

ANNUAL REPORT  
CALENDAR YEAR 2016  
OF ACTIVITIES UNDER THE  
ANADROMOUS FISH AGREEMENT  
AND HABITAT CONSERVATION PLAN  
WELLS HYDROELECTRIC PROJECT  
FERC LICENSE NO. 2149

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## 1 INTRODUCTION

On June 21, 2004, the Federal Energy Regulatory Commission (FERC) approved an Anadromous Fish Agreement and Habitat Conservation Plan (HCP) for the Wells Hydroelectric Project (Wells Project; Wells Dam – FERC License No. 2149) on the Columbia River in Washington State. The Wells Project is owned and operated by Public Utility District No. 1 of Douglas County (Douglas PUD). The HCP provides a comprehensive and long-term adaptive management plan for species covered under the HCP (Plan Species) and their habitats. This document is intended to fulfill Section 6.9 of the HCP, which requires an annual report of progress toward achieving the No Net Impact (NNI) goal, as described in Section 3 of the HCP, and a summary of common understandings based on completed studies. The Wells Project FERC License No. 2149 was issued in November 2012.

Designated representatives of the signatories of the Mid-Columbia HCPs (HCPs for the Wells, Rocky Reach, and Rock Island hydroelectric projects) comprise the Coordinating Committees, Hatchery Committees, and Tributary Committees for each HCP, which meet collectively to expedite the process for overseeing and guiding the implementation of their respective HCPs. Minutes from the 2016 meetings are compiled in Appendix A (HCP Coordinating Committees), Appendix B (HCP Hatchery Committees), and Appendix C (HCP Tributary Committees). The HCP Policy Committees provide a forum for resolution of disputes that are either elevated to or arise in the HCP Coordinating Committees and remain unresolved. The HCP Policy Committees did not meet in 2016, because no issues were discussed requiring dispute resolution. Therefore, there are no HCP Policy Committees meeting minutes to append to this annual report. Appendix D lists members of the Wells HCP Committees. The Wells HCP Coordinating Committee oversaw the preparation of this 13th Annual Report for calendar year 2016, which covers the period from January 1 to December 31, 2016 (the 1st through 12th Annual Reports covered the periods January 1 to December 31, 2004, through 2015, respectively).

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## 2 PROGRESS TOWARD MEETING OR MAINTAINING NO NET IMPACT GOAL

The Wells Project HCP requires preparation of an annual report that describes progress toward achieving the performance standard of NNI for each Plan Species. The NNI standard consists of two components: 1) 91 percent combined adult and juvenile project survival achieved by project improvement measures implemented within the geographic area of the project; and 2) 9 percent compensation for unavoidable project mortality, with 7 percent compensation provided through hatchery programs and 2 percent through tributary programs (Section 3.1 of the HCP). In 2016, Douglas PUD continued achievement of the NNI goal for the Wells Project by successfully meeting or exceeding all requirements for NNI under the Wells HCP.

The remainder of this section of the report summarizes decisions and agreements reached by the Wells HCP Coordinating, Hatchery, and Tributary Committees in 2016 in support of achieving NNI. This section is followed by sections summarizing achievements, actions, and activities specific to the areas of Wells Project survival and dam operations, hatchery compensation, and HCP Tributary Committees funding of habitat protection and restoration.

Throughout 2016, the HCP Coordinating, Hatchery, and Tributary Committees reached agreement on numerous issues during meetings, all of which were documented in the meeting minutes, with many of those decisions described in stand-alone Statements of Agreement (SOAs). The agreements approved during calendar year 2016 are summarized in Table 1 and discussed in the remainder of this section.

**Table 1**  
**Summary of 2016 Decisions by the Wells HCP Committees**

<b>Date</b>	<b>Agreement</b>	<b>HCP Committee</b>	<b>Reference</b>
January 7, 2016	Approved the tributary portion of the 2016 Wells HCP Action Plan	Tributary	Appendix C
January 20, 2016	Approved the hatchery portion of the 2016 Wells Action Plan	Hatchery	Appendix B
January 20, 2016	Agreed to revise the method (now, 40th percentile, including harvest) for calculating HRR targets	Hatchery	Appendix B

Progress Toward Meeting or Maintaining No Net Impact Goal

Date	Agreement	HCP Committee	Reference
January 20, 2016	Agreed to maintain the existing standards for Methow spring Chinook salmon size-at-release targets and re-evaluate the targets yearly	Hatchery	Appendix B
January 26, 2016	Approved the 2016 Wells HCP Action Plan, as revised	Coordinating	Appendix A and Appendix F
January 26, 2016	Approved the 2016 Total Dissolved Gas Abatement Plan and Juvenile Fish Bypass Operating Plan, as revised	Coordinating	Appendix A and Appendix G
January 26, 2016	Agreed to provide Deanne Pavlik-Kunkel (Grant PUD) member access to the HCP Hatchery Committees Extranet site, and add Pavlik-Kunkel to the requested HCP Hatchery Committees email distribution lists	Coordinating	Appendix A
February 17, 2016	Agreed to use the methods for calculating and assessing HRR targets described in Grant PUD's Target HRR Proposal, as revised during the Hatchery Committees February 17, 2016, meeting	Hatchery	Appendix B and Appendix H
March 7, 2016	Approved the 2015 Wells HCP Annual Report after no disapprovals were received during the 30-day review period	Coordinating	Appendix A
March 16, 2016	Approved the "USFWS proposal" in the revised Gene Flow Management Standards, and the revised Methow spring Chinook Gene Flow analysis spreadsheet distributed on March 16, 2016 ( <i>Note: final versions were distributed on March 20, 2016</i> )	Hatchery	Appendix B, Appendix I, and Appendix J
April 13, 2016	Approved the 2016 Broodstock Collection Protocols via email, as follows: Douglas PUD, NMFS, USFWS, WDFW, and the CCT approved April 11; and the YN approved April 13, 2016	Coordinating	Appendix A and Appendix K
April 13, 2016	Approved the 2016 Broodstock Collection Protocols	Hatchery	Appendix B and Appendix K
April 15, 2016	Approved the SOA for Modified Wells Dam Trapping for Bull Trout in 2016 via email, as follows: Douglas PUD approved April 13; NMFS, USFWS, and the CCT approved April 14; and WDFW and the YN approved April 15, 2016	Coordinating	Appendix A and Appendix E
April 26, 2016	Approved the request from Charles Frady (WDFW) to conduct real-time trapping at the Wells Dam west fish ladder during the second half of May 2016	Coordinating	Appendix A



Progress Toward Meeting or Maintaining No Net Impact Goal

<b>Date</b>	<b>Agreement</b>	<b>HCP Committee</b>	<b>Reference</b>
April 26, 2016	Agreed to consider approval of CRITFC's annual request to tag sockeye salmon at Wells Dam in 2016, via email, after Douglas PUD received additional information from Jeff Fryer (CRITFC)	Coordinating	Appendix A
May 9, 2016	Approved CRITFC's annual request to tag sockeye salmon at Wells Dam in 2016, via email, as follows: Douglas PUD and NMFS approved on April 29; USFWS, WDFW, and the CCT approved on May 2; and the YN approved on May 9, 2016	Coordinating	Appendix A
May 18, 2016	Agreed to a 2-day review period for the revised (version 2) April 20, 2016 meeting minutes	Hatchery	Appendix B
June 15, 2016	Approved Hatchery M&E Plan Appendices 2, 4, and 6 (final versions were distributed on June 24, 2016)	Hatchery	Appendix B and Appendix L
June 22, 2016	Agreed to convene quarterly, joint HCP/PRCC sessions to continue discussions regarding subyearling Chinook salmon passage studies	Coordinating	Appendix A
June 22, 2016	Agreed to move the monthly HCP Coordinating Committees meetings from the Radisson Hotel in SeaTac, Washington, to Wenatchee, Washington, starting with the HCP Coordinating Committees meeting on October 25, 2016	Coordinating	Appendix A
July 14, 2016	Approved a request for funding from the Methow Salmon Recovery Foundation for the Silver Side Channel Acquisition Project	Tributary	Appendix C
July 26, 2016	Agreed that, per the Wells Project HCP; 2000 Wells Project Interim BiOp; 2003 BiOp; and Hatchery Permits 1196, 1347, and 1395, trap operators at Wells Dam have the flexibility to trap spring Chinook salmon outside the protocols used to date (16 hours per day, 3 days per week), in order to achieve broodstock collection targets as prescribed and in consultation with the annual Wells HCP Coordinating Committee-approved Broodstock Collection Protocols	Coordinating	Appendix A
August 17, 2016	Approved Hatchery M&E Plan Appendices 3 and 6, as revised during the meeting (note: Appendix 6 was previously approved during the June 15, 2016, meeting, so this approval is for a revised final version)	Hatchery	Appendix B and Appendix L

Date	Agreement	HCP Committee	Reference
August 17, 2016	Agreed to change their meeting start time from 9:30 a.m. to 9:00 a.m. for all future meetings, starting at the next meeting	Hatchery	Appendix B
August 17, 2016	Agreed to hold back-to-back meetings with the PRCC Hatchery Sub Committee at Grant PUD's Wenatchee, Washington, office when the HCP Hatchery Committees and PRCC Hatchery Sub Committee facilitators think the agendas are short enough to hold both meetings in 1 day	Hatchery	Appendix B
October 19, 2016	Agreed to Douglas PUD's proposed 30-day review period for the Draft 2017 Methow M&E Implementation Plan	Hatchery	Appendix B
October 19, 2016	Agreed to delete draft Appendix 5 from the Hatchery M&E Plan because its contents are included in the plan itself	Hatchery	Appendix B
October 25, 2016	Agreed that HCP Coordinating Committees approval will be required to add non-HCP representatives and alternates to HCP email distribution lists, similar to approving Extranet access (the latter discussed February 25, 2014)	Coordinating	Appendix A
October 25, 2016	Agreed to add Michael Humling (USFWS) to the HCP Hatchery Committees email distribution list	Coordinating	Appendix A
October 25, 2016	Agreed to move the start time of the monthly HCP Coordinating Committees from 9:30 to 10:00 a.m., to accommodate travel arrangements for attendees	Coordinating	Appendix A
November 11, 2016	Approved a time extension request from Trout Unlimited for the MVID Instream Flow Improvement Project	Tributary	Appendix C
November 11, 2016	Approved a budget amendment request from Trout Unlimited for the MVID Instream Flow Improvement Project	Tributary	Appendix C

Notes:

BiOp = biological opinion  
 CCT = Colville Confederated Tribes  
 CRITFC = Columbia River Inter-Tribal Fish Commission  
 HCP = Habitat Conservation Plan(s)  
 HRR = hatchery replacement rate  
 MVID = Methow Valley Irrigation District  
 M&E = monitoring and evaluation  
 NMFS = National Marine Fisheries Service  
 PRCC = Priest Rapids Coordinating Committee

SOA = statement of agreement  
USFWS = U.S. Fish and Wildlife Service  
WDFW = Washington Department of Fish and Wildlife  
YN = Yakama Nation

## **2.1 Wells Project Survival and Dam Operations**

### **2.1.1 Status of Phase Designations for Current Plan Species**

A major feature of the Wells HCP is what is termed a “phased implementation plan” to achieve the survival standards. These phases have been described in previous HCP Annual Reports to FERC. Since February 2005, steelhead (*Oncorhynchus mykiss*), subyearling Chinook salmon (*O. tshawytscha*), yearling Chinook salmon, and sockeye salmon (*O. nerka*) have been in Phase III (either designated Standard Achieved or Additional Juvenile Studies; see Table 2).

In December 2007, coho salmon (*O. kisutch*) were designated as in Phase III (Additional Juvenile Studies). In 2008, land and monetary support with a total value of \$600,000 were transferred to the Yakama Nation (YN) pursuant to Douglas PUD’s coho salmon mitigation agreement. This transaction completed Douglas PUD’s coho salmon mitigation obligation through 2017. In 2014, Douglas PUD and the YN began discussing a new coho salmon mitigation agreement for implementation in 2018. Development of a new agreement necessitated the establishment of a NNI hatchery compensation rate. The rate established in Wells HCP, Section 8.4.5.1, was based on the estimated survival of the yearling spring migrants that had been documented prior to the signing of the Wells HCP. In 2015, in order to determine whether this surrogacy assumption among coho salmon and other spring migrants was still valid, Drs. John Skalski and Richard Townsend (Columbia Basin Research) conducted an analysis comparing hydrosystem survival of juvenile spring Chinook salmon, coho salmon, and steelhead from the same release location. The analysis found that, in general, spring Chinook salmon survival is expected to exceed coho salmon survival; however, when compared to steelhead, coho salmon survival is higher in 3 out of 5 years, and significantly higher in 1 out of 5 years. That is, the data indicate that coho salmon survival appeared to be lower than spring Chinook salmon and higher than steelhead. Therefore, the Wells HCP Coordinating Committee approved an SOA designating coho salmon as a Plan Species meeting the Phase III (Standard Achieved) for passage at Wells Dam based on similar survival of studied yearling migrants (intermediate between yearling

Chinook salmon and steelhead), thus establishing a passage survival rate on which to base the level of NNI hatchery compensation. Douglas PUD plans to conduct the next survival verification study for yearling spring migrants in 2020.

In 2016, Douglas PUD, in coordination with Chelan PUD and the Wells HCP Coordinating Committee, and Grant PUD and the Priest Rapids Coordinating Committee (PRCC), began re-evaluating the ability to conduct survival studies on subyearling Chinook salmon. This followed a multi-year subyearling life-history study completed by Douglas PUD for populations upstream of Wells Dam (see Section 2.1.2).

**Table 2**  
**Phase Designations for Wells Dam**

<b>Plan Species</b>	<b>Phase Designation</b>	<b>Date</b>
Upper Columbia River Steelhead	Phase III (Standard Achieved)	February 22, 2005; verified November 16, 2010 <sup>1</sup>
Upper Columbia River Yearling Chinook Salmon	Phase III (Standard Achieved)	February 22, 2005; verified November 16, 2010 <sup>1</sup>
Upper Columbia River Subyearling Summer/Fall Chinook Salmon	Phase III (Additional Juvenile Studies)	February 22, 2005
Okanogan River Sockeye Salmon	Phase III (Additional Juvenile Studies)	February 22, 2005
Methow River Coho Salmon	Phase III (Standard Achieved)	October 27, 2015 <sup>2</sup>

Notes:

- 1 Verified in a statement of agreement on November 16, 2010, by the Wells HCP Coordinating Committee. Verification study included Okanogan Basin yearling Chinook salmon per Sections 4.2.1 and 8.4.5.2 of the Wells HCP.
- 2 Approved in a statement of agreement on October 27, 2015, by the Wells HCP Coordinating Committee.

Under Phase III conditions (Standard Achieved), Douglas PUD is required to re-evaluate survival every 10 years, following the initial completion of 3 years of valid juvenile project survival studies. Douglas PUD conducted valid juvenile survival studies in 1998, 1999, and 2000. In 2010, Douglas PUD completed the first 10-year juvenile survival validation study, verifying the continued achievement of Phase III (Standard Achieved) for yearling Chinook salmon and steelhead migrating through the Wells Project (see Section 2.1.2). No juvenile project survival studies have been conducted since the 2010 study.

### **2.1.2 Assessment of Wells Project Survival**

As stated in Section 2, Douglas PUD has exceeded the HCP survival standard of 91 percent combined adult and juvenile Wells Project survival, and is in Phase III of the phased implementation plan for all Plan Species. As required by Section 4.2.5.1 of the Wells HCP, in 2010, Douglas PUD re-evaluated survival, constituting the first 10-year verification survival study. The Wells HCP Coordinating Committee selected yearling summer Chinook salmon as representative of spring migrant salmonids (juvenile spring Chinook salmon and yearling summer Chinook salmon and steelhead), and directed Douglas PUD to include Methow and Okanogan release sites for the study to fulfill Sections 4.2.1 and 8.4.5.2 of the Wells HCP. The results of the 2010 survival study (96.38 percent Wells Project survival for yearling Chinook salmon smolts) confirmed the continued achievement of Phase III (Standard Achieved) for yearling Chinook salmon and steelhead migrating through the Wells Project, even during the second lowest flow year in the past 25 years. Per Section 4.2.5.1 of the Wells HCP, the result of the 2010 study was combined with the results of the previous three studies to yield a 4-year average survival for yearling spring migrants of 96.3 percent. Douglas PUD plans to conduct a second survival-verification study in 2020, as required, using the same study design and protocols approved by the HCP Coordinating Committees for the 2010 survival-verification study.

In 2011, Douglas PUD initiated a 3-year subyearling life-history study aimed at determining whether the technology and tools exist to estimate, using empirical evidence, the survival of subyearling Chinook salmon migrating through the Wells Project. By the end of 2013, nearly 51,000 wild subyearling Chinook salmon were tagged and released above Wells Dam. In May 2014 and June 2014, Douglas PUD conducted seining surveys once per week to determine timing of recruitment of subyearling Chinook salmon to shoreline areas in Wells Reservoir and monitor growth rates of Chinook salmon at two seining locations. A final report is expected in spring 2017 that will include a comprehensive 4-year comparison (2011 through 2014) to examine year-to-year variability in behavior and life-history strategies and data on growth and fish availability from May 2014 and June 2014, and comparisons of recent data with data on passage timing and fish size from historical fyke netting at Wells Dam.

On June 21, 2016, a Subyearling Chinook Salmon Passage Survival Workshop was held to communicate information on the latest aspects of summer/fall Chinook salmon in the Mid-Columbia Basin. The workshop convened members of the HCP Coordinating Committees and PRCC, as well as regional expert guest presenters. This workshop featured updated information on discussions held during the last Subyearling Chinook Salmon Workshop in November 2009. Topics discussed included fish passage survival model updates, Snake River Chinook salmon life-history patterns, subyearling Chinook salmon life-history diversities observed in the Mid-Columbia Basin, availability of study fish, and tagging effects and available tags and detection equipment (Appendix M). Based on information presented, conducting survival studies on subyearling Chinook salmon is not feasible at this time. Issues include tag technology limitations, difficulty in defining active migrants versus non-migrating individuals, and understanding differences between summer/fall and spring subyearling Chinook salmon, variability in the data due to the plasticity of the species, deficiencies in juvenile monitoring at facilities during winter months, and comprehension of what is compliant with regard to HCP requirements. As a path forward, the HCP Coordinating Committees agreed to convene quarterly, joint sessions with the PRCC to continue discussions regarding subyearling Chinook salmon passage studies.

#### *2.1.2.1 Adult Passage Monitoring*

When the HCP was completed in 2002, the signatories acknowledged the lack of a scientifically accepted methodology for assessing adult survival at the Wells Project for Plan Species (assumed to be 98 percent). Available methods cannot differentiate between mortality caused by the project versus other sources of non-detection of tagged fish. Such sources might include mortality from natural causes or fisheries (e.g., mortality from disease, delayed mortality from injuries resulting from passage at downstream projects, and injuries sustained by marine mammals or harvest activities) or fish not detected for other reasons, such as spawning in locations downstream from Wells Dam or loss of passive integrated transponder (PIT) tags from the body cavity due to gonadal maturation during migration. Regardless of the tagging method used, this limitation remains—technology still does not allow a determination of the fates of all tagged fish detected passing a dam but not detected at the next dam upstream. However, calculations of total losses of tagged fish between

projects provide a means for evaluating compliance with the Wells HCP standards for adult passage. Sequential detections of PIT-tagged adult salmonids through PIT-tag detection systems in the fishways of each dam provide data for calculating conversion rates through the hydrosystem. Calculated per-project conversion rates furnish sufficient evidence for the achievement of adult survival standards, in that project-related mortality must be less than 2 percent when per-project conversion rates exceed 98 percent (i.e., less than 2 percent of fish are missing due to all sources of mortality, including Wells Project-related mortality).

Table 3 details PIT-tag detections at Rocky Reach Dam of known-origin, adult spring and summer Chinook salmon, sockeye salmon, and steelhead originating above Wells Dam; the number of those adults redetected at Wells Dam; and the estimated conversion rate (Rocky Reach Dam to Wells Dam) for return year 2016. The Rocky Reach-to-Wells conversion rate was 100 percent for spring Chinook salmon, 98.5 percent for steelhead (that is, mortalities from all sources did not exceed 1.5 percent), 98.7 percent for summer Chinook salmon, 100 percent for coho salmon, and 96.2 percent for sockeye salmon. These rates for summer Chinook salmon, steelhead, and sockeye salmon include any effects of popular recreational fisheries downstream of Wells Dam.

**Table 3**  
**Return-year 2016 Rocky Reach-to-Wells Adult Conversion Rates for PIT-tagged Fish**  
**Originating above Wells Dam**

Stock Species <sup>1</sup>	Number Detected at Rocky Reach Dam	Number Detected at Wells Dam	Rocky Reach-to-Wells Conversion Rate
Summer Steelhead <sup>2</sup>	133	131	98.5 percent
Spring Chinook Salmon <sup>3</sup>	106	106	100.0 percent
Summer Chinook Salmon <sup>4</sup>	128	126	98.7 percent
Coho Salmon <sup>5</sup>	23	23	100.0 percent
Sockeye Salmon <sup>6</sup>	53	51	96.2 percent

Notes:

- 1 Source of conversion-rate calculations for steelhead and Chinook salmon: Columbia River DART website ([http://www.cbr.washington.edu/dart/query/pitadult\\_conrate](http://www.cbr.washington.edu/dart/query/pitadult_conrate)). Calculation parameters: Conversion Reach = Rocky Reach to Wells; Species = respective species; Run = respective run; Rear Type = All; Release Location = Columbia River and Tributaries above WEL (except, Okanogan Basin – all, for sockeye); Month Range = January start, and December end. Minijacks (immigrants returning in their emigration year), fish tagged as adults, and release sites below upper project were excluded; and recaptures, mortalities, upstream detections, upstream recaptures, and upstream mortalities were included. Wells counts are not corrected for any fish harvested between Rocky Reach and Wells dams.
- 2 Summer steelhead released into or originating from the Okanogan and Methow River Systems – PIT-tag release site designations: CHEWUR, METH, METHR, OKANR, OMAKC, SALMOC, TWISPP, TWISPR, and WINT. Please note that some steelhead detected at Rocky Reach Dam in 2016 will not pass Wells Dam until the spring of 2017.
- 3 Spring Chinook salmon released into or originating from the Methow River System – PIT-tag release site designations: CHEWUP, CHEWUR, MDVAP, CHJO, MDVAP, METH, METHR, RIVERP, TWISPP, TWISPR, WINT, and WINTBC.
- 4 Summer Chinook salmon originating upstream of Wells Dam – PIT-tag release site designations: CHJO (Chief Joseph Hatchery), COLR8 (wild fish tagged as subyearlings), and OMAKP (Chief Joseph Hatchery acclimation pond).
- 5 Coho salmon originating upstream of Wells Dam – PIT-tag release-site designations: BIDDLP, GOLD2C, TWIS2P, WINT.
- 6 Okanogan sockeye salmon tagged in Canada by the Okanogan Nation Alliance – PIT-tag release site designations: OSOYBR, SKA, and SKATAL.

Canada by the Okanogan Nation Alliance – PIT-tag release site designations: OSOYOL and SKATAL.

DART = Data Access in Real Time

PTAGIS = PIT Tag Information System

As described in Table 3, conversion rates of PIT-tagged fish provide a minimum estimate of survival between detection sites because they encompass mortalities from all sources and non-detected fish between the two detection sites. They do not include any indirect or delayed mortality that might occur upstream of Wells Dam that is a result of passing Wells Dam. As noted above, conversion rates reflect a combination of mortality attributable to non-project related causes (e.g., recreational and tribal harvest, predation, and disease) and dam passage, as well as non-detections resulting from straying and spawning downstream of Wells Dam. For this reason, the actual Wells Project survival rate for adult Plan Species likely exceeds the 98 percent assumption set forth in the HCP.

The Wells Project FERC License No. 2149 (issued in November 2012) requires Douglas PUD to implement three plans and programs related to bull trout (*Salvelinus confluentus*), in addition to other measures. Specifically, the license requires Douglas PUD to implement the Bull Trout Management Plan contained within the Aquatic Settlement Agreement, the Bull Trout Biological Opinion (BiOp), and Section 18 of the *Federal Power Act: Fishway*



*Prescriptions for Bull Trout.* Consistent with the terms of FERC License No. 2149 for the Wells Project, Douglas PUD filed the *2015 Bull Trout Management Plan and Incidental Take Annual Report* with FERC prior to the May 31, 2016, deadline. This report included a summary of all bull trout activities conducted between January 1, 2015, and December 31, 2015 (Appendix N).

The license deadline for reporting annual 2016 bull trout activities to the U.S. Fish and Wildlife Service (USFWS) is April 15, 2017, and the deadline for filing the Annual Bull Trout Report to FERC is May 31, 2017.

### *2.1.2.2 Grand Coulee Valid Study Flow Duration Curve Update*

The Wells HCP, Section 4.1.4, requires that survival studies must reflect “Representative Environmental Conditions” for each test, and for each Plan Species and life-history. “Representative Environmental Conditions” as defined by the Wells HCP means river flows between the 10 percent and 90 percent points on the Flow Duration Curve, as calculated using the best available information on historical average river flow (1929 through 1978 and 1993 through 2001 HydroSim) as measured at the Grand Coulee Dam tailrace. In 2013, data were compiled to update the Flow Duration Curves, because the Wells HCP requires periodic review of those curves. The HCP Coordinating Committees agreed to develop an updated Flow Duration Curve using the historical 1929 through 1978 and 1983 through 2001 datasets, to which the new 2002 through 2012 dataset was added, and for comparison, to the Flow Duration Curve based on the 1983 through 2012 dataset. The HCP Coordinating Committees also agreed to revise the definition of the summer period to comprise June 1 through August 15, compared to the former July 1 through August 15 period. Updated Flow Duration Curves were expected to become finalized in early 2014; however, in February 2014, a fracture discovered in Wanapum Dam postponed a number of efforts, including updating the curves, until time allows. The final updated Flow Duration Curves are projected to be completed in 2017. Updating the Flow Duration Curves was driven by requirements in the Rocky Island and Rocky Reach HCPs, whereas the Wells HCP specifies only periodic review. Nevertheless, the Wells HCP Coordinating Committee determined that updating the Flow Durations Curves for the Wells HCP should also take place at the same time as the updates for the Rocky Reach and Rock Island HCPs.

### 2.1.2.3 Completed Studies 2016

#### Northern Pikeminnow Removal Program

Since 1993, Douglas PUD has funded research on, and removal of, northern pikeminnow (*Ptychocheilus oregonensis*) at the Wells Project to understand and control predators of juvenile salmonids within the Project. Annual reports are developed that summarize the northern pikeminnow research and removal efforts for each year. The Draft 2015 Douglas PUD Pikeminnow Program Annual Report was submitted to the Wells HCP Coordinating Committee for review in December 2016, and is expected to be finalized in early-2017. From 1995 to 2015, the northern pikeminnow removal program funded by Douglas PUD has resulted in the removal of approximately 286,000 northern pikeminnow from the Wells Project.

In 2016, Douglas PUD continued northern pikeminnow removal efforts, and a final report on these efforts is expected by spring 2017.

#### Pacific Lamprey Passage Studies

On February 10, 2016, the *2016 Adult Lamprey Approach, Passage, and Enumeration Study Plan* (Appendix O) was approved by the Wells Aquatic Settlement Work Group (SWG) for implementation in 2016. The 2016 study shifts from using active radio telemetry, as with earlier studies to evaluate passage at Wells Dam, to a broader Pacific lamprey (*Entosphenus tridentatus*) approach study using acoustic and PIT tags. Douglas PUD had been operating under the assumption that fish will approach and pass Wells Dam; however, this may not be a valid assumption. The goal of the 2016 Lamprey Approach, Passage, and Enumeration Study was to use acoustic and PIT-tag methodologies to assess this assumption and determine how to appropriately evaluate passage at Wells Dam in the future. In August 2016, 51 Pacific lamprey collected at Priest Rapids Dam were acoustically and PIT-tagged, and released 0.8-mile upstream of Rocky Reach Dam on the Chelan County side of the reservoir. Between Grant, Chelan, and Douglas PUDs, just fewer than 500 PIT-tagged fish and 151 acoustically tagged fish (including 51 from Douglas PUD and 100 from Grant PUD) were released in the Mid-Columbia River in 2016. Results from this year's study will be summarized in a report, expected to be available in 2017.

### Wells Dam Bypass Operations and Outmigration Effects

The Wells HCP, Section 4.3.2, requires Douglas PUD to conduct monitoring every 10 years to verify the effectiveness of the timing of bypass operations at Wells Dam in passing 95 percent of the spring and summer migration of HCP Plan Species. Prior to 2003, hydroacoustic and fyke netting studies at Wells Dam provided data on passage timing necessary to determine the timing of annual bypass operations. In 2011, Douglas PUD discussed the requirement found in Section 4.3.2 of the HCP with the Wells HCP Coordinating Committee to plan for a study in 2012. The Wells HCP Coordinating Committee representatives questioned the need for such a study because of the potential for take of Endangered Species Act (ESA)-listed salmon, and instead suggested an alternative to using the past methods of hydroacoustic monitoring and fyke netting for species verification. Douglas PUD agreed to verify run-timing by comparing Rocky Reach Dam juvenile bypass index samples to bypass operations at Wells Dam, using the adjusted run-timing of fish passing through the Rocky Reach Juvenile Fish Bypass (RRJFB) as a surrogate for run-timing at Wells Dam.

Results of the analysis of run-timing at the RRJFB confirmed that in most years the Wells bypass was appropriately operated to include 95 percent of the spring and summer migration at Wells Dam. However, in 2 of the 6 years analyzed, an earlier start of the Wells bypass would have been necessary to achieve the standard for spring Chinook salmon. Also, the analysis determined that the Wells bypass system could have been shut down earlier in each of the 6 years analyzed and would still have provided greater than 95 percent protection for summer migrating Chinook salmon. The Wells HCP Coordinating Committee agreed that these data would be used to guide the operations of the Wells Bypass System beginning in 2012.

Since 2012, each year following the termination of sampling at the RRJFB, Douglas PUD has updated the analysis with data from the current year and distributed the *Analysis of Proportion of Outmigration Affected by Bypass Operations at Wells Dam* report from Columbia Basin Research's Drs. John Skalski and Richard Townsend. Similarly, in 2016, following the termination of sampling at the RRJFB, Douglas PUD updated the analysis with 2016 bypass data, and in October 2016, distributed the draft report, *Analysis of Proportion of*

*Outmigration Affected by Bypass Operations at Wells Dam in 2016.* The updated analysis indicated the modified bypass timing first implemented in 2012 and continued through 2016 provided bypass passage for greater than 99 percent of the spring and summer migrations of Plan Species during 2016.

In 2016, Douglas PUD, in coordination with Biomark, installed a bypass antenna system in Bypass Bay 2 at Wells Dam, which allows Douglas PUD to measure juvenile fish travel times from Wells Dam to Rocky Reach Dam (see Section 2.1.3.2). Due to unexpected complications during installation, the system was not fully operational in time to sample the bulk of releases of fish from hatcheries upstream of Wells Dam in 2016, but did detect some fish from later release groups of steelhead and coho salmon. Also, there were periods in 2016 when the Wells Dam forebay elevation was below the antennas or when debris was clogging the antennas. In the interest of improved detection in future years, Douglas PUD plans to expand Bay 2's detection system deeper in the water column. Modifications to the system are expected to be complete in time for the 2017 bypass season.

The *Analysis of Proportion of Outmigration Affected by Bypass Operations at Wells Dam in 2016* report was finalized on December 5, 2016, following a 60-day review period, and was included as Appendix A in the 2016 Post-Season Bypass Summary (Appendix P; see Section 2.1.3.1).

#### Gas Bubble Trauma Monitoring

Pursuant to FERC License No. 2149 and the Wells Project Clean Water Act Section 401 Water Quality Certification, Douglas PUD implements a program each year to monitor gas bubble trauma in adult Plan Species at Wells Dam and the Wells Fish Hatchery (FH) and in juvenile Plan Species at the RRJFB sampling facility whenever total dissolved gas levels exceed 125 percent in the tailrace of Wells Dam.

On February 10, 2016, the *2015 Total Dissolved Gas Abatement Plan Annual Report* (Appendix Q) was approved by the Aquatic SWG and submitted to FERC on February 29, 2016. This report summarized water quality compliance, including gas bubble trauma monitoring throughout 2015, as described in the 2015 Wells HCP Annual Report.

In conformance with the *2016 Total Dissolved Gas Abatement Plan* (Appendix G), Douglas PUD continued implementing monitoring for gas bubble trauma in 2016. However, in 2016, there were no exceedances of the 125 percent tailrace total dissolved gas standard.

#### 2016-2017 Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir Study

FERC License No. 2149 includes a requirement to implement a Bull Trout Passage Evaluation Study at the Twisp Weir in Year 1 of the license. Following consultation with USFWS and the Aquatic SWG, Douglas PUD decided to postpone the study for 4 years to combine the study with a Bull Trout Passage Evaluation Study scheduled to take place at Wells Dam during Year 5 of the license term. FERC approved deferring the study as requested and required the comprehensive study be conducted by November 2017.

On February 10, 2016, the *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir Final Study Plan* (2016 to 2017; Appendix R) was approved by the Aquatic SWG for implementation beginning in 2016. This study uses radio-telemetry to monitor bull trout and determine whether survival and passage-success rates for adult, marked bull trout are greater than 95 percent at Wells Dam and greater than or equal to 90 percent at the Twisp Weir. In July 2016, 60 adult bull trout captured at Wells Dam (14 fish) and the Twisp Weir (46 fish) were tagged with radio tags and PIT tags, and released at a location upstream of the Twisp Weir at the Buttermilk Creek confluence with the Twisp River. Fish are being tracked via mobile tracking and monitoring of fixed station detections. Data from fixed stations are downloaded every other week. Monitoring of the radio tags will continue through the 2017 migration, and a final report is expected in November 2017.

#### *2.1.2.4 Planned Studies 2017*

In 2017, Douglas PUD plans to continue evaluating effects of the Wells Project and its operations on adult Pacific lamprey upstream passage behavior and enumeration in the Wells Project fishways. Douglas PUD will continue the annual implementation of the northern pikeminnow removal program. Also, as in previous years, Douglas PUD will continue the evaluation of the effectiveness of the timing of bypass operations at Wells Dam and its effects on the juvenile salmonid outmigration, by updating the analysis of run-timing

at the RRJFB with 2017 data, and will include data from the upgraded PIT-tag detection system in Bypass Bay 2. Douglas PUD will also continue monitoring bull trout for the 2016-2017 Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir Study. Reports on these activities will be developed summarizing the results. In 2017, Douglas PUD will also continue participating in discussions regarding the feasibility of future subyearling Chinook salmon passage studies.

### **2.1.3 Wells Project Operations and Improvements**

This section summarizes project operations implemented to meet HCP requirements at Wells Dam in 2016. Actions in 2016 were guided by the *2016 Wells HCP Action Plan* (Appendix F), as approved by the Wells HCP Coordinating Committee on January 26, 2016 (Appendix A).

#### **2.1.3.1 Operations**

##### Juvenile Bypass System

As in past years, operation of the juvenile bypass system in 2016 was guided by the *2016 Juvenile Fish Bypass Operating Plan* (Appendix G) and criteria contained within Section 4.3 of the Wells HCP. Bypass operations were initiated on April 9, 2016, at 0000 hours and continued until terminated at 2400 hours on August 19, 2016, for a total of 133 days. Because of moderate flows during the period of bypass operations in 2016, Douglas PUD did not need to remove bypass barriers to maintain compliance with the *2016 Juvenile Fish Bypass Operating Plan* (Appendix G) and provisions of the *2016 Total Dissolved Gas Abatement Plan* (Appendix G). Douglas PUD exceeded the HCP requirement to provide bypass operations during 95 percent of the juvenile salmon and steelhead migration passing Wells Dam by providing bypass passage during 99.77 percent of the steelhead migration, 100 percent of the sockeye salmon migration, 99.76 percent of the coho salmon migration, 99.72 percent of the yearling Chinook salmon migration, and 99.84 percent of the subyearling Chinook salmon migration passing Wells Dam in 2016 (see Section 2.1.2.3). A complete summary of 2016 bypass operations at Wells Dam is included in the 2016 Post-Season Bypass Summary (Appendix P).

### Trapping Activities at Wells Dam

Each year, multiple hatchery programs obtain broodstock from the Wells Dam fishway traps and Wells FH volunteer channel. The Wells HCP Coordinating Committee oversees these activities because certain trapping activities can affect salmon and steelhead passage at the dam.

The Wells HCP stipulates that “Broodstock Collection Protocols are developed by the Washington Department of Fish and Wildlife and are annually submitted to the Wells HCP Coordinating Committee and National Marine Fisheries Service (NMFS) Hydro Program for annual approval prior to trapping at the Dam” (Wells HCP, Section 15, Appendix A). The Broodstock Collection Protocols SOA, approved by the HCP Coordinating Committees on October 28, 2014, and HCP Hatchery Committees on September 17, 2014, delegated NMFS’ approval of the annual Broodstock Collection Protocols jointly to the NMFS, HCP Hatchery Committees, and Coordinating Committees representatives. As such, the 2016 Broodstock Collection Protocols were approved by the Wells HCP Coordinating Committee via email, as follows: Douglas PUD, NMFS, USFWS, Washington Department of Fish and Wildlife (WDFW), and the Colville Confederated Tribes (CCT) on April 11, 2016; and the YN on April 13, 2016.

In 2016, trapping operations at Wells Dam included: 1) WDFW for Douglas PUD’s spring Chinook salmon and steelhead programs, Grant PUD’s Carlton summer Chinook salmon program, and Chelan and Grant PUDs’ Spring Chinook Salmon Methow Conservation Program; 2) Dr. Jeff Fryer for the Columbia River Inter-Tribal Fish Commission’s (CRITFC’s) sockeye salmon study; 3) the YN for its coho salmon reintroduction program; and 4) Douglas PUD for the 2016-2017 Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir Study.

As part of the ongoing Wells Hatchery Modernization efforts, the Wells Dam west fish ladder trap was out of service for much of the 2016 trapping season (the conveyance pipe from the trap to the new Adult Handling Facility was disconnected). A new pipe has been installed and operating in 2016, but modifications will be made prior to commencement of spring Chinook salmon trapping in spring 2017, when the pipe is planned to be fully functional again. Adjustments were arranged as needed, as further described below.

WDFW conducts run composition sampling each year during its trapping efforts at Wells Dam. In 2016, the out-of-service west fish ladder trap caused concern about obtaining enough spring Chinook salmon for broodstock collection and stock assessment, based on historical data indicating a large proportion of the spring Chinook salmon run seems to favor passing Wells Dam via the west fish ladder. As a workaround, WDFW requested to conduct real-time trapping at the Wells Dam west fish ladder by diverting fish into the return-to-ladder chute, collecting them from that chute, transporting target fish via a boot, and anesthetizing and processing the fish on the west fishway deck. This real-time trapping was proposed to occur during regularly scheduled trapping operations during the second half of May 2016. After discussing feasibility and logistics, the Wells HCP Coordinating Committee approved WDFW's request on April 26, 2016. However, delays in the construction schedule at Wells Hatchery allowed WDFW to trap as usual on the west ladder for most of May 2016, without using the real-time trapping method.

In 2016, spring Chinook salmon run-timing at Wells Dam was compressed, and most of the run passed Wells Dam in a 2-week period. Given trapping constraints, and the fact that the peak of passage at Wells Dam occurred on the weekend when trapping did not occur, WDFW staff were unable to collect the target number of natural-origin broodstock for the Methow Conservation Program at Wells Dam. Therefore, the HCP Hatchery Committees supported tangle-netting in the Chewuch River or Methow River to acquire natural-origin recruits for the Methow Conservation Program in 2016, contingent that measures would be taken to eliminate the need for tangle-netting in the future (see Section 2.2.2.18). After discussing various modifications to trapping at Wells Dam, the HCP Coordinating Committees agreed trap operators at Wells Dam have the flexibility to trap spring Chinook salmon outside the protocols used to date (16 hours per day, 3 days per week) in order to achieve broodstock collection targets as prescribed in the annual Wells HCP Coordinating Committee-approved Broodstock Collection Protocols. This agreement is also consistent with the Wells Project HCP, 2000 Wells Project Interim BiOp, 2003 BiOp, and Hatchery Permits 1196, 1347, and 1395.

The Wells HCP Coordinating Committee approved CRITFC's annual request to tag sockeye salmon at Wells Dam in 2016, via email, as follows: Douglas PUD and NMFS approved



April 29, 2016; USFWS, WDFW, and the CCT approved May 2, 2016; and the YN approved May 9, 2016. In 2016, with the west fish ladder trap out of service during the sockeye salmon run, CRITFC conducted all sockeye tagging at the east fish ladder, in contrast to the tagging being conducted in the west fish ladder, as was done in previous years.

The Douglas PUD Aquatic SWG requested approval from the Wells HCP Coordinating Committee to trap bull trout at Wells Dam in 2016, in fulfillment of a requirement from FERC to conduct a comprehensive bull trout passage evaluation study by November 2017 (see Section 2.1.2.3). The request was for 7-weeks of trapping at the east fish ladder at the same time as spring Chinook salmon trapping, and targeted trapping 30 bull trout. The request also stipulated that trapping spring Chinook salmon outside of the timing window for spring Chinook salmon trapping would be avoided unless it benefited other programs. After discussing trapping hours, logistics, and protocols, the Wells HCP Coordinating Committee approved the SOA for Modified Wells Dam Trapping for Bull Trout in 2016 (Appendix E) via email, as follows: Douglas PUD approved April 13, 2106; NMFS, USFWS, and the CCT approved April 14, 2016; and WDFW and the YN approved April 15, 2016.

#### Wells Project Land-use Applications and Permits

Douglas PUD's FERC License No. 2149 (issued in 2012) requires the renewal of all Wells Project Land-use Permits that were current when the new license was issued. The Wells HCP also requires that Douglas PUD notify and consider comments from the Parties to the HCP regarding any land-use action on the reservoir for which Douglas PUD is considering issuing a permit. Douglas PUD utilizes the Wells HCP Coordinating Committee as the venue for notifying and soliciting comments from the HCP Parties regarding such land-use permitting. In 2016, two new Wells Project Land-use Permit Applications were provided to the Wells HCP Coordinating Committee for review. As agreed upon in 2015, the Wells HCP Coordinating Committee representatives submitted edits and comments, or an indication of no comments, on the land-use permits and permit applications by the review deadline. In 2016, Douglas PUD proceeded with issuance of both permits.

### *2.1.3.2 Improvements*

Facility improvements and maintenance at Wells Dam in 2016 that had the potential to affect Plan Species are discussed in the following paragraphs.

The fishways at Wells Dam are inspected and maintained annually during winter. During the winter inspection season, the HCP requires that at least one fishway remains in service to provide fish passage. Typically, each fishway receives either annual maintenance or a more substantial inspection and maintenance every other year.

During the 2015/2016 winter fishway maintenance at Wells Dam, the west fishway received the more substantial inspection and maintenance. Inspection and maintenance on the west fishway commenced on December 1, 2015, and concluded on January 28, 2016. Inspection and maintenance on the east fishway commenced February 2, 2016, and concluded on February 23, 2016. In the west fishway, in addition to the more robust inspection, maintenance work was conducted on the fish pumps for the auxiliary water supply. In both fishways, in preparation for future Pacific lamprey studies, mechanics or contractors completed the following tasks: 1) reopened the low-level entrances and installed lamprey entrance boxes specifically for lamprey passage; 2) installed PIT-tag antennas on the lamprey entrance boxes installed at the low-level entrances; 3) installed nylon brush-strips to close gaps used by Pacific lamprey to bypass the count windows; and 4) inspected the radio-telemetry antennas throughout the fishways (see Section 2.1.2.3). In the east fishway, routine annual maintenance was also performed in addition to the aforementioned actions in both fishways.

Installation of lamprey enumeration structures was planned for both fishways during the 2015/2016 winter fishway maintenance at Wells Dam; however, due to issues with obtaining construction materials and fabricating the structures, only one structure was installed in the west fishway. In 2016, during the sockeye salmon run, fish counters observed sockeye salmon accessing the newly installed Pacific lamprey enumeration structure at the count window, which was later determined to be the result of mistakenly constructing the structure with a larger count tunnel and exit than was specified in the design. In August 2016, the tunnel and exit of the enumeration structure were removed and modified, so salmon could not access the structure, and reinstalled. When the counters observed the

modifications did not prevent salmon entry, the exit and tunnel sections were removed. An enumeration structure with correct entrance and exit dimensions was constructed for installation in the east fish ladder, but was not installed.

The construction phase of the modernization of Wells Hatchery commenced in 2015 and continued in 2016 (see Section 2.2.3). Constructed infrastructure included a new Adult Handling Facility, which serves as the terminus for the pipe that conveys fish from the trapping facility in the west fishway to the hatchery for sorting for other purposes, as discussed in Section 2.2.3.

Also, during 2016, the first juvenile PIT-tag detection system at Wells Dam was installed for testing during the 2016 bypass season. In April 2016, four temporary PIT-tag antennas were installed in Wells Bypass Bay 2 just before routine bypass operations started at Wells Dam; however, the system was not fully operational until late April 2016, because not all electrical infrastructure was installed at the time of installation. Data were coded so they uploaded to the PTAGIS database separately from the adult detection system. In August 2016, the bypass PIT-tag detection system was removed and evaluated to determine how well the system survived being submerged. In the interest of better understanding vertical distribution of fish through the area (see Section 2.1.2.3), Douglas PUD plans to expand the bypass detection system to fill one vertical column of openings in Bypass Bay 2. Expansion of the system is expected to be ready and operational at the start of the 2017 bypass season.

During the 2016/2017 winter fishway maintenance at Wells Dam, the east fishway received the more substantial inspection and maintenance. Inspection and maintenance on the east fishway commenced on December 7, 2016, and concluded on January 9, 2017.

## **2.2 Hatchery Compensation**

As required by the HCP, Douglas PUD supported hatchery production in 2016 to compensate for unavoidable project mortality and loss of habitat resulting from original inundation by the project. Section 8 of the Wells HCP outlines a Hatchery Compensation Plan with two hatchery objectives for Douglas PUD: 1) to provide hatchery compensation for spring Chinook salmon, summer/fall Chinook salmon, sockeye salmon, coho salmon, and summer

steelhead; and 2) to implement specific elements of the hatchery program consistent with the overall objectives of rebuilding natural populations and achieving NNI.

In February 2016, the draft 2016 Broodstock Collection Protocols for Chinook and coho salmon, and steelhead were distributed to the HCP Hatchery Committees for review. The revised draft protocols were approved via email as follows: WDFW and NMFS approved April 8, 2016; Douglas PUD approved April 11, 2016; and Chelan PUD, the CCT, the YN, and USFWS approved April 13, 2016. The 2016 Broodstock Collection Protocols (Appendix K) were distributed to the HCP Hatchery Committees on April 14, 2016, and implemented at program hatcheries throughout 2016. In-season revisions to the protocols were made as needed in coordination with the Wells HCP Hatchery Committee. As in previous years, the 2016 Broodstock Collection Protocols were used to guide the collection of salmon and steelhead broodstock in the Methow, Okanogan, Wenatchee, and Columbia river basins. The protocols are consistent with previously defined program objectives, such as program operational intent (i.e., conservation or harvest augmentation) and mitigation production levels (HCPs, and the Priest Rapids Project 2008 BiOp), and they comply with ESA permit provisions.

Hatchery production for NNI and inundation compensation in 2016 included the release of 713,856 yearling and 439,709 subyearling salmonids from hatcheries associated with the Wells Project (Tables 4 and 5). These totals do not include the increased production of natural-origin sockeye salmon smolts attributed to Douglas PUD's sockeye salmon NNI compensation (the continued implementation of the Okanogan Fish and Water Management Tool project administered by the Okanogan Nation Alliance [ONA] and funded by Douglas PUD). The total also does not include NNI compensation paid by Douglas PUD to the CCT for spring and summer/fall Chinook salmon at Chief Joseph Hatchery, or to the YN for the Coho Salmon Enhancement Program in the Methow Basin. Lastly, these totals also do not include the Methow Basin spring Chinook salmon produced at Methow FH for Grant PUD and Chelan PUD, or the yearling steelhead produced at Wells FH for Grant PUD.

## 2.2.1 Hatchery Production Summary

Tables 4 and 5 summarize and compare HCP hatchery production objectives and actual 2016 production levels (release numbers) for the fixed hatchery compensation for the original Inundation and Harvest Enhancement Programs, and the HCP passage loss (i.e., NNI) compensation programs.

### 2.2.1.1 Inundation Compensation Program

The FERC license to operate the Wells Project requires Douglas PUD to rear and release fish to compensate for original impacts associated with the development of the Wells Dam and Wells Reservoir (see Table 4). All of the fish for this program are raised at the Wells FH. The number of fish to be released each year for the Inundation and Harvest Enhancement Program can be found in Section 8.4.6 of the Wells HCP Agreement.

**Table 4**  
**Production Objectives and Release Numbers for the**  
**Inundation and Harvest Enhancement Programs in 2016**

<b>Inundation and Harvest Compensation Program</b>	<b>Numeric Target</b>	<b>Number Released</b>
Yearling Summer/Fall Chinook Salmon (BY 2013)	320,000	350,000
Subyearling Summer/Fall Chinook Salmon (BY 2014)	484,000	439,709
Yearling Summer Steelhead (BY 2014) <sup>1</sup>	300,000	324,063

Notes:

- 1 There were 440,944 summer steelhead produced at the Wells Fish Hatchery for release in 2016. The total Wells Fish Hatchery production target of 408,000 fish was a combination of Wells NNI (8,000), Wells inundation (300,000), and the sharing agreement with Grant PUD (100,000).

BY = brood year

NNI = No Net Impact

### 2.2.1.2 No Net Impact Compensation Program

Section 8.4.3 of the Wells HCP contains the initial numbers of juvenile HCP Plan Species Douglas PUD must produce to meet NNI production levels for unavoidable juvenile losses at the Wells Project. These initial production targets were reduced in 2011 following the demonstration of higher-than-expected survival through the Wells Project for spring-migrating yearling Chinook salmon and steelhead (per the 2010 Survival Verification Study). The hatchery compensation production targets were also adjusted (per the Wells

HCP Agreement, Section 8.4.5), with NNI steelhead releases adjusted starting in 2013 and NNI spring and summer Chinook salmon targets adjusted starting with the 2014 releases. The NNI production goals for the 2016 releases are contained in Table 5 (Numeric Target). Juvenile passage losses are offset through the production of juvenile Plan Species at two facilities (Wells and Methow fish hatcheries) and through the implementation of mitigation options identified in the Sockeye Enhancement Decision Tree.

**Table 5**  
**Production Objectives for the**  
**HCP Passage Loss (NNI) Compensation Program in 2016**

<b>NNI Compensation Program</b>	<b>Numeric Target</b>	<b>Number Released</b>
Yearling Summer Steelhead (BY 2015)	8,000	8,205 <sup>1</sup>
Yearling Spring and summer/Fall Chinook Salmon (BY 2014)	NNI achieved by annually funding Chief Joseph Fish Hatchery operations, maintenance, and evaluation <sup>2</sup>	
Yearling Spring Chinook Salmon (BY 2014) <sup>3</sup>	29,123	31,588
Yearling Osoyoos Lake Sockeye Salmon <sup>4</sup>	NNI achieved by annually funding the Okanogan Fish and Water Management Tool	
Methow Coho Salmon <sup>5</sup>	NNI achieved by payment to the Yakama Nation for the Coho Salmon Enhancement Program in the Methow Basin	

Notes:

- 1 The total wild-by-wild production released into the Twisp River was 57,916, including 8,205 NNI fish and 49,711 inundation fish (Table 4 [C. Snow, WDFW 2017, personal communication]).
- 2 In 2011, Douglas PUD agreed to provide funding at 3.7 percent of annual operations, maintenance, and evaluations costs for spring Chinook salmon and summer/fall Chinook salmon at CJH to achieve NNI for these species produced at CJH.
- 3 There were 265,290 spring Chinook salmon smolts produced at the Methow FH for release in 2016 (C. Snow, WDFW 2017, personal communication). The total Methow FH production target of 223,765 fish was a combination of Wells NNI (29,123), the sharing agreement with Grant PUD (134,126), and the sharing agreement with Chelan PUD (60,516).
- 4 Okanogan sockeye salmon obligation for NNI is covered by Douglas PUD funding of the Okanogan Fish Water Management Tool program (Wells HCP: Sections 8.4.4 and 14, and Figure 3) managed through the Okanogan Nation Alliance.
- 5 NNI for Methow coho salmon is achieved through the funding provided to the YN for the Coho Salmon Enhancement Program as approved by the HCP Hatchery Committees at the December 12, 2007, meeting.

BY = brood year

CJH = Chief Joseph Hatchery

NNI = No Net Impact

YN = Yakama Nation

## **2.2.2 Hatchery Planning**

### **2.2.2.1 Monitoring and Evaluation Plan Implementation**

Since 2006, Douglas PUD hatchery programs have been operated in accordance with three documents: 1) the Hatchery Monitoring and Evaluation (M&E) Plan, titled *Conceptual Approach to M&E for Hatchery Programs Funded by Douglas County Public Utility District*, originally developed in 2005 and updated in 2007, which addresses the Wells HCP, Section 8.5, and is the guiding document for the M&E program; 2) the Hatchery M&E Analytical Framework, titled *Analytical Framework for M&E PUD Hatchery Programs*, prepared in 2006 and updated in 2007, which provides the analysis tools for the Hatchery M&E Plan; and 3) the Douglas PUD Hatchery M&E Implementation Plan titled, *Implementation of Comprehensive M&E of Hatchery Programs funded by Douglas County PUD*, which is prepared and approved by the Wells HCP Hatchery Committee annually to describe the M&E activities for the next calendar year. In 2013, the HCP Hatchery Committees replaced documents 1 and 2 (above) by updating their collective content and combining them into a single document titled *Monitoring and Evaluation Plan for PUD Hatchery Programs – 2013 Update* (Hatchery M&E Plan). The Douglas PUD 2016 Hatchery M&E Implementation Plan, based on the new Hatchery M&E Plan, was approved by the HCP Hatchery Committees in September 2015 and appended to the 2015 Wells HCP Annual Report.

In October 2016, Douglas PUD and the HCP Hatchery Committees discussed the review period for the 2017 Methow M&E Implementation Plan. The Wells HCP Hatchery Committee approved Douglas PUD's proposed 30-day review period for the plan, in order to expedite contracting. The Douglas PUD 2017 Hatchery M&E Implementation Plan (Appendix B) was finalized in November 2016, following a 30-day HCP Hatchery Committees review period.

The Douglas PUD 2015 Hatchery M&E Plan Report titled, *Monitoring and Evaluation of Wells and Methow FH Programs: 2015 Annual Report*, which documented M&E activities in 2015 (Appendix S), was finalized in November 2016, following a 60-day HCP Hatchery Committees review period. A similar report will be completed in 2017 for 2016 M&E activities of natural production and hatchery operations. In addition, Douglas PUD is

working with the HCP Hatchery Committees to develop a long-term scheduling plan to logically orchestrate HCP requirements and M&E reporting, including annual, and 5-year interval reports, and the 10-year Program Review (Wells HCP: Section 8.8). The HCP Hatchery Committees expect to finalize the schedule in early 2017.

### *2.2.2.2 Hatchery Monitoring and Evaluation Plan Appendices*

In January 2015, the HCP Hatchery Committees recognized that the 2013 Hatchery M&E Plan Appendices had not yet been finalized. In March 2015, the HCP Hatchery Committees agreed to reconvene the Hatchery Evaluation Technical Team (HETT) to finalize the appendices. The HETT first reconvened in April 2015 and discussed a plan for completing the appendices, which are living documents, subject to change as more data become available. HETT members were assigned appendices to complete by varying dates, and work continued in 2016 to finalize the appendices. HETT members distributed drafts of Appendices 2, 4, 5, and 6 in February 2016 and March 2016. In March 2016, the HCP Hatchery Committees discussed how carrying-capacity estimates should be calculated for Appendix 1 and provided feedback to Tracy Hillman on material that should be included in Appendix 1. Hillman presented carrying-capacity estimates for Chiwawa River spring Chinook salmon to the HCP Hatchery Committees in April 2016, and the HCP Hatchery Committees suggested that Hillman develop a methodology for calculating carry capacity estimates when drafting Appendix 1, with some populations included as examples. In May 2016, Appendix 3 was distributed for review. In June 2016, the HCP Hatchery Committees discussed and revised draft Appendices 2 through 6 and approved Appendices 2 (Hatchery Replacement Rate [HRR] Targets), 4, (Spatial Distribution of Spawners) and 6 (Rearing Targets). Appendix 6 was later revised, and a final revised version was approved in August 2016. Appendix 3, Proportionate Natural Influence (PNI) and Proportion Hatchery-origin Spawners (pHOS) Targets and Sliding Scales, was revised and later approved in August 2016. Appendix 5, Stray Rate Objectives, was further revised and discussed in August, September, and October 2016. The HCP Hatchery Committees discussed in October 2016 that material in Appendix 5 is redundant with the Hatchery M&E Plan, and decided to delete Appendix 5. Appendices 2, 3, 4, and 6 will be renumbered and appended to the Hatchery M&E Plan in 2017. Appendix 1, which addresses carrying capacity, is not finished



and will have a placeholder in the Hatchery M&E Plan until it is complete. Finalizing the Hatchery M&E Plan Appendices will continue into 2017.

### *2.2.2.3 Review of the Five-Year Hatchery Monitoring and Evaluation Report*

In March 2015, while working toward approving an Interlocal Agreement (ILA) between Douglas PUD and Chelan PUD to rear Chelan PUD's Methow spring Chinook salmon production at Methow FH, the HCP Hatchery Committees unanimously agreed on the need to revisit the results of M&E in the Methow Basin to date and develop an adaptive management plan to improve the performance of the Methow FH Programs. The HCP Hatchery Committees also approved an SOA titled, *Regarding Timeline for Review of "Evaluation of Hatchery Programs Funded by Douglas County PUD 5-Year Report 2006-2010,"* which outlined specific actions to accomplish within 1 year of approval of the SOA. In April 2015, the HCP Hatchery Committees agreed to review the Five-Year Hatchery M&E Report by species and basin, starting with spring Chinook salmon in the Methow Basin and moving forward program-by-program (i.e., Methow, Twisp, and Chewuch). In May 2015, a Methow Spring Chinook Salmon Review of Five-Year Annual Report Plan Outline was distributed, which divided Hatchery M&E Plan objectives into groups to be reviewed during subsequent HCP Hatchery Committees meetings. The HCP Hatchery Committees began reviewing Hatchery M&E Plan objectives for Methow spring Chinook salmon, as described in the outline, documenting which objectives are not meeting targets, flagging items to revisit, and, where applicable, developing recommendations or documenting reasons for not revisiting objectives. During this review, Objectives 2, 4, 5, 6, and 7 were flagged for further discussion. Review of all objectives for Methow spring Chinook salmon was complete by August 2015 and, in September 2015, the HCP Hatchery Committees reviewed and prioritized the flagged objectives. In October 2015, the HCP Hatchery Committees began a process of addressing flagged objectives, including convening the HETT to further discuss certain flagged objectives and make recommendations to the HCP Hatchery Committees. Review of Hatchery M&E Plan objectives for Methow spring Chinook salmon continued into 2016, along with the complete review of the Five-Year Hatchery M&E Report.

In January 2016, the HCP Hatchery Committees addressed flagged objectives 2 (Spawner Distribution), 4 (HRRs and Targets), and 6 (Size-at-release Targets). It was decided that the

HCP Hatchery Committees previous approval of a study design to determine if spawner distribution in the Methow Basin can be altered with short-term acclimation (the Upper Methow Acclimation Study Proposal and Goat Wall SOA, approved in March 2015), eliminated the need for further discussion with regard to Objective 2 at that time. For Objective 4, the HCP Hatchery Committees agreed to revise the method for calculating HRR targets (now, as the 40<sup>th</sup> percentile including harvest). For Objective 6, the HCP Hatchery Committees agreed to maintain the existing standards for Methow spring Chinook salmon size-at-release targets and re-evaluate the targets annually. In February 2016, the HCP Hatchery Committees addressed Objectives 1 (Abundance of Natural-origin Spawners), 5 (Homing Fidelity), and 7 (Freshwater Productivity), and continued to address Objective 4. Objective 1 was not initially flagged, but was discussed to ensure hatchery programs have a positive effect on the population, as measured by the abundance of natural-origin spawners. In their further discussion of Objective 4, the HCP Hatchery Committees agreed to revise the methods used for calculating HRR targets that were agreed to in January 2016, to those described in Grant PUD's Target HRR Proposal (Appendix H). Data continue to be collected annually to assess the effects of pHOS on juvenile salmon productivity in response to Objective 7, and no further discussion occurred at that time. Addressing Objective 5 continued to be a topic of discussion throughout 2016. The HCP Hatchery Committees transitioned in April 2016 from discussing Objective 5 to designing and implementing a pilot management plan to address Objective 5. At that point, the review of the 5-year Hatchery M&E Report was complete and the HCP Hatchery Committees began drafting a summary of their review, which is expected to be finalized in early 2017.

In February 2016, the HCP Hatchery Committees invited Andrew Dittman (National Oceanic and Atmospheric Administration) to discuss the effects of hatchery rearing and release practices on olfactory imprinting and homing fidelity for salmon, as they relate to Objective 5. Assessment of Objective 5 found Chinook salmon released in the Twisp and Chewuch rivers returning to the Methow River at a rate above the objective target. Potential solutions and experiments to improve homing to the river of release in the Methow Basin were identified, including rearing fish in a hatchery much farther away from their natal sites, and then acclimating and releasing the fish in order to prevent familiar olfactory inputs from the hatchery attracting them as they migrate upstream. Wells FH and Eastbank FH are downstream of natal acclimation sites and perhaps far enough away from

natal sites to avoid attracting fish as they migrate to their river of release. A paired release at Twisp and Chewuch Acclimation Facilities (AFs) was identified as one potential sequential imprinting study. The HCP Hatchery Committees discussed the logistics and effects of potential studies identified in the Twisp and Chewuch Homing Fidelity Study Options draft provided by YN. As it became apparent that the viability of conducting the above study was unlikely, the HCP Hatchery Committees discussed truck-planting fish into the Chewuch River as a management strategy to meet the management goal of returning more spawners to the Chewuch River.

In May 2016, a sub-group of HCP Hatchery Committees members visited the Issaquah Salmon Hatchery to learn more about the experimental method of embryonic imprinting in a hatchery and, after further discussions about embryonic and sequential imprinting, a second sub-group will meet in 2017 to prepare a plan to outplant adult hatchery-origin spring Chinook salmon in the Chewuch River. The HCP Hatchery Committees believe this approach will be more reliable in meeting the management goal and be less costly than conducting an embryonic imprinting study. Pending the results of the outplanting strategy, the HCP Hatchery Committees may consider other methods of meeting spawning escapement goals for certain rivers or reaches.

#### *2.2.2.4 Hatchery and Genetic Management Plans*

In October 2008, NMFS requested that the Wells HCP Hatchery Committee prepare updated Hatchery and Genetic Management Plans (HGMPs) for Douglas PUD hatchery programs, including the Methow FH Spring Chinook and Wells Hatchery Steelhead programs. NMFS intended to use the HGMPs to conduct ESA consultations, prepare BiOps, and issue new 10-year Incidental Take Permits for those programs. In February 2013, NMFS also requested an updated HGMP for Douglas PUD's Wells Hatchery Summer Chinook program.

#### Methow Fish Hatchery Spring Chinook Salmon

The Methow FH Spring Chinook HGMP was developed and refined throughout 2009 and approved by the Wells HCP Hatchery Committee on February 17, 2010, and was then submitted to NMFS for ESA consultation on March 12, 2010. NMFS subsequently requested additional analyses to inform the potential to achieve management objectives of interest to

NMFS. Douglas PUD performed these analyses for the Methow FH Spring Chinook Program and submitted them to NMFS in November 2012, in the form of a supplemental information package. In March 2013, Douglas PUD received a letter of scientific sufficiency from NMFS for Douglas PUD's Methow FH Spring Chinook HGMP, initiating consultation for the Methow FH Spring Chinook Program.

In August 2013, NMFS alerted the HCP Hatchery Committees that the new permits would not be complete by the expiration date of the current permits. Subsequently, on September 20, 2013, Douglas PUD received a letter from NMFS indicating that the existing ESA permits would be extended until consultation was complete and a new permit was issued. In late 2013, NMFS requested an updated program description, which Douglas PUD provided on January 21, 2014. In August 2014, NMFS distributed the Draft Methow FH Spring Chinook Salmon Permit (combined with the Okanogan Section 10[j] Permit) for review. In September 2014, NMFS indicated its decision to separate the Methow and Okanogan Section 10(j) Spring Chinook Salmon Programs into two BiOps, with the latter taking precedence in order of target completion dates. In October 2014, NMFS indicated that the Chelan PUD Spring Chinook Salmon Conservation Program would be combined with the Methow FH and Winthrop National Fish Hatchery (NFH) consultation, with a target completion date of March 31, 2015.

In February 2015, NMFS indicated the March 31, 2015, deadline would not be met due to the urgency of completing permitting for other programs prior to the Winthrop Safety Net and Methow Conservation Spring Chinook Salmon consultation. NMFS also indicated reliance on the applicability of the 2003 National Environmental Policy Act (NEPA) process. However, if the 2003 NEPA process cannot be applied, another Environmental Assessment (EA) may be needed. Regarding gene flow management, NMFS requested that Douglas PUD and Chelan PUD coordinate with USFWS to develop a PNI approach for applying a PNI standard to reduce the contribution of the Winthrop Program to pHOS for incorporation into the permit. NMFS also requested that Douglas PUD and Chelan PUD coordinate with USFWS to develop language outlining shared research, monitoring, and evaluation (RME) responsibilities.

In March 2015, the PUDs drafted RME language and developed a draft PNI sliding scale, as requested, and provided these items to USFWS for review. In May 2015, NMFS announced that permits could no longer be issued without first obtaining completed consultations by USFWS on threatened Upper Columbia River bull trout. NMFS also indicated that consultations and permitting were further delayed due to the ongoing Puget Sound litigation and NMFS' growing concern with litigation risk. In October 2015, NMFS indicated that the RME details have been elevated to the federal level with the U.S. Bureau of Reclamation (USBR) and USFWS, and the PUDs planned to meet with USBR and USFWS to discuss this matter. NMFS also indicated that they were continuing to conduct a review of the proposed draft PNI sliding scale. The HCP Hatchery Committees coordinated with WDFW and NMFS to further discuss gene flow standards, and on November 18, 2015, the HCP Hatchery Committees agreed to adopt the three-population gene flow model for calculating PNI. Also, in November 2015, NMFS indicated an estimated permit completion date of May 2016 for Methow FH programs, pending completion of USFWS consultation. In December 2015, USFWS indicated that they conducted a gap analysis reviewing components and activities of the respective programs to determine whether they were all covered under existing consultations. The results of the gap analysis indicated that the project element in the 2012 Wells FERC license BiOp covering Douglas PUD's Methow FH spring Chinook salmon called, "*Implementation of Hatchery HGMPs*," likely provides adequate coverage, along with the take table in that BiOp that explicitly lists allowed take for all activities proposed in the HGMP, including broodstock collection and M&E Plan implementation. USFWS indicated in March 2016 that they will move forward with a strategy that relies on the 2012 Wells FERC license BiOp for coverage.

In February 2016 and March 2016, the HCP Hatchery Committees further discussed the Methow spring Chinook salmon gene flow sliding scale proposed by NMFS. The Final Gene Flow Management Standards approved in March 2016 (Appendix I) used a sliding scale for PUD targets and a reduced PHOS target for Winthrop NFH as natural runs increase. NMFS acknowledged that the standards are aggressive and may be challenging to meet, especially because returns from pre-recalculation releases would continue into 2018; therefore, permits will recognize the challenges of adult management in the Methow basin and will be written to allow flexibility in meeting targets during the first few years of implementation. In April 2016, NMFS indicated that a draft Methow FH permit covering all three PUD programs had

been distributed to applicants for review. In June 2016, NMFS indicated the Methow spring Chinook salmon BiOp was undergoing internal review and the EA was being drafted. On June 10, 2016, revised draft permits were sent to the applicants for another round of review. Douglas PUD submitted comments on June 20, 2016. By August 2016, NMFS had distributed the draft Terms and Conditions for the Methow spring Chinook salmon consultation. In September 2016, the USFWS indicated that the memorandum documenting coverage for the Methow FH programs from the 2012 Wells FERC license BiOp was undergoing internal review. On November 18, 2016, NMFS distributed the final Methow spring Chinook BiOp. The Methow FH spring Chinook salmon Section 10(a)(1)(A) permits were sent out for final review, with comments due by January 19, 2017. Issuance of the permits is expected in early 2017.

#### Wells Fish Hatchery Steelhead

The Wells FH Steelhead HGMP was developed in 2009 and 2010. The extended time required to reach consensus on this HGMP was largely the result of efforts to coordinate federal, state, and tribal interests in the Methow Basin. On March 7, 2011, the Wells HCP Hatchery Committee approved the Wells FH Steelhead HGMP, which was then submitted to NMFS on April 13, 2011, for ESA consultation. In November 2011, NMFS began reviewing the Wells FH Steelhead HGMP and subsequently requested additional analyses to inform the potential to achieve management objectives of interest to NMFS. Douglas PUD performed these analyses for the Wells FH Steelhead Program and submitted them to NMFS in October 2012, in the form of a supplemental information package. In March 2013, Douglas PUD received a letter of scientific sufficiency from NMFS for Douglas PUD's Wells FH Steelhead HGMP, which initiated consultation for the Wells FH Steelhead Program.

In August 2013, NMFS alerted the HCP Hatchery Committees that the new permits would not be complete by the October 2, 2013, expiration of the current permits. Subsequently, on September 20, 2013, Douglas PUD received a letter from NMFS indicating that the existing ESA permits would be extended until consultation was complete and a new permit was issued. In late 2013, NMFS requested an updated program description, which Douglas PUD provided on March 28, 2014. In June 2014, NMFS indicated that the Wells FH Steelhead Program and the Twisp Conservation Program will be incorporated into the same Supplemental EA, with a target completion date of fall 2014. This target date was not met.

In February 2015, NMFS indicated that the Supplemental EA was nearly complete, and that a Fishery and Adult Management Plan was still needed (from the Joint Fisheries Parties [JFP]). WDFW agreed to draft a Fishery and Adult Management Plan for incorporation into this permit. In May 2015, NMFS announced that permits could no longer be issued without first obtaining completed consultations by USFWS on threatened Upper Columbia River bull trout. NMFS also indicated that consultations and permitting were further delayed due to the ongoing Puget Sound litigation and NMFS' growing concern with litigation risk. In October 2015, NMFS indicated that the amended EA was still being drafted. In November 2015, USFWS indicated that the Draft Fishery and Adult Management Plan was incomplete and required consultation on effects of plan implementation on bull trout. The results of the USFWS gap analysis conducted for the PUD Methow spring Chinook salmon programs (see above) would likely also apply to the Douglas PUD steelhead program; however, the Fishery and Adult Management Plan is not a component of the Douglas PUD HGMP, and would thus require a separate consultation and permit. On August, 15, 2016, at the request of NMFS, staff from Douglas PUD, USFWS, and WDFW submitted a Methow basin steelhead gene flow analysis to aid NMFS in their consultation on Methow steelhead and development of their BiOp. On November 3, 2016, Douglas PUD provided NMFS comments on a draft Methow steelhead adult management plan developed by the JFP. At the time of this report, a new deadline for the Wells FH Steelhead HGMP consultation process and permitting has not been established.

#### Wells Fish Hatchery Summer Chinook Salmon

The Wells FH Summer Chinook HGMP was developed in March 2013 and was approved by the Wells HCP Hatchery Committee on May 22, 2013. In August 2013, NMFS alerted the HCP Hatchery Committees that the new permits would not be complete by the October 23, 2013, expiration of the current permits. Subsequently, on September 20, 2013, Douglas PUD received a letter from NMFS indicating that the existing ESA permits would be extended until consultation is complete and a new permit is issued. In late 2013, NMFS requested an updated program description, which Douglas PUD provided on April 4, 2014. In 2014, NMFS indicated that due to the urgency of completing permitting for other programs, summer and fall Chinook salmon programs were the lowest priorities, with target completion dates in spring 2015. In early 2015, no progress was made on the Wells FH Summer Chinook HGMP, because NMFS was still preoccupied with completing permitting

for other programs. In May 2015, NMFS announced that permits could no longer be issued without first obtaining completed bull trout consultations by USFWS. NMFS also indicated that consultations and permitting were further delayed due to the ongoing Puget Sound litigation and NMFS' growing concern with litigation risk. At the time of this report, a new deadline for the Wells FH Summer Chinook HGMP has not been established.

### 2.2.2.5 2013 to 2023 No Net Impact Recalculation

The Wells HCP, Section 8.4.5, requires that hatchery production, except for original inundation mitigation, be adjusted in 2013, and every 10 years thereafter, to achieve and maintain NNI. In September 2010, the process to recalculate hatchery production was initiated by the HCP Hatchery Committees. After first approving a method for recalculating hatchery production on July 20, 2011, the database with the numeric inputs for use in the recalculation efforts was approved as final by the HCP Hatchery Committees on August 17, 2011. The HCP Hatchery Committees then approved the recalculated hatchery production levels for Douglas PUD's NNI supplementation programs for 2013 through 2023 (Table 6) on December 14, 2011. Since 2013, the recalculated hatchery production levels have been implemented, as required.

**Table 6  
Douglas Public Utility District's Recalculated (2013 to 2023) No Net Impact Hatchery Obligations by Species**

Species	Facility	Release Location	Recalculated 2013-2023 Obligation	Purpose
Spring Chinook Salmon	Chief Joseph Fish Hatchery <sup>1</sup>	Okanogan Basin	33,300	NNI
	Methow FH	Methow Basin	29,123	NNI
Summer/Fall Chinook Salmon <sup>2</sup>	Chief Joseph Fish Hatchery (yearling)	Upper Columbia Mainstem/Okanogan	48,100	NNI
	Chief Joseph Fish Hatchery (subyearling)	Upper Columbia Mainstem/Okanogan	49,000	NNI
Steelhead	Wells Fish Hatchery	Twisp River	8,000	NNI
Sockeye Salmon	NNI hatchery compensation achieved through funding of the Okanogan Fish and Water Management Tool			
Coho Salmon	NNI hatchery compensation achieved through a funding Agreement for the YN Coho Salmon Reintroduction Program			



Notes:

- 1 Douglas PUD provides funding for the Chief Joseph Fish Hatchery to produce the Wells HCP NNI spring Chinook for the Okanogan Basin.
- 2 Douglas PUD provides funding for the Chief Joseph Fish Hatchery to produce the Wells HCP NNI hatchery compensation requirement for above-Wells summer/fall Chinook salmon (54,575 yearlings, or 48,100 yearlings plus 49,000 subyearlings).

NNI = No Net Impact

### ***2.2.2.6 Hatchery Production Management Plan***

In 2011, WDFW, in coordination with the HCP Hatchery Committees, drafted a Hatchery Production Management Plan to document criteria, measures, and actions that contribute to more efficiently meeting hatchery production targets and minimizing overproduction. Although not finalized in 2011, WDFW began implementing those actions identified in the draft *2011 Hatchery Production Management Plan*, for which there was support among the fishery co-managers. In 2012, the Hatchery Production Management Plan was finalized, approved, and included as an appendix to the 2012 Broodstock Collection Protocols. Similarly, in 2016, the Hatchery Production Management Plan was appended to the 2016 Broodstock Collection Protocols (Appendix K) that were submitted to NMFS in April 2016.

### ***2.2.2.7 Twisp Steelhead Reproductive Success Study***

The Wells HCP, Section 8.5.3, requires Douglas PUD to fund and implement a steelhead relative reproductive success study. On February 1, 2010, the Wells HCP Hatchery Committee approved the *Twisp Steelhead Reproductive Success Study Plan*. The study covers a 12-year period beginning in 2010 (and also includes tissue samples collected in 2009). It focuses on an adult-to-adult assessment of the relative reproductive success of hatchery and wild fish and includes the measurement of covariates of fitness. The study is designed to provide data to distinguish genetic and environmental influences on reproductive success. Study results will be used in management of summer steelhead in the Methow subbasin.

To date, genetic analyses have been completed by the WDFW Molecular Genetics Laboratory on the first 7 brood years (BYs) in the study of adult steelhead returns to the Twisp River, with the eighth year (2016) underway. Fish were genotyped using 192 single

nucleotide polymorphism (SNP) loci. The number of adult steelhead genotyped in past years has varied, ranging from 163 to 361 (Table 7).

**Table 7**  
**Number of Twisp River Steelhead Genotyped by Brood Year**

Brood Year	Number of Steelhead Genotyped
2009	361
2010	346
2011	264
2012	262
2013	163
2014	175
2015	177

In October 2016, Douglas PUD distributed the final report for the 2015 samples, titled *Relative reproductive success of Twisp River hatchery and wild steelhead (Oncorhynchus mykiss): Summary report for Single Nucleotide Polymorphism (SNP) genotyping of adult collections – Return Year 2015* (Appendix T).

Currently, genotyping of approximately 135 samples from 2016 is in process. For all years completed, the SNP loci are assessed for appropriateness for the Twisp River steelhead population and study goals, and several population-genetic analyses are conducted. These data will be used to conduct parentage analysis in future years. Field work for this study is conducted under the M&E program. A report summarizing findings from the 2016 samples will be available by fall 2017.

#### 2.2.2.8 Multi-Species/Expanded Acclimation

In the interest of developing a long-term, multi-species/acclimation plan for Upper Columbia River salmon mitigation programs, the JFP agreed to develop a plan outlining multi-species acclimation options for Upper Columbia River salmon and steelhead mitigation programs.

In January 2013, the YN distributed an Expanded Acclimation Plan for review and discussion. In October 2013, the YN further discussed potentially expanding acclimation

areas in the Upper Methow Basin, and agreed to develop a document summarizing the details of these plans. In August 2014, the YN began discussing with the HCP Hatchery Committees the possibility of acclimating BY 2014 Methow spring Chinook salmon at one of two acclimation sites in the Upper Methow Basin. In October 2014, after review by the HCP Hatchery Committees of their initial proposal to acclimate 50,000 spring Chinook salmon, the YN proposed acclimating 25,000 Methow spring Chinook salmon at the Goat Wall Acclimation Site, located on the Methow River significantly upstream of the site used in the past (the Mid-Valley Pond site). The HCP Hatchery Committees requested that the YN prepare a proposal for expanded acclimation in the Methow Basin, including an explanation of pond operations, tagging, M&E, project objectives, and adult management, to be further discussed in 2015.

In January 2015, the YN, in coordination with the HCP Hatchery Committees, developed a Draft YN Upper Methow Spring Chinook Salmon Acclimation Proposal, as requested. The proposal was to acclimate 25,000 Methow spring Chinook salmon at the Goat Wall Acclimation Site as part of the YN's Upper Columbia Spring Chinook Salmon and Steelhead Acclimation Project (Bonneville Power Administration [BPA] Project# 2009-00-001), beginning with the 2016 release (BY 2014), and with releases continuing through 2020. The YN also distributed a Draft Goat Wall Acclimation SOA for HCP Hatchery Committees review. In February 2015, the HCP Hatchery Committees further discussed the draft proposal and SOA (which were also vetted with the JFP), and the Wells and Rocky Reach HCP Hatchery Committees approved the Final YN *Upper Methow Spring Chinook Salmon Acclimation Proposal* and Final Goat Wall Acclimation SOA, with NMFS abstaining, as follows: the YN approved on March 3, 2015; NMFS abstained on March 3, 2015; Chelan PUD, Douglas PUD, WDFW, and the CCT approved on March 4, 2015; and USFWS approved on March 5, 2015.

Douglas PUD and Chelan PUD requested that the YN have its own ESA permit coverage for the planned releases. NMFS indicated, however, that it was unlikely to have permits in place before March 2016 when the fish would need to be transferred. The YN, NMFS, and HCP Hatchery Committees explored options for how to move fish to the site; however, they determined it cannot be done without the proper permits in place. Therefore, due to permitting delays, a 2016 release did not happen, despite HCP Hatchery Committees

approval of the proposal and SOA. Due to continued permitting delays in 2016, a 2017 release is uncertain. The YN still intends to conduct 5 years of spring Chinook salmon releases from the Goat Wall Acclimation Site once permits are in place.

#### *2.2.2.9 Okanagan Fish Water Management Tool*

In 2016, Douglas PUD continued to fund the Okanagan Fish Water Management Tool (FWMT) in lieu of providing hatchery-reared sockeye salmon smolts as compensation, as previously agreed on by the HCP Hatchery Committees in October 2004. The FWMT, developed through a collaborative effort led by Dr. Kim Hyatt (Fisheries and Oceans Canada) and the ONA, is a water-management decision platform that includes the collection, analysis, and modeling of real-time biological and environmental data to guide water-management actions in the Canadian Okanagan River Basin for the benefit of Okanagan sockeye salmon. The FWMT is used by water and fisheries managers to minimize flooding, limit desiccation and scouring of salmon redds, and minimize the compression of the available lake-rearing habitat for juvenile sockeye salmon by increasing the oxygen levels in the northern basin of Osoyoos Lake during late summer when the extent of habitable area is compressed between lethally warm surface water and an anoxic hypolimnion. Due to the age of the software and hardware, and identified improvements to the hydraulic and sockeye salmon sub-models, in November 2014, Douglas PUD initiated a modernization process to update the tool. The modernization of the FWMT continued into 2016. The new tool will run side-by-side with the existing model for the 2017 spring freshet and is intended to completely replace the existing model for the 2017-2018 water year.

#### *2.2.2.10 Twisp River Population Assessment*

The Douglas PUD Hatchery M&E Plan requires a population estimate of juvenile spring Chinook salmon and steelhead to inform the evaluation of the effects of the hatchery program on the productivity of the wild populations. Those requirements specifically include reporting PNI and pHOS. Juvenile abundance data for this assessment, collected via two rotary screw traps, have been unreliable due to low catch efficiencies, difficulty in running adequate efficiency trials, and extended periods when the traps are inoperable due to high discharge. Therefore, in September and October 2014, 2015, and 2016, in an effort to improve population abundance estimates, Douglas PUD conducted a population abundance

pilot study in the Twisp River, in coordination with WDFW, that provided abundance estimates of juvenile spring Chinook salmon and steelhead. The data will allow comparison of PIT-tag-based population estimates from this pilot study with rotary screw trap population estimates. The pilot effort involved electroshocking randomly selected sampling sites in the Twisp River, including a subset of three-pass removal samples to estimate catch efficiency. Sample sites in small tributaries were 50-meters long, and those in the Twisp River were 100-meters long. Douglas PUD and Drs. Rebecca Buchanan, Rich Townsend, and John Skalski are conducting the statistical analysis on these data, and results are expected in 2017.

#### *2.2.2.11 Methow Spring Chinook Adult Management*

In April 2015, Douglas PUD notified the HCP Hatchery Committees about plans to implement adult management of spring Chinook salmon in the Methow Basin. A NMFS Permit Extension Letter for Permits 1196, [1347,] and 1395 (dated September 20, 2013), states broodstock collection and adult management of spring Chinook salmon in the Methow Basin may occur during the extension, as approved by consensus of the HCP Hatchery Committees and with NMFS' concurrence. Although this language does not mandate that permit holders implement adult management of spring Chinook salmon in the Methow Basin, Douglas PUD suggested it may be beneficial to take advantage of the opportunity to learn how adult management could be used for managing PHOS in the basin.

In early May 2015, Douglas PUD, in collaboration with WDFW, provided a draft 2015 Methow Basin Spring Chinook Adult Management Plan for review by the HCP Hatchery Committees, which included proposed targets for Methow spring Chinook salmon adult management for implementation in 2015. After discussing the draft plan and incorporating revisions as suggested, on May 20, 2015, the HCP Hatchery Committees approved the *2015 Methow Basin Spring Chinook Adult Management Plan*, as revised (Appendix U). The Plan was updated on June 18, 2015, as the spring Chinook salmon run had proceeded and better information was available. Beginning with the 2015 spring Chinook salmon run, Methow FH and Winthrop NFH staff began performing adult management at the Methow FH and Winthrop NFH outfalls. Based on the 2015 run, Douglas PUD developed a Spring Chinook Adult Management Calculator to help address the following challenges:

1) projecting the number of spawners on the spawning grounds, which then drives PNI and pHOS; 2) knowing how many hatchery-origin recruits to remove at the hatcheries; and 3) understanding the rates at which fish transition from Wells Dam counts to the hatchery outfall and spawning grounds. Adult management (also known as gene flow management) was implemented in 2015 using the above methodology to determine management targets. In 2015, the target pHOS was 0.22 and the realized pHOS was 0.48. The PNI target (0.63) was nearly met (0.68) due to a high proportion of natural fish in the broodstock. A similar approach was used in 2016 and is described in the 2016 Broodstock Collection Protocols (Appendix K). The experience from 2015 indicated that removing too many fish was unlikely, and trap operations sought to remove as many fish as possible. Results for the 2016 effort are not yet available.

#### *2.2.2.12 Methow Basin – Possible Water Right Restrictions*

As in 2015, in July 2016, Douglas PUD notified the HCP Hatchery Committees that earlier in the year, Douglas PUD received a letter from the Washington State Department of Ecology (Ecology) regarding the 2016 water forecast for the Methow Basin. The letter indicated that 2016 may be a dry year, and if so, Ecology will contact Douglas PUD again regarding water usage at Methow FH and associated facilities. Ecology sent another letter to Douglas PUD containing an order stipulating that Douglas PUD must consult stream-gage readings each day before diverting water. This affected the following:

1. Surface water right from Foghorn Ditch for Methow FH
2. Surface water right for the Twisp Pond for spring use
3. Groundwater right for Methow FH

Ecology clarified that no action would be required because Douglas PUD discharges groundwater to the river upstream of the point where water would return to the river. The surface-water right for Twisp Pond was not affected because the water use at that facility occurred during spring runoff before low-flow conditions triggered Ecology's action. The Methow FH was not affected because it does not use surface water during the summer months when the low-flow conditions trigger the order to consult the stream gage before diverting. Additionally, Methow FH has two surface-water rights, one of which is not interruptible; however, that right only covers a portion of the year, not including December,

and the hatchery uses surface water from December through May. Consequently, the interruptible surface-water right could become a problem in December depending on stream flows. Ultimately, no actions were required in 2015 or 2016. However, Douglas PUD initiated the process of amending their agreement with USFWS and WDFW to provide uninterruptible surface water from Foghorn Ditch during December to eliminate uncertainty for future low-water year situations.

#### *2.2.2.13 Excess Brood Year 2014 Hatchery-by-Hatchery Steelhead*

In March 2016, the HCP Hatchery Committees discussed the steelhead broodstock overage that occurred at Wells Hatchery in 2015 for the Methow Safety Net Program and the Okanogan Program when developing the 2016 Broodstock Collection Protocols. WDFW indicated that overages are expected and addressed for the steelhead programs upstream of Wells Dam, and any other overages will be dealt with on a case-by-case basis.

#### *2.2.2.14 Supplemental Radio-Tagging of Summer Steelhead*

In November 2015, the HCP Hatchery Committees received a proposal from WDFW and the University of Idaho to PIT tag and radio tag summer steelhead collected at Tumwater Dam and the Twisp Weir. WDFW and the University of Idaho were trying to tag up to 500 summer steelhead at Priest Rapids Dam; however, due to lower-than-expected return rates in 2015, only 400 summer steelhead were tagged. There were then 100 tags left, and WDFW and the University of Idaho suggested that tagging at Tumwater Dam and the Twisp Weir could provide additional information on several parameters, including for example estimating stray rates and overwinter survival. The HCP Hatchery Committees approved the proposal, and steelhead were radio tagged at the Twisp Weir by University of Idaho and WDFW in spring 2016.

#### *2.2.2.15 Brood Year 2014 Methow Spring Chinook Salmon Acclimation*

In January 2016, the HCP Hatchery Committees discussed logistical constraints for acclimating Chelan PUD's BY 2014 Methow spring Chinook salmon at the Chewuch AF. The fish were being held at Methow FH at the time. Chelan PUD identified their preferred option to have YN operate the facility. Other options included releasing the fish directly from the Methow FH, truck-planting the Chewuch River-progeny fish as far upstream in the

Chewuch River as possible, or performing final acclimation at Carlton Pond. The HCP Hatchery Committees discussed the pros and cons of each option, as well as contracting issues and permission constraints, and concerns about the infrastructure at Chewuch AF, and identified WDFW as another potential operator of the AF. After further discussion via email, CCT indicated that if contracting, budget, and staff hiring constraints jeopardize the acclimation and release of Chelan PUD's spring Chinook salmon from the Chewuch AF in 2016, they are agreeable to the operation of the Chewuch AF in 2016 consistent with the Rocky Reach and Rock Island HCP HC 2013 Chewuch Acclimation SOA (approved November 20, 2013). WDFW indicated that they would not be able to staff the facility in time to release the fish, so Chelan PUD indicated in February 2016 that YN would operate the Chewuch AF in 2016.

#### *2.2.2.16 Population Structure of Upper Columbia River Summer and Fall Chinook Salmon*

In August 2016, the HCP Hatchery Committees reviewed the best available information on genetics and population structure of Upper Columbia River summer and fall Chinook salmon and concluded the Upper Columbia River summer and fall Chinook salmon are one genetic population. Therefore, straying among subbasins (e.g., Wenatchee and Methow basins) will be considered a "within population genetic stray," and a 10 percent genetic stray rate applies. For example, Wenatchee summer Chinook salmon cannot comprise more than 10 percent of the Methow summer Chinook salmon spawning escapement. Previously, a 5 percent genetic stray rate was applied because, in the M&E Plan, the Upper Columbia River summer and fall Chinook salmon populations were treated as independent populations. For management purposes, straying among subbasins will be considered a "management stray" and should not exceed 5 percent.

#### *2.2.2.17 Chelan Falls Summer Chinook Salmon Broodstock Collection*

In May 2016, Chelan PUD, Grant PUD, and Douglas PUD discussed methods for collecting summer Chinook salmon broodstock at Wells FH for the Chelan Falls program (this would have required a new ILA between Douglas and Chelan PUDs). Chelan PUD later indicated that collection in 2016 for the Chelan Falls summer Chinook program will be prioritized at the Eastbank Outfall with summer Chinook held in surplus at the Entiat NFH serving as a



back-up if a shortfall in the broodstock target is realized. To ensure a more reliable brood collection location in 2017 and beyond, Chelan PUD proposed an adult trapping effort at the outlet structure of the water conveyance canal for the Chelan Tailrace Pump Station. Chelan PUD indicated in August 2016 that they were successful in collecting broodstock at the outlet structure. Results on gamete viability and egg-to-fry survival rates will be available in 2017. Results from the pilot study will determine if future broodstock will be collected at the outlet structure of the water conveyance canal.

#### *2.2.2.18 Methow Composite Spring Chinook Salmon Broodstock Collection*

In June 2016, WDFW indicated that they had collected 90 adult natural-origin spring Chinook salmon, of which approximately 60 could be used as broodstock for the Methow Composite Program. The run timing at Wells Dam was compressed in 2016, and coupled with trapping constraints and the run peaking on a weekend, WDFW staff were not able to collect the target number of 122 natural-origin fish. Douglas PUD indicated that WDFW was experiencing a 2-week delay in genetic identification because the genetic sequencer was in need of repair, casting real-time uncertainty on the actual number of appropriate brood that had been collected to date. Tangle-netting for broodstock in the Chewuch River was proposed to acquire additional natural-origin recruits for the Methow Composite program. The HCP Hatchery Committees discussed the effectiveness of past years' tangle-netting efforts in the Chewuch River, potential bull trout encounters, potential issues with USFWS permitting, and the existing backup plan to address broodstock shortages (using hatchery-origin fish). The HCP Hatchery Committees agreed that the HCP Coordinating Committees should discuss trapping constraints at Wells Dam (see Section 2.1.3.1). Following email discussions, HCP Hatchery Committees voiced support for WDFW to tangle-net for Methow spring Chinook salmon in the Chewuch River in 2016. Tangle-netting in 2016 was limited to no more than 8 days throughout a 2-week period, and complied with all temperature, fish harassment, and fish handling procedures implemented in 2014.

#### *2.2.2.19 Meeting Logistics*

In August 2016, the HCP Hatchery Committees discussed the logistics of holding back-to-back meetings with the PRCC Hatchery Sub-Committee. To save time for many members who are on both the PRCC Hatchery Sub-Committee and the HCP Hatchery Committees,

the meetings could be held back-to-back in a single day at one location, if the HCP and PRCC committees have suitably short agendas. Grant PUD's Wenatchee, Washington, office was proposed as the location for back-to-back meetings because it is easily accessible by all attendees. Changing the start time of the HCP Hatchery Committees meetings from 9:30 a.m. to 9:00 a.m. was also proposed. The HCP Hatchery Committees agreed to hold back-to-back meetings with the PRCC Hatchery Sub-Committee at Grant PUD's Wenatchee, Washington, office when the HCP Hatchery Committees Chairman and PRCC Hatchery Sub-Committee facilitator agree that the agendas are short enough to hold both meetings in 1 day. When it is thought that HCP meetings will require more time than can be allotted on a back-to-back day, the meetings would be re-scheduled to be held on separate days. The HCP Hatchery Committees also agreed to change the start time of HCP Hatchery Committees meetings to 9:00 a.m. for all future meetings.

### **2.2.3 Maintenance and Improvements**

Maintenance and improvement activities completed in 2016 in support of hatchery production under the Wells HCP included jacking the concrete floor at the main Methow Hatchery building. A portion of the floor had apparently sunk over the years and required jacking to bring the building into proper alignment. This was accomplished successfully in 2016. The septic system at Methow FH required servicing, and a connecting pipe was found to be clogged dating back to an apparent sabotage attempt by a disgruntled contractor when the building was constructed. This was remedied, and the system is functioning properly. The Methow FH diesel backup generator suffered damage from a lightning strike and required extensive repair to the control panels. At Wells Hatchery, a fire break was constructed behind the hatchery housing, and flooring was replaced in one of the hatchery houses. Additionally, the modernization construction project of the Wells FH to update the facility to reliably meet production and the new requirements of the steelhead and summer Chinook salmon HGMPs, as well as to produce white sturgeon (*Acipenser transmontanus*) and resident trout for the Off-license Settlement Agreement, broke ground in 2015 and continued construction in 2016.

### Wells Fish Hatchery Modernization

In September 2012, Phase I of the modernization of Wells FH was completed, which included the initial assessment of all infrastructure in order to identify needed upgrades. Phase I efforts also included useful-life facility assessment, surface water and groundwater well-field assessments, and bio-programming.

In January 2013, Phase II was completed, which finalized the bio-programming, addressed handling and management of adult returns, refined programmatic needs, including potential changes to the programs in the future, and addressed configuration options for the facility in terms of water needs, rearing vessels, biological logistics, and workflow for Wells FH operations. Phase III focused on creating the Wells Hatchery Modernization Master Plan, which included all information generated in Phases I and II and synthesized that information into a facilities and operation overview. The Master Plan also guided development of bid drawings in Phase IV. The draft Wells Hatchery Modernization Master Plan was completed in May 2013, provided to the Wells HCP Hatchery Committee for review, and finalized in July 2013. In August 2013, Douglas PUD held a Wells Modernization Workshop with the HCP Hatchery Committees to review design aspects of the modernization; HDR Engineering, Inc., the engineering firm developing the plan, also participated.

In January 2014, the 30 percent designs were completed and on February 19, 2014, a second workshop was held with the HCP Hatchery Committees to review the 30 percent designs. HDR Engineering, Inc., reviewed the overall site plan, piping plans, and individual building plans, including the hatchery building, circular tank facility, and adult handling facility. In June 2014, a third Wells Modernization Workshop was held, this time with the HCP Coordinating Committees, to review the draft *Wells Hatchery Adult Handling Facility 60 Percent Design Report* and associated site plans. This workshop focused on the specific details and infrastructure contained within the adult handling facility. The Wells HCP Coordinating Committee approved the *Wells Hatchery Adult Handling Facility 60 Percent Design Report* and associated site plans in August 2014. The design drawings and technical specifications, as well as numerous technical addenda related to dam safety, demolition, biological rearing criteria, and existing conditions of the hatchery, were completed in December 2014.

In March 2015, the Final Conceptual Detailed Design was completed, and the project was put out for bid. Douglas PUD contracted Lydig Construction, Inc., from Spokane, Washington, and construction broke ground in May 7, 2015. The construction phase of the modernization of Wells FH continued in 2016. Newly constructed infrastructure included: 1) a new Adult Handling Facility (completed; see Section 2.1.3.2); 2) a new Wells Hatchery Utilities Corridor (completed); 3) a new Head Tank Facility (completed); 4) a modified water supply to the volunteer channel (completed); 5) a new conveyance fishway between the upstream end of the volunteer channel and the Adult Handling Facility (completed); 6) a new Garage (completed); 7) a new Circular Tank Facility with twelve 20-foot tanks (in operation and nearly completed); 8) a new Hatchery Building with administration, incubation and production wings (construction underway); 9) new pipelines for the Forebay wells and Carpenter Island wells (completed); and 10) a new potable water system (underway). The fish transport pipe from the Wells Dam west ladder to adult holding pond #6 has been constructed but will be modified in 2017 to improve its performance. Grading, landscaping, and paving will be completed in spring and summer 2017. The hatchery has successfully continued normal fish production operations during construction. Bird netting was also installed over Dirt Ponds 1, 3 and 4. The modernization of Wells FH is on schedule and is anticipated to be completed by August 31, 2017.

### **2.3 HCP Tributary Committees and Plan Species Accounts**

As outlined in the Wells HCP, the signatory parties designated one member each to serve on the Wells HCP Tributary Committee. The Rock Island, Rocky Reach, and Wells HCP Tributary Committees meet on a regularly scheduled basis as a collective group to enhance coordination and minimize meeting dates and schedules. Subject items requiring decisions are voted on in accordance with the terms outlined in the specific HCPs. During 2016, the Wells HCP Tributary Committee met on nine occasions.

An initial task of the HCP Tributary Committees in 2016 was to review and update their operating procedures that provide a mechanism for decision making. These were initially

developed in 2005 and included in that year’s annual report (Anchor 2005).<sup>1</sup> The HCP Tributary Committees also developed Policies and Procedures for soliciting, reviewing, and approving project proposals (Anchor 2005). This document was last reviewed and updated in March 2016. The Policies and Procedures provide formal guidance to project sponsors on submission of proposals for projects to protect and restore habitat of Plan Species within the geographic scope of the HCP. The Committees established two complementary funding programs—the General Salmon Habitat Program (GSHP) and the Small Projects Program.

In 2016, the HCP Tributary Committees modified language in Section 3.4 (The General Salmon Habitat Program) and in Section 5.0 (Review Procedures) in the Policies and Procedures document. The Committees revised the language in these sections by indicating that draft GSHP proposals outside the Salmon Recovery Funding Board (SRFB) process are not necessary. The Committees will continue to use the SRFB draft application process when sponsors include the Plan Species Account Funds as a cost share on SRFB applications.

Dr. Tracy Hillman continued as the Chairperson for the Wells HCP Tributary Committee. In 2016, the HCP Tributary Committees conducted a formal evaluation of the Chairperson and agreed unanimously to retain Dr. Hillman as the Chairperson for the next 3-year period (2017 through 2019). Dr. Hillman is an Ecological Society of America board-certified senior ecologist and chief executive officer of BioAnalysts, Inc. He has 30 years of experience as an ecologist and has chaired the Wells HCP Tributary Committee since 2007.

### **2.3.1 Regional Coordination**

Similar to the HCP Hatchery Committees and to improve coordination, a representative from Grant PUD and the facilitator of the PRCC Habitat Sub-Committee were invited to the HCP Tributary Committees monthly meetings. In addition, they received meeting announcements, draft agendas, and meeting minutes. This benefits the HCP Tributary Committees through increased coordination and sharing of expertise. The Grant PUD representative and PRCC Habitat Sub-Committee facilitator have no voting authority. The

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<sup>1</sup> Anchor Environmental, L.L.C., 2005. *Annual Report, Calendar Year 2005, of Activities under the Anadromous Fish Agreement and Habitat Conservation Plan*. Wells Hydroelectric Project, FERC license no. 2149. Prepared for FERC by Anchor Environmental L.L.C. and Public Utility District No. 1 of Douglas County.

HCP Tributary Committees, through the HCP Coordinating Committees, also invited American Rivers and the Confederated Tribes of the Umatilla Indian Reservation to participate in HCP Tributary Committees meetings. Both parties contributed to the development of the HCP, yet elected not to sign the document. Neither of these parties participated in the deliberations of the HCP Tributary Committees in 2016.

The HCP Tributary Committees also coordinate with the Upper Columbia Salmon Recovery Board (UCSRB). Coordination is typically between the chairperson of the HCP Tributary Committees and the Executive Director or the Natural Resource Program Manager of the UCSRB. In addition, some members of the Committees typically attend the UCSRB meetings to foster coordination in developing and selecting projects for funding. Some members of the Committees are also members of the UCSRB's Regional Technical Team, which increases coordination in selecting projects for funding. Many of the policies and procedures of the SRFB and HCP Tributary Committees are complementary, and annual funding rounds by these funding entities have been coordinated during the last several years.

In addition to coordinating with the SRFB process and the PRCC Habitat Sub-Committee, the Wells HCP Tributary Committee coordinates funding of GSHP proposals with BPA. The purpose of this coordination according to Section 2 of the Tributary Fund Policies and Procedures for Funding Projects, is to collaborate with regional, local, state, tribal, and national organizations that fund salmon habitat projects. The efforts resulted in identification of possible cost-shares for suitable habitat restoration projects.

### **2.3.2 Fiscal Management of Plan Species Accounts**

The HCP Tributary Committees set up methods for the long-term management of the Plan Species accounts for each HCP. The Wells HCP Tributary Committee agreed to have Douglas PUD manage the accounting services internally, and to structure the relationship so that it can invoice these administrative costs to the Wells Plan Species account. The beginning balance of the Wells Plan Species Account on January 1, 2016, was \$1,413,317.87. Douglas PUD's annual contribution was \$261,970.49. Interest received during 2016 was \$5,306.71; funds disbursed for projects in 2016 totaled \$313,599.18; \$2,416 was paid to Douglas PUD for account administration; \$2,432.37 was paid to Chelan PUD for

administrative support; and \$5,080 was paid for appraisal fees for the M2 Sugar Acquisition project. The ending balance on December 31, 2016, was \$1,357,067.52. The 2016 Annual Financial Report for this Plan Species Account is provided in Appendix V.

In January 2009, the Wells HCP Tributary Committee recommended to the JFP (via the Wells HCP Coordinating Committee) that Douglas PUD make annual payments to the Wells Plan Species Account beginning in 2010, per Section 7.4.1 of the Wells HCP. The annual contribution would be \$176,780 (in 1998 dollars). In February 2009, the Wells HCP Coordinating Committee accepted the recommendation that Douglas PUD make annual payments to the Wells Plan Species Account beginning in January 2010. Accordingly, each January, Douglas PUD makes an annual payment into the Wells Plan Species Account that is consumer price index-adjusted to the current year.

During Douglas PUD's 2014 Washington State audit, the auditors took the position that the Tributary Plan Species Account, though not governed and controlled by the PUD directly, should be included under the PUD entity for reporting and auditing purposes. This was partially based on the fact that, if dissolved, the ownership of the balances would return to Douglas PUD. In the interest of full disclosure and healthy audit practices, Douglas PUD agreed to include the account in their financial statements going forward. Operationally, there were no changes in how the account was administered. As in the past, approval by Douglas PUD's Board of Commissioners of the annual contributions to the account will constitute approval of the Wells HCP Tributary Committee's discretion in the use of the account. Due to the account being audited annually, the Wells HCP Tributary Committee's requirement of an independent audit every 5 years can be waived.

The Wells HCP Tributary Committee delegated signatory authority to the HCP Tributary Committees Chairperson for processing of payments for invoices approved by the Committee, with the HCP Coordinating Committees Chairperson serving as the alternate. The HCP Tributary Committees Chairperson works for a limited liability corporation, and the HCP Tributary Committees provide funds for liability insurance.

### **2.3.3 General Salmon Habitat Program**

The HCP Tributary Committees established the GSHP as the principle mechanism for funding projects. The goal of the program is to fund projects for the protection and restoration of Plan Species habitat. An important aspect of this program is to assist project sponsors in developing practical and effective applications for relatively large projects. Many habitat projects are increasingly complex in nature and require extensive design, permitting, and public participation to be feasible. Often, a reach-level project involves many authorities and addresses more than one habitat factor. Because of this trend, the GSHP was designed to fund relatively long-term projects. There is no maximum financial request in the GSHP; the minimum request is \$100,000, although the HCP Tributary Committees may provide lesser amounts during a phased project.

In 2014, the HCP Tributary Committees announced that they would accept GSHP applications at any time during the year. They also announced that they would continue to accept SRFB applications for projects where Plan Species Account Funds are included as cost shares in SRFB Proposals.

In an effort to coordinate with ongoing funding and implementation programs within the region, the HCP Tributary Committees used the previously established technical framework and review process for this geographic area, and worked with the other funding programs to identify cost-sharing procedures (see Section 2.3.1).

#### **2.3.3.1 2016 General Salmon Habitat Projects**

The SRFB announced its 2016 funding cycle in March 2016, with pre-proposal applications due on April 15, 2016, and full proposals due on July 1, 2016. The HCP Tributary Committees received and reviewed 14 pre-proposal applications. The HCP Tributary Committees identified six projects that they believed warranted full proposals and dismissed eight projects because they were inconsistent with the intent of the Tributary Fund, did not have strong technical merit, or had low benefits per cost.

In July, the HCP Tributary Committees received seven full SRFB proposals to the GSHP. All were cost-shares with the SRFB or other funding entities. The HCP Tributary Committees



approved funding for four projects. In addition, the HCP Tributary Committees received four full proposals to the GSHP that were outside the SRFB process. The HCP Tributary Committees approved funding for one of those projects. Table 8 identifies the projects, sponsors, total cost of each project, amount requested from Tributary Funds, and, if funded, which Plan Species Account supported the project.

**Table 8**  
**General Salmon Habitat Program Projects Reviewed by the HCP Tributary Committees (T.C.) in 2016**

Project Name	Sponsor <sup>1</sup>	Total Cost	Request from T.C.	Plan Species Account <sup>2</sup>
<b>Salmon Recovery Funding Board Applications</b>				
Wenatchee Sleepy Hollow Floodplain Acquisition	CDLT	\$661,000	\$165,250	RI: \$156,250 <sup>3</sup>
Silver Side Channel Acquisition	MSRF	\$801,470	\$236,406	W: \$236,406
Burns-Garrity Restoration Design	CCFEG	\$177,335	\$45,550	RR: \$45,550
Beaver Fever: Restoring Ecosystem Function	TU-WWP	\$279,278	\$108,226	RI: \$108,226
Nason Creek Side Channel Reconnection Design	CCNRD	\$149,778	\$23,000	Not funded
Thermal Refuge in the Wenatchee Basin	CCNRD	\$48,807	\$7,321	Not funded
Peshastin Irrigation Dist. Pump Exchange Design	CCNRD	\$199,393	\$29,909	Not funded
<b>General Salmon Habitat Program Applications</b>				
Leavenworth Diversion Screening Project	TU-WWP	\$161,654	\$130,255	Not funded
Peshastin Mill Site Preservation Project	TU-WWP	\$463,000	\$100,000	Not funded
Fish Passage at Ellis Creek Sediment Basin	ONA	\$185,638	\$39,784	Not funded
Ecommunity Acquisition	ONA	\$456,514 (CAN) <sup>4</sup>	\$59,676 (CAN) <sup>4</sup>	RI: \$59,676 (CAN) <sup>4</sup>

Notes:

- 1 CCFEG = Cascade Columbia Fisheries Enhancement Group; CCNRD = Chelan County Natural Resources Department; CDLT = Chelan-Douglas Land Trust; ONA = Okanagan Nation Alliance; MSRF = Methow Salmon Recovery Foundation; TU-WWP = Trout Unlimited – Washington Water Project.
- 2 RI = Rock Island Plan Species Account; RR = Rocky Reach Plan Species Account; W = Wells Plan Species Account.
- 3 The Rock Island HCP Tributary Committee will order and pay for the appraisal and review. Because the sponsor asked for \$9,000 for appraisal and review, the Committee subtracted this amount from the Rock Island HCP Tributary Committee request. Thus, the amount the Rock Island HCP Tributary Committee will pay the sponsor for this project is \$156,250 (\$165,250 - \$9,000).
- 4 CAN = Canadian Dollars.

In 2016, the Wells HCP Tributary Committee agreed to fund the following GSHP project:

- **Silver Side Channel Acquisition Project for the amount of \$236,406 (with cost share, the total cost of the project was \$801,470)** – This project will permanently protect 95.8 acres, including off-channel floodplain habitat, wetlands, riparian habitat, and agricultural lands on the middle Methow River (RM 34.3-35.3).

### *2.3.3.2 Modifications to General Salmon Habitat Program Contracts*

In 2016, the Wells HCP Tributary Committee received the following request from a sponsor asking for modifications to a GSHP project funded by the Committee:

- In November, Trout Unlimited – Washington Water Project (TU-WWP) asked the Wells HCP Tributary Committee for a time extension and budget amendment on the Methow Valley Irrigation District Instream Flow Improvement Project. TU-WWP requested a time extension to March 31, 2017. The extra time is needed to complete a few tasks associated with the project. They also asked to move \$15,000.00 from “Cultural Resources,” \$11,406.78 from “Project Materials,” and \$3,027.04 from “Indirect/Administration/Overhead” to “Contract Labor.” The total budget amount will not change because of this amendment. The Wells HCP Tributary Committee approved the time extension and budget amendment.

### *2.3.4 Small Projects Program*

The Small Projects Program has an application and review process that increases the likelihood of participation by private stakeholders that typically do not have the resources or expertise to go through an extensive application process. The HCP Tributary Committees encourage small-scale projects by community groups, in cooperation with landowners, to support Plan Species recovery on private property. Project sponsors may apply for funding at any time, and in most cases, will receive a funding decision within 3 months. The maximum contract allowed under the Small Projects Program is \$100,000.

#### *2.3.4.1 2016 Small Projects*

In 2016, the HCP Tributary Committees received one request for funding under the Small Projects Program. The Rock Island HCP Tributary Committee approved funding for that project.

In 2016, the Wells HCP Tributary Committee did not fund any projects under the Small Projects Program.

#### **2.3.4.2 Modifications to Small Project Contracts**

In 2016, the Wells HCP Tributary Committee received no requests from sponsors asking for modifications to Small Projects funded by the Committee.

#### **2.3.5 Tributary Assessment Program**

In 2008, the ONA responded to the HCP Tributary Committees request for a proposal to monitor the Okanagan River Restoration Initiative (ORRI) Project. The Wells HCP Tributary Committee agreed to fund three monitoring tasks of ORRI during a 5-year period: 1) Fish Holding and Rearing; 2) Channel Morphometry and Hydraulics; and 3) Substrate Composition. The Wells HCP Tributary Committee directed Douglas PUD to fund the project via the Tributary Assessment Program (Wells HCP Section 7.5) rather than through the Wells Plan Species Account. In September 2013, ONA submitted a final report regarding the 5 years of monitoring to the Wells HCP Tributary Committee.

In 2014, at the request of the HCP Tributary Committees, ONA submitted proposals for the following monitoring projects:

- 1. Penticton Channel Monitoring Spawning Platforms** – The objective of this study is to monitor the effects of the proposed spawning platforms as adaptive management for designing and construction of more platforms. This work will focus on quantifying spawners (redd surveys), egg retention (carcass surveys), egg-to-fry success, and habitat conditions (e.g., gravel stability, thalweg slope, fine sediment deposition, and gravel composition) within treated and untreated areas. Monitoring will occur over a 5-year period (2014 to 2018). The amount requested from the HCP Tributary Committees over the 5-year period was \$53,738 (with cost share, the total cost of the monitoring project over the 5-year period was \$168,863).
- 2. ORRI Phase II Effectiveness Monitoring** – The objective of this study is to monitor the effects (i.e., channel, hydraulic, and biological responses) of ORRI-Phase II restoration work and to continue to monitor the long-term effects of Phase I and Vertical Drop Structure 13 restoration. Monitoring will include all activities

associated with channel and hydraulic responses, and aquatic biological responses (except macrophytes and macroinvertebrates). Monitoring will occur over a 5-year period (2014 to 2018). The amount requested from the HCP Tributary Committees over the 5-year period was \$69,578 (with cost share, the total cost of the monitoring project over the 5-year period was \$175,600).

The Rocky Reach HCP Tributary Committee approved funding for the Penticton Channel Monitoring Spawning Platforms, and the Wells HCP Tributary Committee approved funding for the ORRI Phase II Effectiveness Monitoring Project. As required in the HCPs, Chelan and Douglas PUDs will provide funding for the monitoring projects through the Rocky Reach and Wells Tributary Assessment Programs rather than through the Rocky Reach and Wells Plan Species Accounts.

In 2015, the HCP Tributary Committees received a Tributary Assessment Program application from the ONA titled, *Purchase-Installation of Passive Integrated Transponder Tag Array in Shingle Creek Project*. The purpose of the project was to purchase and install a permanent PIT-tag interrogation system near the mouth of Shingle Creek to monitor recolonization of the stream by steelhead and spring Chinook salmon. The site will include remote communications hardware. The total cost of the project was \$42,422. The sponsor requested \$35,867 from HCP Assessment Funds. The Wells HCP Tributary Committee chose to fund the project through its Tributary Assessment Program.

The Wells HCP Tributary Committee did not receive any monitoring or assessment applications in 2016.

To date, Douglas PUD has spent \$150,015.83 of the original \$200,000 total for the Wells HCP Tributary Assessment Program, including \$17,792.10 in 2016. Of the remaining balance in the Wells HCP Tributary Assessment Program (\$49,984.17), \$37,161.91 are allocated to the ORRI Phase II monitoring project and \$12,822.26 are unallocated.

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### **3 HABITAT CONSERVATION PLAN ADMINISTRATION**

This section lists events of note that occurred in 2016 related to the administration of the HCPs and provides a list of reports published in 2016 that relate to the HCPs.

#### **3.1 Mid-Columbia HCP Forums**

In 2005 and 2006, Mid-Columbia Forums (Forums) were held as a means of communicating and coordinating with the non-signatories and other interested parties regarding the implementation of the HCPs. Non-signatory parties at the time of the 2006 meeting included the Confederated Tribes of the Umatilla Indian Reservation and American Rivers. As in 2006 through 2015, these parties were invited by letter in 2016 to attend the Forum, in conformity with the 2005 FERC Order on Rehearing 109 FERC 61208 and in accordance with the offer to non-signatory parties of non-voting membership in HCP Tributary and Hatchery Committees processes. The non-signatory parties again indicated no interest in attending a Forum in 2016.

#### **3.2 Mid-Columbia HCP Extranet Sites**

Prior to 2014, the HCP Committees used a file transfer protocol (FTP) site for the HCP document repository. In 2014, Douglas PUD unveiled a more user-friendly Microsoft SharePoint system (i.e., HCP Extranet site) as a potential option for a new document repository. Following a presentation and brief tutorial of the new site, the HCP Coordinating and Hatchery Committees agreed to transition to the new HCP Extranet sites. In April 2016, following a similar presentation and tutorial, the HCP Tributary Committees also transitioned to the SharePoint system.

#### **3.3 Mid-Columbia HCP Committees' Chairpersons**

The Mid-Columbia HCPs contain a requirement to review the performance of the Chairpersons every 3 years. In August 2016, the HCP Committees were tasked with conducting such a review. The review was informal and conducted via email. HCP representatives were asked to provide input on the performance of the Chairpersons. On September 27, 2016, the HCP Coordinating Committees announced their selection to retain HCP Coordinating and Policy Committees Chairperson, John Ferguson, and support

personnel, Kristi Geris, for 3 more years. On October 19, 2016, the HCP Hatchery Committees announced their selection to retain HCP Hatchery Committees Chairperson, Tracy Hillman, and support personnel, Sarah Montgomery, for 3 more years. On November 10, 2016, the HCP Tributary Committees announced their selection to retain HCP Tributary Committees Chairperson, Tracy Hillman, for 3 more years. The next Chairpersons review will occur in August 2019.

### **3.4 HCP Related Reports and Miscellaneous Documents Published in Calendar Year 2016**

The following is a list of reports released in 2016 that are related to the implementation of the Wells HCP:

- Douglas PUD (Public Utility District No. 1 of Douglas County), 2015. *Methow Basin Spring Chinook Adult Management Plan: 2015*. June 2015.
- Douglas PUD, 2016. *2015 Total Dissolved Gas Report – Wells Project*. Prepared for the Federal Energy Regulatory Commission. February 2016.
- Douglas PUD (Public Utility District No. 1 of Douglas County), 2016. *2016 Total Dissolved Gas Abatement Plan and 2016 Juvenile Bypass Operating Plan*. Prepared for Washington Department of Ecology and the Aquatic Settlement Work Group. January 2016.
- Douglas PUD, 2016. *Adult Lamprey Approach, Passage, and Enumeration Study Plan, Wells Dam – 2016*. Wells Hydroelectric Project, FERC No. 2149. February 2016.
- Douglas PUD, 2016. *Bull Trout Passage and Take Monitoring at Wells Dam and Twisp River Weir Final Study Plan*. Wells Hydroelectric Project, FERC No. 2149. January 2016.
- Douglas PUD, 2016. *Final 2016 Action Plan Wells HCP*. January 2016.
- Douglas PUD, 2016. *2015 Bull Trout Management Plan and Incidental Take Annual Report*. Wells Hydroelectric Project, FERC Project No. 2149. April 15, 2016.
- Douglas PUD, 2016. *Summary of 2016 Juvenile Fish Bypass Operations at Wells Hydroelectric Project*. December 2016.
- Grant Public Utility District, 2016. Target HRRs.
- Hurst, C. and C. Busack, 2016. *Final Gene Flow Management Standards*. March 2016.

- National Marine Fisheries Service, 2016. *Revised Methow spring Chinook Gene Flow analysis spreadsheet*. March 2016.
- Tonseth, M., 2016. *Final Upper Columbia River 2016 BY Salmon and 2017 by Steelhead Hatchery Program Management Plan and Associated Protocols for Broodstock Collection, Rearing/Release, and Management of Adult Returns*. Prepared with the Washington State Department of Fish and Wildlife. Prepared for HCP HC and PRCC Hatchery Sub Committee. April 14, 2016.
- Seamons, T., 2016. *Relative reproductive success of Twisp River hatchery and wild steelhead (Oncorhynchus mykiss): Summary report for SNP genotyping of adult collections – Return Year 2015*. Prepared with Washington Department of Fish and Wildlife, Molecular Genetics Laboratory. October 2016.
- WDFW, 2016. *Monitoring and Evaluation of the Wells Hatchery and Methow FH Programs, 2015 Annual Report*. Prepared for Douglas PUD, Grant PUD, Chelan PUD and the Wells and Rocky Reach HCP Hatchery Committees and the Priest Rapids Hatchery Subcommittee. July 1, 2016.