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Mr. Steve Lewis
Wenatchee Office Lead
Central Washington Field Office
U. S. Fish and Wildlife Service
215 Melody Lane, Suite 119
Wenatchee, WA 98801-5933

April 14, 2017

Subject: Wells Hydroelectric Project – FERC Project No. 2149
2016 Bull Trout Management Plan and Incidental Take Annual Report

Dear Mr. Lewis:

Public Utility District No. 1 of Douglas County, Washington (Douglas PUD), licensee for the Wells Hydroelectric Project No. 2149 (Wells Project) respectfully submits the attached Bull Trout Management Plan and Incidental Take Annual Report for Calendar Year 2016 (Appendix A). This report is being filed in compliance with the reporting requirements found in the *Biological Opinion for the Proposed Relicensing of the Wells Hydroelectric Project* issued by the United States Fish and Wildlife Service (USFWS) on March 16, 2012 and as found in Appendix E of the new Federal Energy Regulatory Commission (FERC) license for the Wells Project.

The Biological Opinion, as adopted by the FERC license order for Wells Dam, requires Douglas PUD to submit its annual report to the USFWS, Central Washington Field Office on or before April 15 during each year of the license. The report is required to describe the work completed and the number of bull trout, if any, observed and /or incidentally taken during the course of implementing the license. Because the measures required by the FERC license are largely consistent with the measures found in the Aquatic Settlement Agreement's Bull Trout Management Plan (BTMP) and because the reporting requirements for the BTMP, Biological Opinion, Clean Water Act section 401 Water Quality Certification, and Federal Power Act section 18 Fishway Prescription, the 2016 Bull Trout Management Plan and Incidental Take Annual Report (this report) will be used to demonstrate compliance with all five of Douglas PUD's Wells Project bull trout obligations.

If you have any questions or require further information related to the 2016 Bull Trout Management Plan and Incidental Take Annual Report, please feel free to contact Andrew Gingerich at (509) 881-2323 or andrewg@dcpud.org.

Sincerely,

Shane Bickford
Natural Resources Supervisor

Enclosure: Appendix A –2016 Bull Trout Management Plan and Incidental Take Annual Report

Cc: Aquatic Settlement Work Group
Jeff Krupka – USFWS, Wenatchee
Judy Neibauer – USFWS, Wenatchee
Andrew Gingerich – Douglas PUD
Chas Kyger – Douglas PUD

Appendix A

2016 Bull Trout Management Plan and Incidental Take Annual Report

2016 BULL TROUT MANAGEMENT PLAN AND INCIDENTAL TAKE ANNUAL REPORT

WELLS HYDROELECTRIC PROJECT

FERC PROJECT NO. 2149

April 14, 2017

Prepared by:
Public Utility District No. 1 of Douglas County
East Wenatchee, Washington

EXECUTIVE SUMMARY

The Bull Trout Management Plan (BTMP) and Incidental Take Annual Report includes information on existing bull trout measures required by the Wells Hydroelectric Project (Wells Project or Project) Federal Energy Regulatory Commission (FERC) operating license including the U.S. Department of Interior's Federal Power Act section 18 Fishway Prescriptions; the Clean Water Act section 401 Water Quality Certification; and Endangered Species Act (ESA) section 7 bull trout consultation for the relicensing of the Wells Project. The 2012 Biological Opinion (BO) for the Wells Project (resulting from ESA consultation) requires Public Utility District No. 1 of Douglas County (Douglas PUD) to monitor incidental take during Wells Project license implementation activities and submit a bull trout annual take report to the Central Washington Field Office of the U.S. Fish and Wildlife Service (USFWS) on or before April 15th each year. Article 406 of the license requires Douglas PUD to submit an annual report of management plan activities by May 31st of each year.

Since measures required by the BO are largely consistent with the measures found in the BTMP and because the reporting requirements for the BTMP, BO, Clean Water Act section 401 Water Quality Certification, and the FERC license are largely consistent, this 2016 Bull Trout Management Plan and Incidental Take Annual Report will be used to demonstrate compliance with all of Douglas PUD's bull trout obligations for the Wells Project.

The goal of the BTMP is to identify, monitor, and address impacts on bull trout (*Salvelinus confluentus*) resulting from the operation and maintenance of the Wells Project in a manner consistent with the USFWS Bull Trout Recovery Plan and the terms of the Section 7 Incidental Take Statement (ITS). The BTMP is intended to continue the implementation of various management plan activities to protect bull trout during the new license term in a manner consistent with the original Wells Bull Trout Monitoring and Management Plan (Douglas 2004). The Protection, Mitigation and Enhancements presented within the BTMP are designed to meet the following objectives:

Objective 1: Operate the upstream fishways and downstream bypass systems in a manner consistent with the Wells Project Habitat Conservation Plan (HCP). In 2016, Douglas PUD maintained safe, efficient and timely passage through the downstream juvenile fish bypass system and upstream adult fishway passage structures for bull trout and conducted video monitoring of the Wells Dam fishway viewing windows during the fish passage season. Douglas PUD continued to operate the juvenile fish bypass system at Wells Dam for HCP Plan Species and bull trout in accordance with criteria outlined in the HCP.

Objective 2: Identify any adverse Project-related impacts on adult and sub-adult bull trout passage. In 2016, Douglas PUD conducted a study designed to examine bull trout passage and survival at the Twisp River Weir and Wells Dam. Preliminary results are reported in this annual report, however the study will continue in the spring and summer of 2017.

During 2016, fewer than 10 sub-adult bull trout were observed at Wells Dam. Adult counts remained below the threshold of twice the 5-year average that would require additional measure

at the request of the Aquatic SWG. As such, no new bull trout related monitoring activities were proposed or implemented.

Objective 3: Implement reasonable and appropriate options to modify upstream fishway, downstream bypass, or operations if adverse impacts on bull trout are identified and evaluate the effectiveness of these measures. No adverse impacts to bull trout were identified in 2016.

Objective 4: Periodically monitor for bull trout entrapment or stranding during low Wells Reservoir elevations (i.e., below 773' mean sea level [msl]). On May 3, 2016 the Project forebay reached 773' msl. This low elevation was a result of Wells Hydroelectric Project operations that were designed to flush sediment out of the Methow River delta using newly refurbished rock groins. This flushing was necessary to facilitate the removal of fine material that has, over time, built up in the lower mile of the Methow River as the river meets the Columbia.

Consistent with license requirements, on May 4, 2016 Douglas PUD biologists conducted a Wells Project stranding, entrapment and incidental take survey consistent with regulatory requirements. No bull trout were observed in stranding pool. Results from this survey are provided in this annual report.

Objective 5: Participate in the development and implementation of the USFWS Bull Trout Recovery Plan including information exchange and genetic analysis. Should bull trout be delisted, the Aquatic Settlement Work Group will re-evaluate the needs and objectives of the BTMP. In 2016, Douglas PUD continued to participate in regional and technical meetings specific to bull trout recovery including the development of the Recovery Unit Implementation Plan for bull trout. Genetic samples were collected in 2016 during the bull trout passage and survival study. The genetic samples collected are being analyzed and typed by the Washington State Department of Fish and Wildlife. The results will be shared with the USFWS as soon as they are available in the second quarter of 2017.

Objective 6: Identify any adverse impacts of Project-related hatchery operations on adult and sub-adult bull trout. In 2016 bull trout were encountered in the Twisp and Methow Rivers and Wells Dam fish traps. In addition, bull trout were encountered during the Twisp River Population study. All encounters fell below take limits listed in the USFWS Biological Opinion for the Wells Project.

1.0 INTRODUCTION

The Bull Trout Management Plan (BTMP) is one of six resource management plans developed by Public Utility District No. 1 of Douglas County (Douglas PUD). The BTMP directs the implementation of measures to mitigate Wells Hydroelectric Project (Wells Project or Project) impacts, if any, on bull trout (*Salvelinus confluentus*) and to monitor incidental take of bull trout at the Wells Project. The BTMP directs the long-term management of bull trout in the Wells Project. Additionally, the BTMP is intended to continue implementation activities aimed at protecting bull trout in a manner consistent with measures specified in the original Wells Bull Trout Monitoring and Management Plan (WBTMMP) (Douglas 2004).

To ensure active stakeholder participation and support, Douglas PUD developed all of the resource management plans found in the Aquatic Settlement Agreement in close coordination with agency and tribal natural resource managers (Aquatic Settlement Work Group or Aquatic SWG). Entities invited to participate in the Aquatic SWG include the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), Washington Department of Ecology (Ecology), Washington State Department of Fish and Wildlife (WDFW), the Confederated Tribes of the Colville Reservation (Colville), the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation), and Douglas PUD.

In addition to the requirements found within the BTMP, the Endangered Species Act (ESA) section 7 Consultation and the Biological Opinion (BO) for the relicensing of the Wells Project, the Clean Water Act section 401 Water Quality Certification, and the Federal Energy Regulatory Commission (FERC) license including the Federal Power Act section 18 Fishway Prescription identify several additional bull trout related requirements associated with the continued operation of the Wells Project.

Since measures required by the BO are largely consistent with the measures found in the BTMP and because the reporting requirements for the BTMP, BO, Clean Water Act section 401 Water Quality Certification, and the FERC license are largely consistent, this 2016 Bull Trout Management Plan and Incidental Take Annual Report will be used to demonstrate compliance with all of Douglas PUD's bull trout obligations for the Wells Project.

2.0 GOALS AND OBJECTIVES

The goal of this report is to present summary information related to BTMP activities conducted in 2016 and after Wells Dam Operating license was issued in November 2012. The goal of the BTMP is to identify, monitor and address impacts, if any, on bull trout resulting from the Project in a manner consistent with the USFWS Bull Trout Recovery Plan and the terms of the Section 7 Incidental Take Statement (ITS) (See Section 4.7). The Protection, Mitigation and Enhancement measures (PMEs) presented within the BTMP are designed to meet the following objectives:

Objective 1: Operate the upstream fishways and downstream bypass systems in a manner consistent with the Hatchery Conservation Plan (HCP);

Objective 2: Identify any adverse Project-related impacts on adult and sub-adult bull trout passage;

Objective 3: Implement reasonable and appropriate options to modify upstream fishway, downstream bypass, or operations if adverse impacts on bull trout are identified and evaluate effectiveness of these measures;

Objective 4: Periodically monitor for bull trout entrapment or stranding during low Wells Reservoir elevations (similar to the WBTMMP);

Objective 5: Participate in the development and implementation of the USFWS Bull Trout Recovery Plan, including information exchange and genetic analysis. Should bull trout be delisted, the Aquatic SWG will re-evaluate the needs and objectives of the BTMP;

Objective 6: Identify any adverse impacts of Project-related hatchery operations on adult and sub-adult bull trout.

In addition to the reporting BTMP activities, this report also addresses additional terms and conditions for bull trout as identified in the USWFS 2012 Biological Opinion for the Operation of the Wells Project and related facilities. As such, listed below are these terms and conditions that are largely consistent with BTMP measures.

To implement Reasonable and Prudent Measures (RPM) 1: FERC shall require Douglas PUD, in coordination with the Service, to provide adequate year-round passage conditions for bull trout at all Project facilities.

1. Upstream and Downstream Passage for Adult and Sub-Adult Bull Trout (BTMP Section 4.1.1): FERC shall require Douglas PUD, in coordination with the Service, to provide upstream passage for bull trout through the existing upstream fishways and downstream passage for bull trout through the existing downstream bypass system consistent with the HCP and Aquatic Settlement Agreement. Both upstream fishway facilities (located on the west and east shores) shall be operational year round with maintenance occurring on each fish way at different times during the winter to ensure that one upstream fishway is always operational. Operation of the downstream passage facilities for bull trout shall be consistent with bypass operations for Plan Species identified in the Wells HCP.

2. Bull Trout Passage Performance Standard (BTMP Section 4.3): FERC shall require Douglas PUD, in coordination with the Service, to implement the upstream and downstream measures contained in the Wells Hydroelectric Project BTMP to provide safe, timely, and effective upstream and downstream passage for adult and sub-adult bull trout at the Wells Hydroelectric Project. "Safe, timely and effective" passage shall be achieved when Douglas PUD has demonstrated that the survival and passage success rates for adult marked fish are greater than 95% and greater than or equal to 90%, respectively, and when passage studies demonstrate that the fishway facilities at Wells Dam do not impede the passage of bull trout. To ensure that safe, timely and effective passage at Wells Dam is maintained during the term of the new license, Douglas PUD

shall implement the bull trout upstream and downstream measures consistent with the BTMP.

3. Upstream Fishway Operations Criteria (BTMP Section 4.1.3): FERC shall require Douglas PUD, in coordination with the Service, to operate the upstream fishway at Wells Dam in accordance with criteria outlined in the Wells HCP.

4. Bypass Operations Criteria (BTMP Section 4.1.4): FERC shall require Douglas PUD, in coordination with the Service, to operate the bypass system at Wells Dam in accordance with criteria outlined in the Wells HCP.

5. Implement Reasonable and Appropriate Measures to Modify the Upstream Fishway and Downstream Bypass if Adverse Impacts on Bull Trout are Identified (BTMP Section 4.3): FERC shall require Douglas PUD, in coordination with the Service, to identify, design, implement, and evaluate reasonable and feasible measures to modify the upstream fishway, downstream bypass, or operations to reduce the identified incidental take of bull trout if monitoring (Term and Condition #10) identifies upstream or downstream passage problems for bull trout, in consultation with the Service, WCC and the Aquatic SWG. Study protocols and radio-telemetry assessment methodologies prescribed above in Term and Condition #10 and #11[1], shall be used to evaluate the effectiveness of any additional measures implemented to reduce the incidental take of bull trout. Upon completion of the evaluation, the Service and the NMFS, in consultation with the Aquatic SWG, and the WCC, will determine whether the proposed measure should be made permanent, removed, or modified.

To implement RPM 2: FERC shall require Douglas PUD, in coordination with the Service, to minimize the effects of hydrographic variation to all life stages of bull trout at all Project facilities.

6. Investigate Entrapment or Stranding of Bull Trout during Periods of Low Reservoir Elevation (BTMP Section 4.4): FERC shall require Douglas PUD, in coordination with the Service, to continue to investigate potential entrapment or stranding areas for bull trout through periodic monitoring when periods of low reservoir elevation expose identified sites. During the first five years of the new license, Douglas will implement up to five bull trout entrapment/stranding assessments during periods of low reservoir elevation (below 773' msl). If no incidences of bull trout stranding are observed during the first five years of study, additional assessment will take place every fifth year during the remainder of the license term, unless waived by the Aquatic SWG. If bull trout entrapment and stranding result in take in exceedance of the authorized incidental take level, then reasonable and appropriate measures will be implemented by Douglas, in consultation with the Aquatic SWG, to address the impact.

To implement RPM 3: FERC shall require Douglas PUD, in coordination with the Service, to minimize the effects of the Hatchery Supplementation Program to all life stages of bull trout.

[1] Refer to the USFWS 2012 reference in the literature cited page for reference.

7. Bull Trout Monitoring During Hatchery Activities (BTMP 4.6.1): FERC shall require Douglas PUD, in coordination with the Service, to monitor hatchery actions (e.g., salmon trapping, sturgeon brood stocking and capture activities) that may encounter adult and sub-adult bull trout resulting from incidental capture and take. Actions to be monitored shall be associated with the Wells Hatchery, the Methow Hatchery, and any future facilities directly funded by Douglas PUD. If the incidental take of bull trout is exceeded due to Douglas PUD's hatchery actions then Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take.

To implement RPM 4: FERC shall require Douglas PUD, in coordination with the Service, to minimize the effects of implementing the Aquatic Resource Management Plans (white sturgeon, Pacific lamprey, resident fish, aquatic nuisance species, and water quality) and the Predator Control Program to all life stages of bull trout.

8. Monitoring Other Aquatic Resource Management Plan Activities and Predator Control Program for Incidental Capture and Take of Bull Trout (BTMP Section 4.5.1): FERC shall require Douglas PUD, in coordination with the Service, to monitor activities associated with the implementation of other Aquatic Resource Management Plans for white sturgeon, Pacific lamprey, resident fish, aquatic nuisance species, and water quality and Predator Control Program that may result in the incidental capture and take of bull trout. If the incidental take of bull trout is exceeded due to the implementation of other Aquatic Resource Management Plan activities, then Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take. If the incidental take of bull trout is exceeded due to the implementation of the Predator Control Program, then Douglas PUD will develop a plan, in consultation with the HCP Coordinating Committee and the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take.

To implement RPM 5: FERC shall require Douglas PUD, in coordination with the Service, to design and implement a bull trout monitoring program that will adequately detect and quantify Wells Hydroelectric Project impacts, including those associated with the Wells Dam, Twisp Weir trapping facilities, and hatchery facilities. This information will allow the Service to determine whether authorized take levels are exceeded.

9. Upstream Fishway Counts (BTMP Section 4.1.2): FERC shall require Douglas PUD, in coordination with the Service, to conduct video monitoring in the Wells Dam fishways from May 1st through November 15th to count and provide information on the population size of upstream moving bull trout.

10. Adult Bull Trout Upstream and Downstream Passage Evaluation (BTMP Section 4. 2.1): FERC shall require Douglas PUD, in coordination with the Service, to periodically monitor incidental take of bull trout through Wells Dam and in the Wells Reservoir through the implementation of a radio-telemetry study. Specifically, in years 5 and 10 of

the new license, and continuing every ten years thereafter during the new license term, Douglas PUD shall conduct a 1 year monitoring study to verify continued compliance with the bull trout passage performance standard (Term and Condition #2). These monitoring studies shall employ the same study protocols and radio-telemetry assessment methodologies used at Wells Dam in 2006 and 2007. If the monitoring results demonstrate continued compliance with the bull trout passage performance standard (Term and Condition #2), then no additional actions are needed. If the monitoring results demonstrate that Douglas PUD is no longer in compliance with the bull trout passage performance standard (Term and Condition #2), then the monitoring study will be replicated to confirm the results. If the results after two years of monitoring demonstrate that Douglas PUD is no longer in compliance with the bull trout passage performance standard (Term and Condition #2), then Douglas PUD shall, pursuant to Term and Condition #5, develop and implement additional measures to improve bull trout passage until compliance with the bull trout passage performance standard (Term and Condition #2) is achieved. If the bull trout counts at Wells Dam increase more than twice the existing 5-year average or if there is a significant change in the operation of the fish ladders, bypass, or hydrocombine, then Douglas PUD shall, in consultation with the Service, the Aquatic SWG, and the Wells HCP Coordinating Committee , shall conduct a 1 year, follow-up monitoring study to verify continued compliance with the bull trout performance standard (Term and Condition #2). Although the BTMP specifies Douglas PUD to utilize radio-telemetry as the recommended monitoring method, the Service concludes that future monitoring technologies may be utilized in the implementation of this term and condition.

11. Adult Bull Trout Passage Evaluation at Off-Project Collection Facilities (BTMP Section (4.2.2): FERC shall require Douglas PUD, in coordination with the Service, beginning in year one of the new license, to conduct a one-year radio-telemetry evaluation to assess incidental take of adult bull trout at the adult salmon and steelhead broodstock collection facilities associated with the Wells HCP, including but not limited to, the Twisp Weir adult collection facility. Douglas PUD shall capture and tag up to 10 adult, migratory bull trout (>400 mm) per assessment per year and use fixed receiver stations upstream and downstream of the collection facilities. Assessments shall employ the same study protocols and radio-telemetry assessment methodologies used at Wells Dam in 2006 and 2007. If the evaluation demonstrates that Douglas PUD is not in compliance with the bull trout passage performance standard (Term and Condition #2), then the evaluation will be replicated to confirm the results. If the results after two years of evaluation demonstrate that Douglas PUD is not in compliance with the bull trout passage performance standard (Term and Condition #2), then Douglas PUD shall develop, implement, and evaluate additional measures, in consultation with the Service, Wells HCP Coordinating Committee and the Aquatic SWG, until the Service determines that the bull trout passage performance standard has been achieved. At such time as the Service determines the bull trout passage performance standard has been achieved, the implementation of this measure shall be integrated into the 1 year telemetry monitoring program that is to be conducted every ten years (beginning in year 10 of the new license) at Wells Dam as identified in Term and Condition #10 above. Although the BTMP specifies Douglas PUD to utilize radio-telemetry as the recommended monitoring

method, the Service concludes that future monitoring technologies may be utilized in the implementation of this term and condition.

12. Sub-Adult Bull Trout Monitoring (BTMP Section 4.2.3): FERC shall require Douglas PUD, if at any time during the new license term, sub-adult bull trout are observed passing Wells Dam in significant numbers (>10 per calendar year), in consultation with the Service, and the Aquatic SWG, implement reasonable and appropriate methods for monitoring sub-adult bull trout. Although the BTMP states that >10 sub-adults per calendar year as the threshold, new information leads the Service to conclude that 31 sub-adults per calendar year is a more appropriate threshold. Specifically, Douglas PUD may modify counting activities, and shall continue to provide PIT tags and equipment, and facilitate training to enable fish sampling entities to PIT tag sub-adult bull trout when these fish are collected incidentally during certain fish sampling operations. This activity shall occur the following year of first observation of sub-adult bull trout (>10 per calendar year), in consultation with the Service and the Aquatic SWG.

13. Funding Collection of Tissue Samples and Genetic Analysis (BTMP Section 4.5.2): FERC shall require Douglas PUD, in coordination with the Service, to collect up to 10 adult bull trout tissue samples in the Wells Dam fish way facilities over a period of one year and fund their genetic analysis. Genetic tissue collection will take place concurrent with the implementation of the bull trout radio-telemetry monitoring study. Any sub-adult bull trout collected during these activities will also be incorporated into the bull trout genetic analysis. Beginning in year 1 of the new license, Douglas will collect up to 10 adult bull trout tissue samples from the Twisp River broodstock collection facility over a period of one year and will fund their genetic analysis. Genetic tissue collection will take place concurrent with the implementation of the off-Project bull trout radio-telemetry monitoring study. This term and condition is consistent with other section 10(a)(l)(a) permits that involve handling of bull trout. The analysis will provide valuable information on the conservation status and genetic relationships between bull trout populations in the Columbia basin. This information will be used to determine the local populations impacted by Project operations, and when used in conjunction with other data such as movement data and redd counts, the resiliency of local populations impacted by the proposed action may be determined. Samples will be submitted to the Service (Central Washington Field Office in Wenatchee, Washington).

Reporting Requirements

In order to monitor the impacts of incidental take, Douglas PUD shall prepare an annual report describing the progress of implementation and its impact on the bull trout. The report, which shall be submitted to the Service (Central Washington Field Office) annually on or before April 15th, shall list and describe the work that was completed and the number of bull trout, if any, observed and/or incidentally taken (i.e., injured or killed) during the course of implementation.

Upon locating a dead, injured, or sick endangered or threatened species specimen, initial notification must be immediately made to the nearest Service Law Enforcement Office (Redmond, Washington; telephone 425-883-8122) and reported to the Service's Central

Washington Field Office (509-665-3508). Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species and preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Service Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed. The RPMs, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take described above is exceeded, such additional take represents new information requiring reinitiating consultation (assuming the Commission retains discretion or control over the action) and review of the RPMs provided. Douglas PUD must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RPMs.

3.0 PROTECTION, MITIGATION AND ENHANCEMENT MEASURES

Consistent with the BTMP and USFWS Biological Opinion Terms and Conditions, Douglas PUD, in consultation with the Aquatic SWG, has initiated the implementation of the following measures.

3.1 Operate the Upstream Fishways and Downstream Bypass Systems in a Manner Consistent with the HCP (Objective 1)

3.1.1 Provide Upstream and Downstream Passage for Adult and Sub-adult Bull Trout

Douglas PUD will continue to provide upstream passage for adult bull trout through the existing upstream fishways and downstream passage of adult and sub-adult bull trout through the existing downstream bypass system. Both upstream fishway facilities (located on the west and east shores) are operational year around with maintenance occurring on each fishway at different times during the winter to ensure that one upstream fishway is always operational. Maintenance activities on Wells fishways occur during the winter when bull trout have not been observed passing Wells Dam. Operation of the downstream passage facilities for bull trout will be consistent with bypass operations for Plan Species identified in the Wells HCP. Currently, the bypass system is operated from April 12 through August 26 of each year. This operating period is consistent with the period of high bull trout and anadromous fish presence at the Project.

3.1.1.1 *Progress Towards Meeting Objective 1 in 2016 - Provide Upstream and Downstream Passage for Adult and Sub-adult Bull Trout*

Consistent with the requirements of the FERC license for the Wells Project and the Wells HCP, Douglas PUD maintained safe, efficient and timely passage through the downstream juvenile fish bypass system and upstream adult fishway passage structures for bull trout. Winter maintenance occurred in the adult fishway structures in January 2016 and December 2016. At least one of the adult fishways was in operation at all times during the winter maintenance period

(December – February) and both adult fishways were in operation for the remainder of the year (March – November).

Juvenile fish bypass operations were implemented consistent with the 2016 Bypass Operations Plan. Dates of operation included initiation on April 9 at midnight with the bypass system operated continuously through August 19. The 2016 dates of operation for the juvenile fish bypass system are the result of species run-timing estimates developed by the University of Washington and Columbia Basin Research. Operational dates were reviewed, approved and adopted by the Wells HCP Coordinating Committee and implemented by Douglas PUD prior to the beginning of the 2016 bypass season.

3.1.2 Upstream Fishway Counts

Douglas PUD shall continue to conduct video monitoring in the Wells Dam fishways from May 1st through November 15th to count and provide information on the population size of upstream moving bull trout.

3.1.2.1 *Progress Towards Meeting Objective 1 in 2016 - Upstream Fishway Counts*

Total upstream counts at Wells Dam fish ladder viewing windows was 51 bull trout in 2016. Counts in 2016 were below the five-year average from 2011-2015 by 39 fish. Ninety six percent of the passage occurred during the months of May and June, which is consistent with historic adult bull trout peak passage timing at Wells Dam normally May-July. This passage is often associated with upstream movement towards natal streams in the Methow River basin where spawning occurs in the fall.

3.1.3 Upstream Fishway Operations Criteria

Douglas PUD shall continue to operate the upstream fishway at Wells Dam in accordance with criteria outlined in the Wells HCP.

3.1.3.1 *Progress Towards Meeting Objective 1 in 2016 - Upstream Fishway Operations Criteria*

Consistent with the license and the Wells HCP, Douglas PUD continued to operate the two upstream fishways at Wells Dam in accordance with upstream fishway criteria found in the Wells HCP and as approved by the Wells HCP Coordinating Committee.

3.1.4 Bypass Operations Criteria

Douglas PUD shall continue to operate the bypass system at Wells Dam in accordance with criteria outlined in the Wells HCP.

3.1.4.1 *Progress Towards Meeting Objective 1 in 2016 - Bypass Operations Criteria*

Consistent with the license and the Wells HCP, Douglas PUD continued to operate the juvenile fish bypass system at Wells Dam in accordance with criteria outlined in the Wells HCP and as approved by the HCP Coordinating Committee.

3.2 Identify Any Adverse Project-related Impacts on Adult and Sub-adult Bull Trout Passage (Objective 2)

3.2.1 Adult Bull Trout Upstream and Downstream Passage Evaluation

Douglas PUD shall continue to monitor upstream and downstream passage and incidental take of adult bull trout through Wells Dam and in the Wells Reservoir through the implementation of a radio-telemetry study. Specifically, in years 5 and 10 of the new license, and continuing every ten years thereafter during the new license term, Douglas PUD will conduct a one-year monitoring program to determine whether Douglas PUD remains in compliance with the ITS. The same study protocols used during past radio-telemetry assessments at Wells Dam (LGL and Douglas PUD 2007) will be employed for these monitoring studies.

If the adult bull trout counts at Wells Dam increases more than two times the existing 5-year average or if there is a significant change in the operation of the fish ladders or hydrocombine, then the Aquatic SWG will determine whether additional years of take monitoring are needed beyond those identified in this section of the BTMP. If the authorized incidental take level is exceeded during any one-year period, Douglas PUD will conduct another monitoring study in the succeeding year. If the authorized incidental take level is exceeded in this second year, Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to exceedance of the allowable level of incidental take.

3.2.1.1 *Progress Towards Meeting Objective 2 in 2016 - Adult Bull Trout Upstream and Downstream Passage Evaluation*

Douglas PUD implemented a Passage Evaluation Study in 2016. Beginning in May 2016 and ending in early July 2016 Douglas PUD radio and PIT tagged 60 adult sized bull trout at Wells Dam (n = 14) and the Twisp Weir (n= 46).

Mobile tracking by flight, boot, and truck coupled with fixed station PIT and radio-telemetry arrays have been used to determine that 17 adult bull, out of 60 bull trout tagged (28%), had died by November 1, 2016. The causes of death are unknown as only 6 of the dead fish tags were recovered in hand by the time this report was published. One of the six tags was found inside a dead bull trout by WDFW in a stranding pool near Poplar Flats by WDFW M&E staff. Five of the six recovered tags were recovered without the fish carcass or fish like material present near the tags. Three of the six recovered tags appear to have bite marks or damaged antennae consistent with small mammal bite marks. The other 11 mortalities were determined based upon the reception of mortality code signals from the tag that indicate that the fish and/or tag have not moved in several weeks and as such the fish is presumed to be dead.

Suspected modes of mortality include post- or pre -spawning mortality near or on spawning grounds, stranding near spawning grounds due to subsurface or low fall Twisp River flows, predation, and delayed mortality (days) after tagging in the mainstem Columbia River. To date no mortality has occurred immediately after upstream or downstream passage past the Twisp Weir or Wells Dam. This study will continue in 2017 and data summarized in a study report due by the end of 2017.

At the time that the Aquatic Settlement Agreement was signed, the five year average count of bull trout at Wells Dam in 2005 was 60 fish. In 2016 the five-year average increased to 90 fish per year, representing a 50 percent increase. Total bull trout counts since 2000 are provided in Figure 1, including the 17 year average of 72.

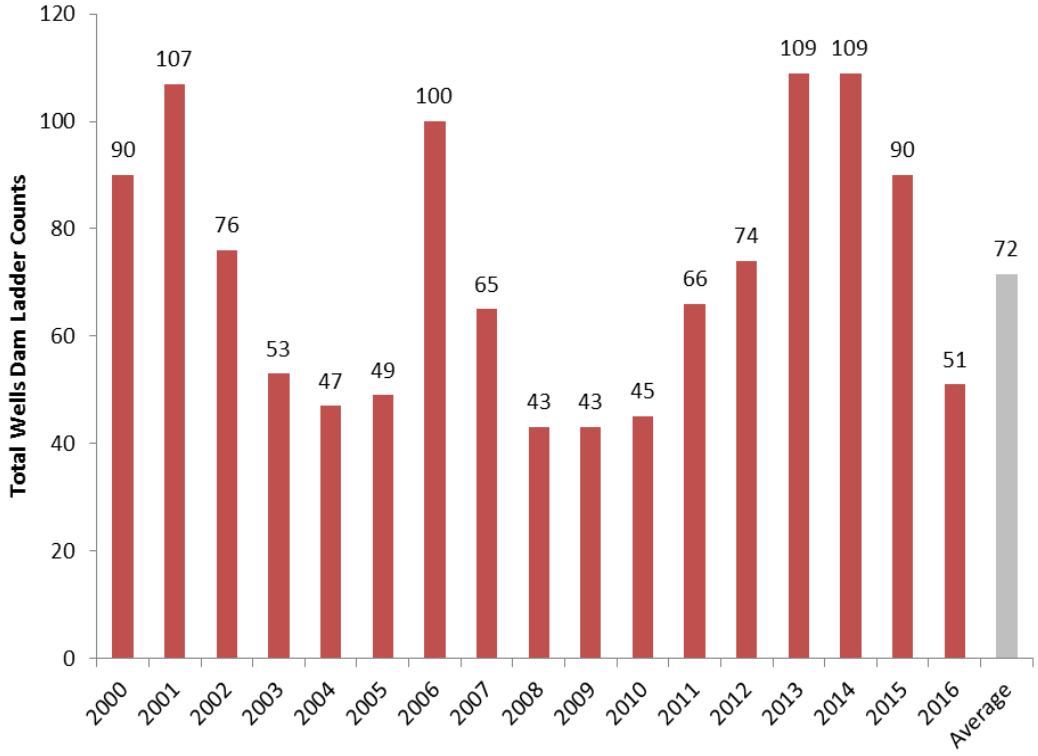

Figure 1. Total Bull Trout Observed Annually at Wells Dam Count Windows

3.2.2 Adult Bull Trout Passage Evaluation at Off-Project Collection Facilities

Douglas PUD shall assess upstream and downstream passage and incidental take of adult, migratory bull trout at off-Project (outside of the Project boundary) adult salmon and steelhead broodstock collection facilities associated with the Wells HCP. Specifically, beginning in year one of the new license, Douglas PUD will conduct a one-year radio-telemetry study to assess passage and incidental take at off-Project adult collection facilities (i.e., Twisp Weir). Douglas PUD will capture and tag up to 10 adult, migratory bull trout (>400 mm) at adult collection facilities and use fixed receiver stations upstream and downstream of collection facilities to examine upstream and downstream passage characteristics and incidental take. Study protocols

that have been used during past radio-telemetry assessments at Wells Dam (LGL and Douglas PUD 2008) will be employed for this assessment.

If negative impacts to passage associated with off-Project collection facilities are observed or the authorized incidental take level is exceeded during any one-year period, Douglas PUD will conduct another monitoring study in the succeeding year. If negative impacts to passage continue to be observed or the authorized incidental take level is exceeded in this second year, Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to passage impacts or the exceedance of the allowable level of incidental take.

After year one of the new license, the implementation of this sub-objective will be integrated into the one-year telemetry monitoring program that is to be conducted every ten years (beginning in year 10 of the new license) at Wells Dam as identified in Section 4.2.1. In year 10 of the new license and every 10 years thereafter, bull trout will be captured and tagged only at Wells Dam (Section 4.2.1) since data show that bull trout passing Wells Dam are migrating back into the Methow River watershed (LGL and Douglas PUD 2008). Through the continued deployment of fixed station monitoring at off-Project adult salmon and steelhead broodstock collection facilities, these tagged bull trout will continue to provide passage and take information in support of this sub-objective throughout the term of the new license.

3.2.2.1 *Progress Towards Meeting Objective 2 in 2016 - Adult Bull Trout Passage Evaluation at Off-Project Collection Facilities*

During 2012, Douglas PUD, in consultation with the Aquatic SWG developed a study plan to assess incidental take of bull trout at the Twisp River Weir broodstock collection facility. All parties including the USFWS, agreed that Douglas PUD should postpone the Off-Project Passage Evaluation until year five of the new license to coincide with the Bull Trout Passage and Enumeration Study scheduled to take place at Wells Dam in 2016-2017. Combining the two studies provided a more comprehensive study and potentially required fewer unique study fish than two independent studies, thereby limiting the overall impact or take of bull trout.

During 2013, Douglas PUD, in consultation with the Aquatic SWG filed a letter with the FERC proposing to postpone the Off-Project Passage Evaluation until year five of the new license when the Bull Trout Passage and Enumeration Study was scheduled to take place at Wells Dam. FERC approved the deferral on October 15, 2013. Planning of the compressive study began in 2015 with the approval of the final study plan in coordination with the USFWS and the Aquatic SWG. Preliminary results from the 2016 study are provided in 3.2.1.1 above. This study will continue in 2017 and data summarized in a final report due in late 2017.

In 2016, there were 71 encounters of adult bull trout at the Twisp River Weir that were handled by Douglas PUD staff and its contractors. Forty six of these fish were radio tagged and the remaining 24 released untagged. Of the 24 untagged, 15 had existing PIT tags. New PIT tags that were given to study fish (also radio-tagged) and exiting PIT tagged fish were uploaded to PITAGIS in respective tagging and recapture databases. PIT tag histories will be provided in the 2017 Study Report.

Twisp Weir encounters in 2016 (N=71) were well below the take limits of 118 as identified in Table 14 of the Bull Trout BO for Wells Dam (USFWS 2012) and are summarized in Table 1. The Twisp Weir is normally operated for steelhead and spring Chinook collection March through August.

3.2.3 Sub-adult Bull Trout Monitoring

While an objective of the BTMP is to identify potential Project impacts on upstream and downstream passage of sub-adult bull trout, Aquatic SWG members (including the USFWS) agree that it is not feasible to assess sub-adult passage because sub-adult bull trout have not been observed at Wells Dam. During the previous six years of bull trout data collection at Wells Dam (BioAnalyst Inc. 2004; LGL and Douglas PUD 2008), sub-adult bull trout have not been documented passing Wells Dam (based upon fishway video counts and bull trout trapping for radio-telemetry). However, it is expected that through the increased monitoring associated with the implementation of the BTMP that there may be additional encounters with sub-adult bull trout. If at any time during the new license term sub-adult bull trout are observed passing Wells Dam in significant numbers (i.e., >10 per calendar year), the Aquatic SWG will recommend reasonable and appropriate methods for monitoring sub-adult bull trout. Specifically, Douglas PUD may modify counting activities, continue to provide PIT tags and equipment, and facilitate training to enable fish sampling entities to PIT tag sub-adult bull trout when these fish are collected incidentally during certain fish sampling operations. This activity would occur the following year after significant numbers of sub-adult bull trout (>10 per calendar year) were observed.

3.2.3.1 *Progress Towards Meeting Objective 2 in 2016 - Sub-adult Bull Trout Monitoring*

Of the 51 bull trout counted at Wells Dam in 2016, 5 were estimated to be less than 450 mm fork length. Of these five, all were estimated to be over 400 mm fork length, suggesting that very few, if any bull trout observed in the Wells Dam count windows in 2016 were subadults.

3.3 Implement Reasonable and Appropriate Measures to Modify the Upstream Fishway and Downstream Bypass if Adverse Impacts on Bull Trout are Identified (Objective 3)

Douglas PUD shall continue to operate the upstream fishway and downstream bypass at Wells Dam in accordance with the Wells HCP. However, if upstream or downstream passage problems for bull trout are identified (as agreed to by the USFWS and Douglas PUD), Douglas PUD will identify and implement, in consultation with the Aquatic SWG and Wells HCP Coordinating Committee, reasonable and appropriate options to modify the upstream fishway, downstream bypass, or operations to reduce the identified impacts to bull trout passage.

3.3.1 Progress Towards Meeting Objective 3 in 2016 - Implement Reasonable and Appropriate Measures to Modify the Upstream Fishway and Downstream Bypass if Adverse Impacts on Bull trout are Identified

No new adverse impacts to bull trout were identified in 2016. As a result, Douglas PUD is not proposing to implement any new upstream fishway or downstream bypass measures.

3.4 Investigate Entrapment or Stranding of Bull Trout during Periods of Low Reservoir Elevation (Objective 4)

During the implementation of the WBTMMP from 2004-2008, Douglas PUD, through the use of high resolution bathymetric information, hydraulic and elevation data, and backwater curves, identified potential bull trout entrapment and stranding areas in the Wells Reservoir. Although no stranded bull trout were observed in these areas during the implementation of the WBTMMP, Douglas PUD will continue to investigate potential entrapment or stranding areas for bull trout through periodic monitoring when periods of low reservoir elevation expose identified sites. During the first five years of the new license, Douglas PUD will implement up to five bull trout entrapment/stranding assessments during periods of low reservoir elevation (below 773' msl). If no incidences of bull trout stranding are observed during the first five years of study, additional assessment will take place every fifth year during the remainder of the license term, unless waived by the Aquatic SWG. If bull trout entrapment and stranding result in take in exceedance of the authorized incidental take level, then reasonable and appropriate measures will be implemented by Douglas PUD, in consultation with the Aquatic SWG, to address the impact.

3.4.1 Progress Towards Meeting Objective 4 in 2016 - Investigate Entrapment or Stranding of Bull Trout during Periods of Low Reservoir Elevation

Pursuant to Article 402 of the Wells Project license, Douglas PUD developed a Bull Trout Stranding, Entrapment, and Take Study Plan (Plan). This document was developed collaboratively with the USFWS and the Aquatic SWG. The Plan was filed with the FERC on September 24, 2013 and approved on October 29, 2013.

The Plan requires Douglas PUD to conduct 5 reservoir surveys when Wells Dam (Project) operations reduce the forebay elevation to 773 feet above sea level (msl) within the first five years of the new operating license for the Project. These surveys are to be conducted opportunistically when reservoir elevations may be at or below 773' msl for an extended period of time. This sampling regime is also consistent with the USFWS 2013 Section 10 Biological Opinion, Section 18 Fishway Prescriptions for the Wells Project license, and Douglas PUD's BTMP.

Since issuance of the new Operating License three standing surveys have taken place. The first stranding survey occurred on February 24, 2013. During this survey no bull trout were observed in stranding pools. Results from this effort were summarized in a technical memorandum dated March 10, 2013 and submitted to the USFWS and the Aquatic Settlement Work Group. These results were also filed with the FERC as part of the 2013 Annual Bull Trout Management Plan Report.

On September 2, 2015 the Wells Reservoir was lowered to 772' msl to facilitate a construction project at the mouth of the Methow River. On September 3, 2015 Douglas PUD biologists conducted a bull trout stranding survey consistent with the Plan. All identified stranding

locations were examined and no bull trout were observed. The results from the second bull trout stranding survey since license issuance in 2013 were again summarized in a technical memorandum and delivered to the USFWS.

On May 3, 2016 the Project forebay reached 773' msl. This low elevation was a result of Wells Dam hydroelectric Project operations that were designed to flush the Methow River delta using newly refurbished rock groins. This flushing was necessary to facilitate the removal of deposited fine material that builds up in the lower mile of the Methow River as the river meets the Columbia. Moving this fine material provides a safeguard against flooding areas of the town of Pateros, Washington. Consistent with license requirements, on May 4, 2016 Douglas PUD biologists conducted a Wells Project stranding, entrapment and take survey consistent with regulatory requirements. During this survey no bull trout were observed. Similarly to the first and second stranding survey, results of the 2016 survey were summarized and provided to the USFWS (See Appendix 1).

3.5 Participate in the Development and Implementation of the USFWS Bull Trout Recovery Plan (Objective 5)

3.5.1 Monitoring Other Aquatic Resource Management Plan Activities and Predator Control Program for Incidental Capture and Take of Bull Trout

Douglas PUD will monitor activities associated with the implementation of other Aquatic Resource Management Plans (white sturgeon, Pacific lamprey, resident fish, aquatic nuisance species, and water quality) and the Predator Control Program that may result in the incidental capture and take of bull trout. If the incidental take of bull trout is exceeded due to the implementation of other Aquatic Resource Management Plan activities, then Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take. If the incidental take of bull trout is exceeded due to the implementation of the Predator Control Program, then Douglas PUD will develop a plan, in consultation with the Wells HCP Coordinating Committee and the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take.

3.5.1.1 *Progress Towards Meeting Objective 5 in 2016 - Monitoring Other Aquatic Resource Management Plan Activities and Predator Control Program for Incidental Capture and Take of Bull Trout*

Two activities conducted under other Aquatic Resource Management Plan actions had the potential to encounter bull trout in 2016:

1. Pikeminnow removal associated with the Predator Control Program
    - The Wells HCP required Predator Control Program, principally Douglas PUD's pikeminnow control program, did not encounter any bull trout in 2016. The pikeminnow control program used setlines to capture pikeminnow in deep water areas of the Wells Project. Over the program's existence (more than fifteen years) no bull trout have been encountered.

2. The 2016 Wells Project White Sturgeon Monitoring and Evaluation Program
    - Over the spring and summer of 2016 Douglas PUD and its contractors conducted a White Sturgeon Monitoring and Evaluation Program consistent with license requirements found within the White Sturgeon Management Plan. To accomplish this task, setlines were used to estimate survival, growth, habitat use and condition of white sturgeon within the Project. No bull trout were encountered during these sampling efforts.

3.5.2 Funding Collection of Tissue Samples and Genetic Analysis

Beginning in year 10 of the new license, and continuing every 10 years thereafter for the term of the new license, Douglas PUD will, if recommended by the Aquatic SWG, collect up to 10 adult bull trout tissue samples in the Wells Dam fishway facilities over a period of one year and fund their genetic analysis. Genetic tissue collection will take place concurrent with the implementation of the bull trout radio-telemetry monitoring study. Samples will be submitted to the USFWS Central Washington Field Office in Wenatchee, Washington. Any sub-adult bull trout collected during these activities will also be incorporated into the bull trout genetic analysis.

Beginning in year one of the new license, Douglas PUD will collect up to 10 adult bull trout tissue samples from the Twisp River broodstock collection facility over a period of one year and will fund their genetic analysis. Genetic tissue collection will take place concurrent with the implementation of the off-Project bull trout radio-telemetry monitoring study.

3.5.2.1 *Progress Towards Meeting Objective 5 in 2016 - Funding Collection of Tissue Samples and Genetic Analysis*

During the Wells Dam and Twisp Weir Passage and Survival Study sixty genetic samples were taken. In early 2017 samples will be analyzed by the Washington Department of Fish and Wildlife Genetics Lab and study bull trout will then be assigned back to natal populations. In addition, in early 2017 previously taken genetic samples will be analyzed as required under pre-licensing agreement(s) and associated with radio-telemetry studies that took place in the mid-2000 at Wells Dam. These older samples will also be assigned to each fish's natal population of origin.

3.5.3 Information Exchange and Regional Monitoring Efforts

Douglas PUD will continue to participate in information exchanges with other entities conducting bull trout research and regional efforts to explore availability of new monitoring methods and coordination of radio-tag frequencies for bull trout monitoring studies in the Project.

Douglas PUD will make available an informational and educational display at the Wells Dam Overlook to promote the conservation and recovery of bull trout in the Upper Columbia River and associated tributary streams.

3.5.3.1 *Progress Towards Meeting Objective 5 in 2016 - Information Exchange and Regional Monitoring Efforts*

In 2016, Douglas PUD participated in a number of regional meetings designed to develop recovery documents and actions for listed bull trout, with specific emphasis on study planning for the 2016/2017 Wells Dam and Twisp Weir study. These meetings were led by USFWS and took place in Wenatchee and Leavenworth, Washington. Recovery planning is expected to continue with regional stakeholders in 2017 and Douglas PUD will continue to participate in these regional information exchanges.

3.6 Identify Any Adverse Impacts of Project-related Hatchery Operations on Adult and Sub-adult Bull Trout (Objective 6)

3.6.1 Bull Trout Monitoring During Hatchery Activities

During the term of the new license, Douglas PUD shall monitor hatchery actions (e.g., salmon trapping, sturgeon brood stocking and capture activities) that may encounter adult and sub-adult bull trout for incidental capture and take. Actions to be monitored shall be associated with the Wells Hatchery, the Methow Hatchery, and any future facilities directly funded by Douglas PUD.

If the incidental take of bull trout is exceeded due to Douglas PUD's hatchery actions then Douglas PUD will develop a plan, in consultation with the Aquatic SWG, to address the identified factors contributing to the exceedance of the allowable level of incidental take.

3.6.1.1 *Progress Towards Meeting Objective 6 in 2016 - Bull Trout Monitoring During Hatchery Activities*

Hatchery actions in 2016 were similar to other years where broodstock was collected at Wells Dam and the Twisp Weir in 2016. Screw traps used during HCP related smolt monitoring and evaluation activities in the Methow River basin often encounter juvenile bull trout. Other M&E and hatchery activities that have the potential to encounter bull trout is adult handling at Methow Hatchery, Wells Dam Volunteer Channel. All of these trapping and hatchery activities are conducted by WDFW, Douglas PUD's lead hatchery contractor.

Twisp Weir operations encountered 71 bull trout and LGL and Douglas PUD tagged 46 of these fish. Well Dam hatchery actions associated with spring Chinook broodstock collection encountered 2 bull trout (Table 1). Additionally, 14 adult bull trout were collected at Wells Dam for the Twisp and Wells Dam radio telemetry study. Finally, 20 subadult bull trout were captured at the Twisp and Carlton screw trap in 2016 (Table 1).

In addition to hatchery actions, during September 2016, WDFW, with support from Douglas PUD staff piloted a third year of a spring Chinook and steelhead Mark Recapture Study in the Twisp River in order to estimate the carrying capacity of anadromous salmonids in the Twisp River Basin. To accomplish this task, 100 meter stream sections were randomly selected as mark and recapture locations. A team of 5-6 biologists sampled the Twisp, Chewuch and Methow Rivers using backpack electrofishing and encountered 2067 steelhead, 846 spring Chinook, and incidentally encountered 278 bull trout. All of these salmonids were PIT tagged unless captured fish were <55 mm. Encountered bull trout fall under WDFW Section 10 sampling and are therefore not considered as part of Douglas PUD's take estimates associated with this report. PIT tag ID's from all tagged salmonids during this study have been uploaded to PTAGIS. PIT tag data can be use in the future to examine immigration timing, life history patterns, and population size.

2016 Douglas PUD Project Actions collectively were well below take estimates (limits) as described in the March 2012 issued Section 7 Biological Opinion from the USFWS. A summary of all bull trout encounters in 2016 and respective take limits are provided in Table 1.

Table 1. Summary of 2016 Bull Trout Incidental Encounters Under Douglas PUD License Actions and Related Project Encounter Limits Under the 2012 Issued Section 7 Biological Opinion.

	Project Element	2012 ISSUED BIOLOGICAL OPINION (Table 14)				2016 Incidental Take Totals			
		Lethal Take		Non-lethal Take		Lethal Take		Non-lethal Take	
		Adult	Sub-adult	Adult	Sub-adult	Adult	Sub-adult	Adult	Sub-adult
Operations	Turbine Operation (A-1)	4	1	31	30				
	Spillway Operation (A-2)	2	1	76	31				
	Reservoir Operation (A-3)	1	2	8	3				
HCP	Passage Survival Plan								
	Wells Dam Juvenile Passage Plan								
	-Fish Bypass Operation (A-1)	1	1	4	6				
	-Juvenile Survival Study (A-2)	2	2	4	6				
	Wells Dam Adult Passage Plan	1	3	76	31			2	
	Tributary Conservation Plan and Committee	-	-	-	-				
	Hatchery Management Plans								
	-Hatchery Management (A-1)	2	5	76	31				20
	-Operation of the Twisp Weir (A-2)	1	1	118	50*			25	
	-HGMP Implementation (A-3)	2	2	76	31				
	-Juvenile Salmonid Release (A-4)	-	-	629	132*				
	Predator Control Program	2	1	76	31				
ASA	Water Quality Management Plan	1	2	76	31				
	Bull Trout Management Plan	2	-	76	31			60	
	Pacific Lamprey Management Plan	1	1	2	5				
	White Sturgeon Management Plan	1	1	2	5				
	Resident Fish Management Plan	1	2	76	31				
	Aquatic Nuisance Management Plan	1	1	76	31				
TERRESTRIAL	Wildlife and Botanical Management Plan	-	-	-	-				
	Line Avian Protection Plan	no effect	no effect	no effect	no effect				
	Recreation Resources Management Plan	-	-	-	-				
	Historic Properties Management Plan	-	-	-	-				
	Land Use Policy	no effect	no effect	no effect	no effect				

3.7 USFWS Section 7 Consultation

The PMEs contained within the BTMP were specifically developed, in consultation with the USFWS, to address potential RPMs for the Project relicensing and associated Section 7 consultation. All of the USFWS's potential RPMs for the Wells Project can be found in Section 2.0 above. Each of these RPMs has been cross referenced with the specific supporting objective and PME (Sections 4.1 - 4.6) found within the BTMP. The purpose of these RPMs are to provide consistency with Douglas PUD's Aquatic Settlement Agreement and the USFWS' subsequent Section 7 consultation on the relicensing of the Wells Project.

3.7.1.1 *Progress Towards Meeting Objective 5 in 2016 - USFWS Section 7 Consultation*

On March 16, 2012, the USFWS issued a Bull Trout BO related for the relicensing of the Wells Project. The BO contained various RPMs and the terms and conditions (T&Cs). These RPMs and T&Cs can be found within Appendix E of the FERC license for the Wells Project and they are consistent with the measures identified in the BTMP and within this report. Since license issuance Douglas PUD has implemented the PME's from the BTMP and RPM's from the Biological Opinion consistent with requirements.

No formal Section 7 consultation was required in 2016.

3.8 Reporting

Douglas PUD will provide a draft annual report to the Aquatic SWG summarizing the previous year's activities undertaken in accordance with the BTMP. The report will document all bull trout activities conducted for the Wells Project and describe activities proposed for the following year. Furthermore, any decisions, statements of agreement, evaluations, or changes made pursuant to this BTMP will be included in the annual report. If significant activity was not conducted in a given year, Douglas PUD will prepare a memorandum providing an explanation of the circumstances in lieu of the annual report.

3.8.1.1 *Progress Towards Meeting Annual Reporting Requirements*

This 2016 report fulfills the reporting requirements identified in the BTMP and Article 406 of the Wells Project FERC operating license. In addition, this report fulfills requirements of the Bull Trout BO to submit an annual take report to the Central Washington Field Office of the USFWS on or before April 15 each year.

Because the measures required by the BO are entirely consistent with the measures found in the Aquatic Settlement Agreement's BTMP and because the reporting requirements for the BTMP, bull trout BO and Article 406 are consistent, the 2016 BTMP Annual Report will be used to satisfy all three of the bull trout annual reporting requirements.

4.0 REFERENCES

BioAnalysts, Inc. 2004. Movement of Bull Trout within the Mid-Columbia River and Tributaries, 2001-2004. Prepared by BioAnalysts, Inc., Eagle Rock, Idaho for Public Utility District No. 1 of Chelan County, Wenatchee, WA, Public Utility District No. 1 of Douglas County, East Wenatchee, WA, and Public Utility District No. 1 of Grant County, Ephrata, WA.

Douglas (Public Utility District No. 1 of Douglas County). 2004. Wells Hydroelectric Project Bull Trout Monitoring and Management Plan, 2004-2008. Public Utility District No. 1 of Douglas County, East Wenatchee, WA.

LGL and Douglas PUD. 2007. Wells bull trout monitoring and management plan, 2006 Annual Report. Wells Hydroelectric Project FERC No. 2149.

LGL and Douglas PUD. 2008. Bull trout monitoring and management plan, 2005-2008 final report. Wells Hydroelectric Project FERC No. 21.49. Prepared for Public Utilities District No. 1 of Douglas County. East Wenatchee, Washington.

Appendix 1

Commissioners:
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May 20, 2016

Subject: Low Pool Elevation Bull Trout Survey – License Article 402
Wells Hydroelectric Project No. 2149

Steve:

Pursuant to Article 402 of the license for the Wells Hydroelectric Project (Wells Project), the Public Utility District No. 1 of Douglas County (Douglas PUD) developed a Bull Trout Stranding, Entrapment, And Take Study Plan (Plan). This document was developed collaboratively with the United States Fish and Wildlife Service (Service) and the Aquatic Settlement Work Group (Aquatic SWG). The Plan was filed with the Federal Energy Regulatory Commission (FERC) on September 24, 2013 and approved by the FERC on October 29, 2013.

The Plan requires Douglas PUD to conduct 5 reservoir surveys when Wells Dam (Project) operations reduce the forebay elevation to 773 feet above sea level (msl) within the first five years of the new operating license for the Project. These surveys are to be conducted opportunistically when reservoir elevations may be at or below 773' msl for an extended period of time. This sampling regime is also consistent with the Service's 2013 Section 10 Biological Opinion, Section 18 Fishway Prescriptions for the Project, and Douglas PUD's Bull Trout Management Plan.

On Tuesday May 3, 2016 the Project forebay reached 773' msl. This low elevation was a result of Wells Dam hydroelectric Project operations that were designed to flush the Methow River delta using newly refurbished rock groins. This flushing is necessary to facilitate the removal of deposited fine material that builds up in the lower mile of the Methow River as the river meets the Columbia. Moving this fine material provides a safeguard against flooding areas of the town of Pateros, Washington.

Consistent with license requirements, on May 4, 2016 Douglas PUD biologists conducted a Wells Project stranding, entrapment and take survey consistent with regulatory requirements. Results of the survey are as follows:

- Methow River mouth - one pool with no fish observed.
- Okanogan River mouth - no pools or fish found.

- Kirk Islands - three pools found (e.g. Figure 1), with one containing approximately 300 redside shiner (*Richardsonius balteatus*) juveniles.

- El Rio Road bed (across from Okanogan River mouth) - visual inspection showed no fish in shallow part of a single pool. The pool was estimated to be over 9 feet deep and seining ineffective.

- Schluneger Flats - no pools or fish found.

- Bridgeport Bar Islands - 7 pools (e.g. Figure 2), 3 of which contained stickleback (*Gasterosteidae* sp.) and juvenile pikeminnow (*Ptychocheilus oregonensis*). Two of the three pools each contained approximately 200 subyearling Chinook salmon (*Oncorhynchus tshawytscha)* fry (measuring approximately 35 mm fork length; Figure 3). Finally, two non-native Northern crayfish (*Orconectes virilis)* were removed from one pool at this location. The crayfish were not returned to the Columbia River (Figure 4).

Figure 1. One of the pools at Kirk Islands containing no fish.

Figure 2. **One of the pools at Bridgeport Bar Islands that contained stickleback and subyearling Chinook fry.**

Figure 3. **Stickleback and subyearling Chinook fry that were salvaged by beach seine at the Bridgeport Bar Islands.**

Figure 4. Two non-native Northern crayfish were removed by beach seine at the Bridgeport Bar Islands.

No bull trout were observed during this effort. For all other non-target taxa, fish were beach seined from smaller shallow pools and returned to the main river channel. In the event of future low reservoir events where forebay elevations drop to or below 773' msl, Douglas PUD will implement the Bull Trout Stranding, Entrapment, and Take Study Plan accordingly. This memo completes the third of five stranding surveys that are to be conducted opportunistically in the first five years of the Wells Hydroelectric Project License.

If you have any questions or require further information regarding the above sampling, please feel free to contact Andrew Gingerich at (509) 881-2323, andrewg@dcpud.org.

Sincerely,

Andrew Gingerich
Sr. Aquatic Resource Biologist

Cc: Wells Aquatic Settlement Work Group
Mr. Shane Bickford – Douglas PUD
Mr. Chas Kyger – Douglas PUD