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: 18925

Permit Type: Scientific Research/Enhancement

Program Name: DPUD/GPUD Methow Hatchery Spring Chinook Salmon Program

Expiration Date: December 31, 2027

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Authorization

The Washington Department of Fish and Wildlife (WDFW), Public Utility District No. 1 of Douglas County (DPUD), and Public Utility District No. 2 of Grant County (GPUD) are 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 WDFW, DPUD, and GPUD (hereafter referred to as Permit Holders meaning any employee, contractor, or agent of any of the Permit Holders) to take naturally produced and artificially propagated ESA-listed adult and juvenile, endangered UCR spring Chinook salmon in the course of operating the spring Chinook salmon hatchery program at Methow Hatchery, including associated monitoring and evaluation (M&E) activities. The effects of issuance of this permit on ESA-listed species were analyzed in NMFS (2016).

Description of Proposed Hatchery Program

This hatchery program is part of the Wells Anadromous Fish Agreement and Habitat Conservation Plan (HCP) (Douglas County Public Utility District 2002), and is funded by DPUD and currently operated by WDFW. A portion of the production is funded by GPUD as a requirement of the Salmon and Steelhead Settlement Agreement (SSSA) and the Biological Opinion for the Priest Rapids Project (NMFS 2008). The purpose of the program is to replace losses of spring Chinook salmon caused by unavoidable project mortality at the Wells, Wanapum, and Priest Rapids hydroelectric projects and to rebuild natural populations. This program is intended to be a conservation program. A spring Chinook salmon safety-net program is also operated within the Methow Basin at Winthrop National Fish Hatchery (WNFH). Surplus hatchery-origin adults from the Methow Hatchery program, as determined by the permit holders, will be provided for broodstock to the WNFH program as available.

The Wells HCP Hatchery Committee (HC) and Priest Rapids Coordinating Committee (PRCC) Hatchery Sub-Committee (HSC) oversee implementation of this program. The HC and HSC both act through regularly scheduled meetings and by unanimous vote. In addition to specific requirements in the HCP, this hatchery program must comply with the provisions of Section 10(a)(1)(A) of the ESA of 1973 (16 U.S.C. §§ 1531-1543), with NMFS regulations governing ESA-listed species permits (50 CFR Parts 222-226), and with the conditions in this permit.

The Methow Hatchery spring Chinook program was conceived out of recognition that UCR spring Chinook were confronting significant short-term abundance and demographic risks in the absence of a supportive breeding program. In writing the ESA section 10 application for the present permit, State, Federal, and Tribal fisheries managers (WDFW, the US Fish and Wildlife Service, The Confederated Tribes of the Colville Reservation, and the Confederated Tribes and Bands of the Yakama Nation) agreed that the risks associated with the Methow Spring Chinook Hatchery Program were outweighed by the benefits of the program to the evolutionarily significant unit. Specifically, continuation of the hatchery program, as authorized in this permit, reflects the ongoing need to increase the abundance and demographic stability of the Methow spring Chinook population. However, meeting short-term abundance and demographic goals must be tempered with the equally important objectives of increasing the productivity and diversity of the natural population. To ensure the hatchery program addresses abundance, productivity, spatial structure, and diversity goals for the Methow spring Chinook salmon natural population and meets the requirements of section 10(a)(1)(A) of the ESA, hatchery operations will be adaptively managed, pursuant to the framework established in the HCP, SSSA, and NMFS 2008 Opinion, and on the basis of an extensive monitoring and evaluation plan and the terms and conditions described in this permit.

The program will collect natural-origin and hatchery-origin fish at Wells Dam, Wells Hatchery, Methow Hatchery, WNFH, Twisp weir, and other HCP HC approved trapping sites to produce 163,249 smolts[1] to be released in the Methow Basin. Surplus hatchery-origin adults from the Methow program, as determined by the permit holders, will be provided to the WNFH program as needed. The program consists of two components: Methow and Twisp. Spawning, incubation, and early rearing will take place at Methow Hatchery or other sites approved by the HC and HSC. Acclimation and release may take place at Methow Hatchery, Twisp Acclimation Pond, or other sites approved by the HC and HSC. All hatchery fish will be marked internally. Hatchery-origin fish can be removed as necessary at Wells Dam, Wells Hatchery, Methow Hatchery, Twisp Weir, and WNFH to achieve proportion of hatchery-origin spawner (pHOS) levels according to gene-flow management targets. An extensive monitoring program will evaluate hatchery performance and natural production. The program is described in detail in a hatchery and genetic management plan (HGMP; DPUD and WDFW 2010).

UCR spring Chinook salmon are at risk of extinction; they are currently listed as *endangered* under the ESA. The Permit Holders propose to use the Methow spring Chinook hatchery program to reduce demographic risk and to enhance or conserve the Methow spring Chinook salmon population. The operation of this hatchery 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 can only "enhance" a population when the natural population is better off with the hatchery program than without it (i.e., benefits to the natural population out-weigh the risks). More specifically, 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 subsequent to release.

This permit clearly delineates the specific roles and responsibilities of the Permit Holders according to their respective obligations and authorities. However, the failure of one Permit Holder to satisfy their conditions may result in the loss of take authorization for all Permit Holders. Under these circumstances, NMFS urges effective collaboration between Permit Holders in carrying out the authorized activities.

Each PUD has an independent responsibility to meet hatchery compensation obligations described in the HCP and biological Opinion (NMFS 2008). The major role of each PUD is in implementing the program. Collectively DPUD and GPUD will:

- Provide and maintain hatchery capacity for the Methow Hatchery spring Chinook salmon program
- Fund hatchery operations related to spawning, incubation, and early rearing activities at Methow Hatchery or at other locations approved by the HC and HSC

[1] Production numbers are based on mitigation obligations and are subject to recalculation every ten years.

- Fund hatchery operations related to rearing and acclimation of spring Chinook for DPUD and GPUD at Methow Hatchery and Twisp Acclimation Pond, or at other locations approved by the HC and HSC
- Fund or conduct within-hatchery M&E under Section 8 of the HCP, Section 13 of the SSSA, and relevant sections in the NMFS 2008 Opinion.
- Fund and maintain the Wells Dam and Wells Hatchery traps, Twisp weir, and Methow volunteer channel, including staff necessary to conduct broodstock collection and gene flow management activities

The WDFW has an independent responsibility and authority to conduct activities necessary to manage fisheries resources of the State of Washington, but is also currently under contract to DPUD to operate the hatchery program and M&E programs. The WDFW currently plays a dual role in this program as resource manager and as operator of the hatchery programs and associated trapping and M&E efforts. Specifically, the WDFW will:

- Operate hatchery facilities and conduct hatchery operations, including trapping and M&E as contracted
- Remove surplus hatchery-origin adults returning to the Methow Basin to achieve gene-flow targets at one or more of the following: Wells Dam, Wells Hatchery, Methow Hatchery volunteer channel, WNFH, Twisp weir, and other locations approved by the HC and HSC

Methow River spring Chinook salmon hatchery and broodstock collection, M&E, and gene flow management activities authorized under this permit include:

- The collection, holding, handling, and sampling of adults for Methow Hatchery program broodstock
- The artificial spawning of collected adults at Methow or Wells hatcheries
- The incubation and propagation from the fertilized egg through the fingerling, pre-smolt, or smolt life stage at Methow Hatchery or other locations as approved by the HC and HSC
- The release of juvenile spring Chinook salmon into the Methow Basin
- The removal of excess hatchery-spring Chinook salmon, before natural spawning, at established trapping sites
- The M&E of the hatchery program in the natural environment as required to assess the effects of the program on natural-origin spring Chinook salmon and steelhead
- The M&E of the hatchery program in the hatchery environment required to assess the performance of the program
- Any enhancement activities not addressed in this permit will be as described in the HGMP and supplemental materials (DPUD and WDFW 2010; DPUD and WDFW 2012)

Annual Planning

This Permit provides for ongoing, active adaptive management pursuant to the terms of the HCP, 2008 NMFS Opinion, and SSSA. Adjustments to the program may be made by the HCP HC or Coordinating Committee (CC) and the PRCC HSC, which meet on a monthly basis to discuss issues regarding upper Columbia River hatchery programs and fish passage facilities, 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), and NMFS regulations governing ESA-listed species permits (50 CFR Parts 222-226). Such program adjustments do not require modification of the Permit, provided that any adjustment will not result in a level or type of direct or incidental take in excess of that otherwise allowed by this permit and by the incidental take statement (ITS). NMFS participates in the HCP HC, CC, and PRCC HSC and notifies parties, in writing, if concerns arise and what steps should be taken to address those concerns (see reporting section below).

Take Description and Levels

This permit authorizes the take of ESA-listed species as outlined below. Take will include any 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. 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 process (see Section C – Permit Reporting and Re-authorization Requirements) during the period this permit is valid.

A. Direct Take Limits

The basis for authorizing the annual 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 M&E activities (Table 1).

Table 1. Permissible quantifiable direct take of listed Methow spring Chinook salmon for the operation, monitoring, and evaluation associated with the Methow Hatchery spring Chinook enhancement program. HOR = hatchery-origin returns; NOR = natural-origin returns. NMFS must be notified within two days if take is exceeded.

Type of take	Amount of Annual Take			
	Harass		Mortality	
	Adult	Juvenile	Adult	Juvenile
Enhancement activities				
Broodstock collection	Up to 100% of return[1]	Not applicable	90[1,2]	Not applicable
Adult removal for gene flow management	Up to 100% of return[1]		Up to 90% of HORs[3]	
Adult biological sampling	Up to 33% of the NORs		Up to 2% of NOR's sampled	
Juvenile rearing	Not applicable	100% of fish in culture	Not applicable	20% of eggs taken[4]
M&E activities (cumulative for permits 18925, 18927 and 20533)				
Juvenile population monitoring	Not applicable	20% hatchery and natural	Not applicable	2% hatchery and natural
Adult population monitoring	Up to 100% of return[1]	Not applicable	< 5	Not applicable

[1] No more than 33 percent of the natural-origin fish in the run may be collected for broodstock.
[2] Includes a 10 percent overage for BKD management.
[3] Based on Table 16 in NMFS (2016), and the following equation: removal of Methow hatchery fish < 1/(HRR+pNOB-1). Hatchery recruitment rate (HRR) is defined as the number of returnees per broodstock fish back to the basin before any are taken for broodstock or removed for gene flow management.
[4] Includes a 12 percent overage for disease management and non-viability (i.e., 182,839).

B. Special Conditions

General Handling of ESA-listed Fish

1. The Permit Holders 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.

2. Should NMFS determine that a procedure provided for under this permit is no longer acceptable, the Permit Holders must immediately cease such activity after notification by NMFS until NMFS identifies and approves an acceptable substitute procedure.

3. Each ESA-listed fish handled for 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.

4. During sampling and processing procedures, 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.

5. 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.

6. Visual observation or other non-invasive 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

7. Up to 100 percent of returning Methow River adult spring Chinook salmon may be captured, handled, transported, and/or released at dams and other trapping sites to collect broodstock and remove Methow River hatchery-origin spring Chinook for gene-flow management.

8. No more that 33 percent of natural-origin Methow River adult spring Chinook salmon may be retained for broodstock. Any natural-origin adults shall be released as soon as genetic typing determines that those fish are not required for broodstock.

9. Broodstock for the Twisp program will consist entirely of Twisp natural-origin fish and Twisp component hatchery-origin returnees.

10. Broodstock collection will target adults necessary to meet the full conservation program to the extent that the 33 percent NOR extraction rate allows. Returning Methow Hatchery-origin fish may be used as broodstock for the non-Twisp portions of the program if sufficient natural-origin broodstock are not available. The HC and HSC can adjust the broodstock number and origin as needed to reflect changes in fecundity, age structure, and other life history parameters.

11. Up to 33 percent of the annual natural-origin upper Columbia River spring Chinook salmon run at Wells Dam may be sampled biologically to conduct stock assessment, run composition, and dam passage evaluations. The Wells HCP Coordinating Committee must approve all schedules for ladder trapping at Wells Dam prior to implementation of trapping activities.

12. Annually, an additional 10 percent *hatchery-origin* broodstock may be retained to provide for Bacterial Kidney Disease (BKD) management, totaling 110 percent of the

overall broodstock requirement. However, the Permit Holders 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 ≥ 0.12 will be culled.

b. Natural-origin eggs/progeny with ELISA titers of 0.12 ≤ OD ≤ 0.19 will be tagged for evaluation purposes and reared at a density of 0.06. When less than 5 percent of the program production is in the 0.12 ≤ OD ≤ 0.19 ranges, the HC and HSC may elect not to rear these fish.

c. All natural-origin eggs/progeny with ELISA titers of OD > 0.19 will be culled.

d. At the first signs of BKD infection, juvenile spring Chinook salmon will be treated in accordance with recommendations from fish health specialists and consistent with the "Salmonid Disease Control Policy of the Fisheries Co-managers of Washington State" and Investigational New Animal Drug (INAD) permit.

Gene Flow Management

13. When the Methow Basin natural run size at Wells Dam is < 300, a set of equations will be used to determine the allowable PUD partial pHOS (calculated as $HOS_{PUD}/(HOS_{PUD} + HOS_{WNFH} + NOS)$), based on achieving a 500 total spawner escapement: when the natural run is ≥ 100 fish, that equation will be y = -0.0013x + 0.8, and when the natural run size is < 100 fish, pHOS will be determined by the equation y = -0.002x + 0.8, where y = pHOS and x = natural run size.
14. When the Methow basin natural run size at Wells Dam is ≥ 300, the Permit Holders will manage to a PNI target as determined by the equation PUD PNI = 0.8(1-e^(-0.006x)), where x equals the natural run size (see examples in Table 2).

Table 2. PUD PNI sliding scale calculations across a range of natural run sizes.

Natural Run	PUD pHOS	PUD pNOB	PUD PNI (equation)
300	0.40	0.75	0.67
500	0.40	0.80	0.76
900	0.30	1.00	0.80
1500	0.25	1.00	0.80
2000	0.25	1.00	0.80
2500	0.25	1.00	0.80

15. Hatchery-origin adults may be removed at one or more of the following trapping locations: Methow Hatchery, WNFH, Twisp weir, Wells Hatchery, and Wells Dam (subject to limitations on ladder-trapping schedules as determined by the Wells HCP Coordinating Committee) as necessary to achieve the annual partial PHOS and/or PNI targets.

16. The removal rate of hatchery-origin fish from the PUD programs should not cause "mining" of natural-origin fish for broodstock; i.e., the number of conservation program hatchery-origin fish left to spawn in the wild after broodstock collection and gene flow management must exceed the number of fish (hatchery-origin and natural-origin combined) used for broodstock (see Section 2.4.2.2 of NMFS 2016). Mining must be rare, occurring no more than once every 10 years.

17. NMFS recognizes that, due to the lack of control structures in the Methow Basin, removal of hatchery-origin adults is challenging, and thus the PNI target may initially be difficult to achieve. The PNI target should be considerably easier to achieve beginning in 2018, when the first four-year-olds from the reduced releases[2] return. NMFS also recognizes that there may be a substantial disparity in spawning success of hatchery-origin fish in different areas. Therefore:

    a. Until 2018, NMFS anticipates that the gene flow target may not be met, but does expect aggressive attempts to substantially increase PNI and/or decrease partial pHOS from existing levels.

    b. To facilitate meeting gene-flow targets, Permit Holders may need to operate hatchery ladders full-time during a large portion of the run for removal of hatchery-origin fish.

    c. The Permit Holders may provide scientifically defensible calculations of effective basin-wide pHOS based on relative effectiveness of hatchery-origin spawners.

18. Hatchery-origin spring Chinook salmon from outside the Methow Basin that are encountered incidentally at any of the fish collection sites in the Methow Basin shall not be returned to waters of the Methow Basin.

19. NMFS expects that strays into the Entiat Basin from the Methow Hatchery spring Chinook salmon program will comprise no more than five percent of the Entiat Basin spawners, averaged over five years beginning in 2016.

20. In the event that the average PNI target(s) are not met five years after implementation of this permit, the Permit Holders will discuss with NMFS the remaining challenges and potential solutions for achieving gene-flow targets.

Fish Culture

21. NMFS recognizes the need for management flexibility. Therefore, changes in fish-culture protocols 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, as approved by the HC and HSC, will be permitted upon request.

[2] In brood-year 2012, release numbers for this program were reduced as part of a no net impact recalculation. This recalculation is conducted every 10 years.

22. Annually, up to 20 percent of the eggs collected (i.e., 35,363) may be unintentionally killed (e.g., disease epizootics) or intentionally killed for assessment purposes (e.g, fish health, precocial maturation).

Juvenile Releases

23. Annually, the Permit Holders shall limit releases of Methow River UCR spring Chinook salmon to 110 percent of the overall production goal (163,259). The 10-percent overage is intended to account for variances in pre-spawn survival, fecundity, and within-hatchery survival. Consecutive years of overproduction shall trigger an adjustment in the parameters used in the calculation of broodstock targets to reduce over-collection of broodstock.

24. Adaptive management shall be used for hatchery release strategies to achieve a balanced outcome of adult returns, PNI, homing fidelity of adult returns to their release site, minimization of precocity rates of hatchery-origin fish, and minimization of ecological interactions between hatchery- and natural-origin juveniles. Numerical objectives for adult returns to the Methow, Chewuch, and Twisp shall be developed in order to assess and achieve that balanced outcome. NMFS is aware that some of the variables cannot be optimized without having undesirable effects on other important variables.

25. The Permit Holders will release hatchery-origin smolts from Methow Hatchery, and Twisp Pond at approximately 15-17 fish per pound (or as determined by the HC and HSC) when fish are ready to emigrate directly to the ocean. The release method will incorporate a volitional approach, or other method as approved by the HC and HSC. If a large proportion of juveniles fail to outmigrate volitionally, the Permit Holders will discuss alternatives with NMFS for juvenile spring Chinook salmon releases.

26. A portion of the fish produced by the program may be transferred to the Yakama Nation according to a HC and HSC approved plan. At the point of transfer, the responsibility of the Permit Holders for these fish ends.

27. 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).

28. All hatchery smolts will be marked according to a coordinated marking scheme for spring Chinook salmon releases above Wells Dam, to be determined by the HC and HSC, to distinguish release locations; facilitate removal of hatchery-origin fish; estimate life-stage-specific survival, life-history patterns or abundance; and allow monitoring and evaluation of fish performance and contribution rates, including straying levels. At present, all Methow Hatchery spring Chinook salmon receive a coded wire tag with no external mark.

Facility Operations

29. Permit Holders 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).

30. Permit Holders 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.

31. Water withdrawals shall not exceed levels permitted by the Water Use Permits issued to each of the facilities.

32. The Permit Holders shall implement fish health policies and guidelines (NWIFC and WDFW 2006) (Pacific Northwest Fish Health Protection Committee (PNFHPC) 1989), or subsequent updates, to minimize the risk of fish disease amplification and transfer, and to ensure that artificially propagated fish would be released in good health.

Monitoring and Evaluation

33. Any activities or methodologies associated with M&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.

34. NMFS strongly encourages the Permit Holders to coordinate M&E with the WNFH 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
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, including mortalities, is exceeded, the Permit Holders 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 Holders 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 Holders shall update and provide to the HC and HSC projected hatchery releases and the specific release locations as well as the broodstock plan for the coming year according to the schedules developed and approved by the HC and HSC.

3. The Permit Holders shall develop, in coordination with the HC and HSC, the reporting responsibilities of each of the joint Permit Holders. At minimum, the following issues should be addressed in annual reports submitted to the HC and HSC:

Hatchery Environment Monitoring Reporting

- Number and composition of Methow Hatchery broodstock, and dates of collection
- The numbers, pounds, dates, locations, and tag/mark information of released fish;
- Coefficient of variation around the average (target) release size immediately prior to their liberation from acclimation sites
- Survival rates of all life stages
- Precocial maturation rate
- Disease occurrence
- All 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 hatchery monitoring and evaluation activities had any unforeseen effects on ESA-listed fish
- Summary of measures taken to achieve gene-flow targets, evaluation of their success, and steps taken to improve them, if necessary

Natural Environment Monitoring Reporting

- The number of returning Methow program hatchery and natural-origin adults and age structure
- Number of Methow program fish removed at facilities
- Distribution (by river kilometer and tributary) of Methow program hatchery- and natural-origin spawners
- Methow program partial pHOS
- Methow program pNOB
- Methow program partial PNI
- Overall subbasin PNI (provided by WDFW)[3]
- Methow program smolt to adult survival rate (pre- and post-harvest/ gene flow management)
- The occurrence of fish from the Methow program within other populations as reported by monitoring entities
- Post-release out-of-basin migration timing of juvenile Methow program fish
- Mean length, coefficient of variation, number, outmigration timing, and age structure of natural-origin juveniles

[3] Based on the three-population model developed by Busack et al. 2015, and on a five-year arithmetic mean.

- Injuries or mortalities of listed species that result from monitoring and evaluation activities

4. Unless otherwise noted in the terms and conditions of this permit, reports shall be submitted according to the schedules developed and approved by the HC and HSC.

5. The Permit Holders must provide NMFS with plans for future projects and/or changes in sampling locations or enhancement/research protocols and obtain concurrence from the HC and HSC before implementation of such changes.

D. General Conditions

1. The Permit Holders, in implementing the hatchery program authorized by this permit, has/have 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 Holders are 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 Holders and their agents 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 Holders 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 or effective if transferred or assigned to any other person without prior authorization from NMFS.

5. The Permit Holders must obtain any other Federal, state, and local permits/authorizations necessary for the conduct of the activities provided for in this permit.

6. The Permit Holders 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 Holders and/or their agents 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 Holders must allow such person(s) to inspect the records and facilities of the Permit Holders and their agents 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 Holders, and/or any individual who is operating under the authority of this permit, to penalties as provided for in the ESA.

9. The Permit Holders and their agents are responsible for maintaining the biological samples collected from ESA-listed species as long as they are useful for research purposes. The Permit Holders 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 Holders.

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

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G. Signatures

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Regional Administrator
NMFS West Coast Region

2/17/2017
Date

William C. Dobbins
DPUD General Manager

2-27-17
Date

Tom Dresser
GPUD Fish, Wildlife, and Water Quality Manager

3/6/2017
Date

Jim Unsworth
WDFW Director

3/1/17
Date