms of a population’s biological significance (Primary, Contributing, Stabilizing) and viability (natural-origin spawning abundance and productivity)

Recommendation 2: Express harvest goals in terms of a population’s contribution to specific fisheries

Recommendation 3: Ensure goals for individual populations are coordinated and compatible with those for other populations in the Columbia River Basin

- b) Design and Operate Hatchery Programs in a Scientifically Defensible Manner*

Recommendation 4: Identify the purpose of the hatchery program (i.e., conservation, harvest or both)

Recommendation 5: Explicitly state the scientific assumptions under which a program contributes to meeting the stated goals

Recommendation 6: Select an integrated or segregated broodstock management strategy based on population goals and hatchery program purpose

Recommendation 7: Size hatchery programs based on population goals and as part of an “all H” strategy

Recommendation 8: Manage harvest, hatchery broodstock, and natural spawning escapement to meet HSRG standards appropriate to the affected natural population’s designation

HSRG criteria for hatchery influence on Primary populations

HSRG criteria for hatchery influence on Contributing populations

HSRG criteria for hatchery influence on Stabilizing populations

Recommendation 9: Manage the harvest to achieve full use of hatchery-origin fish

Recommendation 10: Ensure all hatchery programs have self-sustaining broodstocks

Recommendation 11: Coordinate hatchery programs within the Columbia River Basin ecosystem to account for the effects of all hatchery programs on each natural population and each hatchery program on all natural populations

Recommendation 12: Assure that facilities are constructed and operated in compliance with environmental laws and regulations

Recommendation 13: Maximize survival of hatchery fish consistent with conservation goals

c) Monitor, Evaluate and Adaptively Manage Hatchery Programs

Recommendation 14: Regularly review goals and performance of hatchery programs in a transparent, regional, “all-H” context

Recommendation 15: Place a priority on research that develops solutions to potential problems and quantifies factors affecting relative reproductive success and long-term fitness of populations influenced by hatcheries

Recommendation 16: Design and operate hatcheries and hatchery programs with the flexibility to respond to changing conditions

Recommendation 17: Discontinue or modify programs if risks outweigh the benefits

2. Population/Hatchery Solutions

a) 178 hatchery programs

b) 351 salmon and steelhead populations

C. Recommendations to NPCC

1. ...the NPCC is encouraged to integrate the HSRG framework and the 17 system-wide recommendations into its three-step hatchery planning process, along with previous independent scientific guidance on hatchery programs from the Independent Science Advisory Board and Independent Scientific Review Panel.

III. Options

A. Amend the Fish & Wildlife Program to Incorporate HSRG Recommendations

1. Pros

a) Most robust

Provides the clearest direction to the region and carries the most legal weight.

b) Other opportunities to amend the Program in conjunction with subbasin management plan updates

2. Cons

a) Timing

Minimum 90 days

Will be out of sync with Categorical Review/Hatchery Review Processes

B. Call for ISAB Review of HSRG Recommendations

1. Pros

a) Provides independent review and recommendations on scientific issues

b) Could inform a future amendment process

2. Cons

a) Timing

Could take up to 6 months

Not available for use in Categorical Review process

C. Recommend to the ISRP that they take the HSRG Recommendations into account in their review process

1. Pros

- a) Does not require formal amendment to the Program*
- b) Recommendation would be consistent with existing Program language*

2. Cons

- a) Extent of detail in Council recommendation to ISRP*

D. Ask HSRG to Assist in ISRP Review

1. Pros

- a) Precedent for using peer review groups*

2. Cons

- a) Potential conflicts for some HSRG members*