

**Tribal 4(d) Rule; Limit 6 of 4(d) Rule
Proposed Evaluation and Pending Determination**

Title: Hatchery and Genetic Management Plans (HGMPs) for six Idaho Steelhead programs

Plans Submitted by: Idaho Department of Fish and Game (IDFG)
Idaho Power Company (IDP)
Bonneville Power Administration (BPA)
Columbia River Intertribal Fisheries Commission (CRITFC)
Shoshone-Bannock Tribes (SBT)
Nez Perce Tribe (NPT)
U.S. Fish and Wildlife Service (USFWS) through the Lower Snake River Compensation Plan (LSRCP)

ESU/DPS: Snake River Spring/Summer Chinook Salmon ESU
Snake River Fall Chinook Salmon ESU
Snake River Steelhead DPS
Snake River Sockeye Salmon ESU

ESA 4(d) Rule: Limit 6 and Tribal

**NMFS Tracking
Number:** WCR-2017-7286

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1 EVALUATION

NOAA's National Marine Fisheries Service (NMFS) issued a final Endangered Species Act (ESA) 4(d) rule adopting regulations (50 CFR 223.203) to conserve listed salmon and steelhead (70 FR 37160 and 73 FR 55451; NMFS and NOAA 2005; NMFS and NOAA 2008). However, under the exemptions contained in the rule and the 4(d) Tribal rule, ESA section 9 take prohibitions for listed species do not apply to hatchery activities described in a resource management plan (RMP) or tribal resource management plan (TRMP) that meet certain requirements. This evaluation document considers hatchery plans submitted under each of the two regulations.

Section 9 of the ESA prohibits the take of endangered species, and pursuant to §4 NMFS has extended that prohibition to threatened salmon and steelhead. Under the joint state-tribal 4(d) rule (50 CFR 223.203(b)(6)), those prohibitions are rescinded for hatchery activities described in an RMP, provided that:

- The Secretary of Commerce has determined pursuant to 50 CFR 223.204(b) [the Tribal 4(d) rule] and the government-to-government processes therein that implementing and enforcing the RMP will not appreciably reduce the likelihood of survival and recovery of listed salmon and trout
- The joint plans applying for 4(d) Limit 6 review will be implemented and enforced within the parameters set forth in *U.S. v. Oregon*; and
- The Secretary of Commerce has taken comment on how any HGMP addresses the 4(d) rule limit 5 criteria (§223.203(b)(5))

Under the tribal 4(d) rule (50 CFR 223.204), ESA section 9 prohibitions on taking threatened species do not apply to activities described in a TRMP submitted to NMFS, provided that the Secretary determines that implementation of such TRMP will not appreciably reduce the likelihood of survival and recovery of the listed salmonids. TRMPs must also specify the terms of their enforcement.

The Idaho Department of Fish and Game (IDFG), Nez Perce Tribe (NPT), Shoshone-Bannock Tribes (SBT), Idaho Power Company (IPC), U.S. Fish and Wildlife Service (USFWS) through the Lower Snake River Compensation Plan (LSRCP) Office, Bonneville Power Administration (BPA), and Columbia River Intertribal Fisheries Commission CRITFC) have provided NMFS with six hatchery and genetic management plans (HGMP) and associated addenda proposed for implementation in the Snake Basin (Table 1; Figure 1). The applicants have provided these application materials for review and determination by NMFS pursuant to either the 4(d) rule limit 6 or the Tribal 4(d) rule. Each HGMP and addendum serves as an RMP for this evaluation. The proposed plans contain similar provisions regarding shared salmon population recovery and harvest augmentation objectives and effects; fish collection locations; fish rearing and release sites; and monitoring and evaluation activities.

As per the Tribal 4(d) rule, NMFS consulted with the applicants during the development of the

HGMPs and addenda through government-to-government and technical work group meetings to provide technical assistance, to exchange information and discuss what would be needed to conserve the listed species, and to be consistent with legally enforceable tribal rights and the Secretary’s trust responsibilities to the treaty tribes. The HGMPs and associated application materials were reviewed and NMFS determined that they were sufficient (Purcell 2017a; Purcell 2017b; Purcell 2017c; Purcell 2017d; Purcell 2017e; Purcell 2017f) for NMFS to proceed in its evaluation of plan effects on ESA-listed species.

The following discussion evaluates whether the submitted plans address the criteria in Section 223.203(b)(5) of the 4(d) rule for salmon and steelhead¹. All references below to the hatchery programs or HGMPs includes all programs and plans regardless of which regulatory provision applies to their submission.

Table 1. Proposed hatchery and kelt reconditioning programs for Idaho steelhead requiring 4(d) Limit 6 or Tribal 4(d) rule evaluation.

Hatchery Program	Operator ¹	Funding Agency ¹	Program Purpose	Date Submitted ²	ESA Pathway
East Fork Salmon River Natural A	IDFG	LSRCP	Integrated Recovery	August, 2017	4(d) Limit 6
Steelhead Streamside Incubators A and B	SBT	TBD	Segregated Harvest	August, 2017	4 (d) Tribal Rule
Hells Canyon A	IDFG	IPC	Segregated Harvest	August, 2017	4(d) Limit 6
Little Salmon River A	IDFG	IPC and LSRCP	Segregated Harvest	August, 2017	4(d) Limit 6
South Fork Clearwater (Clearwater Hatchery) B	IDFG	LSRCP	Segregated Harvest	August, 2017	4(d) Limit 6
Snake River Kelt Reconditioning	NPT	CRITFC and BPA	Kelt Reconditioning	October, 2017	4 (d) Tribal Rule

¹IDFG = Idaho Department of Fish and Game; LSRCP = US Fish and Wildlife, Lower Snake River Compensation Plan Office; SBT = Shoshone-Bannock Tribes; TBD = To Be Decided; IPC = Idaho Power Company; NPT = Nez Perce Tribe; CRITFC = Columbia River Intertribal Fish Commission; BPA = Bonneville Power Administration.

²(Chandler 2017; Hebdon 2017; Kennedy 2017; Largo 2017; Schaller 2017; Small 2017)

1 The criteria listed in 223.203(b)(5) concerning the sufficiency of an HGMP are appropriate for evaluating TRMP consisting of HGMPs, because those are the relevant criteria NMFS considers in evaluating whether a hatchery program will appreciably reduce the likelihood of survival and recovery of listed salmon and steelhead. The determination to be made under Limits 5 and 6 of the 4(d) rule is functionally identical to the determination made under the Tribal 4(d) rule. As the submitted documents are in the form of both TRMPs and HGMPs, we will refer generally to them as HGMPs.

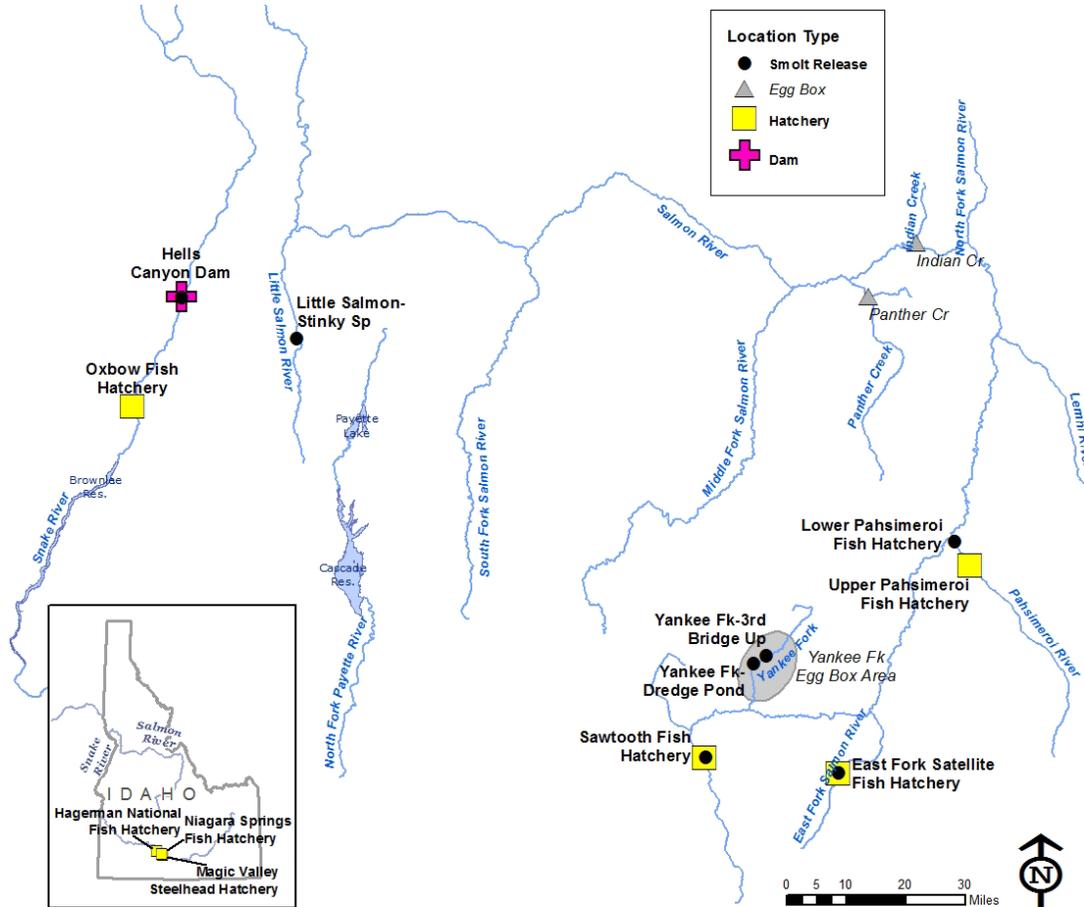


Figure 1. Location of facilities in the Salmon Basin used in the Proposed Action.

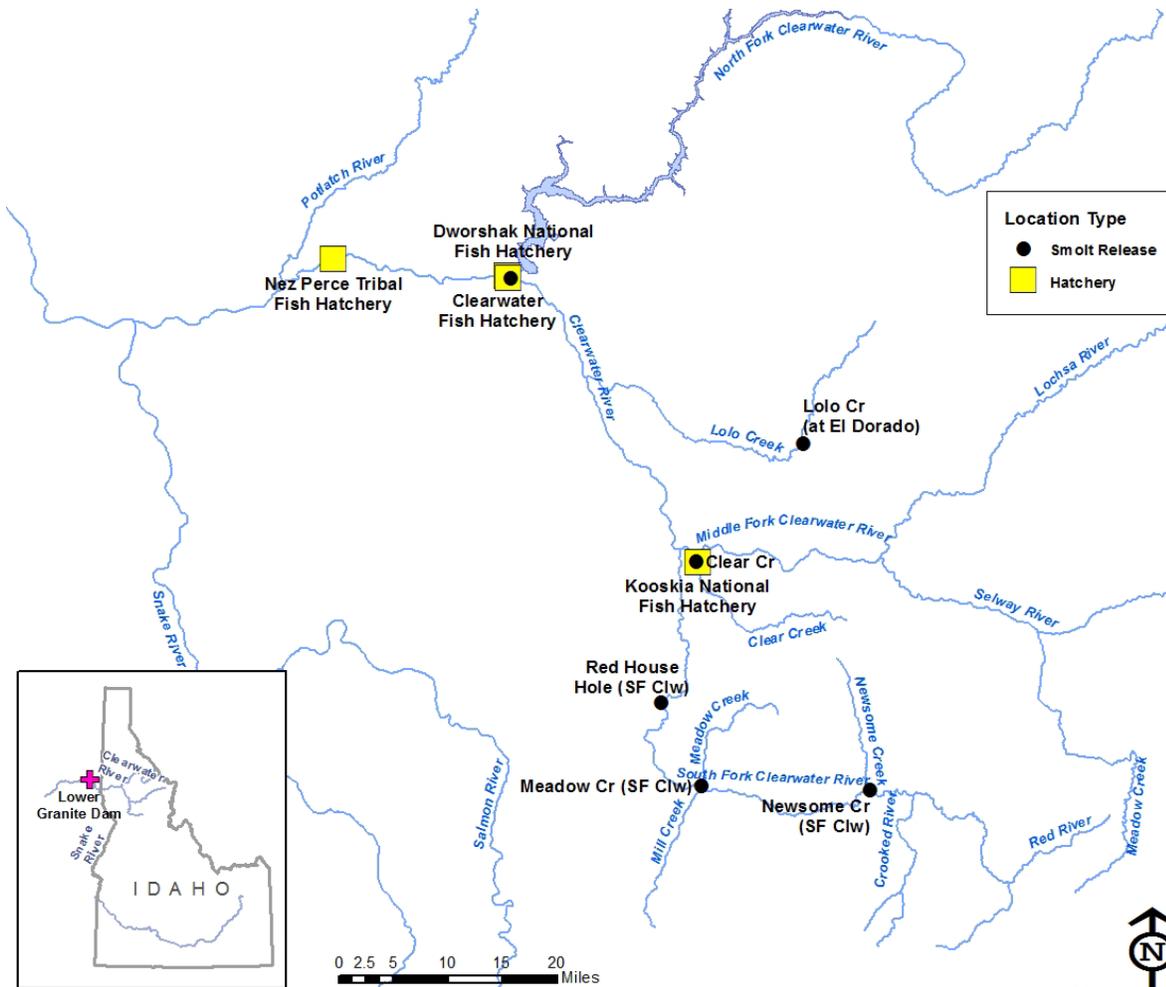


Figure 2. Location of facilities in the Clearwater River Basin used in the Proposed Action.

1.1 5(i)(A) The HGMP has clearly stated goals, performance objectives, and performance indicators that indicate the purpose of the program, its intended results, and measurements of its performance in meeting those results.

Each of the HGMPs has clearly stated its goal, performance objectives, and methods for measuring the progress toward achieving those objectives. The general program goals described in section 1.7 of each HGMP for propagating hatchery fish are to:

- Mitigate lost natural-origin fish production
- Aid in the recovery of the ESA-listed Snake River Steelhead DPS
- Fulfill federally protected reserved fishing rights for salmon and steelhead populations within the Snake River Basin by supporting tribal commercial, recreational, and ceremonial and subsistence fisheries when consistent with conservation objectives
- Meet tribal fishery harvest allocations guaranteed through treaties and affirmed in *U.S. v. Oregon*

- Recondition spawned steelhead so they can spawn again

Performance objectives derived from the Northwest Power Planning Council Artificial Production Review (Northwest Power Planning Council 2001), and performance indicators that would be used to gauge compliance with each objective, are described in section 1.10 of each HGMP. Evaluation and monitoring to ensure standards and indicators are met is further described in section 1.8 of this document and are summarized in Table 2. HGMP implementation would generally be designed to determine:

1. Program consistency with proposed hatchery actions and intended results (e.g., juvenile fish release and adult return levels)
2. Measurement of the program’s success or failure in attaining results
3. Effects of the program on listed natural-origin fish populations in the Snake Basin.

Table 2. HGMP program performance standards and indicators.

Standard	Indicator
Produce fish for harvest while minimizing excess hatchery returns	<ul style="list-style-type: none"> • Measure adult harvest and escapement • Mass marking to allow selective fisheries
Supplement natural population (integrated only)	<ul style="list-style-type: none"> • Increasing proportion of natural-origin adults on spawning grounds • Increasing natural smolt levels
Proper broodstock collection and management	<ul style="list-style-type: none"> • Collected randomly throughout the run • Weir/trap checked regularly • Proportion of natural-origin fish • Designated mating scheme, sex ratio • Stray rates
Meet hatchery juvenile production goal	<ul style="list-style-type: none"> • Egg to fry or smolt survival is as expected • Release targets
Minimize interactions of releases with natural-origin fish	<ul style="list-style-type: none"> • Juveniles released at sea-water ready life stages • Size and time of release accounts for listed stocks
Life history characteristics of the natural population do not change	<ul style="list-style-type: none"> • Stable life history patterns of natural fish • Age and size data for natural population
Natural population genetic variation does not change due to artificial propagation	<ul style="list-style-type: none"> • Proportion of naturally spawning hatchery fish • Genetic assessment
Limit pathogen amplification and transmission	<ul style="list-style-type: none"> • Follows fish health policies

1.2 5(i)(B) The HGMP utilizes the concepts of viable and critical salmonid population thresholds, consistent with the concepts contained in the technical document entitled “Viable Salmonid Populations.”

HGMPs proposed for consideration under any of the 4(d) rules must use the concepts of viable and critical thresholds as defined in the NMFS Viable Salmonid Population (VSP) document (McElhany et al. 2000). Application of these VSP concepts is needed to adequately assess and limit the take of listed salmonids for the protection of the species. Section 2.2.2 of each HGMP

describes the status of the listed Chinook salmon, sockeye salmon, and steelhead populations relative to “critical” and “viable” population thresholds within the Snake Basin and references the most recent Northwest Fisheries Science Center Status Review (NWFSC 2015).

The Snake River Steelhead DPS remains threatened (NWFSC 2015). Factors that limit the DPS’s survival and recovery include: migration through the Federal Columbia River Power System FCRPS; the degradation and loss of estuarine areas, and spawning and rearing areas as well as interbreeding and competition with hatchery fish that outnumber natural-origin fish. Hatchery effects are likely more pronounced when the program occurs on a listed population. Those populations within the DPS with hatchery fractions > 50 percent are the Tucannon, Asotin Creek, Lolo Creek, South Fork Clearwater, Little Salmon River, Pahsimeroi, Lemhi, East Fork Salmon and Upper Salmon River based on a preliminary run reconstruction model (see Table 29; NWFSC 2015). Those in the Clearwater and Salmon River Basins are most likely to be affected by the programs in this Proposed Action. However, consolidation of release sites for most programs in the mainstem area of rivers, and releases where associated populations are targeted for maintained rather than viability or high viability is expected to reduce effects on listed populations.

The Snake River Spring/Summer Chinook Salmon ESU remains listed as threatened (NWFSC 2015). Factors that limit the ESU’s survival and recovery are the same as those for steelhead above (Ford 2011). The most serious risk factor is low natural productivity (spawner-to-spawner return rates) and the associated decline in abundance to low levels relative to historical returns. The biological review team (Ford 2011) was concerned about the number of hatchery programs across the ESU, noting that these programs represent ongoing risks to natural populations and can make it difficult to assess trends in natural productivity. However, none of the programs included in this document propagate spring/summer Chinook salmon, and there is minimal overlap between the two species.

The Snake River Fall-run Chinook Salmon ESU remains at threatened status (NWFSC 2015). Factors that limit the ESU’s survival and recovery include: hydropower projects, predation, and harvest as well as degraded estuary, mainstem, and tributary habitat (Ford 2011). Hatcheries mitigating for losses caused by the dams have played a major role in the production of Snake River fall-run Chinook salmon since the 1980s (NMFS 2012b). Since the species was originally listed in 1992, fishery impacts have been reduced in both ocean and river fisheries (NWFSC 2015). Poor ocean conditions over the last 20 years have also negatively affected the survival of Snake River fall-run Chinook salmon (NMFS 2012b). Although none of the programs considered in this document propagate fall Chinook salmon, there is overlap temporally between the species that could lead to some ecological effects.

The Snake River Sockeye Salmon ESU contains one MPG with one extant population (Redfish Lake) and two to four historical populations (Alturas, Pettit, Stanley, and Yellowbelly Lakes). Since ESA-listing, progeny of the Redfish Lake sockeye salmon population have been outplanted to Pettit and Alturas Lakes within the Sawtooth Valley for recolonization purposes (NMFS 2011). At this stage of the recovery efforts, the ESU remains endangered with a high risk for loss of spatial structure, diversity, abundance, and productivity (NWFSC 2015). At present, anadromous

returns are dominated by production from the captive spawning component. The ongoing reintroduction program is still in the phase of building sufficient returns to allow for large-scale reintroduction into Redfish Lake, the initial target for restoring natural program (NMFS 2015). None of the programs propagate sockeye salmon and there is very little overlap between the species spatially or temporally.

1.3 5(i)(C) Taking into account health, abundances, and trends in the donor population, broodstock collection programs reflect appropriate priorities.

A prioritized purpose of a broodstock collection program using listed fish is to re-establish an indigenous salmonid population for conservation purposes, including restoration of similar at-risk populations within the same ESU, and reintroduction of at-risk populations to under-seeded habitat. Under this 4(d) rule criterion, as described in the 4(d) rule, listed salmonids may be intentionally taken for broodstock only if:

1. The donor population is currently at or above the viable threshold and the collection will not impair its function, or
2. The donor population is not currently viable but the sole objective is to enhance the propagation or survival of the listed ESU, or
3. The donor population is shown with a high degree of confidence to be above the critical threshold although not yet functioning at viable levels, and the collection will not appreciably slow attainment of viable status for that population.

The only hatchery program using listed fish for broodstock is the East Fork Salmon River Natural (HGMP section 6, 7 and 8). This program takes listed salmonids for broodstock consistent with number 2 above, and aims to enhance the abundance and productivity of the East Fork Salmon River population within the DPS. The kelt reconditioning program also takes listed fish for reconditioning which are then released to spawn naturally. This improves kelt survival leading to a higher probability of repeat spawning. Although these fish are not used for broodstock in a traditional hatchery program, the taking of natural-origin adults is consistent with number 2 above.

1.4 5(i)(D) The HGMP includes protocols to address fish health, broodstock collection and spawning, rearing and release of juveniles, disposition of hatchery adults, and catastrophic risk management.

The proposed HGMPs include protocols, or “best management practices” (BMPs), for fish health, broodstock collection, broodstock spawning, rearing and release of juveniles, disposition of hatchery adults, and catastrophic risk management. These practices, when implemented, would be appropriate for their purpose of adequately limiting the risk of substantial direct and incidental adverse effects on listed fish.

Fish Health (HGMP sections 7, 9, and 10)

All of the hatchery programs would be operated in compliance with Federal, State and Tribal fish health policies (USFWS 2004). The policies are designed to limit the spread of fish pathogens between and within watersheds by regulating the transfers of eggs and fish. The policies also outline standard fish health diagnosis, maintenance, and hatchery sanitation protocols to reduce the risk of pathogen amplification and transmission within the hatchery and to fish in the natural environment during broodstock collection and mating as well as fish incubation, rearing, and release. Fish health specialists and pathologists would provide fish health management support and diagnostic fish health services.

Broodstock Collection and Spawning (HGMP sections 6, 7 and 8)

Both natural and hatchery origin fish are used for the East Fork Salmon River Natural program, consistent with the purpose of an integrated program. The kelt reconditioning program does not actually collect fish for broodstock and spawning purposes, but does collect natural-origin steelhead kelts migrating downstream after spawning. The goal is to recondition these fish so they are ready to spawn again in subsequent years (see Hatch et al. 2017 for more details).

For the segregated programs, broodstock are collected from adult fish returning to the hatchery release sites using a trap/weir. The only exception is for the South Fork Clearwater (Clearwater Hatchery) B program, which also uses fish provided to the operators by anglers. Any non-target fish would be released back into the natural environment. Pairwise spawning (1 x 1) is logistically easier, but factorial spawning (e.g., 2 x 2; eggs from a single female are fertilized by multiple males and a single male fertilizes multiple females), which is the priority method for the East Fork Natural Program, conserves genetic diversity by limiting the risk of a sterile adult (Busack and Knudsen 2007).

Table 3. Broodstock collection details; SFH = Sawtooth Fish Hatchery; PFH = Pahsimeroi Fish Hatchery; DNFH = Dworshak National Fish Hatchery; HC = Hells Canyon; SF = South Fork; NF = North Fork; EF = East Fork; KNFH = Kooskia National Fish Hatchery; SSI = Steelhead streamside incubator; NA = Not applicable.

Program	Source	Collection Location(s) ¹	Collection Method	Collection Target	Collection Duration	pNOB
East Fork Salmon Natural A-run	Local hatchery- and natural-origin	EF Salmon River Satellite	Weir and trap	~28	March-May	up to 100%
Hells Canyon A-run	Hatchery fish in Snake River	Hells Canyon ^{1st} ; lower PFH and SFH ^{2nd}	Ladder and trap	~750	October-Nov, March-April	0
Little Salmon River A-run	Receives juveniles from the Pahsimeroi and Hells Canyon A-run programs and does not collect additional brood					
SSI A-run	Receives eggs from the Pahsimeroi A-run program and does not collect additional brood					

SF Clearwater (Clearwater Hatchery) B-run	NF Clearwater River B-run	SF Clearwater River ^{1st} ; DNFH ² and KNFH ^{2nd}	Ladder and trap; Angling ³	~400 SF Clearwater (for CFH)	October-April (DNFH); March-May (KNFH); Angling Mid Feb-Late March	0
SSI B-run	Receives eggs from the Salmon River B-run program and does not collect additional brood					
Kelt Reconditioning	Snake Basin natural-origin and DNFH	Lower Granite Dam, Snake Basin, DNFH ²	Ladder and trap; weirs	Up to 700	February-July	NA

¹ 1st and 2nd refer to order of priority for broodstock collection.

² The DNFH ladder is not open continuously throughout the collection period. The ladder is open about 10 times for less than a week each in an effort to represent fish from throughout the run.

³ The effects of angling are subsumed in the larger fishery action, which is not a part of this Proposed Action, though angling effects are considered generally as part of the baseline and cumulative effects.

Rearing and Release of Juveniles (HGMP sections 9 and 10)

All steelhead would receive a mark or tag prior to release to allow for their differentiation from natural-origin salmon or steelhead. Release numbers, life stage, mark/tag types, and dates for all hatchery programs are detailed in Table 4.

Table 4. Proposed annual release protocols for each program; AD = adipose fin clip; CWT = coded-wire tag; PIT = passive integrated transponder tag; PBT =Parental Based Tagging; SSI = Steelhead Streamside Incubator; HNFH = Hagerman National Fish Hatchery; NSFH = Niagara Springs Fish Hatchery; Dworshak National Fish Hatchery; NPTH = Nez Perce Tribal Hatchery.

Program	Number, life stage, and size (fpp)	Marking and Tagging ¹	Egg incubation Location	Rearing Location	Acclimation Site; Duration	Volitional Release?	Release Location	Release Time
East Fork Salmon River Natural A	60,000 yearling; 4.5	100% CWT and PBT; 8,600 PIT	SFH/HNFH	HNFH	None	No	East Fork Salmon River	Early May
SSI Project A	400,000 eyed-egg	100% PBT	PFH	Panther Creek	Panther Creek	Yes	Panther Creek	May-July
	100,000 eyed-egg		PFH	Indian Creek	Indian Creek	Yes		
Hells Canyon A	550,000 yearling; 4.5	100% ad and PBT; 8,600 PIT	OFH/NSFH	NSFH	None	No	Snake River below Hells Canyon Dam	March-April
Little Salmon River A	250,000 yearling ; 4.5	100% ad and PBT; 2,800 PIT	OFH/NSFH	NSFH	None	No	Little Salmon River-Stinky Springs	April
	186,000 yearling; 4.5	100% ad and PBT; 2,200 PIT	SFH/MVFH	MVFH	None	No		
	200,000 yearling; 4.5	100% ad and PBT; 2,300 PIT	PFH/NSFH	NSFH	None	No		
SF Clearwater (Clearwater Hatchery) B	501,000 yearling; 4.5	100% PBT ~58% ad; 42% CWT only; 10,800 PIT	CFH	CFH	None	No	SF Clearwater-Meadow Creek	April
	219,000 yearling; 4.5	100% ad and PBT; ~4,700 PIT	CFH	CFH	None	No	SF Clearwater-Red House Hole	
	123,000 yearling; 4.5	~1,500 PIT 100% CWT and PBT	CFH	CFH	None	No	SF Clearwater-Newsome Creek	

SSI Project B-run	500,000 eyed-egg	100% PBT	PFH/SFH	Yankee Fork SSI	Yankee Fork	Yes	Yankee Fork	April
Kelt Reconditioning	Up to 700 adult	100% PIT	Not Applicable	DNFH/ NPTH	Not Applicable	No	Snake Basin	October-November

¹Funding for PIT tags come from multiple sources.

Disposition of Hatchery Adults (HGMP section 7.5)

There are no hatchery adults associated with the steelhead streamside incubator project. For the Hells Canyon Program, excess hatchery adults are either given to tribes, the public, food banks, or research institutions or used in urban fisheries with no access to areas of anadromy. For the East Fork Natural Program, all hatchery adults not used for broodstock are released upstream to for natural production. All steelhead kelts collected for the kelt reconditioning program are reconditioned and then released.

Catastrophic Risk Management (HGMP section 5.8)

Fish rearing at all facilities adheres to the applicants' fish health policies (USFWS 2004) and apply BMPs to reduce the risk of catastrophic loss of fish under propagation such as specific rearing densities and feeding regimes, and use of disinfection protocols before entering and leaving egg incubation and rearing buildings at each facility. In addition, all hatcheries have staff on site 24 hour a day or have a way to contact staff in the event of an emergency (e.g., low water, fire).

1.5 5(i)(E) The HGMP evaluates, minimizes, and accounts for the propagation programs' genetic and ecological effects on natural populations, including disease transfer, competition, predation, and genetic introgression caused by straying of hatchery fish.

Artificial fish production may result in genetic risk relating to loss of within-population genetic diversity (the reduction in quantity, variety, and combinations of alleles in a population), outbreeding depression (loss in fitness caused by changes in allele frequency or the introduction of new alleles), and/or hatchery-influenced selection (Busack and Currens 1995). The primary ecological risks to natural-origin salmon and steelhead populations posed by salmon and steelhead hatchery programs are increased pathogen transfer, competition, and predation (NMFS 2012a). As noted in the HGMPs and earlier in this document, all hatchery actions would be implemented in accordance with fish health policies to account for and minimize the risks of pathogen amplification and transmission. In addition, the Idaho steelhead HGMPs and other application materials provide evaluations of potential genetic and ecological effects on listed salmon and steelhead in section 2 and risk minimization measures in sections 6-10. The programs account for and minimize genetic and ecological risks to listed salmon and steelhead populations through implementation of the following measures:

- Broodstock are randomly collected throughout the adult return to ensure full representation of run timing, return location, age class, and equal sex ratio
- Factorial mating ensures that all fish contribute to progeny production to maintain genetic diversity (East Fork Salmon River Natural Program)
- Structuring the programs to release fish into populations targeted for "maintained" in recovery scenarios (NMFS 2016)
- Reduction in releases from 170,000 to 60,000 smolts for the East Fork Salmon River Natural Program

- All hatchery fish are marked to differentiate them from natural-origin fish
- Monitoring straying of steelhead using PBT and PIT tags
- Release smolts at an age/size where they are ready to migrate (East Fork Natural and Hells Canyon programs)
- Eyed-eggs are outpanted in natural rearing areas to minimize hatchery selection and foster homing (SSI project)
- Monitoring of residuals through visual inspections prior to release

1.6 5(i)(F) The HGMP describes interrelationships and interdependencies with fisheries management.

Descriptions of this criterion occur in Section 3 of the HGMPs. Crossover with fisheries management occurs in:

- The *US v Oregon* Management Agreement: hatchery programs (not including the kelt reconditioning program) would operate consistent with the *U.S. v. Oregon* fisheries management framework, which requires that all parties cooperate and agree on the function, purpose, and fish production strategies.
- State recreational and tribal fisheries for hatchery-origin species produced through the programs may incidentally affect natural-origin Chinook salmon, sockeye salmon, and steelhead, but these fisheries are not considered interrelated with or interdependent on these programs because these programs are not the sole producers of fish for the fisheries.

1.7 5(i)(G) Adequate artificial propagation facilities exist to properly rear progeny of naturally spawned broodstock, to maintain population health and diversity, and to avoid hatchery-influenced selection and domestication.

The two programs that propagate ESA-listed fish utilize multiple facilities to properly rear progeny. As described in sections 4 and 5 of the HGMPs, the hatchery facilities used to implement the programs have adequate surface and groundwater sources, fish trapping and holding facilities, egg incubation and fish rearing vessels, and fish release facilities to ensure proper rearing. As mentioned previously, fish health is maintained throughout rearing by adhering to fish health policies and using pathogen-free water sources when possible. Minimization of catastrophic loss and genetic risks associated with these programs was addressed in sections 1.4 and 1.5, respectively, of this document.

1.8 5(i)(H) Adequate monitoring and evaluation exist to detect and evaluate the success of the hatchery program and any risks potentially impairing the recovery of the listed ESU.

Monitoring and evaluation actions to identify the performance of each program and hatchery-related effects on ESA-listed fish are also proposed. These actions are summarized in section 1.10 of each HGMP, and are further described in section 11 of each HGMP. Monitoring and evaluation actions that would be implemented include:

- Hatchery and natural-origin steelhead escapement to determine total escapement and smolt-to-adult return rates
- The number and distribution of marked and unmarked steelhead (via PBT and PIT tags) to inform harvest levels and proportion of hatchery-origin fish on the spawning grounds
- Abundance, timing, age class, sex ratio, and condition information for broodstock to assess run traits of the target populations
- Water withdrawal and effluent discharge to be able to qualitatively assess risk to listed species
- Operation of screw traps and electrofishing to determine emigration timing, size and age structure of natural-origin juveniles
- Monitoring of broodstock collection, composition, egg take, survival rates at all life stages, and smolt release levels for each program to determine compliance with program goals
- Fish health monitoring and reporting in accordance with fish health policies

1.9 5(i)(I) The HGMP provides for evaluating monitoring data and making any revisions of assumptions, management strategies, or objectives that data show are needed.

Under the HGMPs (section 1.10), data collected relating to hatchery program performance and effects would be evaluated by the applicants to determine whether performance standards were met. Annual reports for the programs assembled by the applicants would be jointly reviewed by NMFS to document program results, and to determine if adjustments to the programs' assumptions and management strategies are warranted. Any changes would be incorporated into the *U.S. v. Oregon* management Agreement, Annual Operating Plan documents, and/or the HGMP as necessary. These programs are enforced through the *U.S. v. Oregon* Management Agreement forum, upon review of annual reports and operating plans. The tribes and IDFG employ enforcement officers throughout the Area, who are responsible for on the ground enforcement to prevent ESA violations.

1.10 5(i)(J) NMFS provides written concurrence of the HGMP which specifies the implementation and reporting requirements.

After completion of the public review and comment period for this proposed evaluation and pending determination document, and after consulting with itself under section 7 of the ESA, NMFS will make a determination regarding the adequacy of the HGMPs. If the determination is made that implementing and enforcing the plans will not appreciably reduce the likelihood of survival and recovery of the ESA-listed species, and that the plans address all of the criteria specified in limit 6 of the 4(d) rule or the Tribal 4(d) Rule, NMFS will so notify the managers in writing, and will specify any necessary implementation and reporting requirements.

1.11 5(i)(K) The HGMP is consistent with plans and conditions set within any Federal court proceeding with continuing jurisdiction over tribal harvest allocations.

The steelhead programs were developed by the applicants pursuant to the *U.S. v. Oregon* fisheries and hatchery management framework. The kelt reconditioning program was developed in

response to a Reasonable and Prudent Measure in the Federal Columbia River Hydropower System Opinion (NMFS 2008; NMFS 2014). The HGMPs are one component of an effort to preserve and recover to a fishable status listed salmon and steelhead in the Snake River Basin. The draft recovery plans for fall and spring/summer Chinook salmon and steelhead and the final recovery plan for sockeye salmon² have hatchery and habitat components, and include monitoring, research, and restoration recommendations to complement artificial production. The hatchery actions proposed in the HGMPs are included within, and consistent with, these recovery plans. There are no other plans or conditions set within Federal court proceedings, including memorandums of understanding, court orders or other management plans, that direct operation of the proposed salmon and steelhead hatchery programs.

2 PENDING DETERMINATION

As required by limit 6 of the 4(d) rule and the Tribal 4(d) rule, the Secretary is seeking comment from the public on the pending determination as to whether or not the HGMPs evaluated here would appreciably reduce the likelihood of survival and recovery of the listed salmon and steelhead. In addition, comment is sought on whether the HGMPs meet the requirements of limit 6 of the 4(d) rule.

NMFS has reviewed the HGMPs and evaluated them together against the requirements of the relevant 4(d) rules. Based on this review and evaluation, NMFS' pending determination, subject to information provided during public comment, is that activities implemented as described would not appreciably reduce the likelihood of survival and recovery of NMFS' ESA-listed species. This pending determination does not prejudge the outcome of any additional environmental reviews which are scheduled to be completed prior to a final determination. As required in (6)(iv) of section 223.203 of the 4(d) rule for salmon and steelhead, the Secretary will publish notice of his determination together with a discussion of the biological analysis underlying that determination.

3 REEVALUATION CRITERIA

NMFS will reevaluate this determination if: (1) the actions described by the HGMPs and other application materials are modified in a way that causes an effect on the listed species not previously considered in NMFS' evaluation; (2) new information or monitoring reveals effects that may affect listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may affect NMFS' evaluation of the HGMPs.

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