

# **Integrated Hatchery Operations Team**

## Implementation Plan for Integrating Regional Hatchery Policies

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**BONNEVILLE**  
POWER ADMINISTRATION

# Implementation Plan for Integrating Regional Hatchery Policies

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## Background

In developing its Strategy for Salmon, the Northwest Power Planning Council (Council) called for the creation of an Integrated Hatchery Operations Team (IHOT). This team, comprised of representatives from fisheries co-managers and cooperating entities, was directed to develop regional policies for operating anadromous salmonid hatcheries in the Columbia Basin. IHOT was also directed to develop a plan for implementing these regional hatchery policies..

The hatchery policies and procedures developed by IHOT are detailed in the related publication entitled Policies and Procedures for *Columbia Basin Anadromous Salmonid* Hatcheries. That manual outlines regional policies for hatchery coordination, hatchery performance standards, fish health, ecological interactions, and genetics. It also lists a series of actions that are required to support these new policies.

The regional policies and actions emphasize a general consensus in policy intent among the fisheries co-managers. Policies in common between co-managers will help ensure consistent basinwide hatchery procedures, while allowing site-specific approaches to maintain and improve operations. Upon Council approval of the implementation plan, fisheries co-managers may request that the Council approve funding to implement specific parts of the policies.

The consensus adoption of hatchery operating policies only provides guidance for the technical operation of hatcheries. It is not intended to include setting specific production priorities. These priorities are developed by the fisheries co-managers to meet specific fish management objectives, such as mixed-stock or terminal-area fisheries, supplementation of weak stocks, or in-river recreational or net fisheries. Production priorities may also be established to meet

rebuilding schedules as called for in the Council's Strategy for Salmon or Endangered Species Act recovery plans. The production decisions must be provided by fishery co-managers through a comprehensive plan that addresses both natural and hatchery production. These plans are developed through negotiations, primarily under the Columbia River Fish Management Plan's Production Advisory Committee (PAC).

In summary, this implementation plan has been developed to ensure that hatchery operations will (1) be coordinated throughout the Columbia River Basin, and (2) provide the best possible tool for meeting regional hatchery production responsibilities.

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## Plan Scope and Contents

This implementation plan provides specific guidance for initiating actions needed to achieve policy goals. However, the plan does not identify actions needed to bring specific hatchery operations into compliance with the regional policies. These, needs will be documented as part of the hatchery audit process.

This plan begins with **Policy Statements and Goals**, which describes the regional hatchery policies developed by IHOT. The next two sections, **Implementation Scenario** and **Required Actions**, present specific actions required to implement the policies and the recommendations for sequencing these actions. The final section of this report presents information regarding IHOT **Structure and Operational Procedures**.

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## Policy Statements and Goals

The policies and procedures manual outlines a series of policies designed to improve hatchery practices and make them consistent throughout the Columbia Basin. These policies are organized according to the following categories as identified by the Northwest Power Planning Council:

- Regional hatchery coordination
- Hatchery performance standards
- Fish health
- Ecological interactions
- Genetics

Within each of these policy areas, IHOT established a policy statement and goals. The policy statement reflects an overall policy direction that IHOT has agreed to pursue in operating the region's anadromous salmonid hatcheries. The goals identify specific operational measures designed to support the overall policy.

The policy statements and goals (from the policies and procedures manual) are presented in the sections that follow. These goals form the basis of the policy implementation plan. The steps outlined in this plan will facilitate implementation of the policies.

### REGIONAL HATCHERY COORDINATION POLICY

Basinwide resource needs can be most effectively addressed when hatchery operations are coordinated throughout the region. This coordination can be within an individual agency or between several agencies and co-managers. Coordination can also be used at different levels to meet various organizational needs. For example, staffing or equipment needs can be coordinated to meet a common goal. Coordination can also occur at the programmatic or administrative levels to achieve broader regional goals.

#### Policy Statement

It shall be the policy of the management entities of the anadromous salmonid resources in the Columbia Basin to coordinate the operation of fish hatchery programs to meet basinwide resource management needs.

## **Goals**

1. Coordinate the operation of salmonid hatchery programs to meet basinwide resource management goals and objectives.
2. Develop administrative agreements for improved sharing of facilities, manpower, equipment and/or supplies to meet basinwide management program goals and objectives.
3. Foster open and frequent communication between managing entities to coordinate and jointly resolve technical issues relating to artificial production.
4. Operate hatchery programs in compliance with regionally adopted hatchery performance standards, fish health, ecological interactions, and genetics policies.

## **HATCHERY PERFORMANCE STANDARDS POLICY**

Producing fish in a hatchery is not just a matter of science, it is also somewhat of an art. As an art, fish culture is influenced by specific hatchery operational requirements that directly affect the hatchery's production. Some of the major factors affecting fish production include:

- Biological requirements of the fish stocks
- Water quality parameters that influence hatchery production
- Types of rearing containers utilized and their 'water supply and flow patterns
- Fish nutrition requirements and feeding regimes
- Activities associated with all aspects of the fish culture operation from adult collection through release
- Release strategies and liberation units used for fish transfer and release

Making the transition from the art of fish culture to scientifically applied knowledge is the key to improving the quality of hatchery-produced fish. As used here, quality is defined as increasing the fishery yield and escapement to spawning areas, while also maintaining desired genetic traits and reducing incidence of disease.

Quality is improved by recognizing the origin and status of individual fish stocks, and the conditions that influence these stocks. It should be recognized that fishery contributions from hatcheries are influenced by production goals established through a variety of fish management, political, and administrative processes. The politician, administrator, fish biologist and hatchery manager must understand the production potential and constraints of the hatchery rearing facilities. They must also understand the overriding influences (e.g., ocean conditions and in-river environmental alterations) that control production capacity.

The technology needed to produce quality hatchery fish already exists. New scientific information can be used to adjust hatchery operations to lessen or eliminate the impact of hatchery fish on wild stocks. Existing hatchery operation practices should be the baseline for identifying concerns, progress, and future requirements to successfully provide efficient artificial production.

### **Policy Statement**

It shall be the policy of the management entities of the anadromous salmonid resources in the Columbia Basin to ensure that all hatchery practices are based on regional standards.

### **Goals**

1. All fish produced and released are consistent with management goals.
2. Physical facilities and equipment are operated consistent with standards to maximize fish quality.
3. Ensure compliance with hatchery coordination, fish health, ecological interactions, and genetics policies.
4. Ensure the use of an audit framework to evaluate the compliance of hatchery operations with regional standards.

## **FISH HEALTH POLICY**

Fishery resources must be protected from the adverse effects of disease. Fish populations, whether cultured or free-swimming, are exposed to bacteria and viruses. Under certain conditions, these pathogens can cause disease outbreaks that lead to fish mortality. This can ultimately result in a significant impact on the fishery resource. Consequently, it is important that managers of a watershed, river, or hatchery facility be constantly aware of potential disease problems.

Disease occurrences are influenced by a combination of three factors: host, pathogen, and the environment. All three of these factors must be taken into account when addressing fish diseases. Serious fish losses can occur when host and pathogen are present in an environment that favors the disease. Removing or modifying one of the factors will likely reduce or prevent the disease. Therefore, the effective management of diseases is closely linked with the successful management of fish populations.

There are both passive and active measures that can be taken to manage fish diseases. Restricting the transfer of any infected animals is one example of passive disease management. Active disease management might include improving environmental conditions or the use of therapeutants.

### **Policy Statement**

It shall be the policy of the management entities of the anadromous salmonid resources in the Columbia Basin to protect those resources by restricting the importation, dissemination, and amplification of pathogens and diseases known to adversely affect fish.

### **Goals**

1. Strive to produce healthy fish for release or transfer.
2. Ensure that all fish produced are under a specific fish health management program.
3. Monitor and evaluate the health of wild, natural, and cultured fish populations.
4. Foster open and frequent communications among managing entities to jointly resolve fish health related issues.

## ECOLOGICAL INTERACTIONS POLICY

Hatchery fish can interact with wild fish through several different ecological processes. One example would be the competition between hatchery fish and wild fish for food or space. This type of competition is generally influenced by the carrying capacity of available habitat.

Potential ecological interactions can occur in two ways. One involves the indirect effects of having more fish in an existing aquatic ecosystem. The second involves the direct effects that hatchery fish have on other fish when they all utilize the same habitats.

For indirect effects, studies have demonstrated that the presence of many salmonid species in a stream can produce more biomass than a single species; however, the total biomass of each individual species will be less than if it was reared alone. This increase in biomass is a result of habitat partitioning. Habitat partitioning is created because each species may have different habitat requirements at different stages of its life cycle. However, for the above to be true (decreased biomass of individual species in a multi-species assemblage), the interacting species must share scarce resources for at least part of their life cycles. If the species co-evolve, the fish probably possess some mechanisms to compensate for these interactions.

In contrast to interactions that might increase as natural populations rebuild, stocking hatchery fish may have direct effects on other fish populations. These effects may be reduced, but not eliminated, through a variety of fish rearing and release strategies. These strategies include (1) adjusting the number and/or size of fish to be released, (2) adjusting the time and/or location of release, (3) acclimating fish to release waters, and (4) releasing fish at the appropriate life-cycle stage and time of year when they will migrate quickly downstream.

The regional policy presented below addresses ecological interactions resulting from the release of hatchery fish. The policy does not address the broader issue of ecological interactions resulting from increasing the natural abundance of anadromous species. Strategies to resolve this issue will be addressed when the long-range management plans are developed and adopted.

### **Policy Statement**

It shall be the policy of the management entities of the anadromous salmonid resources in the Columbia Basin that artificial propagation programs will be designed and implemented to minimize ecological interactions that adversely affect the productivity of aquatic ecosystems.

### **Goals**

1. Ensure that all fishes produced and released are under a specific management program.
2. Consider the ecological effects attributable to the specific hatchery products following release.
3. Consider how specific release strategies affect aquatic ecosystems.
4. Monitor and evaluate implementation of ecological interactions guidelines and ecological effects of artificially propagated fish on wild, natural, and cultured fish populations.
5. Foster open and frequent communications among managing entities to jointly resolve related issues.

## **GENETICS POLICY**

Maintaining genetic diversity in hatchery populations is important for the conservation of existing genetic traits that are needed for long-term sustainability. Rearing and releasing strategies designed to minimize adverse ecological interactions can also affect genetic diversity. These strategies are addressed in the Ecological Interactions section above.

### **Policy Statement**

It shall be the policy of the management entities of the anadromous salmonid resources in the Columbia Basin to operate artificial propagation programs that maintain adequate genetic variation and fitness in populations and protect the biological diversity of wild, natural, and cultured anadromous salmonid populations.

## Goals

1. All fish produced and released meet identified management objectives for specific artificial production programs and follow genetic guidelines.
2. Monitor and evaluate implementation of genetic guidelines and genetic effects of artificially propagated fish on wild, natural, and cultured populations.
3. Foster open and frequent communications among managing entities to jointly resolve related issues,

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## Implementation Scenario

IHOT has identified performance standards for each of the policies presented previously. These standards are the accepted procedures and guidelines that will be used to operate hatchery facilities. IHOT has also developed performance measures to identify whether the standards are being met. These actions are needed to achieve the goals for each policy and ensure compliance.

As noted earlier, this implementation plan addresses only those actions necessary to implement the basinwide aspects of hatchery operations. It does not identify actions needed to bring the individual hatchery operations into compliance with the policies. It is important that the actions proceed in proper sequence, and that priority actions not be delayed or postponed. A phased-in approach, when properly pursued, should:

1. Identify and initiate actions for coordinated planning.
2. Allow for monitoring compliance with hatchery performance standards.
3. Allow for revision of existing policies.
4. Encourage creative site-specific approaches for improving operations.
5. Describe progress made towards meeting the performance standards, and recommend future improvement and needed research.

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## Required Actions

### STATE, FEDERAL AND TRIBAL POLICY REVIEW

Regional policies may not be covered in existing state, federal, and tribal policies. Where existing policies are less restrictive or non-existent, new state, federal, and tribal policies must be developed and adopted.

1. Develop staff resources for adopting new agency/tribal policies.
2. Conduct legal review of existing statutory policies.

### HATCHERY AUDITS

The suggested implementation of hatchery audits is based on IHOT's policy for hatchery standards. This policy includes performance standards and relies upon a hatchery audit process to determine if hatcheries are conforming to established standards,. As used here, hatcheries include only those permanent facilities that have been in operation for at least one year. As called for in the Council's Strategy for Salmon, the following are IHOT's recommendations for implementation of the independent hatchery audits:

1. Bonneville Power Administration will fund ongoing independent audits of hatchery performance in consultation with IHOT. Representatives of IHOT will participate in the selection of the audit team.
2. Within 90 days of completing an on-site audit, a formal report of the audit findings will be provided to both IHOT and the hatchery's operating and funding agency.
3. After consulting with the operating and funding entities, and **reviewing the audit results, IHOT will submit recommendations to these entities** and other relevant parties. Recommended actions may include improving facilities and equipment, changing rearing programs, or other measures deemed appropriate. Within one year of the audit, the operating agency must submit a report to IHOT describing the actions taken to resolve the deficiencies identified in the audit.

## COORDINATION

Coordination efforts are designed to (1) help implement the regional hatchery policies, (2) coordinate operations to minimize impacts on naturally spawning populations, and (3) foster sharing of facilities to increase their effectiveness. As part of these efforts, IHOT will:

1. Serve as the forum to foster open and frequent communications among managing entities so they can coordinate and jointly resolve technical issues relating to hatchery operations. All management entities will need to participate in these efforts so that hatchery operations are integrated into a basinwide system of planned production. Coordination with legal or specialized committees (e.g., PAC, Pacific Northwest Fish Health Protection Committee, etc.) will be through the respective chairpersons.
2. Develop administrative agreements that improve sharing of manpower, equipment, and supplies to enhance efficiency in meeting basinwide management goals.
3. Use the Coordinated Information System to exchange hatchery operations data.
4. Support activities to exchange hatchery information and technology among fish hatcheries in the Columbia Basin.
5. Develop a procedure for disseminating updated hatchery operation plans.

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# IHOT Structure and Operational Procedures

## ORGANIZATION

The Integrated Hatchery Operations Team is comprised of one representative from each of the co-managers and cooperating entities listed below. Representatives will have the necessary technical qualifications to effectively evaluate activities described in the regional policies.

### Fisheries Co-Managers

Confederated Tribes of the Colville Reservation  
Confederated Tribes of the Umatilla Indian Reservation  
Confederated Tribes of the Warm Springs Reservation of Oregon  
Confederated Tribes and Bands of the Yakama Indian Nation  
Idaho Department of Fish and Game  
National Marine Fisheries Service  
Nez Perce Tribe of Idaho  
Oregon Department of Fish and Wildlife  
Shoshone-Bannock Tribes of Fort Hall  
U.S. Fish and Wildlife Service  
Washington Department of Fish and Wildlife

### Cooperating Entities

Bonneville Power Administration  
Mid-Columbia Public Utility Districts  
U.S. Army Corps of Engineers  
Northwest Power Planning Council  
Pacific Northwest Utilities Conference Committee  
Columbia River Inter-Tribal Fish Commission  
Columbia Basin Fish and Wildlife Authority

IHOT will install officers to help coordinate IHOT activities. Individuals from the co-manager membership will be elected to these offices by a simple majority vote by co-manager and cooperating entity members. The IHOT officers are described below.

Chairperson: The initial chairperson will be elected to a one-year term by the IHOT members. In succeeding years, the vice-chairperson will be installed as chairperson at the end of the January meeting.

Vice-Chairperson: The vice-chairperson will be elected by the IHOT membership during the January meeting. This person will serve as the chairperson the following year.

Facilitator: The facilitator will be provided by the Columbia Basin Fish and Wildlife Authority for an indefinite term of office. This facilitator will provide administrative support and will not be an official IHOT member.

## **IHOT DECISION-MAKING PROCESS**

1. Except for officer elections, consensus will be used in making all IHOT decisions. As used here, consensus is defined as having the approval of all co-manager representatives present at any IHOT meeting that has been duly scheduled and has a majority of voting members present. Each co-manager will have a single vote in the decision-making process.
2. Any issue raised by either a fisheries co-manager or cooperating entity representative, that cannot be resolved by the IHOT, will be provided to the chairperson in written form with a majority and minority report filed. IHOT will then seek to resolve the issue through further deliberations.
3. The IHOT facilitator will prepare and distribute meeting agendas and minutes, and all reports under the chairperson's direction.
4. IHOT will meet on the second Wednesday of the month, or at the direction of the chairperson when requested by an IHOT member.
5. An annual report detailing IHOT activities will be provided to the Northwest Power Planning Council each January as specified in the Council's Strategy for Salmon (as amended).