



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, Washington 98115

**NATIONAL MARINE FISHERIES SERVICE (NMFS)**  
**SECTION 10(a)(1)(A) PERMIT FOR TAKES OF**  
**ENDANGERED/THREATENED SPECIES**

**Permit Number:** 18927  
**Permit Type:** Scientific Research/Enhancement  
**Program Name:** Winthrop National Fish Hatchery Spring Chinook Salmon  
**Expiration Date:** December 31, 2027

**Permit Holder**

United States Fish and Wildlife Service  
12790 Fish Hatchery Road  
Leavenworth, WA 98826

**Contact**

David Irving  
Leavenworth Complex Manager  
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**Authorization**

The United States Fish and Wildlife Service (USFWS) is hereby authorized to take endangered Upper Columbia River (UCR) spring Chinook salmon (*Oncorhynchus tshawytscha*) for scientific research/enhancement purposes subject to the provisions of Section 10(a)(1)(A) of the Endangered Species Act (ESA) of 1973 (16 U.S.C.1531 *et seq.*), National Marine Fisheries Service (NMFS) regulations governing ESA-listed species permits (50 CFR Part 217-222), and the conditions hereinafter set forth.

**Permit Description**

This permit authorizes the USFWS to take ESA-listed adult and juvenile, naturally produced and artificially propagated endangered upper Columbia River spring Chinook salmon and threatened steelhead in the course of operating the spring Chinook salmon hatchery program at Winthrop National Fish Hatchery (WNFH), including associated research, monitoring, and evaluation (RM&E) activities. The effects of issuance of this permit on ESA-listed species were analyzed in (NMFS 2016 ).

**Description of Proposed Hatchery Program**



UCR spring Chinook salmon are at risk of extinction; they are currently listed as *endangered* under the ESA. The Permit Holder proposes to use the WNFH program as partial mitigation for the construction of Grand Coulee Dam, and to enhance or conserve the Methow spring Chinook salmon population by acting as a safety net for the Methow Hatchery Spring Chinook Salmon conservation program. The operation of the WNFH program requires consideration of the tradeoff between short-term extinction risk posed by abundance-based and demographic factors that exist in the absence of a supportive breeding hatchery program versus risks a program like this poses to population productivity and diversity. In NMFS' opinion, a hatchery program that causes direct and/or incidental take of listed species must provide a clear benefit to conservation and survival of the species to justify the take incurred, not only during short-term production activities, but also take related to interactions between hatchery- and natural-origin fish after release.

The program will collect hatchery-origin fish at Methow Hatchery and WNFH to produce 400,000 smolts to be released in the Methow Subbasin and 200,000 eyed eggs for transfer to the Chief Joseph Hatchery for release into the Okanogan Subbasin as the source for the 10(j) non-essential experimental that was the subject of a previous consultation (NMFS 2014). Methow Composite adults from the Methow Hatchery are collected at WNFH and MFH to genetically link the two programs. After transfer from the Methow Hatchery, all spawning, incubation, rearing and release of fish for the WNFH program will take place at WNFH. All hatchery fish will be marked externally. WNFH-origin fish will be removed as necessary at Methow Hatchery and WNFH to achieve proportion of hatchery-origin spawner (pHOS) levels according to gene flow management targets. The program is described in detail in a hatchery and genetic management plan and supplemental documents (HGMP; Gale 2012). Any enhancement activities not specifically dealt with in this permit will be as described in the HGMP (Gale 2009; USFWS 2012). Program activities authorized under this permit include:

- The collection, holding, handling, and sampling of the adults needed for broodstock
- The artificial spawning of broodstock at WNFH
- The incubation and propagation from the fertilized egg through the fingerling, pre-smolt, or smolt life stage at WNFH
- The release of juvenile spring Chinook salmon into the Methow Subbasin
- The removal of hatchery-origin spring Chinook salmon, before natural spawning, at Methow and Winthrop hatcheries
- The monitoring and evaluation of the hatchery program in the natural environment to assess effects on listed natural-origin salmon and steelhead

### **Take Description and Levels**

This permit authorizes the take of ESA-listed species as outlined below. Permit Holder means any employee, contractor, or agent of the Permit Holder. Take will include one or more of the following: harassment, capture, handling, collection, transport, holding, lethal spawning, biological sampling, tagging, and live release of marked spring Chinook in excess of broodstock

needs, and unmarked spring Chinook salmon, and of natural-origin steelhead, if encountered. General and specific conditions and limits on direct take are enumerated below. Take exceeding the specified levels must be reported as described in section C of this permit. Annual takes listed below are subject to the annual authorization process (see Section C – Permit Reporting and Re-authorization Requirements) during the valid permit period.

### A. Direct Take Limits

The basis for authorizing the direct take of a threatened or endangered species is that the take will result in a net benefit to the species. Pursuant to Section 10(a)(1)(A) of the ESA, “[t]he Secretary may permit, under such terms and conditions as he shall prescribe, any act otherwise prohibited by section 9 for scientific purposes or to enhance the propagation or survival of the affected species.”

Two types of direct take would occur under this permit: (1) take of Methow River spring Chinook salmon associated with broodstock collection, removal of adults for gene flow management, and juvenile rearing, and (2) take of Methow River spring Chinook salmon associated with RM&E activities (Table 1).

**Table 1. Permissible quantifiable direct take of listed Methow spring Chinook salmon for enhancement and scientific purposes for the WNFH program. HOR = hatchery-origin return. NMFS must be notified within two days if take is exceeded.**

Type of take	Amount of Take			
	Harass		Mortality	
	Adult	Juvenile	Adult	Juvenile
<b>Enhancement activities</b>				
Broodstock collection	Up to 100% of return	Not applicable	400 HOR <sup>1,2</sup>	Not applicable
Adult removal for gene flow management	Up to 100% of return		Up to 100% of HOR	
Juvenile rearing	Not applicable	100% of fish in culture	Not applicable	20% of eggs taken <sup>3</sup>
<b>RM&amp;E activities (cumulative for permits 18925, 18927 and 20533)</b>				
Juvenile emigration monitoring	Not applicable	20% hatchery and natural	Not applicable	2% hatchery and natural
Spawning ground surveys	100% of return	Not applicable	< 5	Not applicable

<sup>1</sup> Includes a 10 percent overage for BKD management

<sup>2</sup> This number includes the broodstock needed to supply eggs for the 10(j) spring Chinook salmon population transferred to Chief Joseph Hatchery for release into the Okanogan subbasin

<sup>3</sup> Includes a 10 percent overage for disease management and non-viability (i.e., 660,000)

### B. Special Conditions

#### *Annual Planning*

1. Adjustments to the program may be made, provided they are made within the constraints of this permit and subject to the provisions of Section 10(a)(1)(A) of the Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1543), NMFS regulations governing ESA-listed species permits (50 CFR Parts 222-226), and the conditions hereinafter set forth. Such program adjustments do not require modification of the permit provided that any adjustment will not result in a level of direct or incidental take in excess of that otherwise allowed by this permit and by the incidental take statement (ITS).
2. Although this program is not part of any Upper Columbia Habitat Conservation Plan (HCP), it is closely linked to the Methow Hatchery program, which is part of the Wells HCP (Douglas County Public Utility District 2002). In addition, USFWS personnel are members of the Wells HCP Hatchery Committee (HC), which oversees implementation of HCP hatchery programs. NMFS views the HC as a valuable source of expert opinion on matters, and encourages vetting proposed program modifications through the HC to expedite approval.

### ***General Handling of ESA-listed Fish***

3. The Permit Holder shall apply measures to minimize harm to ESA-listed fish. These measures include, but are not limited to: limits on the duration (hourly, daily, weekly) of trapping; limits on holding time before release; and allowance for free passage through trapping sites when those sites are not actively operated.
4. Should NMFS determine that a procedure provided for under this permit is no longer acceptable, the Permit Holder will be notified by NMFS and must immediately cease such activity until NMFS promptly identifies and approves an acceptable substitute procedure.
5. Each ESA-listed fish handled for the purpose of obtaining biological information must be anesthetized. Anesthetized fish must be allowed to recover (e.g., in a recovery tank) before being released. Fish that are assessed without handling must remain in water, but do not need to be anesthetized.
6. During sampling and processing, ESA-listed fish must be kept in water to the maximum extent possible. Adequate circulation and replenishment of water in holding units is required. When using methods that capture a mix of species, ESA-listed fish must be processed first. The transfer of ESA-listed fish must be conducted using equipment that adequately holds water during transfer.
7. ESA-listed fish must not be handled when water temperature exceeds 21°C (69.8°F) at the capture site. Trap operation shall cease until either temperature drops below the threshold, or pending further consultation with NMFS to determine if continued trap operation poses substantial risk to ESA-listed species. Under these conditions, ESA-listed fish may only be identified and counted.

8. Visual observation protocols must be used instead of intrusive sampling methods whenever possible. This is especially appropriate when merely ascertaining the presence of anadromous fish.

### ***Broodstock Collection***

9. Up to 100 percent of returning Methow River adult spring Chinook salmon may be captured, handled, transported, and/or released at trapping sites to collect broodstock and remove WNFH hatchery-origin spring Chinook for pHOS management.
10. Broodstock will consist of 100 percent hatchery-origin fish, but will maximize the number of Methow Hatchery origin fish before using WNFH fish, with a target of  $\geq 75$  percent of the WNFH broodstock. In a low return year, WNFH origin fish may be used to supplement broodstock.
11. No natural-origin Methow River adult spring Chinook salmon may be retained for broodstock. Any natural-origin adults encountered will be transferred to the Methow hatchery program for broodstock use or released. Natural-origin fish intended for broodstock may be spawned at WNFH and gametes transferred to the Methow Hatchery.
12. Annually, 110 percent of the broodstock requirement may be retained to provide for Bacterial Kidney Disease (BKD) management. However, the Permit Holder must be in compliance with all other broodstock collection limits and requirements. BKD prevalence shall be reduced, to the extent practicable, by implementing the following management actions:
  - a. Hatchery-origin eggs/progeny with ELISA titers of  $OD \geq 0.12$  will be culled.
  - b. At the first signs of BKD infection, juvenile spring Chinook salmon will be treated in accordance with recommendations from USFWS fish health specialists, and consistent with the Investigational New Animal Drug (INAD) permit.

### ***Gene Flow Management***

13. Hatchery-origin adults will be removed at the Methow Hatchery and/or WNFH with the intent to achieve an annual partial pHOS (calculated as  $HOS_{WNFH}/(HOS_{PUD} + HOS_{WNFH} + NOS)$ ) according to Table 2 below based on natural run size.

**Table 2. Target partial pHOS for WNFH based on natural run size.**

Natural Run	WNFH pHOS
0-899	0.2
900-1499	0.15
> 1500	0.1

14. NMFS recognizes that, due to the lack of control structures in the Methow subbasin, removal of hatchery-origin adults is challenging, and thus the pHOS target may be difficult to achieve initially while removal options are explored further. NMFS also recognizes that there may be a substantial disparity in spawning success of hatchery-origin fish in different areas. Therefore:
  - a. To facilitate meeting gene flow targets, hatchery ladders may need to be operated full-time during a large portion of the run to remove hatchery-origin fish.
  - b. NMFS expects that the pHOS goal may not be met initially while operators are experimenting with removal options, but does expect aggressive attempts to substantially decrease pHOS from existing levels.
  - c. NMFS is open to scientifically defensible calculations of effective subbasin-wide pHOS based on relative effectiveness of hatchery-origin spawners.
15. Hatchery-origin spring Chinook salmon from outside the Methow Subbasin that are encountered incidentally at any of the fish collection sites in the Methow Subbasin shall not be returned to waters of the Methow Subbasin.
16. In the event that the target(s) are not met five years after implementation of this permit, the Permit Holder will discuss with NMFS the remaining challenges and potential solutions for achieving gene flow targets.
17. NMFS expects that the contribution of WNFH to the spring Chinook salmon population in the Entiat Subbasin will remain under five percent, averaged over five years beginning in 2016.

### ***Fish Culture***

18. NMFS recognizes the need for management flexibility. Therefore, changes in fish culture consistent with best management practices, conforming to the intent of the program and having no substantial effects on the survival of any ESA-listed species, will be permitted upon request.
19. Annually, up to 20 percent of the eggs collected (i.e., 120,000) may be unintentionally killed (e.g., disease epizootics) or intentionally killed for assessment purposes (e.g, fish health, precocial maturation).

### ***Juvenile Releases***

20. Annually, the Permit Holder shall limit releases of WNFH spring Chinook salmon to less than 110 percent of the overall production goal (400,000). The 10 percent overage is intended to account for variances in pre-spawn survival, fecundity, and within-hatchery survival. Consecutive years of overproduction ( $\geq 110$  percent of 400,000) shall trigger an adjustment in the parameters used in the calculation of broodstock targets to reduce over-collection of broodstock.

21. Hatchery release strategies will be managed adaptively to improve homing fidelity of adult returns to the release site, minimize precocity rates of hatchery-origin fish, and minimize ecological interactions between hatchery- and natural-origin juveniles.
22. The Permit Holder will force release hatchery-origin smolts at approximately 15-17 fish per pound in April. If a large proportion of juveniles residualize, the Permit Holder will discuss alternatives with NMFS for juvenile spring Chinook salmon releases.
23. In the event of an emergency, such as flooding, water loss to raceways, epizootic outbreak, or vandalism that necessitates early release of ESA-listed spring Chinook salmon to prevent catastrophic mortality, any such release shall be reported within 48 hours to NMFS (see Section C for contact information).
24. All WNFH spring Chinook are externally marked with an adipose fin clip and have an internal coded-wire tag.

### ***Facility Operations***

25. The Permit Holder shall ensure that water intakes into artificial propagation facilities are properly screened in compliance with NMFS' 1995 screening criteria and as per the 1996 addendum to those criteria (NMFS 1996) or, in the case of repair or reconstruction, subsequent updates to those criteria (NMFS 2011).
26. The Permit Holder shall inspect and monitor the water intake structure screens at their hatchery facilities to determine if ESA-listed salmon and steelhead are being harmed or being drawn into the facility; the results of this monitoring shall be included in annual reports.
27. Water withdrawals shall not exceed levels permitted by the Water Use Permits issued to each of the facilities.
28. The Permit Holder shall implement fish health policies and guidelines (Pacific Northwest Fish Health Protection Committee (PNFHPC) 1989; USFWS 2004), or subsequent updates, to minimize the risk of fish pathogen amplification and transfer, and to ensure that hatchery fish would be released in good health.

### ***Research, Monitoring, and Evaluation***

29. Any activities or methodologies associated with RM&E including, but not limited to: PIT tagging, smolt trapping, spawning ground surveys, and redd surveys must be done according to the general guidelines for handling listed fish detailed above and within the direct take limits defined in Table 1 and the ITS.
30. NMFS strongly encourages the Permit Holder to coordinate RM&E with the Methow Hatchery program to avoid duplication of effort and data, and minimize take of ESA-listed species.

### C. Permit Reporting and Re-authorization Requirements

NMFS contact for all reports and modifications:

Charlene Hurst: [charlene.n.hurst@noaa.gov](mailto:charlene.n.hurst@noaa.gov)

Anadromous Production and Inland Fisheries Branch

Sustainable Fisheries Division

National Marine Fisheries Service, West Coast Region

1201 NE Lloyd Blvd, Suite 1100

Portland, Oregon 97232

Phone: (503) 230-5409

Fax: (503) 872-2737

1. If the authorized level of take is exceeded, the Permit Holder must notify the above contact as soon as possible, but no later than two days after the authorized level of take is exceeded. The Permit Holder must then submit a written report to the above contact describing the circumstances of the unauthorized take within two weeks of take exceedance. Pending review of these circumstances, NMFS may suspend or amend the permit.
2. Permit Holder shall update and provide to NMFS by December 15<sup>th</sup> of each year projected hatchery releases.
3. Permit Holder shall update and provide to NMFS by April 15<sup>th</sup> of each year a copy of the broodstock plan for the coming year. NMFS will evaluate the benefits and risks to ESA-listed species from the broodstock plan and will provide approval within 10 business days.
4. At minimum, the following issues should be addressed in annual reports submitted to NMFS:

#### *Hatchery Environment Monitoring Reporting*

- Number and composition of WNFH broodstock, and dates of collection
- The numbers, dates, average size at release, coefficient of variation and tag/mark information of released fish
- Survival rates of all life stages
- Precocial maturation rate
- Disease occurrence
- Any additional monitoring and evaluation activities occurring at the hatchery
- Any problems that may have arisen during hatchery activities
- A statement as to whether or not the activities had any unforeseen effects on ESA-listed fish
- Summary of measures taken to achieve pHOS target and any necessary improvements

*Natural Environment Monitoring Reporting*

- The number of returning WNFH program hatchery and natural-origin adults and age structure
  - Number of WNFH program fish removed at facilities
  - Distribution (by river kilometer and tributary) of WNFH program hatchery- and natural-origin spawners
  - WNFH program partial pHOS
  - WNFH program smolt-to-adult survival rate (pre- and post-harvest/gene flow management)
  - The contribution of fish from the WNFH program into other populations
  - Post release out of subbasin migration timing of juvenile WNFH program fish
  - Mean length, coefficient of variation, number, and age structure of natural-origin juveniles
  - Injuries or mortalities of listed species that result from monitoring activities
  - Overall subbasin PNI (provided by WDFW)<sup>1</sup>
5. Unless otherwise noted in the terms and conditions of this permit, the reports shall be submitted by November 1<sup>st</sup> of the year following release (i.e., brood year 2014, release year 2016, report due November 2017) to NMFS.
  6. The Permit Holder must provide plans for changes in sampling locations or enhancement/research protocols and obtain concurrence from NMFS before implementation of such changes.

**D. General Conditions**

1. The Permit Holder, in implementing the hatchery program authorized by this permit, has accepted the terms and conditions of this permit and must ensure compliance by itself and its agents with the provisions of this permit, the applicable regulations, and the ESA.
2. The Permit Holder is responsible for the actions of any individual operating under the authority of this permit. Such actions include operation of adult traps and weirs for broodstock collection and capturing, handling, holding, transporting, releasing, maintaining, and caring for any ESA-listed species authorized by this permit.
3. The Permit Holder and their agent must possess a copy of this permit when conducting the activities for which a take of ESA-listed species or other exception to ESA prohibitions is authorized.
4. The Permit Holder may not transfer or assign this permit without NMFS' approval to any other person(s), as defined in Section 3(12) of the ESA. This permit ceases to be in force if transferred or assigned to any other person without prior authorization from NMFS.

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<sup>1</sup> Based on the three-population model developed by Busack et al. 2015, and on a five-year arithmetic mean.

5. The Permit Holder must obtain any other Federal, state, and local permits/authorizations necessary for conducting the activities provided for in this permit.
6. The Permit Holder must coordinate with other co-managers and/or researchers to minimize duplication and/or adverse cumulative effects as a result of the Permit Holder's activities.
7. The Permit Holder and/or their agent must allow, upon advance notice, any authorized NMFS employee(s) or any other person(s) designated by NMFS to accompany field personnel during the activities provided for in this permit. The Permit Holder must allow such person(s) to inspect the records and facilities of the Permit Holder and their agent if such records and facilities pertain to ESA-listed species covered by this permit or NMFS' responsibilities under the ESA.
8. Violation of any of the terms and conditions of this permit will subject the Permit Holder, and/or any individual who is operating under the authority of this permit, to penalties as provided for in the ESA.
9. The Permit Holder and their agent are responsible for maintaining the biological samples collected from ESA-listed species as long as they are useful for research purposes. The Permit Holder may not transfer biological samples to anyone not listed in the application without obtaining prior written approval from NMFS.
10. NMFS may amend the provisions of this permit after reasonable notice to the Permit Holder.
11. 50 CFR Section 222.23(d)(8) allows NMFS to charge a reasonable fee to cover the costs of issuing permits under the ESA. NMFS has waived the fee for this permit.
12. NMFS may revoke this permit if the activities are not carried out in accordance with the conditions of the permit or the ESA and its regulations, or if NMFS otherwise determines that the findings made under section 10(d) of the ESA no longer hold.
13. Any falsification of annual reports or records pertaining to this permit is a violation of this permit.

#### **E. Penalties and Permit Sanctions**

1. Any person who violates any provision of this permit is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the ESA and 15 CFR Part 904 [Civil Procedures].
2. All permits are subject to suspension, revocation, modification, and denial in accordance with the provisions of subpart D [Permit Sanctions and Denials] of 15 CFR Part 904.

## F. References

- Douglas County Public Utility District. 2002. Anadromous Fish Agreement and Habitat Conservation Plan. Wells Hydroelectric Project. FERC License No. 2149. March 26, 2002. Public Utility District No. 1 of Douglas County, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife, Confederated Tribes of the Colville Reservation, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation.
- Gale, W. 2009. Letter from William Gale to Kristine Petersen. Submission of HGMP for WNFH Spring Chinook Program. July 31, 2009. USFWS, Leavenworth, Washington. 1p.
- Gale, W. 2012. Email to Craig Busack (NMFS) from William Gale (USFWS). WNFH spring Chinook HGMP and supplemental materials. November 21, 2012. USFWS, Leavenworth, Washington. 2p.
- NMFS. 1996. Juvenile fish screen criteria for pump intakes. Available at <http://www.nwr.noaa.gov/1hydro/pumpcrit1.htm>.
- NMFS. 2011. Anadromous Salmonid Passage Facility Design. National Marine Fisheries Service, Northwest Region. July 2011. 140p.
- NMFS. 2014. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Conference Report, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) Consultation. Issuance of Section 10(a)(1)(A) Permit 18928 for the Chief Joseph Hatchery Okanogan Spring Chinook Salmon. West Coast Region, Sustainable Fisheries. October 27, 2014. NMFS Consultation No.: WCR-2014-607. 131p.
- NMFS. 2016 Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) Consultation: Issuance of Four Section 10(a)(1)(A) Permits for Spring Chinook Salmon Hatchery Programs in the Methow Subbasin. October 13, 2016. NMFS Consultation No.: WCR-2015-3845. 116p.
- Pacific Northwest Fish Health Protection Committee (PNFHPC). 1989. Model Comprehensive Fish Health Protection Program. Approved September 1989, revised February 2007. Olympia, Washington.
- USFWS. 2004. U.S. Fish & Wildlife Service handbook of aquatic animal health procedures and protocols.
- USFWS. 2012. Supporting information submitted to the National Marine Fisheries Service regarding the Winthrop National Fish Hatchery Spring Chinook HGMP. 12p.

**G. Signatures**

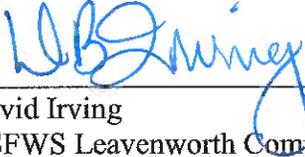


Barry A. Thom  
Regional Administrator  
NMFS West Coast Region

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2/21/2017

Date



David Irving  
USFWS Leavenworth Complex Manager

3/8/2017

Date