Lewis River Hydroelectric Projects

FERC Project Nos. 935, 2071, 2111, 2213

Photo courtesy of Summer Peterman, PacifiCorp – 2020

2020 Annual Report

Annual Summary of License Implementation and Compliance: Aquatic and Terrestrial Resources

April 2021

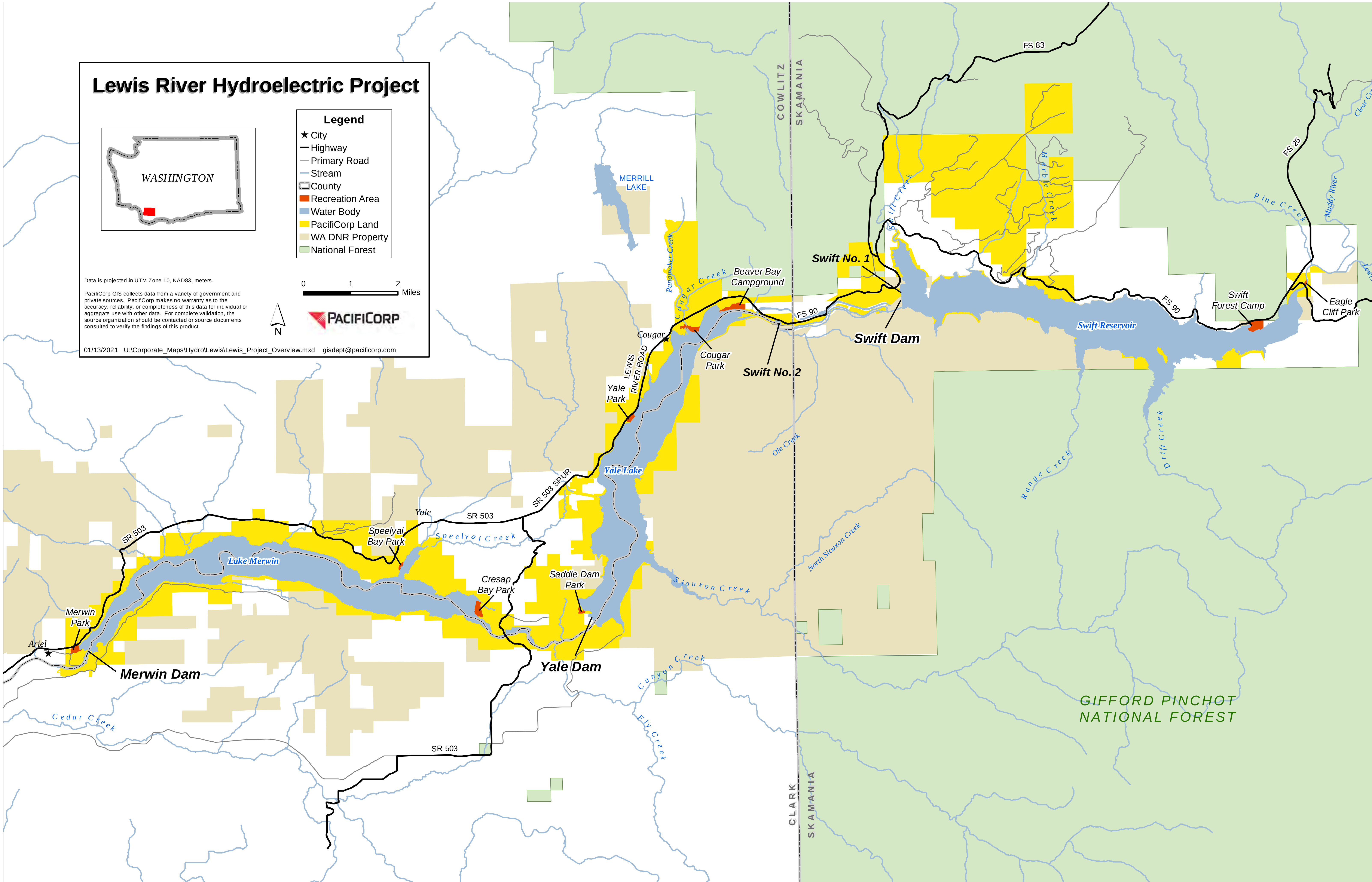
Lewis River Hydroelectric Projects

FERC Nos. 935, 2071, 2111, 2213

Annual Summary of License Implementation and Compliance:
Aquatic and Terrestrial Resources

2020 Annual Report

PACIFICORP
A BERKSHIRE HATHAWAY ENERGY COMPANY



Lewis River Hydroelectric Project
WASHINGTON
Legend
City
Highway
Primary Road
Stream
County
Recreation Area
Water Body
PacifiCorp Land
WA DNR Property
National Forest
Data is projected in UTM Zone 10, NAD83, meters.
PacifiCorp GIS collects data from a variety of government and private sources. PacifiCorp makes no warranty as to the accuracy, reliability, or completeness of this data for individual or aggregate use with other data. For complete validation, the source organization should be contacted or source documents consulted to verify the findings of this product.
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Miles
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PACIFICORP
01/13/2021 U:\Corporate_Maps\Hydro\Lewis\Lewis_Project_Overview.mxd gisdept@pacificorp.com
COWLITZ
SKAMANIA
CLARK
SKAMANIA
MERRILL LAKE
FS 83
FS 25
FS 90
Swift No. 1
Swift Dam
Swift No. 2
Swift Reservoir
Swift Forest Camp
Eagle Cliff Park
Beaver Bay Campground
Cougar
Cougar Park
Cougar Creek
Panamaker Creek
Swift Creek
Marble Creek
Pine Creek
Muddy River
Clear Creek
Lewis River
LEWIS RIVER ROAD
Yale Park
Yale Lake
Ole Creek
Range Creek
Drift Creek
North Siouxon Creek
Siouxon Creek
SR 503 SPUR
SR 503
Yale
Speelyai Bay Park
Speelyai Creek
Lake Merwin
Cresap Bay Park
Saddle Dam Park
Yale Dam
Merwin Park
Ariel
Merwin Dam
Cedar Creek
Canyon Creek
Ely Creek
GIFFORD PINCHOT NATIONAL FOREST

Table of Contents

1.0 INTRODUCTION 8
1.1 BACKGROUND 9
1.1.1 Lewis River Settlement Agreement 9
1.1.2 Environmental Impact Statement 9
1.1.3 Agency Terms and Conditions 9
1.1.4 Endangered Species Act Consultations 10
1.1.5 Water Quality Certifications 10
1.1.6 New FERC Licenses 11
1.1.7 2020 Annual Report and Consultation 11
1.2 Annual Report Organization 12
2.0 AQUATICS AND TERRESTRIAL COORDINATION COMMITTEES 14
2.1 ACC and TCC Membership 14
3.0 AQUATICS RESOURCES 18
3.1 ACC Meetings 18
3.1.1 ACC Meetings and Conference Calls: Overview 18
3.1.2 ACC Meeting Notes 20
3.2 Aquatic Measures Implemented as of the End of 2020 20
3.2.1 SA Section 4.1 Common Provisions Regarding Fish Collection and Transport Facilities 20
3.2.2 SA Section 4.2 Original Merwin Trap 21
3.2.3 SA Section 4.3 Merwin Upstream Collection and Transport Facility 22
3.2.4 SA Section 4.4 Downstream Transport at Swift No. 1 Dam 25
3.2.5 SA Section 4.5 Downstream Passage at Yale Dam 26
3.2.6 SA Section 4.6 Downstream Passage at Merwin Dam 26
3.2.7 SA Section 4.7 Upstream Passage at Yale Dam 26
3.2.8 SA Section 4.8 Upstream Passage at Swift Projects 26
3.2.9 SA Section 4.9.1 Interim Bull Trout Collection and Transport Programs . 26
3.2.10 SA Section 4.10 Bull Trout Passage in the Absence of Anadromous Fish Facilities 27
3.2.11 SA Section 5.1 Yale Spillway Modifications 27
3.2.12 SA Section 5.2 Bull Trout Habitat Enhancement Measures 27
3.2.13 SA Section 5.3 Reserved 28
3.2.14 SA Section 5.4 Reserved 28
3.2.15 SA Section 5.5 Bull Trout Limiting Factors Analysis 28
3.2.16 SA Section 5.6 Public Information Program to Protect Listed Anadromous Species 28
3.2.17 SA Section 5.7 Public Information Program to Protect Bull Trout 28
3.2.18 SA Section 6.1 Flow Releases in the Bypass Reach: Upper Release and Constructed Channel 29
3.2.19 SA Section 6.2 Flow Fluctuations, Ramp Rates below Merwin Dam and Plateau Operations at Merwin Dam 31
3.2.20 SA Section 7.1 Large Woody Debris Program 32
3.2.22 SA Section 7.3 Predator Study 33
3.2.23 SA Section 7.4 Habitat Preparation Plan 33
3.2.24 SA Section 7.5 Aquatics Fund 33
3.2.25 SA Section 7.6 In Lieu Fund 34
3.2.26 SA Section 7.7 Management of Aquatics Fund and In Lieu Fund 37
3.2.27 SA Section 7.8 Execution of Projects and Mitigation Measures 37
3.2.28 SA Section 8.1 Hatchery and Supplementation Program 37
3.2.29 SA Section 8.2 Hatchery and Supplementation Plan and Report 37

3.2.30 SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species 38
3.2.31 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production 38
3.2.32 SA Section 8.5 Supplementation Program 38
3.2.33 SA Section 8.6 Resident Fish Production 38
3.2.34 SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance 38
3.2.35 SA Section 8.8 Juvenile Acclimation Sites 38
3.2.36 SA Section 9.1 Monitoring and Evaluation Plan 39
3.2.37 SA Section 9.2 Monitoring and Evaluation Related to Fish Passage 39
3.2.38 SA Section 9.3 Wild Fall Chinook and Chum 39
3.2.39 SA Section 9.4 Water Quality Monitoring 39
3.2.40 SA Section 9.5 Monitoring of Hatchery and Supplementation Program ... 40
3.2.41 SA Section 9.6 Bull Trout Monitoring 40
3.2.42 SA Section 9.7 Resident Fish Assessment 40
3.2.43 SA Section 9.8 Monitoring of Flows 40
3.2.44 Monitoring and Evaluation Post-Season Incidental Take 41
3.3 Aquatic 2021 Annual Plan 42
3.3.1 SA Section 4.2 Merwin Trap 42
3.3.2 SA Section 4.3 Merwin Upstream Collection and Transport Facility 42
3.3.3 SA Section 4.4 Downstream Transport at Swift No. 1 Dam 43
3.3.4 SA Section 4.9 Interim Bull Trout Collection and Transport 43
3.3.5 SA Section 5.2 Bull Trout Habitat Enhancement Measures 44
3.3.6 SA Section 5.7 Public Information Program to Protect Bull Trout 44
3.3.7 SA Section 6.1 Flow Releases in the Bypass Reach; Constructed Channel 44
3.3.8 SA Section 6.2 Flow Fluctuations below Merwin Dam 44
3.3.9 SA Section 7.1 Large Woody Debris Project 44
3.3.10 SA Section 7.2 Spawning Gravel Study and Gravel Monitoring and Augmentation Plan 44
3.3.11 SA Section 7.4 Habitat Preparation Plan 44
3.3.12 SA Section 7.5 Aquatics Fund 44
3.3.13 SA Section 8.2 Hatchery and Supplementation Plan 45
3.3.15 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production 45
3.3.16 SA Section 8.6 Resident Fish Production 45
3.3.17 SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance 45
3.3.18 SA Section 8.8 Juvenile Acclimation Sites 45
3.3.19 SA Section 9.6 Bull Trout Monitoring 46
3.3.20 Monitoring and Evaluation Post-Season Incidental Take 46
4.0 WATER QUALITY 47
4.1 PacifiCorp Water Quality Measures Implemented in 2020 47
4.1.1 PacifiCorp Application for 401 Water Quality Certificate for Yale, Swift No. 1 and Merwin Hydroelectric Projects 47
4.1.2 SA Section 9.4 Water Quality Monitoring 47
4.2 PacifiCorp Water Quality 2021 Annual Plan 54
4.2.1 Water Quality Management Plan 54
4.2.2 Flow Monitoring 54
4.2.3 Bypass Reach Gravel Replacement 54
4.2.4 Lake Merwin Canyon Water Quality Attainment Plan 54
4.2.5 Swift and Merwin Spill TDG Attainment Plan 54
4.2.6 Lewis River Project Temperature Model 54
4.2.7 Yale-Swift Turbine TDG Corrective Action Plan 54

4.3 Cowlitz PUD Water Quality Measures Implemented as of the End of 2020..... 55
4.3.1 Swift No. 2 Project Water Temperature Monitoring 55
4.3.2 Swift No. 2 Project Tailrace Water Quality Monitoring..... 56
4.3.3 Swift No. 2 Tailrace Total Dissolved Gas (TDG) Monitoring (401) Certification Section 4.8.3..... 56
4.3.4 Swift No. 2 Surge Arresting Structure Total Dissolved Gas (TDG) Monitoring (401) Certification Section 4.3.5 as amended..... 57
4.3.5 SA Section 9.4 Water Quality Monitoring..... 57
4.4 Cowlitz PUD Water Quality 2021 Annual Plan 58
4.4.1 Water Quality Management Plan 58
5.0 TERRESTRIAL RESOURCES 58
5.1 TCC Meetings 58
5.1.1 Meetings and Conference Calls: Overview 58
5.1.2 Meeting Notes..... 60
5.2 PacifiCorp Terrestrial Measures Implemented as of the End of 2020 60
5.2.1 SA Section 10.1 Yale Land Acquisition and Habitat Protection Fund..... 61
5.2.2 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund..... 61
5.2.3 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund..... 61
5.2.4 SA Section 10.4 Transaction Costs..... 61
5.2.5 SA Section 10.5 Management of Funds..... 61
5.2.6 SA Section 10.6 Completed Implementation Advanced Purchases..... 62
5.2.7 SA Section 10.7 Conservation Easements 62
5.2.8 SA Section 10.8 Wildlife Habitat Management Plan 62
5.3 PacifiCorp Terrestrial 2021 Annual Plan 63
5.3.1 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund..... 63
5.3.2 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund..... 63
5.3.3 SA Section 10.4 Transaction Costs..... 63
5.3.4 SA Section 10.5 Management of Funds..... 63
5.3.5 SA Section 10.6 Completed Implementation Advanced Purchases..... 63
5.3.6 SA Section 10.7 Conservation Easements 63
5.3.7 SA Section 10.8 Wildlife Habitat Management Plans..... 63
5.3.8 SA Section 10.8.5.5 Mitigation for Impacts on Wildlife Habitat 63
5.4 Cowlitz PUD Terrestrial Measures Implemented in 2020..... 64
5.4.1 SA Section 10.6 Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]..... 64
5.4.2 SA Section 10.8.1 Development of the Wildlife Habitat Management Plan (WHMP) 64
5.4.3 SA Section 10.8.2 WHMP Fund 64
5.4.4 SA Section 10.8.3 Management of the Plan [Implementation of the Annual Plan]..... 66
5.4.5 SA Section 10.8.4 Habitat Evaluation Procedures 73
5.4.6 SA Section 10.8.4.2 Review of Effectiveness of WHMP 73
5.4.7 SA Section 10.8.3 Cowlitz PUD 2021 Annual Plan 73
5.5 Cowlitz PUD Terrestrial 2021 Annual Plan 73
5.5.1 SA Section 10.6 Cowlitz PUD Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]..... 73
5.5.2 SA Section 10.8.1 Cowlitz PUD Development of the Wildlife Habitat Management Plan (WHMP)..... 73
5.5.3 SA Section 10.8.2 Cowlitz PUD WHMP Fund..... 73

5.5.4 SA Section 10.8.3 Management of the Plan [Annual Plan]..... 74
6.0 LAW ENFORCEMENT.....75
7.0 FUNDING 77
8.0 LITERATURE CITED.....78

Figures

Figure 1. Signs posted for public information..... 29

Figure 2. Daily Minimum Release flows from January 1, 2020 to December 28, 2020. . 30

Figure 3. Daily Swift canal drain flows (cfs) from January 1, 2020 to December 31, 2020..... 31

Figure 4. Devil's Backbone Management Unit Weed Survey and Treatment Areas 67

Figure 5. Project Works Management Unit Weed Survey and Treatment Areas 68

Figure 6. Devil's Backbone Elk Forage Plot 71

Figure 7. Stump and slash burning, November 2020. 72

Figure 8. Completed 5.8-acre Elk Forage Plot, December 2020 72

Tables

Table 1. Representatives and Alternates for Membership on the ACC 16

Table 2. Representatives and Alternates for Membership on the TCC 17

Table 3. 2020 Merwin Trap Capture Data. 24

Table 4. Summary of adult salmonids transport above Swift Dam in 2020. 24

Table 5. Aquatic Species Incidental Take form used for reporting in 2020. 41

Table 6. Water quality parameters to be monitored and the schedule of that monitoring according to the July 2013 WQMP. 48

Table 7. Summary of 2020 spill data at each Project. 49

Table 8. Total number of qualifying periods when the Swift No. 1 and Swift No. 2 projects were off-line for more than 48 consecutive hours during the 2007, 2008, 2009, 2010, 2011, and 2012 monitoring periods. 56

Table 9. Cowlitz PUD WHMP Year 12 2020 Budget. 65

Table 10. Cowlitz PUD WHMP Year 12 2020 Carry Forward 65

Table 11. Cowlitz PUD WHMP Tracking Account. 65

Table 12. Non-native invasive plants classified as noxious weeds in Cowlitz or Skamania County that have been observed in the Swift No. 2 WMA as of 2018. 69

Table 13. WDFW Actions taken 2020 (All fishing) 75

Table 14. WDFW Actions taken 2020 (Non-fishing related) 75

Table 15. WDFW Charges/Citations 2020 (fishing related) 76

Table 16. WDFW Charges/Citations 2020 (Non-fishing related) 76

Table 17. WDFW Arrests/Bookings 2020 76

Attachments

Attachment A .....*ACC / TCC Comments*

Attachment B .....*Section 14 of the Lewis River Settlement Agreement*

Attachment C .. *Hatchery and Supplementation Program 2020 Annual Operations Report*

Attachment D .....*Lewis River Monitoring and Evaluation Program 2020 Annual Report*

Attachment E .....*Yale Water Quality Graphs*

Attachment F ..... *Swift No. 1 Water Quality Graphs*

Attachment G .....*Merwin Water Quality Graphs*

Attachment H ..... *Lewis River Wildlife Habitat Management Plan 2021 Annual Plan*

Attachment I ..... *Wildlife Habitat Management Plan Annual Progress Report for Operation Phase 2020*

1.0 INTRODUCTION

This 2020 annual report prepared by PacifiCorp and the Public Utility District No. 1 of Cowlitz County, Washington ("Cowlitz PUD") is provided to the Federal Energy Regulatory Commission (FERC) and the Lewis River Settlement Agreement (SA) Parties to fulfill the reporting requirements of project licenses, articles 402 and 404, and article 14.2.6 of the agreement. It has been prepared in consultation with Terrestrial Coordination Committee (TCC) and Aquatic Coordination Committee (ACC) members. Period of record for this report is from January 1, 2020 to December 31, 2020.

To reflect the settlement Parties' interest in continuing coordination and communication of the implementation of SA and new FERC licenses, Article 14.2.6 of the SA requires PacifiCorp and Cowlitz PUD to prepare annual reports describing the activities of the TCC and the ACC. This SA Article stipulates that the Committee Coordinators for the TCC and ACC shall prepare and file with the FERC detailed annual reports on the fish and wildlife Protection, Mitigation, and Enhancement (PM&E) measures occurring during the prior year as well as plans for the coming year. This annual report fulfills the requirements of Article 14.2.6.

Per the Article language, any comments that were not incorporated into this final report are presented in **Attachment A** of this report.

This 2020 report is available to the Public on PacifiCorp's website at:
https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - Reports

Copies of this report are available from PacifiCorp upon request.

Lewis River – Photo courtesy of Chris Karchesky, October 2020

1.1 BACKGROUND

Located on the North Fork of the Lewis River in southwestern Washington, the Lewis River Hydroelectric System consists of four operationally coordinated projects. PacifiCorp owns Swift No. 1 (FERC No. 2111), Yale (FERC No. 2071), and Merwin (FERC No. 935) projects which together generate 536 MW of electricity at full capacity. Cowlitz PUD owns the 77 MW Swift No. 2 Project (FERC No. 2213) which lies between Swift No. 1 and Yale. Currently, PacifiCorp operates Swift No. 2 for Cowlitz PUD under contract.

The Lewis Hydroelectric System was developed over a period of approximately 30 years. The first development, the Merwin project, was completed in 1931. The Yale project was completed next in 1953. The Swift No. 1 and Swift No. 2 projects were both completed in 1958.

1.1.1 Lewis River Settlement Agreement

In response to the FERC relicensing of the hydroelectric projects, interested parties collaborated on establishing a settlement agreement concerning future operations and responsive protection, enhancement and mitigation measures. On November 30, 2004, (Effective Date) 26 Parties (including two Licensees, five federal agencies, two state agencies, eight local/county agencies, two tribes, two citizens-at-large, and five non-governmental organizations) signed the Lewis River Settlement Agreement (PacifiCorp and Cowlitz PUD 2004a). In December 2004, the Licensees filed with the FERC the SA along with a Joint Explanatory Statement and Supplemental Preliminary Draft Environmental Assessment (PacifiCorp and Cowlitz PUD 2004b). The SA reflects the interests of all Parties; provides significant investments in fish and aquatic resources, wildlife and recreation; includes monitoring and evaluation and adaptive management; and includes ongoing coordination with the Parties through the Aquatics and Terrestrial Coordination Committees. The SA included support for 50-year licenses to allow the projects to continue to provide benefits to the Utilities customers. The Lewis River system allows PacifiCorp to maximize the value of its generation assets and power purchases to provide customer benefits. Cowlitz PUD uses its Swift No. 2 power in a similar fashion to provide benefits to its customers.

1.1.2 Environmental Impact Statement

In September 2005, the FERC released the Draft Environmental Impact Statement for the Lewis River Hydroelectric Projects (DEIS) (FERC 2005) for public comment. The DEIS was generally consistent with the SA in that it included most of the SA terms. In November 2005, the Parties filed comments on the DEIS. The FERC released the Final Environmental Impact Statement for the Lewis River Hydroelectric Projects March 24, 2006 (FERC 2006).

1.1.3 Agency Terms and Conditions

The USFS submitted modified Terms and Conditions in November 2005 (USDA FS 2005). The US Fish and Wildlife Service (USFWS 2006) and National Marine Fisheries Service (NMFS 2006) filed fishway prescriptions February 22, 2006 and February 14, 2006, respectively.

1.1.4 Endangered Species Act Consultations

In January 2005, Cowlitz PUD and PacifiCorp filed with the FERC Biological Evaluations (BEs) covering federally listed fish and wildlife in the Lewis River basin (PacifiCorp and Cowlitz PUD 2005a, PacifiCorp and Cowlitz PUD 2005b). The FERC modified the BEs, included them in the Final EIS and submitted the documents to the Services. The Proposed Action in the BEs is the SA. On September 15, 2006, the USFWS issued a Biological Opinion (USFWS 2006) covering bull trout, northern spotted owls and bald eagles. The National Marine Fisheries Service issued its Biological Opinion (NMFS 2007)covering their respective listed species August 27, 2007.

1.1.5 Water Quality Certifications

Both Licensees applied to the Washington State Department of Ecology (Ecology) for Clean Water Act Section 401 Water Quality Certifications for their respective projects in February 2005. At Ecology's request, both Licensees withdrew and resubmitted those applications in December 2005. Ecology issued a Draft Certification Order for each of the Lewis River projects February 10, 2006. Section 401Water Quality Certifications were issued to the Licensees and filed with the FERC October 9, 2006.

Subsequently, Ecology issued an Order Amendment for the Swift No. 2 project November 3, 2006 followed by a second Order Amendment (No. 4998) December 21, 2007, addressing Conditions 4.6.3.e, 4.6.4.a, and 4.6.5.a. in Administrative Order 3676. Order Amendment No. 3 (No. 5531), issued by DOE January 17, 2008 replaces Condition 3 of Amended Order 4998 (Condition 4.6.5.a of Order 3676). On November 7, 2011, Ecology issued Order Amendment 8832 which replaced conditions of Order No. 3676 relating to water quality standards as provided by RCW 90.48 and WAC 173-210A.

PacifiCorp filed with the FERC an Objection to Inconsistent 401 Certificates Pursuant to Section 15.2 of the Lewis River Settlement Agreement November 16, 2006 and conducted two Alternative Dispute Resolution meetings with SA parties December 11, 2006 and December 15, 2006. Parties reached a resolution at the December 15, 2006 meeting.

On December 21, 2007 the Washington Department of Ecology (Ecology) issued Amended Orders 5000, 4999 and 5001 for the Merwin (Order No. 3678), Yale (Order No. 3677) and Swift No. 1 (Order No. 3679) Certifications respectively. These amendments replaced conditions 4.6.3e, 4.6.4a and 4.6.5a of the Merwin, Yale and Swift No. 1 Certifications, as well as condition 4.6.4e of the Swift No. 1 Certification.

On January 17, 2008, Ecology issued Amended Orders 5329, 5328 and 5330 which replaces condition 4.6.5a as provided in Amended Order 5000 for the Merwin Certification, Amended Order 5328 replacing condition 4.6.5a as provided in Amended Order 4999 for the Yale Certification and Amended Order 5330 replacing condition 4.6.5a as provided in Amended Order 5001 for the Swift No. 1 Certification.

On October 3, 2008, Ecology issued Amended Orders 5743, 5972 and 5974 which replaces condition 4.2(1) and portions of 4.8(3) Table 2 as provided for in Amended order 5329 for the Merwin Certification, Amended Order 5972 replaces portions of 4.8(3) Table 2 as provided in

Amended Order 5328 for the Yale Certification and Amended Order 5974 replaces portions of 4.8(3) Table 2 as provided in Amended Order 5330 for the Swift No. 1 Certification.

On June 22, 2009, Ecology issued Amended Order 6811 which modified the mixing zone for turbidity as it relates to construction of the Upper Release and Constructed Channel implementation.

On February 1, 2010, Ecology issued Amended Order 7325 which modifies Order 3679. Specifically, this amendment extends the expiration dated listed in section D. Duration of Order of amendment 6811 from December 31, 2009, to March 31, 2010.

On November 7, 2011, Ecology issued Amended Orders 8833, 8834 and 8831 which replaced conditions of Administrative Orders 3677,3678,and 3679, respectively, to comply with new water quality standard language modified by Washington Administrative Code (WAC 173-201A-600(1)(a)(ii)).

The Water Quality Certifications and associated amendments for the Swift No. 1, Swift No. 2, Yale and Merwin projects are available for viewing on PacifiCorp's website at https://www.pacificorp.com/energy/hydro/lewis-river/relicensing-documents.html
- (Lewis River relicensing documents).

1.1.6 New FERC Licenses

On June 26, 2008, the FERC provided the Utilities with new operating licenses for the Lewis River hydroelectric projects (Merwin Project No. 935, Yale Project No. 2071, Swift No. 1 Project No. 2111, and Swift No. 2 Project No. 2213). The license periods are each 50 years starting June 1, 2008. Each license includes the respective conditions of the services biological opinions and respective conditions of the Washington Department of Ecology 401 certificates US Forest Service 4(e) conditions. In general, the licenses include terms of the Lewis River Settlement Agreement with few exceptions. Parties to the SA continue to abide by the SA terms including those terms outside the FERC requirements. As such this report may contain information not required by the FERC licenses.

1.1.7 2020 Annual Report and Consultation

PacifiCorp and Cowlitz PUD prepared this 2020 Lewis River Hydroelectric Projects Annual Report (Annual Report) in consultation with the ACC and TCC. A draft report was provided to the ACC and TCC March 4, 2021, the Licensees reviewed the ACC and TCC comments and prepared this final Annual Report. This report was provided to the FERC and the Settlement Agreement Parties on April 14, 2021 to fulfill the requirements of Section 14.2.6 of the Settlement Agreement.

The period of record for the 2020 Annual Report is January 1, 2020 through December 31, 2020.

The following 2020 Reports and 2021 Plans were completed for the 2020 reporting period:

- Wildlife Habitat Management Plan (WHMP Annual Plan for Operation Phase 2021)

- WHMP Annual Progress Report Operations Phase 2020
- Aquatic Coordination Committee/Terrestrial Coordination Committee 2020 Annual Report
- Lewis River Hatchery & Supplementation Program Annual Operations Report 2020
- Lewis River Monitoring and Evaluation Program 2020 Annual Report
  - Lewis River 2020 Fish Passage Program Annual Report
  - Lewis River Bull Trout 2020 Annual Operations Report
  - Lewis River Bull Trout 2021 Annual Operations Plan
  - Yale Reservoir Kokanee 2020 Escapement Report

The water quality monitoring (Section 4) and terrestrial resources (Section 5) sections of this Annual Report have been prepared in cooperation with Cowlitz PUD.

1.2 Annual Report Organization

The 2020 Lewis River Annual Report provides the following information as required under Section 14.2.6 of the SA and the 401 Water Quality Certifications:

Section 2.0 Aquatics and Terrestrial Coordination Committees (ACC, TCC)

Section 2.1 ACC and TCC Membership

Section 3.0 Aquatic Resources

Section 3.1 ACC Meetings
Section 3.2 Aquatic Measures Implemented in 2020
Section 3.3 Aquatics 2021 Annual Plans

Section 4.0 Water Quality

Section 4.1 PacifiCorp Water Quality Measures Implemented in 2020
Section 4.2 PacifiCorp Water Quality 2021 Annual Plan
Section 4.3 Cowlitz PUD Water Quality Measures Implemented in 2020
Section 4.4 Cowlitz PUD Water Quality 2021 Annual Plan

Section 5.0 Terrestrial Resources

Section 5.1 TCC Meetings
Section 5.2 PacifiCorp Terrestrial Measures Implemented in 2020
Section 5.3 PacifiCorp Terrestrial 2021 Annual Plan
Section 5.4 Cowlitz PUD Terrestrial Measures Implemented in 2020
Section 5.5 Cowlitz PUD Terrestrial 2021 Annual Plan

Section 6.0 Law Enforcement

Section 6.1 Motorized Vehicle Issues, Vandalism and Malicious Mischief, Security and Public Safety Support

Section 7.0 Funding Tables

Section 8.0 Literature Cited

Lewis River Bull Trout
Photo courtesy of Jeremiah Doyle - PacifiCorp

2.0 AQUATICS AND TERRESTRIAL COORDINATION COMMITTEES

Section 14 of the Lewis River Settlement Agreement includes several measures that define the Parties' roles and obligations. The full text of Section 14 of the Settlement Agreement is provided in **Attachment B**. The structure and process of the ACC and TCC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The ACC and TCC make decisions based on consensus, while implementing the Settlement Agreement.

More specifically, Section 14:

- Establishes the Aquatics Coordination Committee (ACC) and Terrestrial Coordination Committee (TCC).
- Establishes the Licensees' ACC and TCC Coordinators (Coordinators).
- Describes the coordination and decision-making roles of the ACC and TCC.
- Requires the ACC and TCC to coordinate and Consult on development of plans by the Licensees.
- Requires the ACC and TCC to review information and oversee, guide, and make comments and recommendations on implementation and monitoring of the terrestrial and aquatic Protection, Mitigation and Enhancement (PM&E) Measures, including plans.
- Requires the ACC and TCC to establish, among other things:
    i. Procedures and protocols for conducting committee meetings and deliberations to ensure efficient participation and decision making;
    ii. Rules for quorum and decision making in the absence of any member;
    iii. Alternative meeting formats as desired, including phone or teleconference; and
    iv. The methods and procedures for updating committee members on interim progress of development and implementation of the terrestrial and aquatic PM&E Measures.
- Requires the ACC and TCC to establish subcommittees to carry out specified committee functions and responsibilities and establish the size of, membership of, and procedures for, any such subcommittees.
- Requires the Licensees' Coordinators to prepare and file with the FERC detailed annual reports on the TCC and ACC activities; monitoring and evaluations under the Monitoring and Evaluation Plan (M&E Plan) described in SA Section 9; implementation of the terrestrial and aquatics PM&E Measures occurring during the prior year; and plans for the coming year, and water quality monitoring information.
- Requires the Licensees to consult with the ACC and TCC when preparing the Annual Report.

2.1 ACC and TCC Membership

In December 2004 the Licensees appointed their respective ACC and TCC Coordinators. At the same time, the Licensees established the ACC and TCC, and invited the Parties to designate

representatives (and alternates) for membership on these committees. Current Party representation for each committee is shown in Table 1 and Table 2. Fourteen Parties have designated representatives to the ACC and twelve Parties designated representatives to the TCC.

Committee meetings were conducted in every month in 2020. During the year, the ACC met 12 times and the TCC met 9 times.

The purposes of the Coordination Committee meetings were to:

- Develop study and monitoring plans.
- Discuss implementation strategies for PM&E measures.
- Oversee implementation of the PM&E measures.

Sections 3.1, 3.2, and 5.1 of this report summarize major items discussed at the ACC and TCC meetings during the reporting period. Detailed meeting summaries are provided on the PacifiCorp Web site at: https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - ACC or TCC – 2020

Lewis River Slash Burn, 2020
Photo courtesy of Chris Karchesky

Table 1. Representatives and Alternates for Membership on the ACC

ACC Representatives	Organization	Alternate
[1]Bridget Moran	American Rivers	Wendy McDermott
Public Works Director	City of Woodland	To be named
No representative at this time	Clark County	To be named
No representative at this time	Cowlitz County	To be named
Eli Asher	Cowlitz Indian Tribe	Pete Barber
No representative at this time	Cowlitz-Skamania Fire District No. 7	To be named
Jim Malinowski	Fish First	To be named
No representative at this time	Lewis River Citizens at-large	To be named
Mariah Stoll-Smith Reese	Lewis River Community Council	To be named
Steve Manlow	Lower Columbia River Fish Recovery Board	Steve West
[2]Josh Ashline	National Marine Fisheries Service	To be named
No representative at this time	National Park Service	To be named
No representative at this time	North County Emergency Medical	To be named
Erik Lesko	PacifiCorp (PacifiCorp Co-Chair)	To be named
Amanda Froberg	PUD of Cowlitz County (PUD Co-Chair)	To be named
No representative at this time	Rocky Mountain Elk Foundation	To be named
No representative at this time	Skamania County	To be named
Bill Bakke	The Native Fish Society	To be named
Jim Byrne	Trout Unlimited	Brice Crayne
No representative at this time	US Bureau of Land Management	To be named
Tim Romanski	US Fish & Wildlife	[3]Lindsy Wright
[4]Kate Day	USDA Forest Service	Joshua (JD) Jones
Bryce Glaser	Washington Dept. of Fish & Wildlife	Josua Holowatz (primary alternate) Peggy Miller (secondary alternate) Aaron Roberts (tertiary alternate)

[1] As of August 12, 2020 Britney Moran was appointed as a primary ACC representative in place of Jonathan Stumpf.
[2] As of December 10, 2020 Scott Anderson was appointed as a primary ACC representative in place of Joshua Ashline who is resigning from NMFS.
[3] As of October 8, 2020 Jeffrey Garnett was appointed as an alternate ACC representative in place of Lindsy Wright.
[4] As of June 30, 2020 Kate Day was appointed as a primary ACC representative in place of Ruth Tracy who retired April 1, 2020.

Katie Pruit	Washington State Recreation and Conservation Office, formerly known as *Washington Interagency Committee for Outdoor Recreation*	Kaleen Cottingham
No representative at this time	Woodland Chamber of Commerce	To be named
Bill Sharp	Yakama Nation	No be named

Table 2. Representatives and Alternates for Membership on the TCC

TCC Member	Organization	Alternate
No representative at this time	American Rivers	To be named
Public Works Director	City of Woodland	To be named
No representative at this time	Clark County	To be named
No representative at this time	Cowlitz County	To be named
Erik White	Cowlitz Indian Tribe	To be named
No representative at this time	Cowlitz-Skamania Fire District No. 7	To be named
No representative at this time	Fish First	To be named
John Clapp	Lewis River Citizens at-large	To be named
Mariah Stoll-Smith Reese	Lewis River Community Council	To be named
Steve Manlow	Lower Columbia River Fish Recovery Board	Steve West
To be named	National Marine Fisheries Service	To be named
No representative at this time	National Park Service	To be named
No representative at this time	North County Emergency Medical	To be named
Kendel Emmerson	PacifiCorp (PacifiCorp Co-Chair)	Summer Peterman
Amanda Froberg	PUD of Cowlitz County (PUD Co-Chair)	To be named
Bill Richardson	Rocky Mountain Elk Foundation	Ray Croswell
No representative at this time	Skamania County	To be named
No representative at this time	The Native Fish Society	To be named
No representative at this time	Trout Unlimited	To be named
No representative at this time	US Bureau of Land Management	To be named
Tim Romanski	US Fish & Wildlife	To be named
Neil Chartier	USDA Forest Service	Ruth Tracy
Peggy Miller	Washington Dept. of Fish & Wildlife	Eric Holman
Katie Pruit	Washington State Recreation and Conservation Office, formerly known as *Washington Interagency Committee for Outdoor Recreation*	Kaleen Cottingham
No representative at this time	Woodland Chamber of Commerce	To be named
Bill Sharp	Yakama Nation	To be named

3.0 AQUATICS RESOURCES

3.1 ACC Meetings

The purpose and role of the Aquatic Coordination Committee (ACC), as defined in Section 14.1 of the SA is to facilitate coordination and implementation of the aquatic PM&E measures.

The structure and process of the ACC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The ACC makes decisions based on consensus, while implementing the Settlement Agreement and the FERC license requirements.

3.1.1 ACC Meetings and Conference Calls: Overview

This section summarizes major items discussed at ACC meetings during the 12-month reporting period. Detailed meeting summaries are provided on the PacifiCorp website at: https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - ACC - 2020

- On January 9, 2020 PacifiCorp contractor, Four Peaks Environmental conducted a presentation to the ACC summarizing the final report for the Swift Floating Surface Collector (FSC) Collection Efficiency Evaluation Study conducted in spring 2019.

- On January 9, 2020 PacifiCorp provided the Aquatic funding year-end accounting to the ACC.

- On February 5, 2020 the Draft In Lieu Applications for FERC License Amendments were distributed to the ACC for a 90-day review and comment period.

- The 2019 Draft ACC/TCC Annual Report was distributed to the ACC for its 30-day review and comment period March 3, 2020.

- On March 10, 2020 PacifiCorp informed the ACC via email that the March meeting would be modified to a Skype meeting only due to the COVID-19 pandemic and the need for social distancing.

- On March 12, 2020 the ACC agreed to transporting all-natural origin (wild) Winter Steelhead (WWSTD) upstream after weekly brood stock goals have been met as part of the ongoing Reintroduction and Supplementation Program in 2020.

- On April 9, 2020 the ACC agreed that Aquatic Fund design-only projects will be considered for the 2020/2021 funding cycle.

- The ACC also agreed on April 9, 2020 to temporarily suspend the 2020 aerial tracking of radio tagged winter steelhead upstream of Swift Dam given the COVID-19 social distancing measures in place, but indicated that ground surveys of reservoir tributaries would continue and fixed telemetry site operation would continue as planned.

- The ACC also agreed at the April 9, 2020 meeting to continue with the past practice of stocking a small number of catchable rainbow trout originally allocated to the Swift Reservoir in Section 8.6 of the Settlement Agreement, to the recreational fishery in the Swift No. 2 Power Canal. PacifiCorp notified the FERC of the temporary change to Section 8.6 of the Settlement Agreement. The ACC agreed further steps were needed to formalize this as a permanent change and that should be added to future agenda topics after the ATS makes its recommendation.

- The 2019 ACC/TCC Annual Report was submitted to the FERC April 13, 2020.

- On June 11, 2020 the ACC approved the revised ACC/TCC Structure and Ground Rules.

- On June 11, 2020 the ACC agreed that design-only projects will be considered in the 2020/2021 funding cycle with the caveat that each will be evaluated during the pre- and full-proposal states for its biological merit.

- On June 11, 2020 the ACC agreed to an In Lieu consensus kickoff meeting whereby the Utilities and their consultants will present the generalized comments received on the draft applications and identify how comments were addressed.

- On July 9, 2020 PacifiCorp's consultant, Meridian Environmental, provided the ACC with an overview presentation of the draft Hatchery and Supplementation (H&S) Plan as the official kickoff for the 60-day review period of the new plan.

- The ACC reviewed and approved the revised 2020/2021 Aquatic funding timeline to make the Announcement on or before September 4, 2020.

- On August 13, 2020 the ACC finalized the Aquatic Fund Procedure documents for the 2020/2021 funding cycle.

- On August 13, 2020 Meridian Environmental, Cramer Fish Sciences and PacifiCorp provided a summary presentation on the In Lieu Strategic Plan, Monitoring Plan and the Bull Trout Passage Plan. The ACC agreed they are working toward the NMFS request timeline for ACC approval or disapproval and have an ACC consensus meeting in September 2020 using the ACC approved consensus template.

- All Aquatic Fund 2020/2021 application materials were distribution to interested parties via the Lewis website on September 4, 2020.
  https://www.pacificorp.com/energy/hydro/lewis-river/aquatic-fund-applications.html

- On September 10, 2020, ACC representatives met and discussed a consensus decision making process in response to the NMFS request for decision. All parties present at the meeting, voted in favor of, or opposition to, consent of the Lewis River Merwin In-Lieu Program Strategic Plan and the Lewis River Basin Implementation Monitoring Plan. A consensus was not reached to either approve or disapprove the plans. The NMFS and the USFWS were apprised of this outcome.

- On November 12, 2020 PacifiCorp informed the ACC attendees that on October 8, 2020 the Forest Service had a remaining balance of $59,795.10 specific to Collection Agreement 15-CO-11060300-010 (2015 Lewis River Side Channel restoration project) which will be returned to PacifiCorp to apply toward future habitat improvement projects awarded by the ACC.

- On December 10, 2020 each aquatic fund applicant provided a PowerPoint presentation for ACC review, comments and questions.

3.1.2 ACC Meeting Notes

The Licensees prepared draft notes for ACC meetings and conference calls. These notes were distributed to ACC members for review and comment approximately one week after the subject meeting. After review, revision and approval by the ACC, the final notes were entered in the public record and posted on the PacifiCorp web site at:
https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - ACC – 2020

3.2 Aquatic Measures Implemented as of the End of 2020

This section presents the actions taken by the Utilities during January 2020 through December 2020 toward Aquatic requirements of the Lewis River Settlement Agreement and the FERC licenses. It also includes previously completed Settlement Agreement actions. The actions are identified by agreement Article number as the agreement is more specific in detailing the requirements than the license orders which in essence, incorporate agreement terms via agency regulatory authority. In some instances, previous actions are noted to provide a more comprehensive record.

A description of funding amounts deposited and disbursed during 2020 is provided in Section 7.0 – Funding.

3.2.1 SA Section 4.1 Common Provisions Regarding Fish Collection and Transport Facilities

Studies to Inform Design Decisions (SA 4.1.1)
PacifiCorp has completed the Merwin Tailrace Fish Behavior study to provide information that could assist the planning and design of the Merwin Upstream Collection and Transport Facility. The study plan was developed in coordination with the ACC and was finalized as a revised document June 30, 2005. In 2005 through 2006, the study was conducted, and a final report was issued in February 2007 and can be viewed at the following link:

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/LR_Merwin_Tailrace_Behavior_2007.pdf

Adult Trap Efficiency for Salmonids (SA 4.1.4c)

The Adult Trap Efficiency (ATE) standard was first discussed by the ACC at the February 14, 2009 meeting. Bryan Nordlund of NMFS subsequently developed a proposal for the ATE standard along with a matrix for a phased fish trap implementation. This proposal was the topic of nearly every ACC and Engineering subgroup meeting for most of the year accompanied by several offline conversations. An ATE determination methodology and standard was finally accepted by the ACC at their December 11, 2009 meeting with the efficiency set at 98%. Detailed methodology and definitions were delegated to the Draft Monitoring and Evaluation Plan which was submitted to the FERC in June 2009 and approved in December 2010, and later revised and resubmitted to FERC in April 2017 and approved on May 15, 2017 (see Section 3.2.36 below). The Merwin Upstream Collection and Transport facility was not substantially completed until April 2014. Based on this, PacifiCorp proposed, and the ACC agreed to suspend the start date of the two year ATE evaluation until spring 2015. ATE evaluations were conducted over a five (5) year period (2013-2019). In review of these previous studies, the ACC determined that reliable operation of the facility's fish lift and conveyance system was the largest contributor to the success of fish being captured at Merwin Dam. At the December 12, 2019 ACC meeting, members agreed to postpone the ATE Evaluations in 2020 and requested PacifiCorp to develop a memorandum outlining the proposed steps for moving forward with the Merwin Trap for the ACC to review. In early 2020, PacifiCorp began reviewing possible alternative designs to the current lift and conveyance system, particularly aimed toward modifying the system's crowder that automatically crowds adults from the head of the fish ladder into the lifting hopper. As of December 2020, PacifiCorp has begun the formal process of redesigning the facility's crowding mechanism. It is anticipated that a final design will be reach by late-2021 with construction occurring sometime in 2022. Once the redesigned crowder is in place, it is intended that the ATE studies will resume for the target transport species. Additional information regarding the results of previous ATE studies and the current status of the Merwin Trap can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.2.2 SA Section 4.2 Original Merwin Trap

Original Merwin Trap suspended operation in June 2013.

Merwin Trap Flow Restrictions (SA 4.2b)

To provide a margin of safety for personnel, PacifiCorp limited the 2012 river discharge at Merwin dam/powerhouse to 5,500 cfs or less as river flow conditions warranted when personnel were in the trap. Flow limitations were coordinated with WDFW hatchery staff. With completion of the Merwin Upstream Collection and Transport facility, flow restrictions are no longer needed.

Merwin Trap Upgrades (SA 4.2c)

On November 29, 2005 PacifiCorp provided the Services (USFWS and NOAA Fisheries) and WDFW a letter requesting a meeting to discuss potential upgrades and operational procedures

to improve operating conditions for personnel working in the Merwin Trap by providing a greater margin of safety. Attached to the letter was a memo that identified company proposed measures and a supporting Engineering Study (Black and Veatch. 2005. Merwin Hydroelectric Project Fish Trap Upgrades. Report No. RES 3000028924).

Final designs were submitted to the FERC February 2, 2007 and acceptance received from the FERC February 12, 2007. Final designs and the FERC correspondence are available upon request.

Interim Merwin Trap Operations (SA 4.2d)

For 2012, the Merwin Trap was operated in coordination with WDFW or PacifiCorp's new Fish Passage crew to collect hatchery fish returning from the ocean and to transport any bull trout collected to Yale reservoir. Per the SA, WDFW increased frequency of trap cleanout to daily during the work week (Monday - Friday) unless flows or inadequate staff prevented such effort. PacifiCorp coordinated with WDFW and made reasonable efforts to operate the Merwin powerhouse to allow fish trapping operations at the trap. Fish other than hatchery fish or wild winter steelhead were returned to the river downstream of Merwin Dam.

3.2.3 SA Section 4.3 Merwin Upstream Collection and Transport Facility

On March 2, 2009, PacifiCorp submitted to the subgroup and the ACC the 60 percent design report. Following comments on the 60 percent design report, the subgroup worked on developing the design to a 100 percent level. On June 26, 2009, the subgroup was provided the 90 percent design report. Following the review period, PacifiCorp worked with the subgroup to finalize the report. A 100 percent design report was submitted to the FERC December 23, 2009. (Black & Veatch & R2 Resource Consultants. 2009). Periodic project updates were provided at monthly ACC meetings until the upstream collection facility was completed.

On September 4, 2012, PacifiCorp assumed operations of the existing adult trap located at Merwin Dam. This included daily (Mon. – Fri.) removal of fish from the trap, vertical adjustment of weir orifice, transportation of target species upstream, and data management. WDFW remained responsible for transporting all non-target species (i.e., species not identified in PacifiCorp's upstream transport plan) to the hatcheries or to the lower Lewis River.

On June 30, 2013, the existing Merwin Trap was decommissioned to allow for construction of the new facility and associated infrastructure. The new upstream collection and transport facility began operation in late December 2013 and was considered substantially complete in April 2014. The following information is a summary of the Merwin trap operations in 2020. Detailed results of the 2020 operations and associated M&E evaluations are included in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

In compliance with WDFW standards, all adult salmonids collected were identified to species and sorted based on the following characteristics: missing adipose fin with no coded wire tag detection *(AD CLIP ONLY)*, adipose fin absent and present with a coded wire tag detection *(CWT)*, adipose fin intact with no coded wire tag detection *(WILD)*, and adipose fin intact with

blank wire tag present *(WILD + BWT)*. All fish were also identified as male *(M)*, female *(F)*, or jacks *(J)*.

A total 18,932 fish were captured at the Merwin Trap in 2020 (**Table 3**). Among the species collected, early coho accounted for the largest proportion of fish captured (n=10,036) followed by winter steelhead (n=2,289), summer steelhead (n=2,289), spring Chinook (n=2,267), winter steelhead (n=1,802), late coho (n=1,689), fall Chinook (n=750), cutthroat (n=86), sockeye salmon (n=12), and chum salmon (n=1). Of the 2,289 summer steelhead collected at Merwin trap in 2020, 605 of these fish had been recaptured as part of WDFW's Recreational Angler Recycle Program. No bull trout were captured at the Merwin Trap in 2020, or in any previous years.

A record number of wild early run coho (n=3,660), late run coho (n=711), and winter steelhead (n=456) were collected in 2020 (Table 3). In terms of relative abundance, wild fish also made up a substantial proportion of the runs returning to Merwin Trap. Approximately 42.1% of all late run coho, 36.5% of early run coho, and 25.3% of the winter steelhead collected in 2020 were of natural origin.

Lower Lewis River Screw Trap – October 2018
Photo courtesy of Christopher M. Karchesky

Table 3. 2020 Merwin Trap Capture Data.

Specie	AD Clip			CWT			Wild			Wild Recap			Wild-BWT		Recap		Not sexed	Total
	M	F	J	M	F	J	M	F	J	M	F	J	M	F	M	F		
Spring Chinook	219	162	565	490	405	256	76	53	41									**2267**
Fall Chinook	124	93	119	23	7	12	152	187	33									**750**
Early Coho	1,492	1,888	2,076	218	296	406	1,481	1,993	186									**10,036**
Late Coho	321	349	132	52	58	66	340	346	25									**1689**
Summer Steelhead	649	1,031					3	1							159	446		**2289**
Winter Steelhead	352	272					246	210					339	383				**1802**
Sockeye Salmon							6	6										**12**
Chum Salmon							1											**1**
Pink Salmon																		**0**
Cutthroat (>13 inches)																	86	**86**
Cutthroat (< 13 inches)																		**0**
Rainbow (< 20 inches)																		**0**
Bull Trout (> 13 inches)																		**0**
Bull Trout (< 13 inches)																		**0**
															Total			18,932

A total of 8,119 early coho, 1,367 late coho, 1,052 wild winter steelhead (blank wire tag and wild combined), 634 spring Chinook, and 86 cutthroat were transported upstream and released above Swift Dam as part of the reintroduction program in 2020 (**Table 4**).

Table 4. Summary of adult salmonids transport above Swift Dam in 2020.

Species	Male	Female	Jack	Not sexed	Female:Male Ratio	Jack:Adult Ratio	Total
Spring Chinook	193	56	385	-	0.10	1.55	***634***
Early Coho	3,670	4,244	205	-	1.10	0.03	***8119***
Late Coho	649	667	51	-	0.95	0.04	***1367***
Winter Steelhead	517	535	-	-	1.03	-	***1052***
Cutthroat >13''	-	-	-	86	-	-	***86***
Bull Trout >13''	-	-	-	-	-	-	***0***
							11,258

3.2.4 SA Section 4.4 Downstream Transport at Swift No. 1 Dam

Modular Surface Collector (SA 4.4.1)
The Modular Surface Collector, referred to as the Swift Floating Surface Collector (FSC), operated for most of 2020 with a planned shutdown from approximately mid-July through mid-October 2020 for scheduled maintenance. Detailed results of the 2020 operations and M&E evaluations are included in the attached Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

A total 54,932 salmonids were captured by the FSC in 2020, with nearly all (94%) being transported downstream of Merwin Dam. Juvenile coho accounted for the highest proportion of the overall estimated catch (57.4%), followed by spring Chinook (28.7%), steelhead (7.8%), and coastal cutthroat trout (0.9%). A total of 1,040 hatchery rainbow trout and 21 bull trout were also collected in 2020 and returned to the reservoir. An estimated total of 1,041 additional hatchery rainbow trout were collected and passed downstream of Merwin Dam during the peak out migration season when subsampling was occurring (March-July). A full accounting of the required performance standards, such as injury rate, capture efficiency, Overall Downstream Survival (ODS), among others, is included in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

Release Ponds (SA 4.4.3)
In 2006, PacifiCorp notified the ACC representatives that the company was working to secure a site for the Release Ponds. PacifiCorp initially worked with WDFW to secure acquisition of a site just downstream of Woodland, Washington. The site met the criteria established in the SA and the land was available for trade with WDFW.

In 2009, PacifiCorp discovered that the identified WDFW parcel was much smaller than originally recorded with the county and was not of suitable size. PacifiCorp then initiated talks with the adjacent landowner to pursue either purchase or lease. Discussions with continued through to October 2010, at which point the adjacent landowner withdrew from negotiations.

In November 2010, PacifiCorp initiated an effort to find an alternate site upriver from the previously considered location. A site was selected and purchased, and final designs updated. The site is on approximately 5 acres near River Mile 9 and the town of Woodland, Washington. PacifiCorp has prepared documentation for formal consultation between NMFS and the FERC on Eulachon smelt (*Thaleichthys pacificus*) and associated critical habitat.

A Biological Opinion from NOAA Fisheries was submitted to the FERC February 3, 2015. (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/LR_Merwin_Tailrace_Behavior_2007.pdf) With the Biological Opinion complete, progress towards the US Army Corp of Engineers' (USACOE) dredge and fill permit, and the Washington Department of Natural Resources (WDNR) lease for the in-water structure could continue.

In 2015, PacifiCorp received notification from the City of Woodland that the Company would need to resubmit permit applications for construction of the Release Ponds since the previous permits had expired. PacifiCorp staff resubmitted permit applications. Land Use permit approvals were issued by the City of Woodland, USACOE, WDNR and WDFW, with the final approval granted April 16, 2017. Following completion of all the regulatory requirements, PacifiCorp initiated and completed construction of the Release Ponds in December 2017.

Operations testing occurred in early-January 2018 with final acceptance later that month. The Woodland Release Pond began daily operation in March 2018. The facility's purpose is to allow for stress reduction and determination of transport survival for out-migrants transported downstream from the Swift Reservoir FSC before volitional release into the lower Lewis River. The Release Ponds continued to operate in concurrence with the Swift FSC operation, and no unscheduled outages occurred in 2020.

The Woodland Release Ponds were operated in concurrence with the Swift FSC operation, and no unscheduled outages were necessary in 2020. Nearly all out-migrants transported downstream from the Swift FSC in 2020 (51,196) were released into the ponds. When circumstances required an alternate release location, out-migrates were released directly into the lower Lewis River at the Washington Department of Fish and Wildlife (WDFW) boat ramp on Pekin Ferry Rd. at approximately river mile 3.0. Additional information regarding fish releases into the Woodland Release Ponds and related survival estimates can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.2.5 SA Section 4.5 Downstream Passage at Yale Dam

Implementation scheduled prior to 13th (2021) anniversary of Yale Project License.

3.2.6 SA Section 4.6 Downstream Passage at Merwin Dam

Implementation scheduled prior to 17th (2024) anniversary of Merwin Project License.

3.2.7 SA Section 4.7 Upstream Passage at Yale Dam

Implementation scheduled prior to 17th (2024) anniversary of Yale Project License.

3.2.8 SA Section 4.8 Upstream Passage at Swift Projects

Implementation scheduled prior to 17th (2024) anniversary of Swift No.1 Project License.

3.2.9 SA Section 4.9.1 Interim Bull Trout Collection and Transport Programs

Per Article 402(a) in the FERC licenses and the Lewis River SA section 4.9.1, PacifiCorp annually captures and transports bull trout from the Yale powerhouse tailrace (upper Merwin Reservoir) to the mouth of Cougar Creek, a Yale Reservoir tributary. A total of 162 bull trout have been captured from the Yale tailrace since the program began in 1995.

For Methods, Materials, and Results concerning number of bull trout captured and transported during 2020 Yale Tailrace activities as well as pertinent biological information of individual bull trout captures, please see the *Bull Trout 2020 Annual Operations Report*, which is an

appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

Investigation of Alternative Collection Methods (SA 4.9.2)
PacifiCorp continues to consider more effective and less intrusive methods to collect bull trout from the Yale tailrace until future fish passage requirements are finalized (See Section 3.2.25) Past alternative methods investigated include; beach seines, purse seines, drifting tangle nets when the powerhouse is online, and angling.

In 2020, tangle nets and angling were the only methods used and, to date, remain the most effective. Annual Consultation concerning 2020 bull trout monitoring activities occurred between the Utilities and the USFWS in January 2020 at which time it was agreed that tangle nets would again be utilized in the upcoming field season to attempt to capture bull trout from within the Yale tailrace waters.

Yale and Merwin Bull Trout Entrainment Reduction (SA 4.9.3)
PacifiCorp completed and distributed a revised *Yale Project Entrainment Reduction Plan* to the ACC and the Services May 16, 2008. The plan is available on PacifiCorp's website:https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/Yale_Hydro_Project_Bull_Trout_Entrainment_Final_Report_and_Bull_Trout_Reduction_Plan_January_2008.pdf

3.2.10 SA Section 4.10 Bull Trout Passage in the Absence of Anadromous Fish Facilities

If Yale Downstream Facility is not constructed, implement prior to 13th (2021) anniversary of Yale Project License.

3.2.11 SA Section 5.1 Yale Spillway Modifications

PacifiCorp has completed installation of a spillway barrier net given the net was completed October 15, 2013. This net is similar in design and made of material similar to the Entrainment Reduction net in Yale Reservoir. The net is designed to exclude bull trout from the spillway at any spill flow less than 6,000 cfs (the average spill volume for Yale Spillway) meeting the intent of SA 5.1. When spill flows exceed 6,000 cfs, the net floating line is designed to sink to allow large debris to float over the net and exit Yale reservoir via spill. This procedure avoids damaging the net. It is anticipated that the occurrence of spills greater than 6,000 cfs will be rare so bull trout spillway entrainment is consequently expected to be low. As of the end of 2012, some of the floating system parts failed during installation so PacifiCorp solicited approvals from ACC members and the FERC to extend the final installation to March 31, 2013. ACC members, including the Services, approved the extension but the FERC had not responded prior to the end of 2012. The FERC approved the extension in spring 2013 and the spillway entrainment net was completed October 15, 2013.

3.2.12 SA Section 5.2 Bull Trout Habitat Enhancement Measures

PacifiCorp continued to manage the Cougar Creek Conservation Covenant to the benefit of bull trout. Noxious weeds (scotch broom and Himalayan blackberry) were identified and treated along the transmission Right of Way (ROW) and in previously tree harvested lands along Panamaker Creek.

A habitat improvement project on Panamaker Creek was submitted by PacifiCorp through the 2007/2008 Aquatic Habitat Fund process. This project was completed in August 2008 and had the following benefits:

- Reduced sediment input through the decommissioning of one mile of road;
- Removal of nine culverts and installation of ten cross ditches for runoff control; and
- Re-vegetation of all disturbed soils.

Per the SA, Cowlitz PUD managed the Devil's Backbone Conservation Covenant to benefit bull trout.

3.2.13 SA Section 5.3 Reserved

3.2.14 SA Section 5.4 Reserved

3.2.15 SA Section 5.5 Bull Trout Limiting Factors Analysis

Contract was awarded to Meridian Environmental, Inc. (the Consultant). The Consultant completed the field work and provided a final report in May 2007 (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/20070530_Bull_Trout_LFA_final_report.pdf). The report describes three potential streams (Swift Creek, S10, and Brooks Creek) that could support bull trout if improvements were made to the habitat. The improvements include shading to reduce stream temperatures and riparian habitat stabilization. An overriding limiting factor in two of the three streams was lack of water during the critical spawning period.

3.2.16 SA Section 5.6 Public Information Program to Protect Listed Anadromous Species

PacifiCorp maintains signage at the Eagle Cliff area to inform the public of specific angling regulations that are designed to protect both bull trout and reintroduced anadromous species (**Figure 1**). Additionally, WDFW has regulations on Swift Reservoir that prohibit the harvest of unclipped adipose fin salmonids or salmon over 15 inches in length. The area upstream of Eagle Cliff Bridge remains catch and release for all species. This effort will help protect transported adults and their progeny migrating through Swift Reservoir.

3.2.17 SA Section 5.7 Public Information Program to Protect Bull Trout

PacifiCorp maintains signage at most reservoir and river access sites that are owned by the company. The company also provides informational flyers to the public at all camping and day use areas the company owns. Figure 1 reflects July 2018 updates.

Figure 1. Signs posted for public information.

3.2.18 SA Section 6.1 Flow Releases in the Bypass Reach: Upper Release and Constructed Channel

Upper Release Point (SA 6.1.2)
Upper Release Point water flowed continuously throughout 2020. With the exception of the noted excursions, stream flow as measured at the upper release point was in excess of the required minimum flow for the duration of the year. There were two spill events at the Swift project in 2020. The first was an unplanned spill event from January 28, 2020 through February 8, 2020 to pass increased inflows related to a seasonal storm event. The second was a planned spill event for the purpose of annual spill gate testing required by the Federal Energy Regulatory Commission on December 19 and 20, 2020.

On July 4, 2020, the flow sensor in the pipe at the Upper Release Point stopped responding. Due to the lack of flow indication, the siphon gate was set to manual to ensure that it constantly released water regardless of flow sensor indication. Inspection and repair or replacement of the sensor requires an outage at the Upper Release Point siphon. This work was planned for September 2020, but prior to taking the siphon drain out of service, on September 9, 2020 a PacifiCorp biologist completed an inspection of the channel immediately downstream of the Upper Release Point and observed a single female spring Chinook on a redd in the channel. Due to the presence of spawning fish, the work was postponed until after fry emergence sometime in the spring of 2021. Without a flow sensor at the Upper Release Point, flows shown on **Figure 2** are estimated based on the siphon gate opening. However, flow measurements taken downstream of the Upper Release Point in the Swift bypassed reach on November 5,

2020 and December 27, 2020 indicated stream flows of 93.2 cfs and 81.7 cfs, indicating that the flows on **Figure 2** are likely slightly lower than actual. Based on the available data, PacifiCorp is confident that flows have been in excess of the required minimum flow for the duration of 2020. Average daily flows, as measured or estimated (July 4, 2020 – December 31, 2020) at the upper release point, are provided in **Figure 2**.

As explained, the daily average flows shown on **Figure 2** for the second half of the year are estimated based on manual siphon gate opening. Although it appears that flows were slightly lower than the required minimum from October 28, 2020 through November 6, 2020, a real-time flow measurement on November 5, 2020 indicated flows immediately downstream of the Upper Release Point siphon were 93.2 cfs, well in excess of the required minimum of 76 cfs.

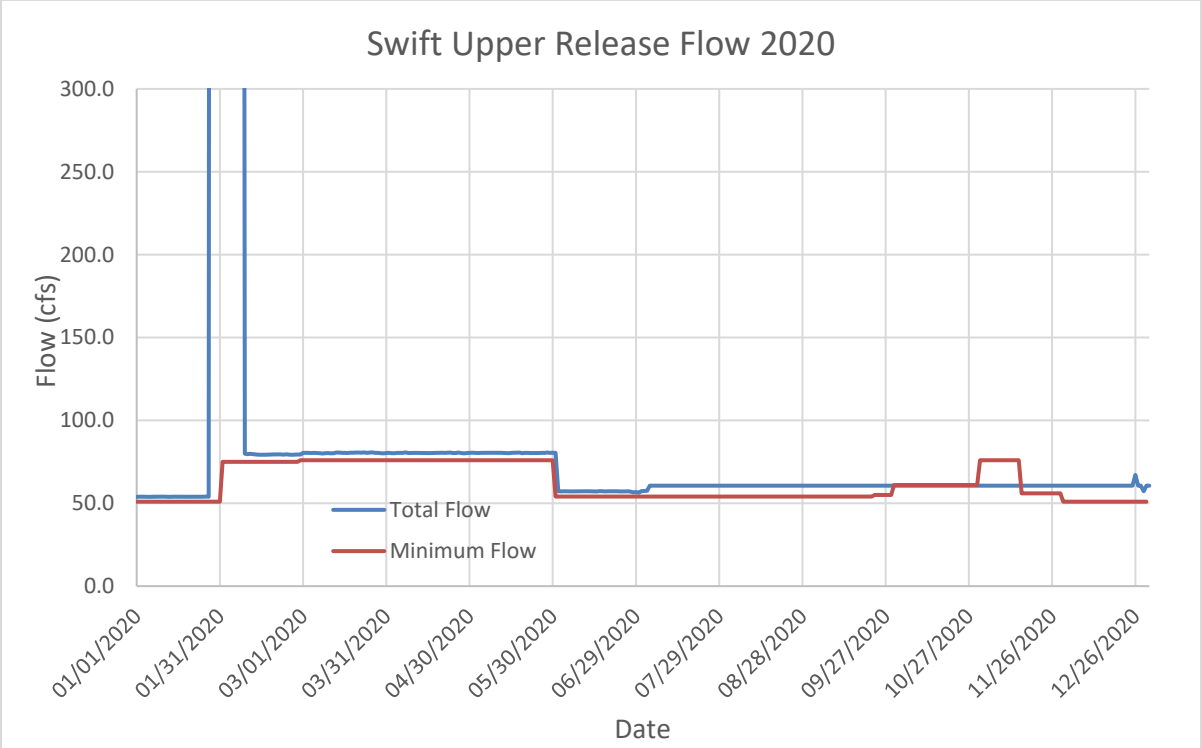

Figure 2. Daily Minimum Release flows from January 1, 2020 to December 28, 2020.

Constructed Channel (SA 6.1.3b)

Beginning in fall 2011, a flow monitoring gage was installed at the canal drain outlet to provide a minimum flow alarm system and enhanced flow measurement. Minimum flow from the canal drain is set at 14 cfs or greater year-round.

The system is performing well and with the exception of one variance on May 30, 2020, flows were in excess of the minimum flow for the duration of 2020.

There was a single variance in 2020 that was not a true excursion, for which the following explanations is provided. On May 30, 2020 the daily average flow, as measured at the canal drain outlet, was 13.9 cfs, 0.1 cfs below the minimum flow of 14 cfs. This reading was due to

a low nitrogen tank at the gage and visual observation confirmed there was no actual drop in flow. Average daily flows for 2020 are provided in **Figure 3**.

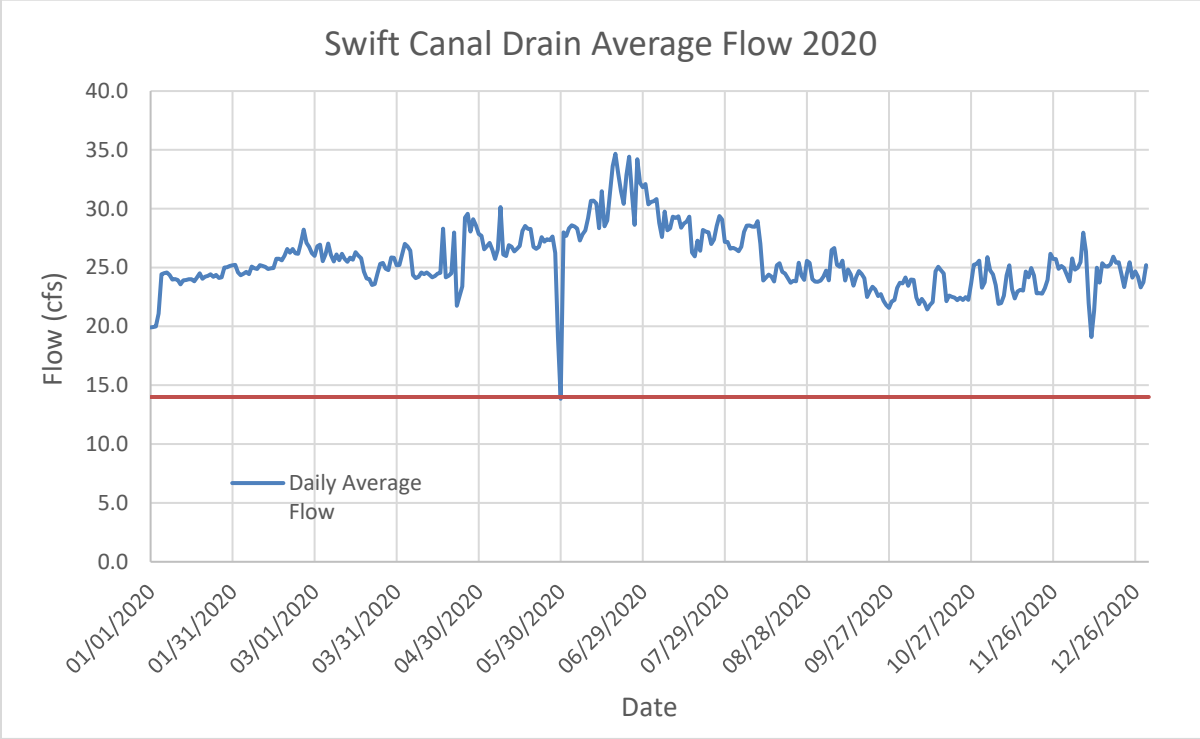

Figure 3. Daily Swift canal drain flows (cfs) from January 1, 2020 to December 31, 2020.

Maintenance of the Constructed Channel (SA 6.1.3e)
As of December 31, 2020, all structures are in place and functioning.

3.2.19 SA Section 6.2 Flow Fluctuations, Ramp Rates below Merwin Dam and Plateau Operations at Merwin Dam

Minimum Flows
During calendar year 2020, flows for the Merwin Project were met or exceeded as stipulated in the June 26, 2008 FERC license with the following exceptions.

On July 13, 2020 streamflow and ramp rate deviations were measured at the U.S. Geological Survey's (USGS) Arial Gage No. 14220500. The hourly average flow and ramp rate, as measured at 16:00 hours, was 1,895 cfs and 0.31 feet per hour, respectively. The license required minimum instream flow is 1,900 cubic feet per second (cfs) and allowable down-ramp rate is 0.17 feet per hour.

At 15:53 hours on July 13, 2020, the Merwin Water Management System (WMS) flow control sensor on Merwin Spill Gate 1 malfunctioned and indicated that 5,000 cfs was being spilled when in fact the spill gate was closed, and no spill was occurring. Detecting spill, the WMS automatically decreased generation load on Unit 2 thereby reducing flows in the river. As soon

as the hydro control operator realized what had occurred, he put the WMS in manual mode and ramped generation back up on Unit 2 to increase stream flow in the river. The short reduction in generation resulted in the top of the hour average flow and down-ramp deviations described above. This event was reported, by electronic mail, to the Aquatic Coordination Committee and key agency stakeholders on July 14, 2020 and to the Commission by letter filed on July 20, 2020. The Commission provided no response.

At 17:21 hours PacifiCorp's controls engineer temporarily disabled the malfunctioning WMS position sensor on Spill Gate 1 and returned the WMS to service. It was determined that water in the Spill Gate 1 sensor housing caused the erratic reading and the sensor was replaced.

In accordance with Article 415 of the Federal Energy Regulatory Commission (Commission) license for the Merwin Hydroelectric Project, all planned flow modifications during the 2020 calendar year were agreed to by the Lewis River Flow Coordination Committee (FCC).

As in years past, Washington Department of Fish and Wildlife requested several days of Merwin Project flow reductions to facilitate fall Chinook fish and redd counts in the lower Lewis River. PacifiCorp and the FCC agreed to the following flow reductions.

Date	**FERC Minimum Flow**	**Modified Minimum Flow (0930 – 1430 hrs.)**
11/4/2020	4,200 cfs	1,200 cfs
11/11/2020	4,200 cfs	1,200 cfs
11/28/2020	4,200 cfs	1,200 cfs
11/25/2020	4,200 cfs	1,200 cfs
12/1/2020	4,200 cfs	1,200 cfs
12/8/2020	4,200 cfs	1,200 cfs

Ramp Rates
As described above there was one ramp rate excursions downstream of Merwin Dam, as measured at the USGS Ariel Gage No. 14220500, on July 13, 2020.

3.2.20 SA Section 7.1 Large Woody Debris Program

Swift Reservoir did require large wood debris removal in 2020. PacifiCorp delivered 58 habitat logs and 20 root wads to Friends of East Fork Lewis River. Because there was no drift removal from Swift in 2019 the fund had a balance carryover $4,013.42 and the $2,000 contribution. The remaining balance in the fund is $343.42.

3.2.21 SA Section 7.2 Spawning Gravel Study and Gravel Monitoring and Augmentation Plan

In 2006, PacifiCorp completed a Spawning Gravel Report for downstream of Merwin dam and proposed to monitor gravel movement for two years before making recommendations and developing a final gravel augmentation plan (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/Lewis_River_Spawning_Gravel_Evaluation_Final_Year_One_Report_April_2006.pdf). A summary report was provided to the ACC December 20, 2007 (Letter from

Byron Amerson, Stillwater Sciences to Frank Shier, PacifiCorp regarding Completion of 2 tasks for the Lewis River Spawning Gravel Evaluation (as specified in Section 7.2 of the settlement agreement), regarding completion of two tasks for the Lewis River Spawning Gravel Evaluation. In 2008, the third year of mapping the spawning gravel areas and analyzing the accumulated data was completed. Some of the key findings were that spawning habitat is likely limiting to the local Chinook salmon population. Available spawning gravel does not appear to be diminished in the upper reach and the gravel appears to be stable. Adding more spawning gravel would not necessarily increase the spawning area due to the effect of the confined canyon geomorphology.

PacifiCorp provided an annual report to the ACC and monitored the gravel sites in the fall of 2008 in order to provide more refinement to the model for gravel movement and an applicable trigger or gravel augmentation. A report update and recommendations was submitted in January 2009 for review. In April 2009 the report was published (Stillwater Sciences. 2009. Lewis River Spawning Gravel Evaluation). Per the assessment plan a recommended monitoring-trigger occurs when flows below Merwin exceed 42,000 cfs as measured at the Ariel gage. Since completion of the assessment report, flows of that magnitude have not occurred. The highest flow since the completion of this study occurred in January 2010 at just over 37,000 cfs.

3.2.22 SA Section 7.3 Predator Study

A predator analysis was initiated as part of the New Information process and was reported in the document titled, *New Information Regarding Fish Transport into Lake Merwin and Yale Lake* which was provided by the USGS and University of Washington June 24, 2016 (PacifiCorp 2016).

3.2.23 SA Section 7.4 Habitat Preparation Plan

PacifiCorp's obligation under the Habitat Preparation Program for Swift Reservoir ended in 2012. Formal reintroduction of fish collected at Merwin Trap replaced the Habitat Preparation Program for all reintroduction species into Swift. The Habitat Preparation Program may be initiated at Merwin and Yale reservoirs pending the decision to reintroduce salmon and steelhead into those reservoirs.

3.2.24 SA Section 7.5 Aquatics Fund

PacifiCorp continues to annually make funds available for Aquatic resource projects in accordance with the *Aquatics Fund – Strategic Plan and Administrative Procedures*.

On September 4, 2020 the Licensees notified Settlement Agreement Parties, ACC, TCC and interested parties of the availability of Funds for the 2020/2021 funding cycle. The total amount available was $3,158,483.23 for Resource Projects and $816,962.35 for projects designed to benefit bull trout as determined by USFWS (see Section 7.0). The Licensees will continue to provide additional money to the Aquatic Fund on an annual basis as stipulated in the SA.

In addition, PacifiCorp contributed $10,000 to the Aquatics Fund that is earmarked for LWD projects in the mainstem of the Lewis River below Merwin Dam that benefit anadromous fish. The total amount available as of December 31, 2020 is $111,500 (see Section 7.0).

3.2.25 SA Section 7.6 In Lieu Fund

In 2020, the Utilities completed actions identified below in response to the National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service (USFWS) (collectively the "Services") April 12, 2019 preliminary decisions regarding construction of anadromous fish and bull trout passage facilities at the Merwin and Yale hydroelectric projects located on the Lewis River. This information was provided to the FERC through quarterly reports submitted in 2020.

On January 9, 2020, during the monthly Aquatic Coordination Committee (ACC) meeting and as part of project updates, PacifiCorp noted it was assembling draft applications for license amendments in preparation for a filing with the Commission. PacifiCorp stated that draft applications would be released to the Lewis River settlement parties within the next two weeks for a 90-day review and comment period.

On January 29, 2020, the Utilities participated in a Bull Trout Working Group meeting. The group is comprised of stakeholders interested in the recovery of bull trout in southwestern Washington. PacifiCorp provided an overview of the proposed Draft Bull Trout Passage Plan; then in greater detail reviewed conceptual drawings of the proposed new bull trout fish passage facilities.

On February 5, 2020, the Utilities provided draft license amendment application documents to representatives of the Lewis River Settlement Agreement and the ACC for a 90-day review. Comments received from the settlement parties were addressed in application documents submitted to the Commission. The draft license amendment applications support the April 2019 preliminary determinations of the Services and include corresponding actions as identified in the Draft Merwin In-Lieu Strategic Plan, Draft Lewis River Basin Implementation Monitoring Plan, and Draft Bull Trout Passage Plan.

On February 10, 2020, PacifiCorp provided the ACC with a project update and presentation providing an overview of the Draft Lewis River Basin Implementation Monitoring Plan and the revisions made to the plan since the August 2019 ACC meeting when the initial plan overview was provided to the ACC.

On March 12, 2020 at the monthly ACC meeting, PacifiCorp reminded the ACC that draft copies of the applications for license amendments are available for review. PacifiCorp offered to conduct additional briefings and meetings to help facilitate review of the draft documents.

On April 9, 2020 during the monthly ACC meeting, the committee discussed the request of NMFS as identified in its April 11, 2019 letter which identified "Aquatic Coordination Committee (ACC) approval of all restoration and monitoring plans." The ACC found additional clarification was needed. At this meeting the ACC requested that the Services provide further guidance to the ACC about the Services' expectations for when ACC review and approval of the documents should occur. The Utilities suggested that Services clarify their expectation that the ACC would "approve" plans. The ACC also discussed the need to revise the ACC Structure and Ground Rules document to include a decision-making template. Josh

Ashline (NMFS) and Tim Romanski (USFWS) indicated they would each consult with their respective agencies to clarify the Services' expectations for ACC review of the documents.

Parties to the Lewis River Settlement Agreement provided comments to the Utilities on draft license amendment application documents which had previously been provided on February 5, 2020 to representatives of the agreement and the ACC for a 90-day review. Comments were due to PacifiCorp by May 13, 2020. The Utilities received comment letters from the following: Cowlitz Indian Tribe, Yakama Nation, National Marine Fisheries Service, US Fish and Wildlife Service, US Forest Service, Washington Department of Fish and Wildlife, Lower Columbia Fish Recovery Board, American Rivers/Trout Unlimited, and the Lewis River Bull Trout Recovery Team. Comments received from the settlement parties and Lewis River Bull Trout Recovery Team addressed the draft license amendment applications including the application "action" documents, the Draft Merwin In-Lieu Strategic Plan, Draft Lewis River Basin Implementation Monitoring Plan, and Draft Bull Trout Passage Plan. Comments received will be submitted to the Commission with the license amendment applications as part of the consultation record.

On May 14, 2020, and in response to the April 9, 2020 ACC request to the Services, the ACC and Services discussed the Services' guidance regarding ACC consent to the action plans. The Services requested that the ACC engage in the decision process outlined in Section 14.2.4.b of the Lewis River Settlement Agreement and attempt to reach consensus over the plans. The Services noted that they are developing a timeline for decision process actions, and that they will share the timeline for this process with the ACC once it is available.

On June 10, 2020, during the monthly ACC meeting, the Committee again discussed the Settlement Agreement consensus process specific to the Merwin In Lieu Strategic Plan, Lewis River Basin Implementation Monitoring Plan, and Bull Trout Fish Passage Plan. This topic was in response to the Services' request provided at the May 14, 2020 ACC meeting. The ACC agreed to a consensus kickoff meeting whereby the Utilities and their consultants will present the generalized comments received on the draft applications and identify how comments were addressed. The schedule for this meeting largely depends on the Services' yet to be identified timeline but will occur after the Utilities' submission of the License Amendment Application on the schedule previously provided to the Commission (July 1, 2020).

On July 2, 2020, PacifiCorp submitted to the Commission Applications for Non-Capacity Amendment of License for the Merwin Hydroelectric Project (FERC No. P-935), the Yale Hydroelectric Project (FERC No. P-2071) and the Swift No. 1 Hydroelectric Project (FERC No. P-2111). That same day the Public Utility District No. 1 of Cowlitz County, Washington (Cowlitz PUD) submitted to the Commission an Application for Non-Capacity Amendment of License for the Swift No. 2 Hydroelectric Project (FERC No. P-2213). In addition to the applications, the Utilities submitted a Draft Biological Assessment for coho salmon (*Oncorhynchus kisutch*), winter steelhead (*O. mykiss)*, and spring Chinook salmon (*O. tshawytscha*), a Draft Biological Assessment for bull trout ((*Salvelinus confluentus*), and a Draft Environmental Assessment for Amendment Of Licenses For The Implementation Of A Habitat Restoration In-lieu Fund And Construction And Operation Of Bull Trout Fish Passage Facilities.

On July 9, 2020, during the monthly ACC meeting, the committee reviewed a working timeline for the Lewis River In-Lieu Implementation as provided by NMFS. It was noted that the schedule was incorrect, but it identifies the procedural steps the Services have to go through. The ACC discussed how the outcome of the pending consensus meeting in September might fit into the Commission's process.

On August 4, 2020, the Commission, by individual letters to the NMFS and USFWS, requested formal consultation under the Endangered Species Act. The Commission provided each agency with Biological Assessments concerning the Utilities' applications for non-capacity amendment of license.

On August 10, 2020, during the monthly ACC meeting, the Utilities provided a presentation identifying how some previous comments on the Lewis River Merwin In-Lieu Program Strategic Plan, the Lewis River Basin Implementation Monitoring Plan and the Lewis River Bull Trout Passage Plan had led to changes to the final versions of the plans submitted in the applications to the Commission. The NMFS presented their decision template (in accordance with the Committee ground rules) for review requesting the ACC engage in the consensus process regarding the proposed plans and to fulfil the NMFS preliminary decision letter request for ACC approval of these plans.

On August 26, 2020, the Commission provided Notice of Application Accepted for Filing and Soliciting Comments, Motions to Intervene, and Protests. Deadline for filing comments, motions to intervene, and protests was September 21, 2020.

On September 2, 2020, the NMFS and USFWS responded to the Commission's August 4, 2020 request to initiate formal consultation under the Endangered Species Act.

On September 10, 2020, ACC representatives met and discussed a consensus decision making process in response to the NMFS request for decision. All parties present at the meeting, voted in favor of, or opposition to, consent of the Lewis River Merwin In-Lieu Program Strategic Plan and the Lewis River Basin Implementation Monitoring Plan. Notes from the meeting summarizing each parties' position are available online. The Utilities post final ACC meeting notes to the Lewis River project webpage which is located at https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html

On September 2, 2020, the Services filed letters with FERC requesting additional information beyond that contained in the draft Biological Assessment (BA) developed by the Utilities as a part of the Endangered Species Action Section 7 consultation process.

On October 7, 2020, the Utilities responded to the Services' letters, and indicating the Utilities' willingness to meet with the Services to discuss their additional information needs.

During the period of November and December 2020, the Utilities and Services discussed the additional information request, and identified additional technical information to assist the Services in their Section 7 consultations. On December 9, 2020, the Utilities provided the Services with a redline version of a revised draft BA for review. This information includes

additional information on the Southern Resident killer whale and Merwin In-Lieu habitat restoration actions.

On December 2, 2020, the Services filed with the Commission preliminary fishway prescriptions for the Lewis River Hydroelectric Projects.

3.2.26 SA Section 7.7 Management of Aquatics Fund and In Lieu Fund

At the end of 2020, PacifiCorp's total available fund amount was $3,052,355.71 for Resource Projects and $834,905.83 for Bull Trout Projects. In addition, PacifiCorp contributed $10,000 to the Aquatics Fund that is earmarked for LWD projects in the mainstem of the Lewis River below Merwin Dam that benefit anadromous fish. The total amount available as of December 31, 2020 is $111,500 (see Section 7.0). All Fund account information is provided in Section 7.0.

3.2.27 SA Section 7.8 Execution of Projects and Mitigation Measures

After the December 10, 2020 aquatic fund presentations each applicant below will submit final full proposals for the four (4) projects referenced below by February 1, 2021.

USDA Forest Service	Clear Creek and Clearwater Creek Restoration Design - $333.520
USDA Forest Service	Rush Creek Side Channel - $125,500
USDA Forest Service	Pepper Creek Culvert Removal and Road Hydro-Stabilization - $48,210
LCFEG	SW Washington Nutrient Enhancement Coalition: Lewis River Support - $143,966

3.2.28 SA Section 8.1 Hatchery and Supplementation Program

On December 20, 2010, the FERC issued an order approving the Hatchery and Supplementation Plan, which was originally submitted December 23, 2009. On January 22, 2015, the FERC issued an order approving the updated Lewis River Hatchery and Supplementation Plan that was submitted December 16, 2014. On December 23, 2019, the Licensees filed an extension of time request to the FERC for submittal of an updated Hatchery and Supplementation Plan on or before December 31, 2020. This request was filed to allow results from the Comprehensive Period Review to be incorporated into the revised plan. On January 15, 2020, the FERC issued an order approving the extension of time request to December 31, 2020. The Utilities submitted the final H&S Plan to the FERC on December 29, 2020.

3.2.29 SA Section 8.2 Hatchery and Supplementation Plan and Report

The Licensees have completed the H&S Annual Report for 2020 (see **Attachment C)** or at the following link –
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/ats/A%20-%20HS%20PLAN%20FINAL%202020.pdf

The Aquatic and Technical Subgroup (ATS) completed the 2020 Annual Operations Plan (AOP) in February 2020. The 2021 AOP is currently being developed by the ATS and shall be submitted with the 2021 Annual H&S Report in April of 2022. The goal is to submit the plan in the same year of the annual report; however, this has been difficult to achieve given the complexity of the plan and rewrite of the H&S plan in 2020.

3.2.30 SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species

The development of a precise and acceptable methodology for calculation of ocean recruits is an ongoing process. PacifiCorp and their contractors began evaluating methods and identifying data acquisition concerns and needs. This work continued in 2015 and was presented as part of the Monitoring and Evaluation Plan dated April 3, 2017 (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/04032017%20LR%20ME%20Plan%20-%20Final%20Revised%20Master%20to%20FERC.pdf) . NOTE: As part of the Hatchery and Supplementation Plan update, development of methods to calculate ocean recruits was moved to the Monitoring and Evaluation Plan (as Objective 12) to reduce redundancy between the two plans and because many of the objectives in the Monitoring and Evaluation rely on this estimate.

3.2.31 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production

Juvenile production targets as provided in the H&S Plan have been met for 2020.

3.2.32 SA Section 8.5 Supplementation Program

The Supplementation Program is included in the *Hatchery and Supplementation Plan* submitted to the FERC in December 2020. The Utilities have followed and met the provisions of this plan during 2020 as adaptively managed by the Aquatic Technical Subgroup formally the Hatchery and Supplementation Subgroup. The annual report of operations under this program is provided as **Attachment C**.

3.2.33 SA Section 8.6 Resident Fish Production

PacifiCorp and Cowlitz PUD funded the operation of the Lewis River Hatchery Complex to meet current FERC license obligations for resident fish production.

3.2.34 SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance

The Licensees have fulfilled their obligation with respect to SA Section 8.7 hatchery upgrades. The Licensees will continue to implement hatchery facility upgrades in collaboration with the hatchery managers, hatchery engineers and in Consultation with the ACC. The completion schedule for SA 8.7 upgrades was provided in **Attachment E** of the 2015 ACC/TCC Annual Report.

3.2.35 SA Section 8.8 Juvenile Acclimation Sites

On June 14, 2018, The ACC agreed to suspend the spring Chinook acclimation program upstream of Swift (up to 100,000 juveniles) for a period of at least 5 years. This decision modified the release location of 100,000 juveniles from acclimation sites upstream of Swift Dam to in-river release sites downstream of Merwin Dam in an effort to improve future adult

returns to traps at Merwin Dam or the Lewis River hatchery. Review of this modification will occur annually between the ACC and the ATS.

On December 5, 2017, PacifiCorp filed with the Federal Energy Regulatory Commission (FERC) a request for Commission approval to decommission the juvenile fish acclimation pond facilities located along the Muddy River, Clear Creek and upper Lewis River near Crab Creek within the Gifford Pinchot National Forest Service. On January 4, 2018, the Commission responded with an order approving the December 5, 2017 request. The acclimation site located on the Muddy River was decommissioned from August through October of 2018. The acclimation sites located along Clear Creek and in the upper Lewis River near Crab Creek were both decommissioned from August through November 2019. All sites were restored to pre-construction condition. The final decommissioning report was filed with FERC on December 13, 2019.

3.2.36 SA Section 9.1 Monitoring and Evaluation Plan

On March 31, 2010, PacifiCorp provided a draft Monitoring and Evaluation (M&E) Plan to the ACC for review. After receiving comments, the M&E Plan was finalized and submitted to the FERC June 16, 2010. The FERC approved the final plan November 3, 2010. A 5-year update of the M&E Plan occurred during 2015-2016, and a final draft version was submitted to the ACC for a 90-day review period September 2, 2016. Based on discussions with NMFS and with concurrence from WDFW, PacifiCorp requested an Extension of Time request from the FERC and provided stakeholders an additional 45-day period to review the completed final draft of the M&E Plan by February 2017. The document was updated and submitted to the Commission in April 2017. The final Plan was approved by the FERC May 15, 2017. Implementation of the M&E Plan requirements continued through 2020.

3.2.37 SA Section 9.2 Monitoring and Evaluation Related to Fish Passage

Implementation of the M&E Plan as it relates to anadromous reintroduction continued in 2020 and included monitoring of upstream and downstream migrants. Details regarding all M&E Plan activities as they related to fish passage performance metrics outlined in Settlement Agreement sections 4.1.4 and 9.2.1 through 9.2.2. can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.2.38 SA Section 9.3 Wild Fall Chinook and Chum

Implementation of the fall Chinook and chum salmon monitoring continued in 2020 per the revised H&S Plan approved by the FERC in 2015, and related 2020 H&S Annual Operating Plan. NOTE: Fall Chinook and chum salmon monitoring activities and objectives in the lower Lewis River were part of the M&E Plan but are now part of the Hatchery and Supplementation Plan as part of the updated plan approved by the FERC in January 2015.

3.2.39 SA Section 9.4 Water Quality Monitoring

See section 4.1.2 under Water Quality

3.2.40 SA Section 9.5 Monitoring of Hatchery and Supplementation Program

The FERC approval of the updated *Hatchery and Supplementation Plan* was provided January 22, 2015. Monitoring of the H&S program is the responsibility of the H&S subgroup created by the ACC. Each year, the H&S subgroup develops annual operating plans (AOP) to adaptively manage and implement components of the H&S Plan.

3.2.41 SA Section 9.6 Bull Trout Monitoring

PacifiCorp, on behalf of the Utilities, completed actions according to the *2020 Bull Trout Annual Operations Plan*. Results from activities performed and data obtained under SA Section 4.9.2 and 9.6 are provided in the *Bull Trout 2020 Annual Operations Report*, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.2.42 SA Section 9.7 Resident Fish Assessment

Given the spatial and temporal overlap of preferred spawning habitat and periodicity between coho and bull trout, there is concern that later spawning coho may superimpose redds over redds newly constructed by bull trout. To evaluate any superimposition, bull trout redd surveys were completed in Pine Creek and Pine Creek tributary P8 in September and October. All identified bull trout redds were labeled by Global Positioning Satellite, as well as physically marked within the stream for ease of identification at a later date. Coho redd surveys were subsequently performed of the same stream in October and November to evaluate any redd superimposition by the two species. No coho redds were observed to be superimposed over bull trout redds in 2020. We will continue to watch for any encroachment of coho into critical spawning streams for bull trout.

This evaluation was not conducted within Cougar Creek in 2020 as no reintroduced anadromous species were released into Yale Reservoir this year. Habitat Preparation Plan species were scheduled to be released into Yale Reservoir in 2016 but that has been delayed pending decision on passage into Yale Lake.

Kokanee spawner abundance was evaluated within Yale Reservoir and estimates are included within the Yale Reservoir Kokanee 2020 Escapement Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.2.43 SA Section 9.8 Monitoring of Flows

Monitoring of Merwin flows and the Upper Release and the Constructed Channel flows has occurred on a continuous basis and will continue per the M&E Plan. A discussion of flows can be found in the following sections of this report; Merwin flows in Section 3.2.19, Upper Release Point flows in Section 3.2.18 and Constructed Channel flows in Section 3.2.18.

Section 9.8 of the Settlement Agreement requires reporting of spill events at the Swift No. 1 and Swift No. 2 projects. The emergency spillway at the Swift No. 2 project was not used in 2020. There were two spill events at the Swift No. 1 project in 2020. The first was an unplanned spill event from January 28, 2020 through February 8, 2020 to pass increased inflows related to a seasonal storm event. The second was a planned spill event for the purpose

of annual spill gate testing required by the Federal Energy Regulatory Commission on December 19 and 20, 2020.

3.2.44 Monitoring and Evaluation Post-Season Incidental Take

Each year PacifiCorp handles and processes numerous ESA-listed fish species. As part of the NOAA Fisheries Biological Opinion, PacifiCorp is to use an Incidental Take Form provided by NOAA Fisheries to report on species taken during the previous year of scientific activity. The Incidental Take Form reporting the 2020 sampling year is provided in **Table 5**.

Table 5. Aquatic Species Incidental Take form used for reporting in 2020.

ESU Species and population group if specified in your permit	Life Stage	Origin	Take Activity	Number of Fish Authorized For Take	Actual Number of Listed Fish Taken	Authorized Unintentional Mortality	Actual Unintentional Mortality	Evaluation Location	Evaluation Period
Lower Columbia River (LCR) Chinook	Juv.	NOR	Screwtrap, Mark, Release	N/A	16,138	0	0	NF Lewis River, WA	Mar 9 – July 15
LCR Steelhead	Adult	NOR	Tangle Net, Mark, Release	N/A	17	0	0	NF Lewis River, WA	Mar 11 – May 1
LCR Steelhead	Adult	HOR	Tangle Net, Mark, Release	N/A	19	0	0	NF Lewis River, WA	Mar 11 – May 1
Oregon Coast Coho	Juv.	NOR	Screwtrap, Mark, Release	N/A	3,916	0	0	NF Lewis River, WA	Mar 9 – July 15
LCR Steelhead	Juv.	NOR	Screwtrap, Mark, Release	N/A	1,250	0	0	NF Lewis River, WA	Mar 9 – July 15
Lower Columbia River (LCR) Chinook	Adult	HOR	Merwin Adult Fish Trap	N/A	1,276	0	1	NF Lewis River, WA	Jan 1 – Dec 31
Lower Columbia River (LCR) Chinook	Adult	NOR	Merwin Adult Fish Trap	N/A	129	0	0	NF Lewis River, WA	Jan 1 – Dec 31

ESU Species and population group if specified in your permit	Life Stage	Origin	Take Activity	Number of Fish Authorized For Take	Actual Number of Listed Fish Taken	Authorized Unintentional Mortality	Actual Unintentional Mortality	Evaluation Location	Evaluation Period
LCR Steelhead	Adult	HOR	Merwin Adult Fish Trap	N/A	3,026	0	0	NF Lewis River, WA	Jan 1 – Dec 31
LCR Steelhead	Adult	NOR	Merwin Adult Fish Trap	N/A	460	0	1	NF Lewis River, WA	Jan 1 – Dec 31
Oregon Coast Coho	Adult	HOR	Merwin Adult Fish Trap	N/A	4,674	0	67	NF Lewis River, WA	Jan 1 – Dec 31
Oregon Coast Coho	Adult	NOR	Merwin Adult Fish Trap	N/A	4,160	0	29	NF Lewis River, WA	Jan 1 – Dec 31
Lower Columbia River (LCR) Chinook	Juv.	NOR	Swift Floating Surface Collector	N/A	15,763	0	*NA*[7]	NF Lewis River, WA	Jan 1 – Dec 31
LCR Steelhead	Juv.	NOR	Swift Floating Surface Collector	N/A	4,275	0	*NA*	NF Lewis River, WA	Jan 1 – Dec 31
LCR Steelhead	Adult	NOR	Swift Floating Surface Collector	N/A	310	0	0	NF Lewis River, WA	Jan 1 – Dec 31
Oregon Coast Coho	Juv.	NOR	Swift Floating Surface Collector	N/A	31,509	0	*NA*	NF Lewis River, WA	Jan 1 – Dec 31

3.3 Aquatic 2021 Annual Plan

3.3.1 SA Section 4.2 Merwin Trap

Since the new trap was installed in December 2013 this section no longer applies.

3.3.2 SA Section 4.3 Merwin Upstream Collection and Transport Facility

The new upstream collection and transport facility was considered substantially complete in April 2014. And will continue to operate with some minor modifications anticipated that will improve operations. Major modifications are potential but, pending results of the Adult Trap Efficiency studies for each of the three transport species, will not be put in place until a determination of need occurs. The intent of the modifications made to the existing collection facility at Merwin Dam were to provide safe, timely, and effective passage of adult salmonids being transported upstream.

The new facility is designed to be modified in phases, offering the ability to incrementally improve fish passage performance (if needed) in the future to meet biological performance goals. Depending on the biological monitoring of the facility's performance, there are up to four additional phases that will increase flow into the fishway attraction pools, and add a second fishway with additional attraction flow, if necessary.

Based on the biological monitoring of the facility's performance over a five (5) year period (2013-2019), the ACC determined that reliable operation of the facility's fish lift and conveyance system was the largest contributor to the success of fish being captured at Merwin Dam. In early 2020, PacifiCorp began reviewing possible alternative designs to the current lift and conveyance system, particularly aimed toward modifying the system's crowder that automatically crowds adults from the head of the fish ladder into the lifting hopper. As of

December 2020, PacifiCorp has begun the formal process of redesigning the facility's crowding mechanism. It is anticipated that a final design will be reached by late-2021 with construction occurring sometime in 2022. PacifiCorp Once the redesigned crowder is in place, it is intended that the biological monitoring of the facility's performance will resume. Until then, PacifiCorp will continue to operate the Merwin Upstream Collection and Transport Facility in 2021 and report fish collection and operations information. Additional information regarding operation of the Merwin Trap can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.3.3 SA Section 4.4 Downstream Transport at Swift No. 1 Dam

PacifiCorp completed and submitted the final design for the Swift Downstream Facility in December 2009 and the facility, referred to as the Swift Floating Surface Collector (FSC) was put into service December 26, 2012. PacifiCorp purchased the land needed for the downstream Release Pond and the pond facility was constructed in December 2017. The Release Pond facility began full operation in March 2018 and is operated in concurrence with the Swift FSC.

Several adjustments have been made to the FSC since the facility was put into service in late-2012. These adjustments were based on fish monitoring and operational information. In March 2016, a lead net was installed at the entrance of the FSC. The purpose of the lead net was to orient out-migrants towards the entrance of the collector and improve collection efficiency. In February 2019, the entrance of the FSC was modified to increase water velocity (i.e., attraction flow) as well as baffles adjusted made to increase flow volume. These adjustments increased the FSC regular operating flow from 600 cfs to approximately 860 cfs and increased the water velocity at the entrance of the FSC from 0.5 fps to approximately 1.3 fps. Several smaller adjustments have been made inside the facility's sorting building to improve debris management and reduce fish injury and mortality. These adjustments have included: the expansion of the fry and adult fish holding tanks to include debris removing traveling screens; widening of the smolt conveyance flumes to allow woody debris to more readily pass through the system; and redesigning the fish separator bars to reduce improve debris accumulation and improve fish passage. Future adjustments may include additional alterations to the entrance of the facility's fish passage channel and may focus on flow dynamics and/or reducing various sources of acoustic noise. The direction for these future adjustments will be informed by the fish behavior study scheduled for spring 2021.

PacifiCorp will continue to operate the Swift Downstream Facility and Release Pond Facility in 2021 and report collection results. Additional information regarding operation of the Swift FSC can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.3.4 SA Section 4.9 Interim Bull Trout Collection and Transport

PacifiCorp and Cowlitz PUD are to investigate alternative Bull Trout collection methods in consultation with the ACC. The *2021 Bull Trout Annual Operations Plan* has been incorporated into this Annual Report and submitted to the ACC including USFWS and NMFS

in March 2021. This document can be found within the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.3.5 SA Section 5.2 Bull Trout Habitat Enhancement Measures

PacifiCorp will continue to manage the Cougar Creek Conservation Covenant and Cowlitz PUD will continue to manage the Devil's Backbone Conservation Covenant to benefit bull trout.

3.3.6 SA Section 5.7 Public Information Program to Protect Bull Trout

PacifiCorp will continue to provide flyers with the same information at recreation park entrance booths. The Utilities will also provide such flyers to enforcement personnel for distribution.

3.3.7 SA Section 6.1 Flow Releases in the Bypass Reach; Constructed Channel

PacifiCorp and Cowlitz PUD will continue to adhere to the Swift bypass reach and constructed channel flow release schedule specified in the 401 Water Quality certifications.

3.3.8 SA Section 6.2 Flow Fluctuations below Merwin Dam

PacifiCorp will continue to implement the operational flow regimes as identified in the SA and the Merwin FERC License. If 2021 climate conditions result in drought conditions for the area, PacifiCorp will engage the Low Flow Committee as necessary.

3.3.9 SA Section 7.1 Large Woody Debris Project

PacifiCorp will continue to maintain the available funds and annual $2,000 contribution in a Tracking Account per the SA 7.1.1 to help defray the costs of LWD transport.

3.3.10 SA Section 7.2 Spawning Gravel Study and Gravel Monitoring and Augmentation Plan

Periodic monitoring will continue pursuant to determining the need for gravel supplementation if flows exceed 42,000 cfs.

3.3.11 SA Section 7.4 Habitat Preparation Plan

PacifiCorp's obligation under the Habitat Preparation Program for Swift Reservoir ended in 2012. Formal reintroduction of fish collected at Merwin Trap replaced the Habitat Preparation Program for all reintroduction species. The Habitat Preparation Program will again be initiated for Yale Reservoir (5 years prior to proposed implementation of downstream collection facilities at Yale Dam) pending a decision on passage into Yale Lake (now referred to as the In-Lieu Decision).

3.3.12 SA Section 7.5 Aquatics Fund

On October 8, 2020 the Forest Service had a remaining balance of $59,795.10 specific to Collection Agreement 15-CO-11060300-010 (2015 Lewis River Side Channel Restoration project) which will be returned to PacifiCorp in 2021 and applied toward future habitat improvement projects awarded by the ACC. ACC decisions for funding the four (4) Aquatic Fund proposals will be made in 2021.

3.3.13 SA Section 8.2 Hatchery and Supplementation Plan

On December 22, 2020, the utilities submitted a revised H&S Plan to the FERC as stipulated in the Agreement. This version included results from a comprehensive periodic review as required under Section 8.2.5 of the Agreement. The utilities continue to work collaboratively with the ATS to develop annual operating plans to guide implementation of the H&S program and provide the means to adaptively manage the program. The ATS will finalize the 2021 AOP in the summer of 2021 and will submit this plan to the FERC as part of our 2021 reporting.

3.3.14 SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species

The development of a precise and acceptable methodology for calculation of ocean recruits is an ongoing process. PacifiCorp and their contractors developed methods to estimate Ocean Recruits, worked with WDFW and others in the M&E Plan subgroup, and included these revised methods in the Monitoring and Evaluation Plan issued in May 2017. The methods for determining Ocean Recruits is complicated and will continually require adjustments to find the right mix of inputs to come up with a reliable measure. In addition, there are still not enough returning adults to evaluate Ocean Recruits for either the Hatchery or the Natural component. NOTE: As part of the Hatchery and Supplementation Plan update, development of methods to calculate Ocean Recruits was moved to the Monitoring and Evaluation Plan to reduce redundancy between the two plans and because many of the objectives in the Monitoring and Evaluation rely on this estimate. Evaluation of Ocean Recruit methodology will be evaluated as part of the M&E Plan rewrite in scheduled for completion in the spring of 2022. Information on Ocean Recruit metric can be found in the Lewis River Fish Passage Program 2020 Annual Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2020 Annual Report (**Attachment D**).

3.3.15 SA Section 8.4 Anadromous Fish Hatchery Juvenile Production

Per the SA and the *Hatchery and Supplementation Plan* and depending on the adult returns of spring Chinook, the Licensees will provide for the production of spring Chinook salmon smolts, steelhead smolts, and coho salmon smolts at levels specified ("Juvenile Production") in the H&S plan.

3.3.16 SA Section 8.6 Resident Fish Production

Subject to Section 8.6.3, the Licensees will continue to provide for the production of 20,000 pounds of resident rainbow trout (to Swift reservoir) and 12,500 pounds of kokanee (to Merwin reservoir) each year per the FERC licenses and H&S Plan. However, the ACC is currently evaluating modifications to the location and timing (not the poundage) of the rainbow plants. These modifications are intended to reduce the number of planted rainbow that are collected by the FSC and transported and released downstream of Merwin Dam (Release Ponds). Any modifications to the rainbow trout plants will be documented by the utilities and provided as part of our annual reporting requirements.

3.3.17 SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance

The Licensees have fulfilled their obligation with respect to SA Section 8.7 hatchery upgrades. Maintenance of the facilities, including upgrades, will continue as part of the Settlement Agreement and license implementation requirements.

3.3.18 SA Section 8.8 Juvenile Acclimation Sites

With damages that occurred to the acclimation facilities caused by flood flows in December 2015, the ACC agreed that acclimation releases would be suspended until further notice. On December 5, 2017, PacifiCorp filed with the Federal Energy Regulatory Commission (FERC) a request for Commission approval to decommission the juvenile fish acclimation pond facilities located along the Muddy River, Clear Creek and upper Lewis River near Crab Creek within the Gifford Pinchot National Forest Service. On January 4, 2018, the Commission responded with an order approving the December 5, 2017 request. The acclimation site located on the Muddy River was decommissioned from August through October of 2018. The acclimation sites located along Clear Creek and in the upper Lewis River near Crab Creek were both decommissioned from August through November 2019. All sites were restored to pre-construction condition. The final decommissioning report was filed with FERC on December 12, 2019. Spring Chinook targeted for acclimation sites in 2019 were released downstream of Merwin Dam as part of rearing and release strategies being evaluated as part of the Hatchery and Supplementation program. This practice continued in 2020. It is expected that spring Chinook releases will continue to be released as part of the hatchery program downstream of Merwin Dam until the ACC recommends reinitiating the upstream acclimation program.

3.3.19 SA Section 9.6 Bull Trout Monitoring

The Licensees will continue to monitor and evaluate bull trout populations in the Lewis River basin following approval of the Bull Trout Annual Operating Plan (AOP). Overarching long-term bull trout monitoring objectives were included within the FERC approved M&E Plan. Specific monitoring tasks, including methods and locations, will continue to be developed and included within the bull trout AOP and submitted to the USFWS and ACC annually.

3.3.20 Monitoring and Evaluation Post-Season Incidental Take

As required by the NOAA Fisheries Biological Opinion, PacifiCorp is to use an Incidental Take Form provided by NOAA Fisheries to report on species taken during the previous year of scientific activity. PacifiCorp will continue to collect and report information.

4.0 WATER QUALITY

4.1 PacifiCorp Water Quality Measures Implemented in 2020

4.1.1 PacifiCorp Application for 401 Water Quality Certificate for Yale, Swift No. 1 and Merwin Hydroelectric Projects

On October 9, 2006, Ecology provided 401 Water Quality certificates for the Merwin, Yale, and Swift No. 1 hydroelectric projects. These 401 Certifications have subsequently been amended several times. Until the FERC issued licenses for the Lewis River Hydroelectric Project June 26, 2008, PacifiCorp implemented those measures contained in the 401 Certifications that were not FERC license-specific and has implemented all the 401 requirements since June 26, 2008.

4.1.2 SA Section 9.4 Water Quality Monitoring

The following section covers water quality monitoring activities performed in accordance with Ecology's Lewis River 401 water quality certifications. More specifically this section covers the monitoring of Total Dissolved Gas (TDG), water temperature, and dissolved oxygen as prescribed in the Water Quality Management Plan submitted in July 2013 (WQMP) and approved by Ecology on September 20, 2013 (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/relicensing-documents/LR_WQMP_final_July_2013.pdf).

Some monitoring parameters are ongoing from previous years, such as TDG monitoring in Swift No. 1 and Yale tailraces; while other activities such as Merwin, Yale, and Swift forebay temperature profiles were implemented for the first time in 2007 and continued in 2020. Water quality data collected in 2020 is summarized in this report; 2020 data tables are available per request.

Per the 401 water quality certificates, monitoring of projects' spillway TDG levels continued through 2020. Tailrace TDG monitoring has been ongoing since 1995 and will continue per the direction of the 401 requirement. Until it is shown that a water temperature issue does not exist, PacifiCorp will also continue to monitor water temperature in the forebays and tailraces of each project and, in cooperation with Cowlitz PUD, monitor water temperature in the Swift Bypass Reach. A summary of the water quality parameters associated with this section (TDG, Water Temperature and Dissolved Oxygen) to be monitored and the schedule of that monitoring as taken from the WQMP is summarized below in Table 6.

Table 6. Water quality parameters to be monitored and the schedule of that monitoring according to the July 2013 WQMP.

Parameter	Total Dissolved Gas	Dissolved Oxygen	Temperature
Merwin	Monitor turbine outlets to assure compliance with 110%. During spill, monitor just downstream of aeration zone. TDG must be <110% unless 32,884cfs inflows are exceeded. If TDG is exceeded with spill when inflow is <32,884cfs, then provide TDGWQAP with data.	Monitor in forebay and tailrace, in September and October hourly.	Monitor in forebay at depths of 1, 5, 10, 20, 40, 60, 100, and 200 feet. May 1st through Oct. 31st hourly. Monitor tailrace hourly all year, not to exceed 16ºC (13ºC Sept.1-June 15).
Frequency/Duration	Ongoing if exceedences occur until 3 months after such exceedences are corrected.	Ongoing until DO is found to not go below 8 mg/l for a period of 5 consecutive years.	Ongoing until tailrace temperature does not exceed 16ºC (13ºC Sept. 1-June 15) for five consecutive years.
Yale	Monitor turbine outlets to assure compliance with 110%. During spill, monitor just downstream of aeration zone. TDG must be <110% unless 27,088cfs inflows are exceeded. If TDG is exceeded with spill when inflow is <27,088cfs, then provide TDGWQAP wit	N/A	Monitor in Forebay at depths of 1, 5, 10, 20, 40, 60, and 100 feet. May 1st through Oct. 31st hourly. Monitor tailrace, 15ft deep, hourly all year. Also, profile of tailrace depth temp. Attainment Plan for the canyon on Lake Merwin just downstream of Yale Tailrace.
Frequency/Duration	Ongoing if exceedences occur until 3 months after such exceedences are corrected.		Ongoing until temp is shown to not increase the 7-DADMax temperature more than 0.3ºC (0.54ºF) above natural conditions. Occurs for five consecutive years. Tailrace temp./depth profile monitoring done until temp. fluctuations in tailrace/upper Lake Merwin.
Swift 1	Monitor in Swift No. 1 forebay. Monitor turbine outlets to assure compliance with 110%. During spill, monitor just downstream of aeration zone. TDG must be <110% unless 21,322cfs inflows are exceeded. If TDG is exceeded with spill when inflow is <21,322 cfs.	N/A	Monitor Swift 1 forebay at 1, 5, 10, 20, 40, 60, 80, 120, and 145 ft. depths May 1st - Oct. 31st. Swift 1 tailrace canal at depth of 1 ft. hourly all year. Place 1 meter just upstream from Ole Creek mouth and 1 meter just downstream from Ole Creek mouth.
Frequency/Duration	Ongoing if exceedences occur until 3 months after such exceedences are corrected. Spill monitoring ongoing unless TDG during spill is found to not exceed 110% during river flows <21,322cfs.		Swift forebay monitoring is ongoing until temp. behavior in the forebay of Swift 2, the upper and lower release points, and the bypass reach are understood. Monitoring in the Swift 1 tailrace and just below Ole Creek mouth are ongoing.

2020 Total Dissolved Gas Analysis for Yale, Swift No. 1 and Merwin Hydroelectric Project Spills

Upon issuance of the 401 water quality certificates, PacifiCorp began monitoring of spillway TDG in the fall of 2006. Previous TDG monitoring sites near the Swift No. 1, Yale and Merwin spillways were reactivated at the beginning of the 2019/2020 high run-off period.

During 2020, a single 7Q10 high flow event from January 27, 2020 through February 11, 2020 occurred at Swift 1, Yale, and Merwin Projects. As a result of high spill volumes over the dam to manage the high flow event, TDG exceedances were observed downstream of Swift 1 and Merwin spillways during the event. No TDG exceedances were observed downstream of the Yale spillway. The 7Q10 was reached for Yale and Merwin during the high flow event. A summary of the 2020 spill event is shown below in Table 7. TDG monitoring of Swift No. 1, Yale and Merwin spillways is ongoing and will continue as prescribed in the WQMP.

Table 7. Summary of 2020 spill data at each Project.

Project	Spill Date (2020)	TDG Exceedance Hours	Maximum TDG Level	Maximum Natural Inflow	7Q10 Flow
Swift 1	Jan 28th – Feb 8th	193 hours	117.5%	17,459 cfs	21,322 cfs
Yale	Jan 27th – Feb 11th	0 hours	103.7%	27,144 cfs	27,088 cfs
Merwin	Jan 27th – Feb 10th	238 hours	115.4%	37,778 cfs	32,884 cfs

Yale Tailrace TDG:

Total dissolved gas data in the Yale tailrace (**Attachment E**) were gathered hourly in 2020 using a HydroLab Series 5 miniSonde (MS5). A stainless-steel tube is permanently attached to the Yale powerhouse wall and submerged to a depth of 15 feet. The HydroLab is deployed within this tube to protect the probe and maintain consistent depth at 15 feet. In 2020, 8,681 hourly data points were recorded in the Yale tailrace, of which eight hourly data point exceeded the state standard of 110% (**Attachment E**). Total dissolved gas levels greater than 110% have been observed in the past and can be produced during times of motoring operations and at low generation levels. Motoring Operations involves spinning a turbine using grid power in order to have the unit ready to engage at a moment's notice in case of a power plant outage in another area of the Western Grid or in the case of a surge in power demand. During times of normal generation, elevated levels of tailrace TDG are not typically observed.

During 2020 PacifiCorp continued measures at the Yale tailrace to control TDG during motoring operations. These measures include automated "flushing" of the tailrace periodically. Flushing is defined as ramping one unit to 5 MW for ten minutes. The frequency of this event depends on real-time dissolved gas measured in the tailrace with the MS5 and is fully automated through the Programmable Logic Control (PLC). This measure was first implemented October 20, 2007 and continues to be an effective procedure in reducing TDG levels in the Yale tailwaters as demonstrated in the 2020 data.

In addition to flushing flows, automated air valves have been in place since 2009 to limit the volume of air entering the turbine throughout the operating range of each unit. This investment provides control of excessive TDG in the Yale tailwaters during normal operations of the units.

Swift No. 1 Tailrace TDG
TDG data (**Attachment F**) were gathered hourly in the Swift No. 1 tailrace using two HydroLab Series 5 minisondes (MS5). The second meter is used for comparison and quality control as well as determining if differences in TDG exist based on individual unit operation. Similar to the Yale tailrace, meters are deployed within steel tubes permanently attached to the powerhouse wall. Meter No. 1 is located between the draft tubes of Units 11 and 12 while Meter No. 2 is located between the draft tubes of Units 12 and 13. The meters gather data hourly from a water depth of 15 feet. Data between the two meters are averaged and provided in graphic form (**Attachment F**). Of the 8,682 data points collected in 2020, one data point exceeded the 110% state standard. Similar to Yale tailrace, data points greater than 110% can be produced during times of project motoring operation or prolonged periods of inefficient operation between 20 and 40 MW per unit. During times of normal generation, elevated levels of TDG are not typically observed.

To reduce TDG within Swift No. 1 tailrace during periods of normal generation and load following operations, air intake modifications and automation were made in 2005 that limit the volume of air entering the units over their generation range based on a predefined air volume curve. This measure, while effective at normal generation levels, is not effective during periods of motoring. Flushing procedures used at Yale have been demonstrated to be effective, and the same procedure has been implemented at Swift No. 1. Modifications were made in late October 2012, to ensure that air entrainment would not be possible during periods of motoring operation.

TDG monitoring of Swift No. 1 and Yale Tailraces are ongoing and will be continuously monitored as prescribed in the WQMP.

Swift No. 1 Forebay TDG
TDG data was gathered hourly in the Swift No. 1 forebay from February 7, 2008 to May 31, 2008 using a HydroLab Series 5 datasonde (DS5). The meter was deployed to a water depth of 15 feet from the dam intake deck via steel cable. During the period, 2,747 data points were recorded. Of those data points none were found to exceed 110% TDG saturation. Based on Table 2 in section 4.8 of the 401 water quality certification for the Swift No. 1 hydroelectric facility, TDG monitoring in the project forebay is "Ongoing if exceedances occur until three months after such exceedances are corrected". No exceedances were recorded in the four-month monitoring period for the Swift No. 1 forebay, therefore monitoring activities were suspended as of May 31, 2008.

2020 Temperature Profiles for Merwin, Yale, and Swift No. 1 Forebays and Corresponding Temperature Comparison between Forebay Intake Depth and Tailrace for Each Project
Graphs representing forebay temperature profiles from the surface to reservoir bottom and graphs comparing forebay intake depth temperatures to the tailrace temperatures for Merwin,

Yale, and Swift No. 1 during 2020 are included in **Attachment E, Attachment F** and **Attachment G**. Data points for forebay temperature profiles are two-week averages of hourly temperature readings taken at each specified depth.

Data points for intake depth/tailrace comparison were taken hourly from a depth of 15 feet in project tailraces, and at specified intake depth in project forebays. This hourly data was then converted to seven-day averages of the daily maximum temperature (7DADmax). Temperature data were gathered using Onset HOBO prov2 Temp Loggers®. Prior to deployment, each temperature thermograph was verified and calibrated using a National Institute of Standards and Technology (NIST) certified reference thermometer.

Yale
In July 2020 PacifiCorp staff visited the Yale thermograph site to download loggers. It was observed that the thermograph string was missing. The thermograph string was replaced in early August 2020. After the monitoring season was over PacifiCorp staff visited the site to download data. It was found that, again, the Yale thermograph string was missing. In 2021 PacifiCorp will use a heavier gauge cable for the thermograph string and possibly shorten the thermograph length to avoid snagging on the reservoir bottom.

The Yale tailrace 7DADmax temperature graph is presented in **Attachment G**. The tailrace temperatures are comparable to what has historically been observed.

Swift No. 1
Temperature stratification was observed in Swift No. 1 forebay for the entire period of analysis May through October 2020 (**Attachment F**). The warmest two-week average temperature, 20.9°C, was observed 11 feet below the surface in early August. The coldest observed temperature was 5.8°C and was recorded at a depth of 122 feet in early May. In 2020 the Swift thermograph string was attached to a vertically fixed position, as a result, temperature loggers were at constant elevation rather than constant water depths. To address this, fluctuating reservoir levels were correlated to each temperature loggers fixed elevation. Bi-weekly average logger depths were calculated and assigned to corresponding bi-weekly average temperatures.

Hourly temperature readings were taken from the Swift No. 1 tailrace from a depth of 15 feet using HydroLab Series 5 miniSonde. Hourly temperatures were then converted to 7DADmax readings in order to get an intake depth temperature to tailrace temperature comparison per the direction of the 401 certification (**Attachment F**). Many different environmental factors influenced the intake depth to tailrace water temperature comparison, namely, reservoir elevations, powerhouse operations, configuration of the water withdrawal system, and placement of the forebay thermistors.

The bathymetry of Swift Reservoir in the vicinity of the penstock intakes is unusual. Instead of the entrance of the intakes lying on the reservoir bottom, drawing water from all angles, they are at the downstream end of a deep and narrow trench notched into the hillside during construction of the dam. The intakes influence the mixing of stratified water columns as they draw water through the trench. It is difficult to deploy thermographs that spatially align and

represent the temperature regime occurring near the intake (**Attachment F**) as it relates to the Swift No. 1 tailrace temperature.

Merwin
As in prior years, temperature stratification was observed in Merwin Reservoir from May through October 2020, with the reservoir getting progressively warmer until turn-over in the latter half of October (**Attachment G**). The coldest two-week temperature average, 7.2°C, was recorded in May at intake depth of 150 feet. The warmest two-week average temperature was 21.8°C at the reservoir surface in August. Since PacifiCorp considers the reservoir conditions as baseline, there were no observed temperature exceedances for Merwin Reservoir in 2020.

An Onset HOBO Pro v2 Temp Logger® temperature recorder was positioned within the Merwin tailrace at a depth of approximately 15 feet and hourly temperature recordings were taken for the duration of 2020 (**Attachment G)**. Hourly readings were converted to seven-day averages of the daily maximum temperature (7DADmax). In mid-September PacifiCorp staff went to download the logger and it was found to be missing. The logger was replaced. As a surrogate, maximum daily temperatures from Lewis River Hatchery were used to generate 7DADMAX from 1/1/2020 through 9/20/2020. During the June 15 through September 15 time period, fourteen 7DADmax data points were recorded and zero were observed to be greater than the state standard of 16° C. During the Jan 1 through June 14 and September 15 to December 31 time frames; thirty-two 7DADmax data points were recorded. Of these, eight were observed to be greater than the state standard of 13° C (**Attachment G**). 7DADmax temperatures over 13° C were first observed in the project tailrace during the second week of September and persisted through the second week of November. PacifiCorp will continue to monitor this condition as per the WQMP approved by Ecology in September 2013.

Temperature monitoring of Swift No. 1, Yale and Merwin forebay's are ongoing and will continue as prescribed in the WQMP.

2020 Dissolved Oxygen Comparison between Merwin Forebay Intake Depth and Merwin Tailrace in September and October
Hourly dissolved oxygen levels in milligrams per liter (mg/l) were measured in the Merwin forebay at an approximate depth of 160 feet and in Merwin tailrace at an approximate depth of 15 feet from September through October 2020 (**Attachment G**). Measurements in the forebay were recorded with a HydroLab Series 5 datasonde (DS5) and with a HydroLab Series 5 miniSonde (MS5) in the project tailrace.

The Merwin forebay DO meter experienced a malfunction during the entire monitoring period, consequently, no forebay DO data for 2020 is available. The tailrace DO meter also experienced malfunctions resulting in 894 dissolved oxygen hourly data points collected from September 9, 2020 through October 16, 2020 (**Attachment G**). Of these 894 data points collected in the tailrace 56 of them were observed to be lower than the minimum state standard of 9.5 mg/L. Merwin dissolved oxygen monitoring is ongoing, and monitoring will continue as prescribed in the WQMP.

Lewis River Temperature and Dissolved Oxygen Water Quality Attainment Plan

As discussed above, PacifiCorp has continued to monitor temperature and dissolved oxygen in the Merwin forebay and tailrace, as required by the certification conditions as well as the WQMP. In response to Ecology's 2011 amendment of the certification conditions, PacifiCorp in June 2013 submitted to Ecology a revised WQMP that included the Lewis River Temperature and Dissolved Oxygen Water Quality Attainment Plan (TDOWQAP) (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/relicensing-documents/LR_WQMP_final_July_2013.pdf). The revised WQMP and TDOWQAP were approved by Ecology on September 20, 2013. Per the TDOWQAP, PacifiCorp developed a water quality model to determine natural temperatures and dissolved oxygen concentrations immediately downstream of the Merwin Dam from September through November, as well as any project contributions to deviations from natural conditions. The results of this modelling were submitted to Ecology in a Water Quality Model Report in March 2015 (Mason Bruce & Girard. 2015. Water Quality Modeling of the Lewis River Hydro Project, Washington).

2020 Temperature Comparison in the Swift Bypass Reach between Waters Upstream and Downstream of the mouth of Ole Creek

In 2020, 8,760 hourly temperature readings were taken from the Swift Bypass Reach 50 feet upstream of the Ole Creek confluence. The temperature logger downstream of Ole Creek was lost and as a result no corresponding temperature readings were taken. These hourly data points were converted to 7DADmax values (**Attachment G**). Temperatures were recorded using Onset HOBO pro v2 Temp Loggers®.

Temperature monitoring of Swift Bypass temperature upstream and downstream of the Ole Creek confluence is ongoing and will continue as prescribed in the WQMP.

2020 Redd and Biological Surveys of the Lewis River Bypass Reach, Upper Release Point and Canal Drain Constructed Channels

In compliance with section 4.2(10)(a) and 4.2(11) of the Washington Department of Ecology issued 401 Water Quality Certificate for Swift 1 Hydroelectric Project, PacifiCorp will conduct quarterly biological surveys and bi-weekly redd surveys (during Sept. 15th- Nov. 15th) of the Lewis River Bypass Reach, Upper Release Point and Canal Drain Constructed Channels on a set schedule as stipulated within Section 4.2(10)(a-e) of the 401 Water Quality Certificate.

According to the schedule defined within section 4.2(10)(a-e) of the 401 Water Quality Certificate, PacifiCorp was not required to perform any biological or redd surveys of the Lewis River Bypass Reach, Upper Release Point or Canal Drain Constructed Channels in 2020.

4.2 PacifiCorp Water Quality 2021 Annual Plan

PacifiCorp will implement the following water quality measures in 2021.

4.2.1 Water Quality Management Plan

PacifiCorp will continue to implement the Ecology-approved Water Quality Management Plan (WQMP) (Approved by Ecology on September 20, 2013). (PacifiCorp Energy. 2013. Lewis River Hydroelectric Projects Water Quality Management Plan)

4.2.2 Flow Monitoring

PacifiCorp will continue to monitor flows in the Swift bypass reach (Upper Release flow and Constructed Channel flow) and flow/ramp rates downstream of Merwin dam.

4.2.3 Bypass Reach Gravel Replacement

PacifiCorp and Ecology met onsite at the Swift project Bypass reach to view gravel conditions following a December 2015 high flow event. That event resulted in spill exceeding 10,000 cfs that completely scoured the replaced spawning gravel out of the channel. Based on this occurrence and other spill events in the past, Ecology provided PacifiCorp a determination dated December 14, 2016 to cease gravel augmentation at the Bypass Reach until further notice.

4.2.4 Lake Merwin Canyon Water Quality Attainment Plan

Implement the Lake Merwin Canyon (Yale Tailrace) Water Quality Attainment Plan per the final WQMP approved by Ecology in September 2013 (PacifiCorp Energy. 2013 Attachment B, Lake Merwin Canyon Water Quality Attainment Plan, to Lewis River Hydroelectric Projects Water Quality Management Plan.) Study elements were completed in 2014 and reported to Ecology in 2015 (PacifiCorp Energy. 2015 Merwin Hydroelectric Project Lake Merwin Canyon Water Quality Attainment Plan Study Report.

4.2.5 Swift and Merwin Spill TDG Attainment Plan

Implement Merwin Spill TDG Attainment Plan per the final WQMP approved by Ecology in September 2013 (PacifiCorp Energy. 2013. Merwin Hydroelectric Project Spill-related Total Dissolved Gas Water Quality Attainment Plan). Implement the Swift Spill TDG Attainment Plan as approved by Ecology in February 2014 (PacifiCorp. 2014. Spill-related Total Dissolved Gas Water Quality Attainment Plan for Swift No. 1 Hydroelectric Project North Fork Lewis River, Washington).

4.2.6 Lewis River Project Temperature Model

The model was completed, and a report was submitted to Ecology in 2015. (Mason Bruce & Girard. 2015. Water Quality Modeling of the Lewis River Hydro Project, Washington).

4.2.7 Yale-Swift Turbine TDG Corrective Action Plan

Continue implementation of corrective actions and monitoring for turbine TDG for the Yale and Swift projects. A copy of the corrective action plan is included in the final WQMP. However, since PacifiCorp has been able to demonstrate compliance with TDG standards related to turbine operation at the Yale and Swift plants, Ecology has removed these sites from

the 303(d) list of sites requiring a Total Maximum Daily Load (TMDL) procedure. PacifiCorp continues to monitor Swift No. 1 and Yale turbine TDG and implement actions to maintain TDG in the tailraces to less than the state standard of 110%.

4.3 Cowlitz PUD Water Quality Measures Implemented as of the End of 2020

On October 9, 2006, Ecology issued a Clean Water Act Section 401 Certification (Order No. 3676) to Cowlitz PUD for the continued operation of the Swift No. 2 Hydroelectric Project under a new FERC license (Ecology 2006). The Section 401 Certification, as amended[5,6,7,8,10], includes a number of conditions and general requirements directing Cowlitz PUD to comply with applicable water quality standards codified in 173-201A WAC. As of December 31, 2020, Cowlitz PUD has completed all of the requirements in the 401 Certification.

This section of the 2020 Annual Report lists the completed measures. Additional Settlement Agreement and amended Section 401 Certification requirements relating to instream flows, the constructed channel, gravel augmentation, salmonid monitoring, and water temperature monitoring in the Lewis River bypass reach are implemented together with PacifiCorp.

4.3.1 Swift No. 2 Project Water Temperature Monitoring

The water temperature monitoring program in the Swift No. 2 canal and forebay was completed in 2012 and fully satisfied the requirement of the amended Section 401 Certification to monitor a total of 10 qualifying periods. Final results were included in the 2012 Annual Report (PacifiCorp and Cowlitz PUD 2013).

As illustrated in Table 8, during the 2007, 2008, 2009, 2010, 2011, and 2012 forebay and log boom water temperature monitoring periods, there were a total of ten qualifying periods when the Swift No. 1 and Swift No. 2 projects were off-line for more than 48 consecutive hours. As a result, the completion of the 2012 sampling season fully satisfies the requirement of the amended Section 401 Certification to monitor a total of 10 qualifying periods. There were no documented exceedences of the 16.0˚C 7-DADMax water temperature criteria at any depth interval at the log boom or forebay sites during the six summer monitoring periods between 2007 and 2012. Results of monitoring over the past six years have clearly shown that regular operating procedures at Swift No. 1 and No. 2 maintain water temperatures that protect Core Summer Salmonid Habitat (i.e., will not cause any violation of the state water temperature standards).

Based on these findings, and consistent with its amended Section 401 Certification, Cowlitz PUD discontinued the water temperature monitoring program at both the log boom and forebay sites in September 2012.

[5] https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/swiftno2cert3676.pdf
[6] https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/swift2amend1.pdf
[7] https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/swift2amend2.pdf
[8] https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/swift2amend3.pdf
[10] https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/swift2amend4.pdf

Table 8. Total number of qualifying periods when the Swift No. 1 and Swift No. 2 projects were off-line for more than 48 consecutive hours during the 2007, 2008, 2009, 2010, 2011, and 2012 monitoring periods.

Year	Qualifying Off-line Periods
2007	3
2008	0
2009	3
2010	3
2011	0
2012	1
Total	**10**

4.3.2 Swift No. 2 Project Tailrace Water Quality Monitoring

On August 15, 2013, with Ecology's written approval, Cowlitz PUD discontinued water quality monitoring in the Swift No. 2 tailrace. Final results of this monitoring were included in the 2013 Annual Report (PacifiCorp and Cowlitz PUD 2014).

After four years of detailed water quality monitoring, it is clear that the Swift No. 2 Project has no negative effect on water quality in the Swift No. 2 Project's tailrace or in the upper end of Yale Lake, and may actually improve water quality conditions in the project area during the summer months. During the summer, discharges from the Swift No. 2 Project function to cool the water in the upper end of Yale Lake, improving aquatic habitat conditions for salmonids and other native cold-water fish species. However, during periods when the project is off-line, water temperatures in the tailrace can increase as warmer surface water in Yale Lake begins to enter the tailrace area. Based on these findings and on the conditions included in the amended Section 401 Certification, which do not require a long-term water quality monitoring program in the tailrace, Cowlitz PUD believes there is a reasonable assurance that Project operations do not violate applicable water quality standards.

If project operations change in any way that could adversely affect water quality, Cowlitz PUD will consult with Ecology staff to determine an appropriate level of monitoring needed to document any changes to existing conditions.

4.3.3 Swift No. 2 Tailrace Total Dissolved Gas (TDG) Monitoring (401) Certification Section 4.8.3

The initial Water Quality Certification Section 4.8.3 study was completed in 2008 and included in the 2008 Annual Report.

As stipulated in Ecology's amended Water Quality Certification, Cowlitz PUD was required to monitor TDG in the project tailrace to capture a minimum of one month of TDG data during normal Project operations (at tailrace elevations above 485 ft msl and with the air injection system operating automatically to reduce turbine cavitation). TDG concentrations did not exceed the 110 percent criteria at any time during the 2008 or 2006 monitoring periods and in general, TDG concentration associated with Project operations are protective of designated beneficial uses, including salmonid, spawning, rearing, and migration. Based on these finding, Cowlitz PUD requested to discontinue TDG monitoring at the Swift No. 2 Project. However,

should Cowlitz PUD implement any operational or structural adjustments that could change the amount of air entrained at the powerhouse, it would implement additional TDG monitoring to fully meet the requirements of its Section 401 Certification.

In September 2014, Cowlitz PUD replaced the original (1956) air intake valves for both turbines (Unit 21 and Unit 22) with new automated air intake valves. This modification triggered additional monitoring in 2014. Consistent with 401 Water Quality Certification Sections 4.3.4 and 4.8.3, Cowlitz PUD monitored TDG in the Swift No. 2 forebay and tailrace from June 24 to November 20, 2014. Final results of this monitoring were included in the 2014 Annual Report (PacifiCorp and Cowlitz PUD 2015).

As expected, and as previously documented (PacifiCorp Energy and Cowlitz PUD 2013a and 2013b), the results of sampling during this period indicated that the overall water quality in the Swift No. 2 Project tailrace remains good. During 2014, TDG in the Swift No 2. Project tailrace ranged from 92.6 percent saturation to 109.5 percent saturation. The highest TDG values were observed just prior to installation of the air intake valve when the project was not generating. These values were most likely due to warm Yale Lake surface water entering the tailrace sampling area but decreased to about 100 percent after the project returned to standard operations. Overall, the valve replacement at the Project did not have a significant effect on water quality in the tailrace or in the upper end of Yale Lake and TDG remained below 110 percent saturation during the entire 2014 monitoring period.

4.3.4 Swift No. 2 Surge Arresting Structure Total Dissolved Gas (TDG) Monitoring (401) Certification Section 4.3.5 as amended

The TDG study required in Certification Section 4.3.5, as amended, was completed in 2007 and included in the 2007 Annual Report.

Cowlitz PUD monitored TDG at two fixed stations in the Project area during a scheduled one hour-long SAS test on March 11, 2007. One station was located in the Swift No. 2 Project forebay at the SAS intake in an area approximately eight feet from the intakes' trash rack. The other was located approximately 100 feet downstream of the existing tailrace buoy line (just outside of the turbulent SAS release path bubble curtain).

Prior to opening the SAS valves, TDG levels in the release path were fairly constant, ranging from 100.2 to 100.8 percent. During the SAS test, TDG levels increased as the visible surge of water moved past the release path monitoring site, reaching a peak at 105.0 percent saturation, after which, TDG levels gradually decreased to pre-test levels (as the SAS valves were closed). TDG levels at the SAS intake were fairly constant throughout the entire SAS test ranging from 97.8 to 98.3 percent. Water temperatures at the release path site ranged from 4.2 to 5.9 °C and water temperatures at the intake ranged from 4.1 to 4.2 °C.

In conclusion, TDG levels remained well below the state standard of 110 percent saturation during the entire test.

4.3.5 SA Section 9.4 Water Quality Monitoring

Cowlitz PUD developed a Water Quality Management Plan, dated January 23, 2013, (Cowlitz PUD 2013a.) to address the water quality requirements of the Lewis River Settlement

Agreement and Ecology's Section 401 Certification. This document described Cowlitz PUD's completed, ongoing, and future plans for water quality monitoring and management, including the results of water quality monitoring discussed above in Sections 4.3.1, 4.3.2, 4.3.3, and 4.3.4. The Water Quality Management Plan described Cowlitz PUD's plan to discontinue all water quality monitoring unless any operational or structural adjustments are implemented that could adversely affect water quality, in which case Cowlitz PUD will consult with Ecology staff to determine an appropriate level of monitoring needed to document any changes to existing conditions.

Ecology approved the Swift No. 2 Water Quality Management Plan on September 20, 2013.

4.4 Cowlitz PUD Water Quality 2021 Annual Plan

Cowlitz PUD will implement the following water quality measures in 2021.

4.4.1 Water Quality Management Plan

Cowlitz PUD has completed all monitoring required under the Water Quality Management Plan. No future monitoring is anticipated unless an operational change triggers additional monitoring as required in the 401 Certification Order as amended.

5.0 TERRESTRIAL RESOURCES

5.1 TCC Meetings

The purpose and role of the TCC, as defined in Section 14.1 of the Settlement Agreement, is to facilitate coordination and implementation of the Terrestrial PM&E measures.

The structure and process of the TCC is intended to provide a forum to address time-sensitive matters, early warning of problems, and coordination of member organization actions, schedule, and decisions to save time and expense. The TCC makes decisions based on consensus, while implementing the Settlement Agreement.

5.1.1 Meetings and Conference Calls: Overview

This section summarizes major items discussed at TCC meetings during the 12-month reporting period. The February, August, and November meetings were cancelled due to lack of agenda items or conflict with holidays. Detailed meeting summaries are provided on the PacifiCorp website at: https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - TCC - 2020

- On January 8, 2020 the TCC agreed to pursue purchase of certain fee simple property.

- On January 8, 2020 all TCC representatives agreed once again that eBike use is NOT permitted on Lewis River Hydroelectric Project lands (PacifiCorp private property).

- On February 12, 2020 the TCC agreed to proceed with the Speelyai Road ATV trespass fence project as quickly as possible.

- On February 12, 2020 the TCC reviewed proposed budgets and project overviews for PacifiCorp's 2019 Wildlife Habitat Management Plan (WHMP) Annual Report, PacifiCorp 2020 WHMP Annual Plan and the Cowlitz PUD WHMP 2020 Annual Plan and 2019 Annual Report.

- On February 12, 2020 the TCC participated in a field tour to Management Units, 2 and 5 (Oak Sites 5-1 & 5-2).

- The 2019 Draft ACC/TCC Annual Report was distributed to the TCC for its 30-day review and comment period March 3, 2020.

- On March 10, 2020 PacifiCorp informed the TCC via email that the March meeting would be modified to a Skype meeting only due to COVID-19 and the need for social distancing.

- On March 11, 2020 PacifiCorp provided the Terrestrial Funds 2019 year-end accounting to the TCC.

- On March 17, 2020 the Cowlitz PUD filed its WHMP 2020 Annual Plan with the FERC.

- On April 8, 2020 the TCC agreed that due to the social distancing mandate, it is not possible to do so in a helicopter flight. PacifiCorp proposed to cancel the April flight and conduct a longer more comprehensive survey in June 2020, if possible and allowed by the COVID-19 requirements. In addition, the TCC agreed to cancel the May 13, 2020 TCC meeting and reconvene June 10, 2020.

- The 2019 ACC/TCC Annual Report was submitted to the FERC April 13, 2020.

- On May 27, 2020 PacifiCorp emailed all TCC Representatives to confirm their approval of moving forward with the purchase and captured the approvals in a response matrix. No objections were received. The purchase of property in the Lewis River basin, which is now referred to Management Unit 40 closed Thursday, June 11, 2020 which adds another 640 acres of Wildlife Habitat Management lands.

- On June 10, 2020 PacifiCorp provided a PowerPoint presentation on the Speelyai Additional Parking Area Feasibility Study for discussion and input. TCC agreed that Parking Option C (with trail option C along existing road) is preferred based on information provided at that meeting. This option is least likely to require additional septic, has the smallest project footprint, and least disturbance to wildlife because this

option is located along the existing and publicly accessible park entrance road. The TCC further agreed to keep Option B-1 on the table if Option C does not work.

- On June 10, 2020 the TCC approved the revised ACC/TCC Structure and Ground Rules document.

- On June 10, 2020 the TCC approved commercial thinning for Management Unit 9.

- On July 8, 2020 PacifiCorp informed the TCC of a successful land acquisition (Management Unit 40) and provided the final financial report.

- On July 8, 2020 the TCC agreed to cancel the August TCC meeting and reconvene September 9, 2020.

- On October 14, 2020 the TCC agreed that they would like to protect the Cresap Pond Dam habitat and its wildlife value and proceed with the repairs providing PacifiCorp give its approval to proceed also.

- On December 9, 2020 the TCC agreed that snowmobiles are motorized vehicles and their use is not allowed/permitted on WHMP lands.

- In addition, on December 9, 2020 he TCC agreed to analyze each project impacts on a case by case basis but the impacts may be mitigated collectively to give a bigger bang for the buck. Projects taking place currently may be lumped together but not projects that may take place well into the future.

5.1.2 Meeting Notes

The Licensees prepared draft notes for TCC meetings and conference calls. These notes were distributed to TCC members for review and comment approximately one week after the subject meeting. After review, revision and approval by the TCC, the final notes were entered in the public record and posted on the PacifiCorp web site at:
https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html - TCC - 2020

5.2 PacifiCorp Terrestrial Measures Implemented as of the End of 2020

This section presents the actions taken during January 2020 through December 2020 toward PacifiCorp terrestrial requirements in the Lewis River Settlement Agreement. It also includes previously completed Settlement Agreement actions. **Attachment I** provide a copy of the *Lewis River Wildlife Habitat Management Plan Annual Report*, which provides a summary of the terrestrial protection, mitigation, and enhancement measures that were implemented in this area during 2020.

A discussion of the activities associated with each of the measures is presented by SA Article for the report period. A description of funding amounts deposited and disbursed during 2020 is provided in Section 7.0 – Funding.

5.2.1 SA Section 10.1 Yale Land Acquisition and Habitat Protection Fund

PacifiCorp completed its settlement agreement and the FERC license commitment under the Yale Land Acquisition Fund for acquiring land in 2010 with the purchase of 490 acres (198.3 ha) of land near Saddle Dam. 10.1 funds were used in their entirety, which was $$2,995,608.83, and there were no further contributions.

5.2.2 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund

PacifiCorp completed the acquisition of 640 acres which include the entire Section 14 in Township 7 North Range 5 on June 11, 2020. This expended most of these funds with $29,156.94 remaining.

Because of confidentialities in acquiring other lands, specific discussion is not included in this annual report other than to indicate that opportunities continue to be discussed.

5.2.3 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund

a) In April 2017 the 10.3 funds were used in their entirety, which was $1,170,009.20, and there are no further contributions.

b) In addition to contributions made under 10.3.1 PacifiCorp provided additional matching funds of $15,000 for the Swift Creek Forage Enhancements project in 2013, $16,500 to WDFW for the Eagle Island project in 2017 and $20,093.00 for the Marble Mountain Forage Enrichment and Effectiveness Monitoring project in 2018. On January 28, 2019, Cowlitz PUD received approval from Rocky Mountain Elk Foundation for funding at the $13,735 level to fund stump-pulling, scarification, forage seeding and burning stumps/slash. In 2019, PacifiCorp provided $13,735 in matching funds and was reported in the 2019 annual report in April 2020.

All matching funds provided by PacifiCorp are not to exceed $100,000 per year, and not to exceed $500,000 in any ten consecutive years. Fund account information is provided in Section 7.0.

5.2.4 SA Section 10.4 Transaction Costs

PacifiCorp expended $6,885.09 in transaction costs for escrow and closing costs, updated Environmental Site Assessment Phase 1 report, and survey for title encumbrances for the 2020 acquisition of 640 acres as described in Section 5.2.2.

5.2.5 SA Section 10.5 Management of Funds

PacifiCorp made interest contributions to Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Funds in 2020. The Funds continue to be tracked in an account and is inclusive of accrued interest pending any transactions (see Section 7.0).

5.2.6 SA Section 10.6 Completed Implementation Advanced Purchases

As identified in the Settlement Agreement article 10.6.2, PacifiCorp acquired 770 acres (in 2000) of wildlife habitat near Cougar and Panamaker Creeks and established a 213-acre conservation covenant on those lands for the protection of bull trout. Routine maintenance of culverts, existing road closures, forestry management assessments, and invasive plant species control continued in 2020.

5.2.7 SA Section 10.7 Conservation Easements

PacifiCorp continued management of the 16 acres of land managed under a conservation easement with the Cowlitz Indian Tribe. The property includes the parcel associated with the former Pine Creek School and is located in Section 26 Township 7 North Range 3 East. In the past PacifiCorp has treated (herbicide spraying) for invasive scotch broom control in a meadow area and the Cowlitz Tribe also hand-pulled scotch broom in the 2011 timber harvest area. The scotch broom continues to be monitored.

PacifiCorp continued inspections of a vegetation exclosure established on this easement for purposes of monitoring forage establishment and use by wildlife. Ocular assessments of vegetation within the exclosures and the surrounding area will be conducted for another 5 years (2023) by PacifiCorp biologists to assist in determining success of program treatments. Forage establishment as a result of the 2011 forest management actions and subsequent seeding has been successful especially in terms of releasing understory shrubs from excessive shade. Wildlife use in the conservation easement area is evidenced from browsing, grazing and deer or elk pellet groups throughout the easement.

5.2.8 SA Section 10.8 Wildlife Habitat Management Plan

Article 403 of the Merwin, Yale, and Swift No. 1 licenses and Section 14.2.6 of the Settlement Agreement directs PacifiCorp to prepare and file with the FERC a detailed Annual Report (Federal Energy Regulatory Commission 2008a, 2008b, and 2008c, PacifiCorp et al. 2004). **Attachment I** provides a copy of the *Lewis River Wildlife Habitat Management Plan 2020 Annual Report*.

- SA Section 10.8.1 Development of WHMPs was completed with the submittal of the Lewis River Wildlife Habitat Management Plant to FERC on December 2008 (https://www.pacificorp.com/energy/hydro/lewis-river/wildlife-recreation-shoreline.html)

- SA Section 10.8.2 Funding the 2020 funding and budget is provided in detail in **Attachment I.**

- SA Section 10.8.3 has been completed and is provided in **Attachment H**.

- SA Section 10.8.4 Habitat Evaluation Procedures. The 2020 land acquisition does not have any new or different vegetation cover types; therefore, the current Habitat Suitability Index values are still applicable. The review of WHMP effectiveness will occur in 2025.

- SA Section 10.8.5.5 There were no impacts to WHMP lands therefore no mitigation was required in 2020.

5.3 PacifiCorp Terrestrial 2021 Annual Plan

This section presents PacifiCorp's Terrestrial Resources Annual plan which identifies planned 2021 activities as organized by the Settlement Agreement measures.

5.3.1 SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund

PacifiCorp will work in coordination with the TCC regarding the future acquisition of interests in land in the vicinity of Swift Reservoir. Fund account information is provided in Section 7.0.

5.3.2 SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund

All funds were expended in 2017 for the 2nd and final phase of land acquisition. There are no additional contributions, so this fund and action is completed.

5.3.3 SA Section 10.4 Transaction Costs

There are no transaction costs anticipated in 2021.

5.3.4 SA Section 10.5 Management of Funds

Funds provided by PacifiCorp in 2021 will be managed in a tracking account and in accordance with SA language. Contribution amounts and interest gained will be identified in the 2021 Annual Report. See Fund account information provided in Section 7.0 for end of 2020 amounts.

5.3.5 SA Section 10.6 Completed Implementation Advanced Purchases

PacifiCorp will continue to manage the Cougar Creek Conservation Covenant lands and the company lands on the Swift Creek Arm for the long-term benefit of fish, wildlife, and native plants. These lands are managed under the WHMP as described in SA 10.8.

5.3.6 SA Section 10.7 Conservation Easements

Guidelines for the selection and acquisition of conservation easements will be considered in the acquisition of Interests in Lands to be purchased with Funds described in SA 10.1 through 10.3.

5.3.7 SA Section 10.8 Wildlife Habitat Management Plans

The 2021 Annual Plan fulfills PacifiCorp's obligations for the license's Article 403 and Settlement Agreement 10.8.3 and is provided in **Attachment H**. The plan details the terrestrial protection, mitigation, and enhancement measures to be implemented on PacifiCorp WHMP lands in the following year (i.e., January 1 to December 31, 2021).

5.3.8 SA Section 10.8.5.5 Mitigation for Impacts on Wildlife Habitat

Following consultation with the TCC, PacifiCorp received $5,931.23 for mitigation funding dollars for proposed adverse impacts to WHMP lands from PacifiCorp Transmission & Distribution (T&D) operations due to the Cowlitz PUD Interconnect Project. This fund also received $1,238.51 and $603.58 from the Washington Department of Natural Resources for

impacts from constructing temporary access roads across PacifiCorp lands in management units 11 and 16. Finally this fund received $1,190.57 for a judgment payoff from a property trespass. This fund does not accrue interest, which PacifiCorp will account for in a separate funding account, See Section 7.0, Funding. These funds were used in their entirety to create pollinator seed test plots along the transmission line ROW in 2019. These continue to be monitored and are discussed in more detail in **Attachment I** provides a copy of the *Lewis River Wildlife Habitat Management Plan 2020 Annual Report*. There are no impacts to WHMP lands in 2020, therefore no additional funds were received. The TCC will determine the impacts of proposed 2021 projects that may have potential impacts to WHMP and determine the appropriate mitigation for the impacts.

A detailed 2020 budget is provided in **Attachment I**.

5.4 Cowlitz PUD Terrestrial Measures Implemented in 2020

5.4.1 SA Section 10.6 Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]

Cowlitz PUD managed the Devil's Backbone Conservation Covenant to benefit bull trout.

5.4.2 SA Section 10.8.1 Development of the Wildlife Habitat Management Plan (WHMP)

Cowlitz PUD filed the Swift No. 2 WHMP with the FERC December 23, 2008 (https://www.pacificorp.com/energy/hydro/lewis-river/wildlife-recreation-shoreline.html). The FERC issued an Order Modifying and Approving the Habitat Management Plan March 31, 2009. The FERC's Order approved the WHMP and added the following requirements:

- file an Annual Habitat Management Report by April 30 of each year; and
- In the event changes are made to the WHMP, file these changes with the Commission and the TCC.

This Section 5.4 fulfills Cowlitz PUD's obligation to file the WHMP Annual Report.

5.4.3 SA Section 10.8.2 WHMP Fund

On December 26, 2019, Cowlitz PUD made $19,574 available for Year 12 2020 WHMP activities, ($23,473) in carry forward, and $0 in interest earned for a total of ($3,899). Table 2.1-1 in the March 17, 2020, Year 12 2020 WHMP Annual Plan included a list of proposed actions and estimated costs based on the 2020 budget. **Table 9** below illustrates the 2020 Budget, including estimated costs, year-end costs and the difference between the two. At year-end, ($13,650) remained in the budget, as itemized in **Table 10**. **Table 11** provides the WHMP Tracking Account summarizing the WHMP budget and expenditures for each year.

Table 9. Cowlitz PUD WHMP Year 12 2020 Budget.

WHMP Activity	2020 Budget	2020 Actual	Difference
Administration	$ 5,000	$ 0	$ 5,000
Annual inspection to monitor and manage public access	$ 0	$ 0	$ 0
Invasive plant surveys at high priority sites	$ 0	$ 0	$ 0
Invasive Species Control	$ 0	$ 0	$ 0
Devil's Backbone Patch Cut burning, seeding and roadwork	$ 17,801	$ 17,801	$ 0
Estimated cost of management activities	**$ 22,801**	**$ 17,801**	**$ 5,000**
Estimated amount remaining in 2020 Budget at year-end	($ 26,700)	($ 21,700)	$ 5, 000
Administration	$ 5,000	$ 0	$ 5,000
Annual inspection to monitor and manage public access	$ 0	$ 0	$ 0

Table 10. Cowlitz PUD WHMP Year 12 2020 Carry Forward

Carry Forward		Running Total
2020 Carry Forward	($ 21,700)	($ 13,650)

Table 11. Cowlitz PUD WHMP Tracking Account.

Year	Year Beginning Date	WHMP Beginning Balance	WHMP Annual Payment at Year Beginning	WHMP Beginning Balance + Annual Payment	Grants Received During Year	WHMP Funds Dispersed at Year-End	Year-End WHMP Funds Remaining	Interest Accrued Year-End WHMP Funds	WHMP Ending Balance	Year-End Date	WSJ Prime Rate Apr 1
1	26-Dec-2008	$ -	$ 16,321	$ 16,321		$ 18,855	$ (2,535)	$ -	$ (2,535)	26-Dec-2009	0.0325
2	26-Dec-2009	$ -	$ 16,659	$ 16,659		$ 18,230	$ (1,571)	$ -	$ (1,571)	26-Dec-2010	0.0325
3	26-Dec-2010	$ -	$ 16,773	$ 16,773		$ 12,822	$ 3,951	$ 128	$ 4,080	26-Dec-2011	0.0325
4	26-Dec-2011	$ 4,080	$ 16,959	$ 21,039		$ 7,949	$ 13,091	$ 425	$ 13,516	26-Dec-2012	0.0325
5	26-Dec-2012	$ 13,516	$ 17,408	$ 30,924		$ 31,094	($ 170)	$-	($ 170)	26 Dec-2013	0.0325
6	26 Dec-2013	$-	$ 17, 715	$ 17,715		$14,530	$3,185	$103	$3,288	26 Dec-2014	0.0325
7	26 Dec-2014	$ 3,288	$ 17,971	$ 21, 259		$ 7,078	$ 14,181	$ 461	$ 14,642	26 Dec-2015	0.0325
8	26 Dec-2015	$ 14,462	$ 18,214	$ 32, 856		$4,762	$28,094	$983	$29,077	26 Dec-2016	0.0350
9	26 Dec-2016	$ 29,077	$18,488	$47,565		$8,033	$39,532	$1,581	$41,114	26 Dec-2017	0.04
10	26 Dec-2017	$41,144	$18,814	$59,928		$18,153	$41,775	$1,984	$43,759	26 Dec-2018	0.0475
11	26 Dec-2018	$43,759	$19,158	$62,917	$13,735	$100,125	$ (23,473)	$ -	$ (23,473)	26 Dec-2019	0.055
12	26 Dec-2019	$ (23,473)	$19,574	$ (3,899)	$8,050	$17,801	$ (13,650)	$ -	$ (13,650)	26 Dec-2020	
13	26 Dec-2020	$ (13,650)	$19,900	$6,250							

In 2020, Cowlitz PUD completed the 2020 WHMP Annual Report without charge as an in-kind service. On December 26, 2020, the WHMP fund included a deficit of $13,650 in funds, which generated $0 interest. On December 26, 2020, Cowlitz PUD made $19,900 available for the Year 13 2021 WHMP activities. Therefore, the total available for the Year 13 2021 WHMP is $6,250.

5.4.4 SA Section 10.8.3 Management of the Plan [Implementation of the Annual Plan]

After consultation with the TCC, Cowlitz PUD filed the Swift No. 2 Year 12 2020 WHMP Annual Plan with the FERC March 17, 2020. Specific wildlife management activities implemented under the Year 12 2020 Annual Plan are described in the following sections.

5.4.4.1 Invasive Plant Surveys

In 2020, Cowlitz PUD completed the 5.8-acre patch cut in Devil's Backbone MU (DBMU-2), finishing the burning of stumps and slash, roadwork and seeding. The forage seed mix specifications are listed below. The patch cut was implemented in accordance with Forestland Management SOPs outlined in Section 5.7 of the WHMP, and in accordance with Invasive Plant Management SOPs (Section 5.8) and Raptor Management SOPs (Section 5.9).

	Common Name	**% by weight**
Lolium multiflorium tetraploid var tetrastar	Annual Ryegrass	15.00%
Lolium perenne tetraploid var Albion	Albion Perennial Ryegrass	25.00%
Dactylis glomerata var. Quick draw	Orchardgrass	20.00%
Trifolium incarnatum	Crimson clover	10.00%
Trifolium repens var Domino	Domino White Clover	10.00%
Trifolium repens var. Ladino	Ladino White Clover	10.00%
Sanguisorba minor	Small Burnet	10.00%

On January 28, 2019, Cowlitz PUD received approval from Rocky Mountain Elk Foundation for funding at the $13,735 level to fund stump-pulling, scarification, forage seeding and burning stumps/slash. In 2020, RMEF provided $8,050 in cost reimbursement. The remaining $5,685 cost reimbursement will be received in 2021.

The 5.8-acre patch cut is illustrated in **Figure 4, 5 and 6.**

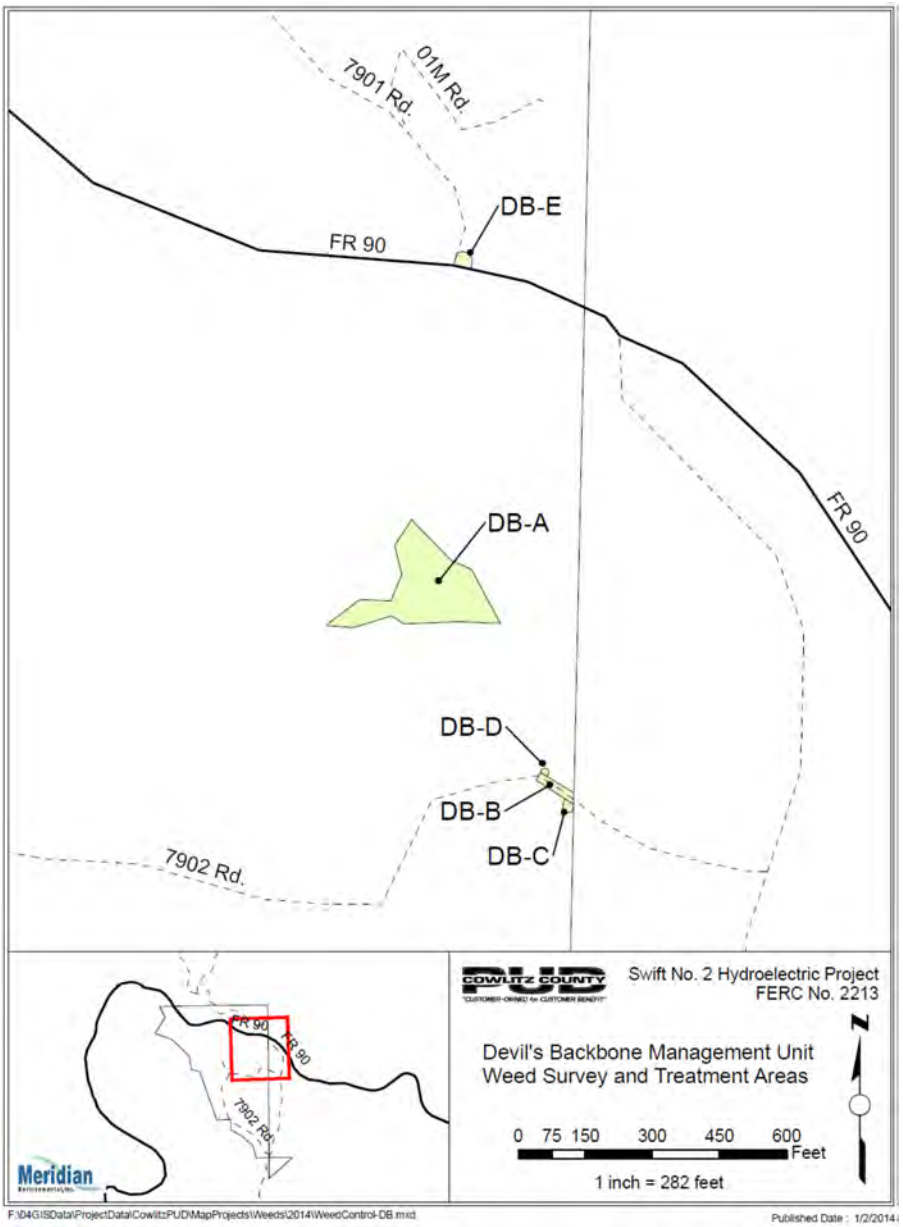

Figure 4. Devil's Backbone Management Unit Weed Survey and Treatment Areas

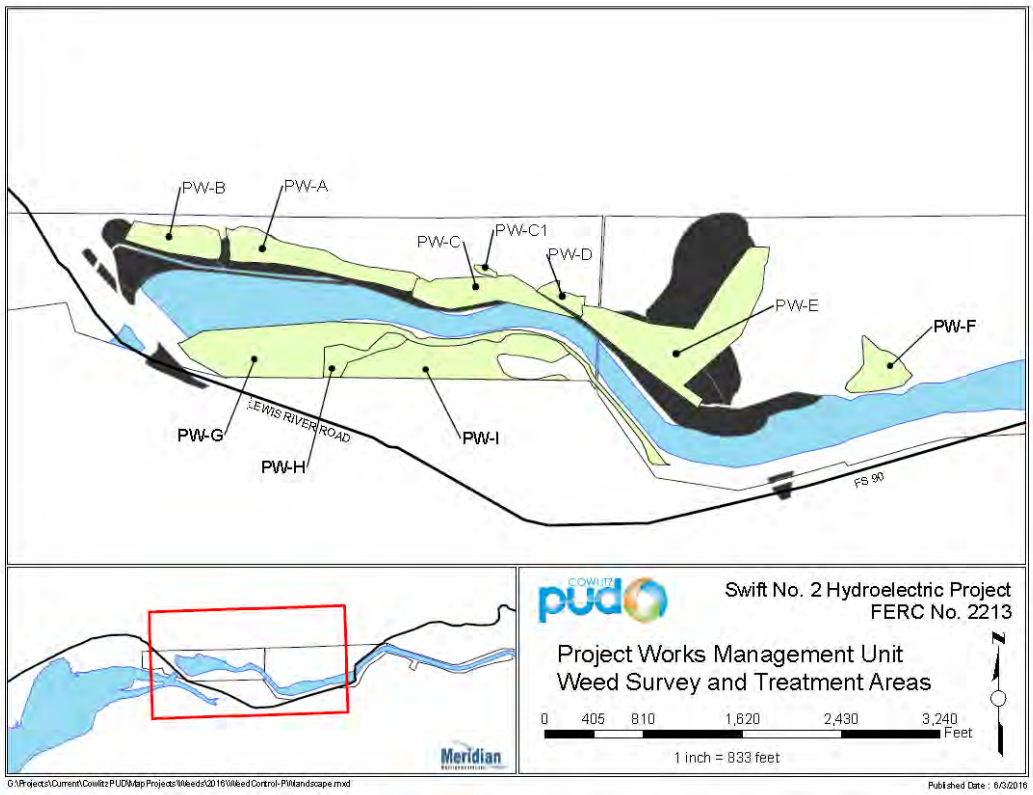

Figure 5. Project Works Management Unit Weed Survey and Treatment Areas

Updated noxious weed lists are obtained annually from the Cowlitz County and Washington State noxious weed control boards (Skamania County follows the state listings). The current classifications of target weed species observed in the Swift No. 2 Wildlife Management Area (WMA) as of 2018 are shown in **Table 12** below. Weeds shown in bold are species Cowlitz County has selected as high priorities for control.

Class B Weeds: Non-native species presently limited to portions of the State. Species are designated for control in regions where they are not yet widespread. Preventing new infestations in these areas is a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal.

Class C Weeds: These are noxious weeds typically widespread in WA State or are of special interest to the state's agricultural industry. The Class C status allows counties to require control if locally desired.

Table 12. Non-native invasive plants classified as noxious weeds in Cowlitz or Skamania County that have been observed in the Swift No. 2 WMA as of 2018.

Common Name (*Scientific Name*)	Cowlitz County	Skamania County (Washington State)
Bull thistle (*Cirsium vulgare*)	C	C
Canada thistle (*Cirsium arvense*)	**C**	**C**
Common catsear (*Hypochaeris radicata*)	---	C
Common groundsel *(Senecio vulgaris)*	C	C
Common St. Johnswort (*Hypericum perforatum*)	C	C
Evergreen blackberry (*Rubus laciniatus*)	C	C
Himalayan blackberry (*Rubus armeniacus*)	C	C
Oxeye daisy (*Leucanthemum vulgare*)	C	C
Perennial sowthistle (*Sonchus arvensis ssp. arvensis*)	---	C
Robert's geranium (*Geranium robertianum*)	**B**	**B**
Scentless mayweed (*Matricaria perforata*)	C	C
Scotch broom (*Cytisus scoparius*)	**B**	**B**
Tansy ragwort (*Senecio jacobaea*)	**B**	**B**

Other non-native invasive species that are not classified in either county as noxious weeds are also recorded when observed. These include foxglove (*Digitalis purpurea*), self-heal (*Prunella vulgaris*), brackenfern (*Pteridium aquilinum*), and common dandelion (*Taraxacum officinale*).

5.4.4.1.1 Initial Invasive Plant Surveys

Meridian Environmental, Inc. (Meridian) completed initial invasive plant surveys in all high priority areas of the Devil's Backbone MU in 2009. These areas are shown in **Figure 4,** above.

Meridian completed initial invasive plant surveys of high priority areas in the Project Works MU in 2013. These areas are shown in **Figure 5**.

5.4.4.1.2 Invasive Plant Species Follow-up Surveys

Meridian did not conduct follow-up surveys in 2020, as the TCC collectively decided to spend 2020 funds on the 5.8-acre Devil's Backbone Patch Cut.

5.4.4.2 Invasive Plant Species Control

In March 2020, Cowlitz PUD signed a 1-year interlocal agreement (with an option for 3 additional years) with Skamania County to perform weed control in the WMA.

No weed control treatments were completed in 2020.

5.4.4.3 PWMU-PUB Wetland Restoration

During a heavy rain event in January 2009, a landslide buried the PWMU-PUB wetland in mud and large woody debris. The following summer, Cowlitz PUD re-contoured the wetland, reseeded the area, and planted willow (*Salix spp.*) stakes. Crews planted additional willow and red osier dogwood (*Cornus sericia*) stakes and rooted stock of several species in 2010 to further

increase the species and structural diversity of wildlife habitat around the wetland. No survey was completed in 2020.

5.4.4.4 Devil's Backbone Forest Management

The Timber Management Fund was expended in 2020.

5.4.4.4.1 Devil's Backbone Elk Forage Plot

In 2020, Cowlitz PUD completed the 5.8-acre patch cut in Devil's Backbone MU (DBMU-2), finishing the burning of stumps and slash, roadwork and seeding . The patch cut was implemented in accordance with Forestland Management SOPs outlined in Section 5.7 of the WHMP, and in accordance with Invasive Plant Management SOPs (Section 5.8) and Raptor Management SOPs (Section 5.9).

On January 28, 2019, Cowlitz PUD received approval from Rocky Mountain Elk Foundation for funding at the $13,735 level to fund stump-pulling, scarification, forage seeding and burning stumps/slash. In 2020, RMEF provided $8,050 in cost reimbursement. The remaining $5,685 cost reimbursement will be received in 2021.

The 5.8-acre patch cut is illustrated in **Figure 4, 5 and 6.**

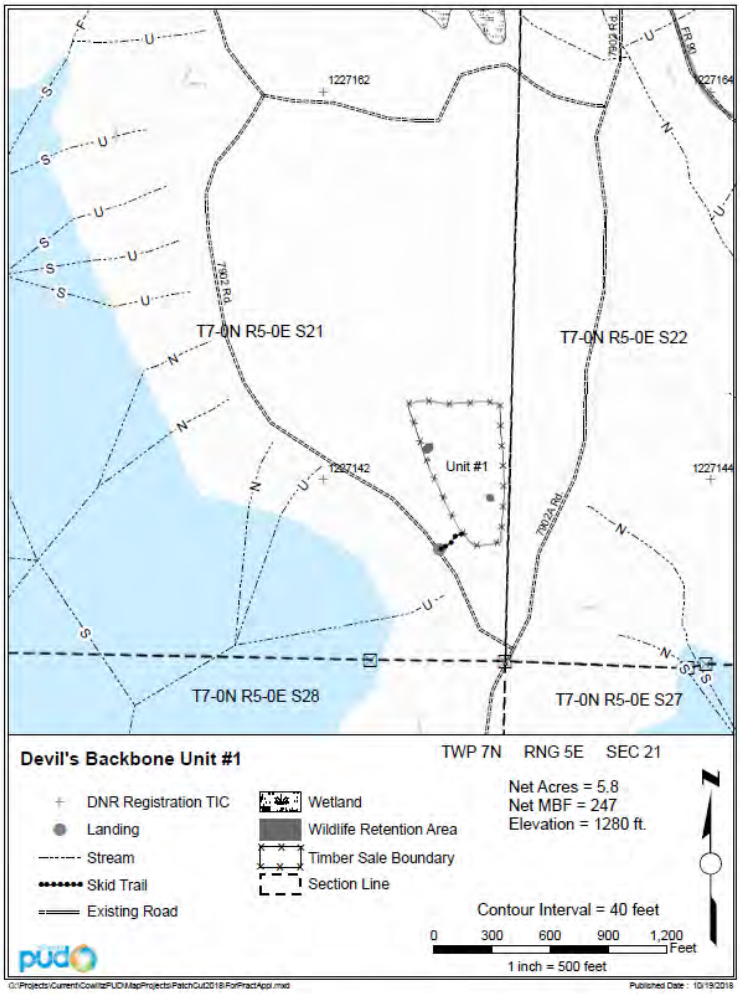

Figure 6. Devil's Backbone Elk Forage Plot

Figure 7. Stump and slash burning, November 2020.

Figure 8. Completed 5.8-acre Elk Forage Plot, December 2020

5.4.4.5 Public Access Monitoring

Public access surveys are conducted concurrently with invasive plant species surveys but were not completed in 2020. The purpose of the surveys is to document the condition of roads,

gates, and signs; evidence of authorized (i.e., non-motorized) or unauthorized (i.e., motorized) public access; and screening between the roads and adjacent habitat. The surveys included roads that lead into the Devil's Backbone MU and the Project Works MU maintenance road, shown in **Figures 4 and 5**, respectively.

Devil's Backbone MU
The Devil's Backbone MU public access surveys are conducted concurrently with invasive plant species surveys but were not completed in 2020.

Project Works MU
The Project Works MU maintenance road was not inspected in 2020, but weekly dam safety inspection is completed, and any issues are reported to management.

5.4.4.6 Fisher Candidate Conservation Agreement with Assurances
On May 6, 2016 Cowlitz PUD received confirmation from the Washington Department of Fish and Wildlife of enrollment of the Devil's Backbone and Project Works MU lands in the Candidate Conservation Agreement with Assurances (CCAA) for the Fisher in the State of Washington. This agreement is designed to promote fisher conservation while also addressing concerns about future regulatory restrictions if fishers were to ever become a listed species under the federal Endangered Species Act (ESA). As an enrolled landowner, Cowlitz PUD is entitled to regulatory assurances against future land-use restrictions on its enrolled lands.

5.4.5 SA Section 10.8.4 Habitat Evaluation Procedures
Implementation scheduled for 2025 (Year 17) of the Swift No. 2 License.

5.4.6 SA Section 10.8.4.2 Review of Effectiveness of WHMP
Implementation scheduled for 2025 (Year 17) of the Swift No. 2 License.

5.4.7 SA Section 10.8.3 Cowlitz PUD 2021 Annual Plan
Cowlitz PUD will begin preparation of the 2021 WHMP Annual Plan in January 2021.

5.5 Cowlitz PUD Terrestrial 2021 Annual Plan

5.5.1 SA Section 10.6 Cowlitz PUD Completed Implementation: Advance Purchases [Devil's Backbone Conservation Covenant]
These lands will be managed under the WHMP.

5.5.2 SA Section 10.8.1 Cowlitz PUD Development of the Wildlife Habitat Management Plan (WHMP)
The WHMP will be implemented via the 2020 Annual Plan upon the FERC approval.

5.5.3 SA Section 10.8.2 Cowlitz PUD WHMP Fund
The carry forward, interest, and the Year 13 2020 annual funding amount will be available in 2021. Cowlitz PUD will make approximately $20,497 available for WHMP activities December 26, 2021.

5.5.4 SA Section 10.8.3 Management of the Plan [Annual Plan]

Following consultation with the TCC, Cowlitz PUD will file the 2021 Annual Plan with the FERC. Upon the FERC approval, Cowlitz PUD will implement the 2021 Annual Plan.

6.0 Law Enforcement

6.1 SA Section 13.2.1 Law Enforcement

Throughout the year the Lewis River Basin was patrolled by a full time Washington Department of Fish and Wildlife officer, a part time Skamania County Deputy (May through October) and a full time Cowlitz County Deputy. During some periods, additional patrols were provided by other officers. For these officers the focus is protection of fish and wildlife, cultural resources, and public safety and security.

The following table presents the WDFW Fish and Wildlife Police actions taken during January through December 2020 toward fish and wildlife law enforcement requirements in the Lewis River Settlement Agreement:

Table 13. WDFW Actions taken 2020 (All fishing)

Incident Type	Total
COL. RIVER SALMON/STEELHEAD STAMP	1
ESA - COL. RIVER SALMON/STEELHEAD STAMP	59
ESA/PROTECTED SPECIES VIOLATION	3
FRESHWATER FISH VIOLATION	17
Grand Total	**80**

Table 14. WDFW Actions taken 2020 (Non-fishing related)

Count of IRF's	
Incident Type	**Total**
ASSIST OTHER AGENCY	1
BIG GAME VIOLATION	3
BOATING SAFETY INSP./VIOLATION	11
DANGEROUS WILDLIFE REPORT	1
DISCOVER PASS/ACCESS PASS VIOLATION	1
GENERAL AUTHORITY INVESTIGATION	1
HPA INVESTIGATION - NON-PERMITTED	1
TRAFFIC INCIDENT/VIOLATION	9
Grand Total	**28**

The following table presents the WDFW Fish and Wildlife Police charges/citations during January through December 2020 toward fish and wildlife law enforcement requirements in the Lewis River Settlement Agreement:

Table 15. WDFW Charges/Citations 2020 (fishing related)

Count of Charges	Violation Type			
Incident Type	**Criminal Nontraffic**	**Infraction Nontraffic**	**Infraction Traffic**	**Grand Total**
COL. RIVER SALMON/STEELHEAD STAMP		2		2
ESA - COL. RIVER SALMON/STEELHEAD STAMP	25	98		123
ESA/PROTECTED SPECIES VIOLATION	2	5		7
FRESHWATER FISH VIOLATION	4	18	1	23
Grand Total	**31**	**123**	**1**	**155**

Table 16. WDFW Charges/Citations 2020 (Non-fishing related)

	Violation Type				
Incident Type	**Criminal Nontraffic**	**Criminal Traffic**	**Infraction Nontraffic**	**Infraction Traffic**	**Grand Total**
BIG GAME VIOLATION	2				2
BOATING SAFETY INSP./VIOLATION			11		11
DISCOVER PASS/ACCESS PASS VIOLATION			1		1
TRAFFIC INCIDENT/VIOLATION		6		8	14
Grand Total	**2**	**6**	**12**	**8**	**28**

The following table represents WDFW Fish and Wildlife Police arrests/bookings during January through December 2020 toward Fish and Wildlife law enforcement requirements in the Lewis River Settlement Agreement:

Table 17. WDFW Arrests/Bookings 2020

Sum of Charge Count	
Incident Type	**Total**
ESA - COL. RIVER SALMON/STEELHEAD STAMP	1
Grand Total	**1**

7.0 FUNDING

This section presents an accounting to date of the funding obligations for the Lewis River Settlement Agreement section 7.5.

2020 ACC & TCC Year-end Accounting

Lewis River License Implementation

Lewis River LWD Fund - Haul
Section 7.1.1

Funding Start Date: 12/26/08
Unspent balance in any year shall be carried forward

Totals:	$ 28,000.00	$ (27,656.58)	$ 343.42	
Release Date	**Funds Received**	**Funds Dispersed**	**Balance**	**Notes**
4/30/20	$ 2,000.00		$ 6,013.42	7.1.1 Large Woody Debris Program, ILR-LWD
8/19/20		$ (5,670.00)	$ 343.42	Habitat Logs; Fish First and LKE Corp

Lewis River License Implementation

Lewis River LWD Fund - Resource
Section 7.1.1

Funding Start Date: 12/26/08
Unspent balance in any year shall be carried forward

Totals:	$ 130,000.00	$ (18,500.00)	$ 111,500.00	
Release Date	**Funds Received**	**Funds Dispersed**	**Balance**	**Notes**
12/26/20	$ 10,000.00	$ -	$ 111,500.00	7.1.1 Large Woody Debris Program, ILR-LWD

Lewis River License Implementation

Lewis River Aquatics Fund - Resource Projects
Sections 7.5, 7.5.1, 7.5.3.1, & 7.7

Totals:	$ 4,606,062.37	$ (2,404,281.00)	$ 850,574.34	$ 3,052,355.71	
Release Date	**Funds Received**	**Expense**	**Interest**	**Balance**	
04/30/20	$ 306,706.48	$ -	$ 37,369.73	**$ 3,158,481.23**	
12/01/20	$ -	$ (175,000.00)	$ -	**$ 2,983,481.23**	2020 WDFW Eagle Island Chum Spawn
12/31/20	$ -	$ -	$ 68,874.48	**$ 3,052,355.71**	
		$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
		Total Spent to Date:	$ (2,404,281.00)		
		Balance Remaining:	$ 3,052,355.71		

Lewis River License Implementation

Lewis River Aquatics Fund - Bull Trout
Sections 7.5, 7.5.1, 7.5.3, 7.5.3.1, & 7.7

Funding Start Date: 4/30/05

Totals:	$ 710,489.80	$ (234,547.92)	$ 358,963.95	$ 834,905.83	
Release Date	**Funds Received**	**Expense**	**Interest**	**Balance**	**Notes**
4/30/20	$ -	$ -	$ 10,697.80	**$ 816,962.35**	
12/31/20	$ -	$ -	$ 17,943.48	**$ 834,905.83**	
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
	$ -	$ -	$ -		
		Total Spent to Date:		$ (234,547.92)	
		Balance Remaining:		$ 834,905.83	

Lewis River License Implementation

Additional Matching Funds
Section 10.3.3

Funding Start Date: 2/25/2017

Release Date	Funds Received	Expense		Notes
4/15/13	$ 15,000.00			
5/15/13	$ 15,000.00			
10/15/14	$ -	$ (30,000.00)		
2/25/17	$ 16,500.00			WO #337499 - WDFW Eagle Island
2/25/17	$ -	$ (16,500.00)		WO #337499 - WDFW Eagle Island
3/27/18	$ 20,091.00			WO # ILR-RMEFFUND RMEF Grant Funds
4/18/18	$ 20,093.00			WO # ILR-RMEFFUND PacifiCorp matching funds for RMEF project
11/1/18	$ -	$ (38,078.25)		2017 Marble Mountain Forage Enrichment and Effectiveness Monitoring
12/31/19	$ -	$ (13,735.00)		Devil's backbone; RMEF matching funds
12/31/20	$ -			No contributions or expenditures in 2020
				All matching funds provided by PacifiCorp are not to exceed $100,000 per
				year, and not to exceed $500,000 in any ten consecutive years.

Lewis River License Implementation

Lewis River WHMP Fund (Conservation Easement Lands)
Section 10.8.2

Funding Start Date: 12/26/08

Contributions in 2003 dollars, Adjusted for Inflation

Totals:	$ 2,993.44	$ (2,993.44)	$ -	
Release Date	**Funds Received**	**Funds Expended**	**Balance**	**Notes**
2/1/20	$ 295.30	$ -	$ 295.30	8.2 WHMP Fund: 16 acres owned in conservation easement, adjusted for inflation
12/31/20	$ -	$ (295.30)	$ -	Expenditure for 2020
	$ -	$ -		

Lewis River License Implementation

Lewis River WHMP Fund (Fee Simple Lands)
Section 10.8.2

Funding Start Date: 12/26/08
Contributions in 2003 dollars, Adjusted for inflation

Totals:	$ 5,273,922.73	$ (5,447,658.66)	$ 187,823.86	$ 14,087.93	
Release Date	**Funds Received**	**Expense**	**Interest**	**Balance**	**Notes**
1/1/20	$ 569,114.85	$ -		$ 488,076.85	
12/31/20	$ -	$ (498,992.78)	$ 25,003.86	$ 14,087.93	As of 6/11/2020, current WHP acreage total is 15,798; ANE 640 acre land purchase
	$ -	$ -	$ -		

Lewis River License Implementation

Swift No. 1 & Swift No. 2 Land and Habitat Protection Fund
Section 10.2, 10.2.1

Totals:	$ 9,103,356.37	$ (10,054,970.43)	$ 980,771.00	$ 29,156.94	
Release Date	**Funds Received**	**Expense**	**Interest**	**Balance**	**Notes**
12/31/19	$ -	$ -	$ 105,393.00	$ 2,121,357.68	Settlement Agreement contribution, adjusted for inflation
3/24/20	$ -	$ (84,000.00)		$ 2,037,357.68	Ernest money to Ticor title for ANE purchase
6/10/20	$ -	$ (2,017,856.59)	$ 32,795.00	$ 52,296.09	Property purchase, 640 acres to include $1856.59 escrow/title costs
6/11/20	$ -	$ (3,200.00)	$ -	$ 49,096.09	2019 Timber appraisal
6/11/20	$ -	$ (4,910.65)	$ -	$ 44,185.44	2019 ESA Phase I
6/11/20	$ -	$ (3,498.50)	$ -	$ 40,686.94	2019 ESA Phase I, updated
6/11/20	$ -	$ (1,530.00)	$ -	$ 39,156.94	2020 Desktop survey; title encumbrances
6/11/20	$ -	$ (10,000.00)	$ -	$ 29,156.94	2019 Land appraisal
12/31/20	$ -	$ -	$ -	$ 29,156.94	

Lewis River License Implementation

Mitigation for Impacts on Wildlife
Section 10.8.5.5

Funding Start Date: 11/1/2016
WO ILR-IMPWILD

Totals:	$ 19,135.89	$ (19,135.89)	$ -	$ -	
Release Date	**Funds Received**	**Expense**	**Interest**	**Balance**	**Notes**
12/31/20	$ -	$ -	$ -	$ -	No contributions or expenditures in 2020
	$ -	$ -	$ -		

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Attachment A
ACC / TCC Comments

Attachment A

WDFW Comment Response Table

Draft 2020 Annual Report Annual Summary of License Implementation and Compliance: Aquatic and Terrestrial Resources and Attachments

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
2020 Annual Report			
1.1.1	Lewis River Settlement Agreement	Pg 8	*On November 30, 2004, (Effective Date) 26 Parties (including two Licensees, five federal agencies, two state agencies, eight local/county agencies, two tribes, two citizens-at-large, and five non-governmental organizations) signed the Lewis River Settlement Agreement (PacifiCorp and Cowlitz PUD 2004). In December 2004, the Licensees filed with the FERC the SA along with a Joint Explanatory Statement and Supplemental Preliminary Draft Environmental Assessment (PacifiCorp and Cowlitz PUD 2004).*
8.0	Literature Cited	Pg 76	(PacifiCorp and Cowlitz PUD 2004) references two separate citations in the above paragraph. These citations here and in Literature Cited should have an a and b so that you can distinguish between the two. Citations corrected to reflect a & b in Section 1.1.1 and 8.0.
1.1.2	Environmental Impact Statement	Pg 8	*The FERC released the Final Environmental Impact Statement for the Lewis River Hydroelectric Projects March 24, 2006.* Please add a citation here as well as in Literature Cited. Suggest citing all reference documents for consistency. The Final EIS is in the text on pg 9. Please add citation unless other documents with citations are not cited when they are reference after the first citation. Cited in section 1.1.2 and 8.0
1.1.3	Agency Terms and Conditions	Pg 8	*The USFS submitted modified Terms and Conditions in November 2005 (USDA FS 2005). The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) filed fishway prescriptions February 22, 2006 and February 14, 2006, respectively.* Please add (USDA FS 2005) to Literature Cited. Please add citation for USFWS and NMFS here and Literature Cited Added citations in sections 1.1.3 and 8.0

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
1.1.4	Endangered Species Act Consultations	Pg 9	*On September 15, 2006, the USFWS issued a Biological Opinion covering bull trout, northern spotted owls and bald eagles. The National Marine Fisheries Service issued its Biological Opinion covering their respective listed species August 27, 2007.* Please add citations for both USFWS BiOp and NMFS BiOp here and in Literature Cited. Added citations in section 1.1.4 and section 8.0.
1.1.6	New FERC Licenses	Pg 10	*Each license includes the respective conditions of the Services biological opinions and respective conditions of the Washington Department of Ecology 401 certificates.* If the licenses also incorporate *The USFS submitted modified Terms and Conditions in November 2005 (USDA FS 2005)*, please add it here. Added language noting the licenses include US Forest Service 4(e) conditions.
1.1.7	2020 Annual Report and Consultation	Pg 10	*The following Plans and Reports were completed in 2020:* • *Aquatics Fund Projects Annual Report – April 2021* Please clarify if the list is reports "completed in 2020" or if the list is reports for *work* completed in 2020. In addition, please check the year for Aquatics Fund report. If the list is referencing reports completed in 2020 the year would likely be 2020. If the list is referencing reports for work completed in 2020, then will we get the Aquatics Fund Report before this report is filed? If not, please note in the text that the AF report is filed after this report is filed with FERC. The other reports listed are attachments to this report. Clarification added on page 10.
2.1	ACC and TCC Membership	Pg 17 – Table 2. Representatives and Alternates for Membership on the TCC	[5] *As of December 31, 2020 Erik White was appointed as a primary TCC representative in place of Nathan Reynolds who resigned from the Cowlitz Indian Tribe.* To be consistent with the ACC table changes, please consider making the above change to the TCC table. Document modified to note that Erik White is the TCC member for the Cowlitz Indian Tribe.
3.1.1	ACC Meetings and Conference	Pg 18	Process decisions for the implementation of the Aquatic Fund are included in the major items discussed list, however decisions to fund or not fund projects for the 2019/2020 grant round are not. Please consider adding that these decisions were made at the appropriate meeting date. Decisions are captured in the Aquatic Fund Annual Report and posted to the Lewis River webpage and filed with the FERC annually.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
	Calls: Overview		
3.2.1	SA Section 4.1 Common Provisions Regarding Fish Collection and Transport Facilities	Pg 20 Studies to Inform Design Decisions (SA 4.1.1)	*PacifiCorp has completed the Merwin Tailrace Fish Behavior study to provide information that could assist the planning and design of the Merwin Upstream Collection and Transport Facility. The study plan was developed in coordination with the ACC and was finalized as a revised document June 30, 2005. In 2005 through 2006, the study was conducted, and a final report was issued in February 2007.* Please cite the final February 2007 Merwin Tailrace Fish Behavior report here or annual report containing the report as an attachment and add to the Literature Cited so the reader can find the report. *Added web link in Annual Report to the Tailrace document.* Please cite historical final study reports, current Plans and other major documents throughout. Other suggested documents to be considered for citation • memorandum outlining the proposed steps for moving forward with the Merwin Trap (pg 21) The technical memorandum has yet to be finalized with the ACC as information is still being gathered. The narrative provided in Section 3.2.1 of the Annual Report on page 21 does provide a generalized overview of the steps and timeline for moving forward as of December 2020. • supporting Engineering Study (Report No. RES 3000028924) (pg 22) Citation added. • Merwin Upstream Collection and Transport Facility…100 percent design report was submitted to the FERC December 23, 2009 (pg 22) Citation added. Note: document was filed under CEII to the Federal Energy Regulatory Commission and is not available for public viewing. • Biological Opinion from NOAA Fisheries was submitted to the FERC February 3, 2015 (pg 25) Added link • Bull Trout Limiting Factors Analysis final report May 2007 (pg 28) Added link • 2006, Spawning Gravel Report (pg 32) Added link

			• summary gravel movement report December 20, 2007 (pg 32) Citation added. • final report update and recommendations (gravel movement) January 2009 (pg 33) Edits made and citation added • final H&S Plan to the FERC on December 29, 2020 (pg37) Added link • Monitoring and Evaluation Plan dated April 3, 2017 (pg 37) Added link • Water Quality Management Plan submitted in July 2013 (pg 45) Added link

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
			• Lewis River Temperature and Dissolved Oxygen Water Quality Attainment Plan (TDOWQAP). (pg 51) Added link • Water Quality Model Report in March 2015 (pg 51) Citation added • Lake Merwin Canyon (Yale Tailrace) Water Quality Attainment Plan (pg 52) Citation added • Merwin Spill TDG Attainment Plan pg 52) Citation added • Swift Spill TDG Attainment Plan (pg 52) Citation added • Lewis River Project Temperature Model report (pg 52) Citation added • Cowlitz PUD developed a Water Quality Management Plan, dated January 23, 2013 (pg 55) Citation added • PacifiCorp completed the WHMP and submitted it to the FERC December 23, 2008 (pg 60) Added link • Cowlitz PUD filed the Swift No. 2 WHMP with the FERC December 23, 2008. (61) Added link
3.2.3	SA Section 4.3 Merwin Upstream Collection and Transport Facility	Pg 22	Please include a brief summary of work performed and designs prepared for improvements on the Merwin upstream collection facility since potential future major and minor repair is addressed in section 3.3.2. (pg 40) Additional information now included
3.2.4	SA Section 4.4	Pg 25 Modular Surface	*An additional 1,041 hatchery rainbow trout were collected and passed downstream of Merwin Dam during the peak out migration season when subsampling was*

	Downstream Transport at Swift No. 1 Dam	Collector (SA 4.4.1)	*occurring (March-July).* Please add if the 1,041 hatchery rainbow trout is an estimate or if this is the number captured in the subsample. Changed text to reflect the estimated total of trout sent downstream
3.2.5 – 3.2.8 3.2.10		Pg 26 Pg 27	Please consider adding year in parentheses after 13th anniversary and 17th Anniversary. Added requested text.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
3.2.9	SA Section 4.9.1 Interim Bull Trout Collection and Transport Programs	Pg 26	*For Methods, Materials, and Results concerning number of bull trout captured and transported during 2019 Yale Tailrace activities as well as pertinent biological information of individual bull trout captures, please see the Bull Trout 2019 Annual Operations Report, which is an appendix to the Lewis River Monitoring and Evaluation Program 2019 Annual Report (Attachment D).* Please verify that this should be the 2019 Annual Report and not the 2020 Annual Report. Corrected to read 2020 Annual Report.
3.2.9	SA Section 4.9.1 Interim Bull Trout Collection and Transport Programs	Pg 27 Investigation of Alternative Collection Methods (SA 4.9.2)	*PacifiCorp continues to consider more effective and less intrusive methods to collect bull trout from the Yale tailrace until capital improvements and future fish passage is implemented prior to 2023.* Please clarify in the text what "…capital improvements and future fish passage is implemented prior to 2023" is referring to. Text has been revised to clarify.
3.2.11	SA Section 5.1 Yale Spillway Modifications	Pg 27	*PacifiCorp has nearly completed installation of a spillway barrier net.* This should be changed to PacifiCorp has completed installation of a spillway barrier net given the net was completed October 15, 2013. Requested edit incorporated into the report.
3.2.15	SA Section 5.5 Bull Trout Limiting Factors Analysis	Pg 28	*The report describes three potential streams that could support bull trout if improvements were made to the habitat.* Please list in the text the three potential streams. Information added to the text.

3.2.17	SA Section 5.7 Public Information Program to Protect Bull Trout	Pg 28	*As of July 2018, Figure 1 content was updated.* Please consider clarifying or rewording this sentence. It could be interpreted that Figure 1 is pre 2018 signs that have since been updated. It could also be interpreted as Figure 1 reflects the July 2018 updates. Modified to read, Figure 1 reflects July 2018 updates.
3.2.18	SA Section 6.1 Flow	Pg 30	End of October beginning of November graphed flow is below minimum flow. It is near the time of the November 5th flow measurement. There is not a good Clarifying text has been added to Section 3.2.18 of the report.
	Releases in the Bypass Reach: Upper Release and Constructed Channel	Upper Release Point (SA 6.1.2) Figure 2. Daily Minimum Release flows from January 1, 2020 to December 28, 2020.	connection between the text and the figure. Please provide additional text to connect the potential exceedance with the flow measurement such as …measurements at the spill gate on (days) indicate flow in the bypass reach was below the minimum flow threshold as shown on Figure 2 however manual instream measurements revealed minimum flow was being met. Clarifying text has been added to Section 3.2.18 of the report.
3.2.19	SA Section 6.2 Flow Fluctuations, Ramp Rates below Merwin Dam and Plateau Operations at Merwin Dam	Pg 31	*On July 13, 2020 streamflow and ramp rate deviations were measured at the U.S. Geological Survey's (USGS) Arial Gage No. 14220500. The hourly average flow and ramp rate, as measured at 16:00 hours, was 1,895 cfs and 0.31 feet per hour, respectively.* Please indicate if this exceedance was reported to FERC and the response from FERC. If not indicate why you didn't need to report it to FERC. The exceedance was reported to FERC by letter dated July 20, 2020. Clarifying text has been added to the report.
3.2.20	SA Section 7.1 Large Woody Debris Program	Pg 32	*The entire $6,013.42 was used in 2020* *7.0 FUNDING Table Lewis River LWD Fund – Haul Section 7.1.1* indicates there is $343.42 left in the fund at the end of 2020. Please check for accuracy. Corrected text to reflect correct remaining balance of $343.42
3.2.24	SA Section 7.5 Aquatics Fund	Pg 33	*The total amount available was $3,158,483.23 for Resource Projects and $816,962.35 (see Section 7.0).* Please provide what type of projects may be funded with the $816,962.35. It appears to be for bull trout projects. Added the following text:"… and $816,962.35 for projects designed to benefit bull trout as determined by USFWS." In addition, the SA indicates "PacifiCorp shall contribute $10,000 to the Aquatics Fund

			(Section 7.5) that will be earmarked for LWD projects. These funds ($111,500) should either be accounted for here or 3.2.20 SA Section 7.1 Large Woody Debris Program. Added the following text in Section 3.2.24, "In addition, PacifiCorp contributed $10,000 to the Aquatics Fund that is earmarked for LWD projects in the mainstem of the Lewis River below Merwin Dam that benefit anadromous fish. The total amount available as of December 31, 2020 is $111,500 (see Section 7.0)"
3.2.25	SA Section 7.6 In Lieu Fund	Pg 34	*On February 5, 2020, the Utilities provided draft license amendment application documents to representatives of the Lewis River Settlement Agreement and the*
			ACC for a 90-day review. Comments received from the settlement parties will be addressed in application documents submitted to the Commission; and *Comments received will be submitted to the Commission with the license amendment applications as part of the consultation record.* The Applications for Non-Capacity Amendment of License were submitted July 2, 2020 and within the annual report reporting period, so these statements should be past tense. Corrected text to reflect past tense.
3.2.25	SA Section 7.6 In Lieu Fund	Pg 35	*On June 10, 2020, during the monthly ACC meeting, the Committee again discussed the* The remaining portion of the paragraph is missing. Added missing text.
3.2.25	SA Section 7.6 In Lieu Fund	Pg 36	*On September 2, 2020, the Services filed letters with FERC requesting additional information beyond that contained in the draft Biological Assessment (BA) developed by the Utilities as a part of the Endangered Species Action Section 7 consultation process. On October 7, 2020, the Utilities responded to the Services' letters, and indicating the Utilities' willingness to meet with the Services to discuss their additional information needs.* To maintain consistency, please make this paragraph two separate paragraphs, one for each date. Corrected.
3.2.26	SA Section 7.7 Management of Aquatics Fund and In Lieu Fund	Pg 36	*At the end of 2020, PacifiCorp's total available fund amount was $3,052,355.71 for Resource Projects and $834,905.83 for Bull Trout Projects.* SA 7.7 references 7.5 and 7.6. The funds for LWD projects ($111,500) should also be included here. Clarification provided.

3.2.27	SA Section 7.8 Execution of Projects and Mitigation Measures	Pg 36	Please include information regarding Aquatic Fund proposal decisions made in 2020 for draft proposals submitted in 2019. No change. Outcome of aquatic fund cycle is captured in an annual report filed with the FERC by April 15th of each year.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
3.2.29	SA Section 8.2 Hatchery and Supplementation Plan and Report	Pg 37	*The Aquatic and Technical Subgroup completed the 2020 Annual Operations Plan in February 2020 (Attachment C-1)* WDFW encourages that the H&S Annual Operations Plan be submitted the year the plan is implemented, similar to the timing of the WHMP Plan and the Bull Trout Plan. Ideally the 2021 H&S Annual Operations Plan would have been submitted with this report and the 2022 AOP submitted with the 2021 Annual ACC/TCC report. Consider submitted both the 2021 and 2022 with next year's annual ACC/TCC report. If this is not possible, please explain in the text that the goal of the ATS is to prepare the AOP in two phases, so that current methods and any modifications may be address before data is collected for the spring and fall activities. Explanation added in Section 3.2.29
3.2.31	SA Section 8.4 Anadromous Fish Hatchery Juvenile Production	Pg 37	*Juvenile production targets as provided in the H&S Plan have been met for 2019* Please check the year. This report covers calendar year 2020. Corrected the year to read 2020.
3.2.34	SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance	Pg 38	*The completion schedule for SA 8.7 upgrades was provided in **Attachment E** of the 2015 ACC/TCC Annual Report and is also included in the 2020 annual report (Objective 7)* Please add reference for the attachment in the 2020 annual report. Added to annual report.

3.2.36	SA Section 9.1 Monitoring and Evaluation Plan	Pg 38	*Implementation of the M&E Plan requirements continued through 2019.* Please check the year. This report covers calendar year 2020. Corrected the year to read 2020.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
3.2.43	SA Section 9.8 Monitoring of Flows	Pg 39	SA 9.8 Monitoring of Flows indicates "PacifiCorp shall notify the ACC of the occurrence, duration, and magnitude of any spill within 10 business days after a spill from Swift No. 1 or the Swift No. 2 canal." Please add to this section if spills at Swift 1 or Swift 2 cana occurred in 2020. IN addition, please include reference to the sections in this report where Merwin flows (3.2.19) and the Upper Release (3.2.18) and the Constructed Channel (3.2.18) flows information is found. References and clarifying text added to the report. In recent years it has been PacifiCorp's practice to appraise the ACC of any significant spill events or changes in reservoir operations at the monthly ACC meeting. Moving forward PacifiCorp will provide email notification to the ACC and Washington Department of Ecology within 10 business days of a measurable spill event at either the Swift No. 1 or 2 projects.
3.3	Aquatic 2021 Annual Plan	Pg 40	Much of the information in this section appears to be historical information that is likely also in 3.2 Aquatic Measures Implemented as of the End of 2020 and some of it could be removed. There's very little information on work planned for 2021. Please include work planned for 2021 such as 3.3.2 SA Section 4.3 Merwin Upstream Collection and Transport Facility – PacifiCorp will continue to operate the Merwin Upstream Collection and Transport Facility in 2021 and report collection results. Minor repairs will address as they occur. X modifications to the facility will occur in 2021. Comments noted. Additional text has been added to note known 2021 actions at the fish passage facilities.
3.3.9	SA Section 7.1 Large Woody Debris Project	Pg 41	Please add that PacifiCorp will add another $10,000 to the LWD projects fund in 2021. This section has been corrected to include the appropriate SA funding 7.1.1.

3.3.12	SA Section 7.5 Aquatics Fund	Pg 41	*On October 8, 2020 the Forest Service had a remaining balance of $59,795.10 specific to Collection Agreement 15-CO-11060300-010 (2015 Lewis River Side Channel Restoration project) which will be returned to PacifiCorp to apply toward future habitat improvement projects awarded by the ACC.* Please insert funds will be returned to PacifiCorp in 2021. If funds were returned in 2020, this should be moved to Section 3.2. In addition, please include that a decision for funding the four Aquatic Fund proposals will be made in 2021. Added the following text, "…which will be returned to PacifiCorp in 2021 and applied toward future habitat improvement projects awarded by the ACC. ACC decisions for funding the four (4) Aquatic Fund proposals will be made in 2021."

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
3.3.14	SA Section 8.3 Anadromous Fish Hatchery Adult Ocean Recruit Target by Species	Pg 41	Please consider simplifying this section to what occurred in 2020 and what is planned for 2021 rather than what was proposed in the past. Consider stating that estimates of ocean recruits were not generated in 2020 and that AM&E Plan will be evaluated and re-written in 2021. Specific methods/approaches to calculate estimates of ocean recruits will be considered during the evaluation of the plan. Clarification added to Section 3.3.14
3.3.16	SA Section 8.6 Resident Fish Production	Pg 42	Please include if PacifiCorp plans to continue a discussion with the ACC about stocking a portion of the 20,000 lbs of rainbow trout in Swift 2 canal, and then seek an amendment with FERC in 2021. Clarification added to Section 3.3.16.
3.3.17	SA Section 8.7 Hatchery and Supplementation Facilities, Upgrades, and Maintenance	Pg 42	*The Licensees have fulfilled their obligation with respect to SA Section 8.7 hatchery upgrades.* Please include that maintenance will continue in 2021. Clarification added to Section 3.3.17.

3.3.20	Monitoring and Evaluation Post-Season Incidental Take	Pg 43	*Each year PacifiCorp handles and processes numerous ESA-listed fish species. As part of the NOAA Fisheries Biological Opinion, PacifiCorp is to use an Incidental Take Form provided by NOAA Fisheries to report on species taken during the previous year of scientific activity. The Incidental Take Form reporting the 2020 sampling year is provided in Table 5.* This information and table should be moved to section 3.2 since it's 2020 work. Instead, state either the 2020 information will be submitted to NOAA Fisheries in 2021 and PacifiCorp will continue to track incidental take in 2021 or PacifiCorp will continue to track incidental take and submit it to NOAA Fisheries in 2021 Comment noted and 2020 information moved to section 3.2
5.1.1	Meetings and Conference	Pg 57	*On June 10, 2020 PacifiCorp provided a PowerPoint presentation on the Speelyai Additional Parking Area Feasibility Study for discussion and input. TCC agreed that*

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
	Calls: Overview		*Parking Option C (with trail option C along existing road) is preferred on what we know today.* Please consider changing today to on the day of the meeting referring to January 10, 2020 and not the date someone is reading this report. The sentence was revised to "TCC agreed that Parking Option C (with trail option C along existing road) is preferred based on information provided at that meeting."
5.1.1	Meetings and Conference Calls: Overview	Pg 58	*In addition, on December 9, 2020 the TCC agreed to analyze each new mitigation project on a case by case basis but if there is an opportunity to lump projects together that gives us a bigger bang for the buck. Projects taking place currently may be lumped together but not projects that may take place well into the future.* Please clarify the above statement. It is WDFW's understanding that each project would be evaluated for impacts and mitigation determined then the mitigation amounts would be combined. WDFW understands this correctly. The statement was revised to provide more clarity "In addition, on December 9, 2020 the TCC agreed to analyze each project impacts on a case by case basis but the impacts may be mitigated collectively to give a bigger bang for the buck. Projects taking place currently may be lumped together but not projects that may take place well into the future."

5.1.1	Meetings and Conference Calls: Overview	Pg 58	2.1 ACC and TCC Membership (pg 14) indicates the TCC met 9 times. 5.1.1 Meetings and Conference Calls: Overview acknowledges the May and August meetings were cancelled but not the third meeting. Please indicate that November was also cancelled due to Veteran's Day. The following sentence has included into Section 5.1.1 "The February, August, and November meetings were cancelled due to lack of agenda items or conflicts with holidays."
5.2.1	SA Section 10.1 Yale Land Acquisition and Habitat Protection Fund	Pg 59	Please indicate the amount of funds and if they have been expended, similar the 5.2.3. The following sentence has been added to Section 5.2.1 . "10.1 funds were used in their entirety, which was $2,995,608.83, and there were no further contributions."
5.2.2	SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund	Pg 59	*This expended most of these funds with $39,172.00 remaining.* Please check numbers. Table Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund Section 10.2,10.2.1 indicates only $29,156.94 remains. 2020 year-end total is correct and should read, $29,156.94 and was reported in the TCC 2/10/21 Meeting Notes.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
5.2.3	SA Section 10.3 Lewis River Land Acquisition and Habitat Protection Fund	Pg 59 b)	There was discussion that Cowlitz PUD would use 10.3.3 funds for the Devil's Backbone forestry project. If this occurred, please add the expenditure to the historical information. 5.2 PacifiCorp Terrestrial Measures Implemented as of the End of 2020 is limited to actions implemented by PacifiCorp. The 10.3.3 is a PacifiCorp fund therefore PacifiCorp would have allocated the funds to Cowlitz PUD so that allocation should be included here. Receiving the funds would be in 5.4 Cowlitz PUD Terrestrial Measures Implemented in 2020. On January 28, 2019, Cowlitz PUD received approval from Rocky Mountain Elk Foundation for funding at the $13,735 level to fund stump-pulling, scarification, forage seeding and burning stumps/slash. In 2019, PacifiCorp provided $13,735 in matching funds and was reported in the 2019 annual report in April 2020.
5.2.4	SA Section 10.4 Transaction Costs	Pg 59	*PacifiCorp expended $6,885.09 in transaction costs for escrow and closing costs, updated ESA Phase 1 report, and survey for title encumbrances in 2020.* Please indicate that these transaction costs were for the purchase of Management Unit 40 and were covered under the SA Section 10.2 Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund account. The sentence has been revised to as follows: "PacifiCorp expended $6,885.09 in transaction costs for escrow and closing costs, updated Environmental Site Assessment Phase 1 report, and survey for title encumbrances for the 2020 acquisition of 640 acres as described in Section 5.2.2."
5.2.7	SA Section 10.7 Conservation Easements	Pg 59	*PacifiCorp continued management of the 16 acres of land managed under a conservation easement with the Cowlitz Indian Tribe.* Please provide the name and/or location of this conservation easement especially so that the exclosure location is identified in this section. The following sentence has been added to Section 5.2.7: "The property includes the parcel associated with the former Pine Creek School and is located in Section 26 Township 7 North Range 3 East."

5.2.8	SA Section 10.8 Wildlife Habitat Management Plan	Pg 60	The are 5 subsections under 10.8 in the SA and many second and third layer subsections under the first layer subsections. Please consider brief summary for select subsections such as: *10.8.2 Funding* – Add the total acreage and the dollar figure per acre for fee simple and Interests in Land allocated for 2020. *10.8.4.1 Updating Existing Information. As PacifiCorp expends Fund assets to acquire lands that will be managed under its WHMP, PacifiCorp shall update the existing HEP data.* – Please indicate if this activity has been completed for lands PacifiCorp has purchased. Require mapping and cover-typing the newly acquired lands has likely occurred but has the HEP data using existing Habitat Suitability Index ("HSI") values been done? The following was added to the section: SA Section 10.8.1 Development of WHMPs was completed with the submittal of the Lewis River Wildlife Habitat Management Plant to FERC on December 2008. SA Section 10.8.2 Funding the 2020 funding and budget is provided in detail in **Attachment I.** SA Section 10.8.3 has been completed and is provided in **Attachment H**. SA Section 10.8.4 Habitat Evaluation Procedures. The 2020 land acquisition does not have any new or different vegetation cover types, therefore the current Habitat Suitability Index values are still applicable. The review of WHMP effectiveness will occur in 2025. SA Section 10.8.5.5 There were no impacts to WHMP lands therefore no mitigation was required in 2020.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
			10.8.5.5 Mitigation for Impacts on Wildlife Habitat. – Please indicate if the TCC determined if mitigation was necessary for actions taken on WHMP lands that are no longer available for wildlife habitat in 2020.

5.3.8	SA Section 10.8.5.5 Mitigation for Impacts on Wildlife Habitat	Pg 61	This section should be moved from *5.3 PacifiCorp Terrestrial 2021 Annual Plan* to *5.2 PacifiCorp Terrestrial Measures Implemented as of the End of 2020*. It is all activities that occurred in 2020 or before. Any anticipated mitigation or loss of WHMP lands in 2021 should be included here instead. Please consider adding *10.8.2 Funding* and adding the total acreage and the dollar figure per acre for fee simple and Interests in Land allocated for 2021. This section has been revised as follows: 5.3.3 SA Section 10.4 Transaction Costs There are no transaction costs anticipated in 2021. 5.3.4 SA Section 10.5 Management of Funds Funds provided by PacifiCorp in 2021 will be managed in a tracking account and in accordance with SA language. Contribution amounts and interest gained will be identified in the 2021 Annual Report. See Fund account information provided in Section 7.0 for end of 2021 amounts. 5.3.5 SA Section 10.6 Completed Implementation Advanced Purchases PacifiCorp will continue to manage the Cougar Creek Conservation Covenant lands and the company lands on the Swift Creek Arm for the long-term benefit of fish, wildlife, and native plants. These lands are managed under the WHMP as described in SA 10.8. 5.3.6 SA Section 10.7 Conservation Easements Guidelines for the selection and acquisition of conservation easements will be considered in the acquisition of Interests in Lands to be purchased with Funds described in SA 10.1 through 10.3. 5.3.7 SA Section 10.8 Wildlife Habitat Management Plans The 2021 Annual Plan fulfills PacifiCorp's obligations for the license's Article 403 and Settlement Agreement 10.8.3 and is provided in **Attachment H**. The plan details the terrestrial protection, mitigation, and enhancement measures to be implemented on PacifiCorp WHMP lands in the following year (i.e., January 1 to December 31, 2021). 5.3.8 SA Section 10.8.5.5 Mitigation for Impacts on Wildlife Habitat Following consultation with the TCC, PacifiCorp received $5,931.23 for mitigation funding

			dollars for proposed adverse impacts to WHMP lands from PacifiCorp Transmission & Distribution (T&D) operations due to the Cowlitz PUD Interconnect Project. This fund also received $1,238.51 and $603.58 from the Washington Department of Natural Resources for impacts from constructing temporary access roads across PacifiCorp lands in management units 11 and 16. Finally this fund received $1,190.57 for a judgment payoff from a property trespass. This fund does not accrue interest, which PacifiCorp will account for in a separate funding account, See Section 7.0, Funding. These funds were used in their entirety to create pollinator seed test plots along the transmission line ROW in 2019. These continue to be monitored and are discussed in more detail in **Attachment I** provides a copy of the *Lewis River Wildlife Habitat Management Plan 2020 Annual Report*. There are no impacts to WHMP lands in 2020, therefore no additional funds were received. The TCC will determine the impacts of proposed 2021 projects that may have potential impacts to WHMP and determine the appropriate mitigation for the impacts. A detailed 2020 budget is provided in Attachment I.
6.1	SA Section 13.2.1 Law Enforcement	Pgs 72 &73 Tables 13 - 17	*Throughout the year the Lewis River Basin was patrolled by a full time Washington Department of Fish and Wildlife officer, a part time Skamania County Deputy (May through October) and a full time Cowlitz County Deputy.* The report indicates patrol was within the Lewis River Basin. SA 13.2.1.2 Contracts indicates that "…enforcement activities will be limited to the Project vicinity in the North Fork…" Please consider noting by * which activities were on Project lands or within Project vicinity and which occurred within the Lewis River Basin and not within the Project vicinity. It seems unusual that an HPA INVESTIGATION – NONPERMITTED would occur within Project lands or lands managed by PacifiCorp. If all were considered within the Project vicinity, please consider changing Lewis River Basin to Project vicinity in the North Fork. On April 12, 2021 WDFW and PacifiCorp agreed that it is not reasonable to have law enforcement include location information as requested. No changes made to Section 13.2.1.
7.0	FUNDING	Pg starting 74	Please consider including starting balance carried over from 2019 for all tables. In addition, it appears some tables may be missing funds received entries such as the Lewis River Aquatics Funds – Resource Projects Sections 7.5, 7.5.1, 7.5.3.2, & 7.7 table. The table is missing the beginning balance (? – 175,000 = 2,983,481.23) and does not show any funds received. SA 7.5.1 PacifiCorp's Contributions indicates "For each of the Merwin, Yale, and Swift No. 1 Projects, PacifiCorp shall make [available] on each April 30 commencing in 2019, $200,000 per year through 2027 (a total of $1.8 million)."

			Reprinted Resource Projects Sections 7.5, 7.5.1, 7.5.3.2, & 7.7 table to capture 2020 Q2 contribution of $306,706.48 reflected in Section 7.0 Funding.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
			Please clarify this table. It indicates that a total of $86,684.00 was available, $84,578.25 was expended and $2,105.75 remains. No time frame is given for these amounts. Yet SA indicates that PacifiCorp shall match the contributions of local, state, and federal agencies, and other persons or organizations, made for the purposes of this Section 10.3, in an amount not to exceed $100,000 per year, and not to exceed $500,000 in any ten consecutive years. It's not clear if the $86,684.00 is what was available in 2020 from the ten year $500,000 and $84,578.25 was expended in 2020. If so, this does not follow the same format as other table totals. It would seem that the beginning balance should have been $100,000 for 2020 minus any expenditures. The total should be $500,000 minus the total expenditures with a note that the $500,000 is the potential balance for the 10 year period (starting year – 10 years later) and no carry over. Table has been corrected to reflect annual contributions and expenditures to confirm in compliance with no more than $100,000 per year and not to exceed $500,000 over a 10 year period. See Section 7.0 Funding.
8.0	Literature Cited	Pg 76	*Cowlitz PUD 2013. Water Quality Management Plan for the Swift No. 2 Hydroelectric Project, FERC No. 2213. Prepared for: Public Utility District No. 1 of Cowlitz County. Prepared by: Meridian Environmental, Inc. January 2013.* *Cowlitz PUD 2013. Water Quality Management Plan for the Swift No. 2 Hydroelectric Project, FERC No. 2213. Prepared for: Public Utility District No. 1 of Cowlitz County. Prepared by: Meridian Environmental, Inc. February 2013.* Please add an a and b to distinguish between these two citations here and in the text. A & b references added to pg. 76.

Attachment C: H&S 2020 Annual Operations Report			
			WDFW has reviewed the H&S 2020 Annual Operations Report and has no comments
Attachment C-1: H&S 2020 AOP			
			WDFW has reviewed the H&S 2020 Annual Operations Plan and has no comments WDFW encourages that the H&S Annual Operations Plan be submitted the year the plan is implemented, similar to the timing of the WHMP Plan and the Bull Trout Plan. Comment noted
Attachment D: M&E 2020 Annual Report			

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
1.0	Introduction	Pg 2 Figure 1.0-1	Please verify if the arrow with the label for Swift No. 2 Dam is pointing to the "dam" or the powerhouse. Consider changing the label if it's the powerhouse. It is pointing to the dam.
2.0	Monitoring and Evaluation Objectives	Pg 8 Table 2.0-1 M&E - 3 Task 3.1	Assessing the proportion of fish entering the intake of the Swift No.1 Powerhouse is required under Section 9.2.1(f) of the SA and identified as Objective 3 of the M&E Plan. However, this M&E Objective will not be quantified until downstream passage facilities are installed at Yale and Merwin Dams. Even without downstream passage at Yale and Merwin, some portion of juveniles are likely being passed through the Swift powerhouse intakes. Are provisions in place for monitoring this objective if Section 18 Fishway Prescriptions are changed and in lieu funds are provided instead of passage? Please consider this situation during the next M&E Plan and H&S Plan update. Comment noted for future consideration.

Attachment D: Appendix A		**2021 Fish Passage Program Annual Report M&E Plan Metrics**	
1.0	Introduction	Pg 1	*In December of 2020, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS; collectively the "Services") submitted Preliminary Section 18 Fishway Prescriptions to the FERC. The prescriptions call for PacifiCorp and Cowlitz PUD to forgo constructing salmon and steelhead fish passage into and out of Merwin Reservoir and instead invest $21 million in aquatic habitat restoration upstream of Swift Reservoir. The Services will defer a fish passage decision for Yale Reservoir, for a period of 10 years, until 2031. Additionally, bull trout fish passage facilities are to be constructed providing these fish transport between the three reservoirs.* Please add that although the Preliminary Section 18 Fishway Prescriptions was submitted to FERC, additional steps remain before the decision is final. Text has been added to note that the process to finalize the preliminary prescriptions is ongoing.
2.3	Woodland Release Ponds	Pg 11	During a site visit to the Woodland Release Ponds, it was brought to our attention that there was an eagle nest near the release site. Has there been any avian predation issues observed during releases given the releases are concentrated at a single site? Is any antidotal loss of smolts from predation at the release site considered when describing the results of any of the fish passage survival metrics such as CS and ODS? There has been no observed or recorded avian predation occurring at the release site. Calculations of CS and ODS are based on live fish leaving the ponds and passing into the release pipe.

Section Number	**Section Title**	**Comment Location Pg. (Subsection / Table / Figure Title, if applicable)**	**WDFW Comment**
3.4.2	Result/Discussion	Pg 38 Table 3.4-1	*Table 3.4-1. Summary of seasonal corrected passage metrics for tagged fish released at the head of Swift ~~Reservior~~ Reservoir by species in 2020* *Chinook Salmon DET_{CHA} 38, DET_{COL} 47* Why was the Chinook detection so much lower than collection? None of the other species exhibited this Excerpt from Section 3.3.2 (Zone Detection Efficiency) of the *Swift FSC Smolt Collection Efficiency Evaluation – 2020 Final Report* (Appendix C):

			… Among all zones, collection channel detection efficiency was lowest and most variable among species. Chinook had the lowest channel detection efficiency at 53%, while steelhead had the highest at 87%. It appears that collection channel detection efficiency was constrained by aspects of fish biology and behavior more so than technical limitations (see Section 3.4). This conformed with behavioral expectations, with Chinook making quick passage attempts through the channel with limited opportunities for detection, whereas steelhead are able to hold and thus increase chances of being positioned within the channel.
4.3.2	Results/Discussion	Pg 54	*At the December 12, 2019 ACC meeting, members agreed to postpone the ATE Evaluations in 2020 and requested PacifiCorp to develop a memorandum outlining the proposed steps for moving forward with the Merwin Trap for the ACC to review.* Please provide date and citation for final memo. The technical memorandum has yet to be finalized with the ACC as information is still being gathered. The narrative provided in Section 4.3.2 of the Fish Passage Program Annual Report does provide a generalized overview of the steps and timeline for moving forward as of December 2020.
Attachment D: Appendix B Bull Trout 2020 Annual Operations Report			
1.0	Introduction	Pg (3) And throughout	2006 Biological Opinion issued to PacifiCorp and Cowlitz PUD by the U.S. Fish and Wildlife Service (USFWS) Please provide citations for major documents and plans. See 2021 Fish Passage Program Annual Report M&E Plan Metrics for some of the citations. Other documents lacking citations are listed here. • ACC/TCC Annual Report in April 2020 (pg 1?) • Compelling bull trout handling data and the negative impact presumed to have on long-term survival presented in 2016 (3.1.1) Citations have been added
2.0	Study Area	Pg (4) Figure 2.0-1	Since Figure 2.0-1 is the map of the North Fork Lewis River study area, please add Lower Falls to the map. The Lower Falls location is included within the overarching map. No Study in 2020 incorporated this specific area, including an identifier on the Study Area Map is not necessary at this time.

3.1.1	Eagle Cliffs…	Pg ?	*The Utilities in Consultation with the USFWS and the Lewis River Bull Trout Recovery Team* Please add acronym after Lewis River Bull Trout Recovery Team since LRBTRT is used later in the report. Acronym added.
3.1.1	Snorkel Surveys…	Pg 3 Table 3.1.1-2	Please identify >450 and <450. This could be done after the table title. Page numbers started at Figure 3.3.3-1 (pg 2) but are off. Corrected within report.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
		Appendices	Appendices Lewis River Bull Trout Demographic Update, 2020 Report; Genetic Estimation of Lewis River Bull Trout Spawner Abundance, 2020 Report; and Operation of Cougar Creek Weir and Underwater Video, 2020 Report are not included in this report. Please consider modifying the body report indicating these appendix reports are not available for the 30-day 2020 ACC/TCC Annual Report review and will be submitted with the 2021 ACC/TCC annual report. It is difficult to review any sections referencing the appendices in the body of the report without the appendix reports. Comment noted. At this time the contractors conducting said analyses are still in the process of completing the work. Identified analyses will likely be included within the 2021 Annual Report. Wording indicating such has been added to the body of the report.
Attachment D: Appendix C Bull Trout 2021 AOP			
1	Introduction	Pg 3	*6. Comprehensive Bull Trout Redd Surveys of Pine Creek, Pine Creek ~~Tributary~~ tributaries P8, P10, Rush Creek. Exploratory redd surveys of entire upper mainstem Lewis River below lower falls.* Comment noted.
2.5	Cougar Creek Spawning Estimate	Pg 12	*Redds will be mapped using a Global Positioning Satellite (GPS) receiver and flagged until no longer visible to avoid double counts.* Comment noted.
2.6	Redd Surveys of Pine Creek Tributary P8 and P10, Pine Creek…	Pg 13	*2.6 Redd Surveys of Pine Creek ~~Tributary~~ Tributaries P8 and P10, Pine Creek Mainstem and Rush Creek; Exploratory Survey of Mainstem Lewis Above Eagle Cliff* *During the survey, two biologists in dry suits will float downstream within their assigned river survey section.*

			All identified redds will be flagged and recorded with ~~Global Positioning~~ ~~Satellite~~GPS. Comment noted.
2.7	Underwater Video Camera in Cougar Creek During the Spawning Migration Period	Pg 14	*In order to funnel bull trout nearer to the underwater camera lens, a ~~partial~~ floating resistance weir consisting of polyvinyl chloride (PVC) pickets will be constructed in Cougar Creek near its confluence with Yale Reservoir (Cougar Creek PIT antenna site, Figure 2.4-2). The weir will consist of one stream spanning floating resistance board weir panels board, with a swim-thru box located near the stream margin, outside of the thalweg.* Comment noted.

Section Number	Section Title	Comment Location Pg. (Subsection / Table / Figure Title, if applicable)	WDFW Comment
Attachment D: Appendix D Yale Reservoir Kokanee 2020 Escapement Report			
		General	This report lacks detail and description of the analysis. Please consider if an evaluation of the actual data collection and analysis methods is necessary. Comment noted.
4.2	Escapement	Pg 10 Table 3. Calculation % egg to adult survival	Please provide additional information on how Egg-to-Adult % Survival is calculated. The footnote states: *Estimated Escapement of Adults (3-year-olds) / estimated number of eggs = % egg to adult survival*. Using the information in the table for Estimated Escapement and estimated number of eggs does not yield the same number provided in the Egg-to-Adult % Survival column. Table has been corrected
Attachment E: Yale Water Quality Graphs			
			WDFW has reviewed the graphs and has no comments
Attachment F: Swift No. 1 Water Quality Graphs			
			WDFW has reviewed the graphs and has no comments
Attachment G: Merwin Water Quality Graphs			
			WDFW has reviewed the graphs and has no comments

Attachment B
Section 14 of the Lewis River Settlement Agreement

SECTION 14: COORDINATION AND DECISION MAKING

14.1 Coordination and Decision Making. The provisions of this Section 14 describe the processes for coordination and decision making among the Parties for the implementation of the terrestrial and aquatic PM&E Measures provided for in this Agreement. As provided for in Section 14.2 below, the Licensees shall convene a Terrestrial Coordination Committee ("TCC") to coordinate implementation of the terrestrial PM&E Measures described in Section 10 (including any exhibits, schedules, and appendices related to Section 10), and shall accomplish the purposes set forth in Section 14.1.1 below. The Licensees shall convene an Aquatics Coordination Committee ("ACC") to coordinate implementation of the aquatics PM&E Measures described in Sections 3 through 9 (including any exhibits, schedules, and appendices related to those Sections), referred to below as terrestrial and aquatic PM&E Measures.

14.1.1 Purposes of the TCC. The TCC is intended to accomplish the purposes set forth below:

a. Provide a forum for coordination between the Licensees and the other Parties on terrestrial resources PM&E Measure implementation.

b. Oversee the development by the Licensees of an objective oriented WHMP prior to the Issuance of the New Licenses.

c. Monitor implementation of that WHMP.

d. Oversee the HEP study in the 17th year after Issuance of the New Licenses, and modify the WHMP if necessary, based on the HEP's results.

e. Oversee and make decisions regarding the: (1) Yale Fund; (2) the Swift Fund; and (3) the Lewis River Fund.

f. Oversee the annual budget for the WHMP.

14.2 Coordination Committees. Within 60 days after the Effective Date, PacifiCorp and Cowlitz PUD shall convene the TCC and the ACC.

14.2.1 Committee Coordinators. Within 30 days after the Effective Date, PacifiCorp Energy and Cowlitz PUD each shall designate one Committee Coordinator for the TCC and one Committee Coordinator for the ACC. PacifiCorp Energy and Cowlitz PUD shall make their designations by notice to the Parties in accordance with the notice provisions in Section 16.6. The PacifiCorp Energy Committee Coordinator(s) shall be employed or retained by PacifiCorp Energy and may represent PacifiCorp Energy on the TCC and the ACC. The Cowlitz Committee Coordinator(s) shall be employed or retained by Cowlitz PUD and may represent Cowlitz PUD on the TCC and the ACC. The PacifiCorp Energy Committee Coordinator(s) shall, as their primary responsibilities, oversee the coordination and implementation of the terrestrial and aquatics PM&E Measures that are the responsibility of PacifiCorp

Energy as provided in this Agreement. The Cowlitz PUD Committee Coordinator(s) shall oversee the coordination and implementation of the terrestrial and aquatics PM&E Measures that are the responsibility of Cowlitz PUD as provided in this Agreement. PacifiCorp Energy and Cowlitz PUD Committee Coordinators together shall oversee the coordination and implementation of terrestrial and aquatics PM&E Measures for which PacifiCorp Energy and Cowlitz PUD have joint responsibility as provided in this Agreement.

14.2.2 TCC and ACC Membership. Within 30 days after the Effective Date, or at any time thereafter with 30 days' notice to the Licensees, each Party, at its own discretion and cost, may designate one representative for membership on the TCC and may designate one representative for membership on the ACC and may designate one or more alternates. The Party shall make its designation(s) by notice to the Parties in accordance with Section 16.6. A Party not participating on the TCC, the ACC, or both may request, by notice to the Parties in accordance with Section 16.6, to be placed on a contact list to receive notices of committee meetings and releases of information, including annual reports and other interim reports that the TCC or the ACC may issue.

14.2.3 TCC and ACC Functions. The TCC and the ACC will:

a. Coordinate and Consult on development of plans by the Licensees as provided in this Agreement;

b. Review information and oversee, guide, and make comments and recommendations on implementation and monitoring of the terrestrial and aquatic PM&E Measures, including plans;

c. Consult with the Licensees on their respective reports prepared under this Agreement regarding implementation of the terrestrial and aquatic PM&E Measures as referred to in Section 14.2.6 below;

d. Make decisions, grant approvals, and undertake any additional duties and responsibilities expressly given to the TCC or the ACC with respect to the terrestrial and aquatic PM&E Measures;

e. Establish, among other things, (i) procedures and protocols for conducting committee meetings and deliberations to ensure efficient participation and decision making; (ii) rules for quorum and decision making in the absence of any member; (iii) alternative meeting formats as desired, including phone or teleconference; and (iv) the methods and procedures for updating committee members on interim progress of development and implementation of the terrestrial and aquatic PM&E Measures;

f. As deemed necessary and appropriate by the TCC or the ACC, establish subcommittees to carry out specified committee functions and responsibilities described in this Section 14.2.3, and establish the size of,

membership of, and procedures for any such subcommittees; and

g. Discuss the protocols and the content of public information releases; provided that each Party retains the right to release information to the public at any time without such discussion.

14.2.4 TCC and ACC Decision-Making Process and Limitations. The TCC and the ACC shall make comments, recommendations, and decisions in a timely manner as provided below:

a. Each Party represented on the TCC and the ACC will have the authority to participate in all committee discussions relating to, and to provide input and advice on, decisions regarding implementation of the terrestrial or aquatics PM&E Measures;

b. The TCC and the ACC shall strive to operate by Consensus. Whether or not the TCC or the ACC has final authority over decisions on terrestrial and aquatic PM&E Measures, the Licensees and other Parties may proceed with actions necessary to implement the New Licenses or this Agreement, even though Consensus is not achieved; provided that in such cases the responsible Licensee or Licensees shall notify the Commission of the comments of the ACC or TCC members and the areas of disagreement. If the TCC or ACC does not reach Consensus, then any member of the TCC or ACC, respectively, may initiate the ADR Procedures as provided in Section 15 below.

c. Where one or more Parties have approval authority under this Agreement, Licensees shall notify the Commission of any approvals that were not obtained, include the relevant comments of the Parties with approval authority, describe the impact of the lack of approval on the schedule for implementation of PM&E Measures, and describe proposed steps to be taken to gain the approval, including dispute resolution.

d. In no event shall the TCC or the ACC increase or decrease the monetary, resource, or other commitments made by PacifiCorp Energy and Cowlitz PUD in this Agreement; override any other limitations set forth in this Agreement; or otherwise require PacifiCorp Energy to modify its three Projects' facilities without PacifiCorp Energy's prior written consent or require Cowlitz PUD to modify its Project's facilities without Cowlitz PUD's prior written consent, which consent may be withheld in the applicable Licensee's discretion.

e. At any juncture where discussion or other contact with the ACC or TCC is required by this Agreement, when requested by the Services or as required by the Agreement, the ACC or TCC Committee Coordinator, respectively, shall schedule an opportunity to discuss the relevant issue with the ACC or TCC. This event shall consist of a conference call, in-person meeting, or other appropriate forum to enable full consideration of the issue.

14.2.5 TCC and ACC Meetings. Commencing in the first year after the Effective Date and each year thereafter for the terms of the New Licenses, the TCC and ACC Committee Coordinators shall arrange and provide an agenda for an annual meeting of their respective committees. The TCC and ACC Committee Coordinators also shall arrange and provide an agenda for any additional meetings deemed necessary by either coordinator for a committee or at the request of any two Parties on that committee, which request shall be sent simultaneously to all members of that committee. Members of the TCC and the ACC shall be given a minimum of 30 days' notice prior to any meeting, unless otherwise agreed to by the members of the applicable committee.

14.2.6 TCC and ACC Reports

The Committee Coordinators for the TCC and the Committee Coordinators for the ACC shall prepare and file with the Commission detailed annual reports on the TCC and ACC activities, monitoring and evaluations under the M&E Plan, and implementation of the terrestrial and aquatics PM&E Measures occurring during the prior year, as well as plans for the coming year as required in this Agreement. The annual reports may also include plans and reports required pursuant to Sections 4.9.1, 7.7.1, 8.2.3, 8.2.4, 10.5, and 10.8.3. Copies of such reports will be made available to each Party. The annual reports shall be prepared in Consultation with the TCC and ACC committee members and shall be submitted to the committees for review each year, commencing after the Effective Date. Committee members shall have a minimum of 30 days to review and provide comment on a draft report before a final report is prepared and filed with the Commission. The Licensees shall submit the final report to the Commission not later than 30 days after the close of the ACC and TCC comment periods. To the extent that comments are not incorporated into the final report, an explanation will be provided in writing, and such explanation shall be included in the report.

Attachment C is saved as a separate file.

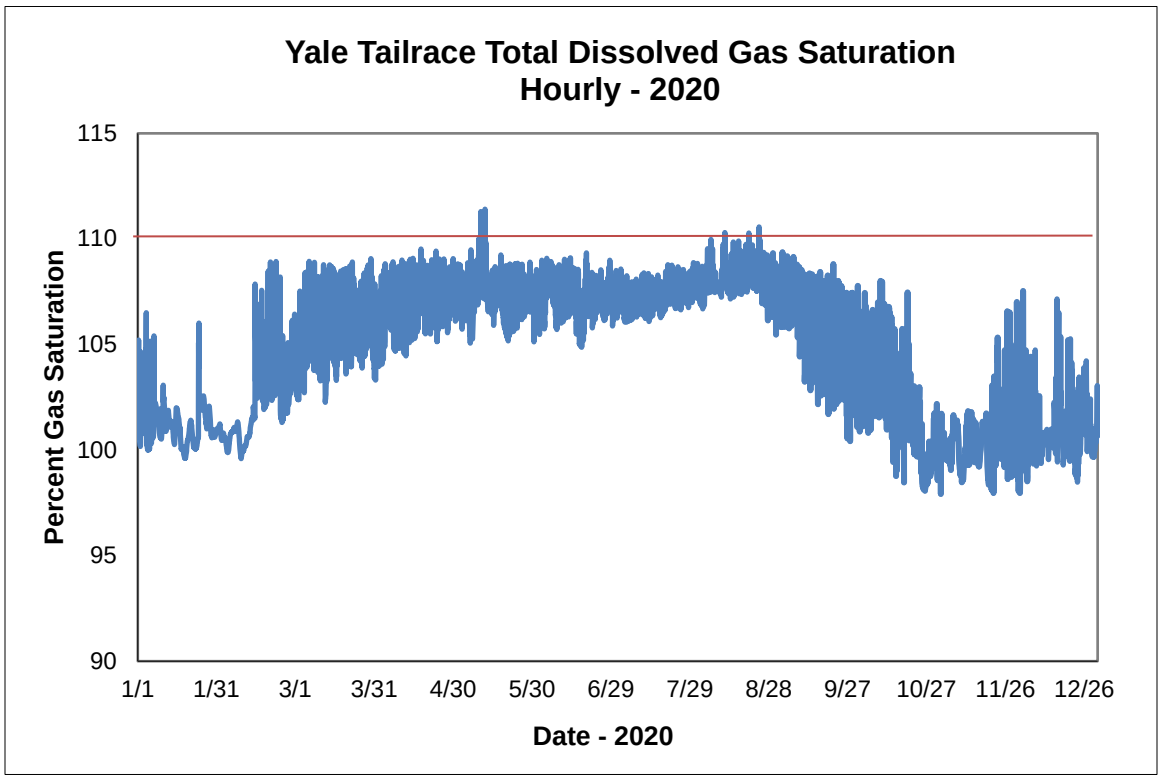
Attachment C
Hatchery and Supplementation Plan 2020 Annual Operations Report

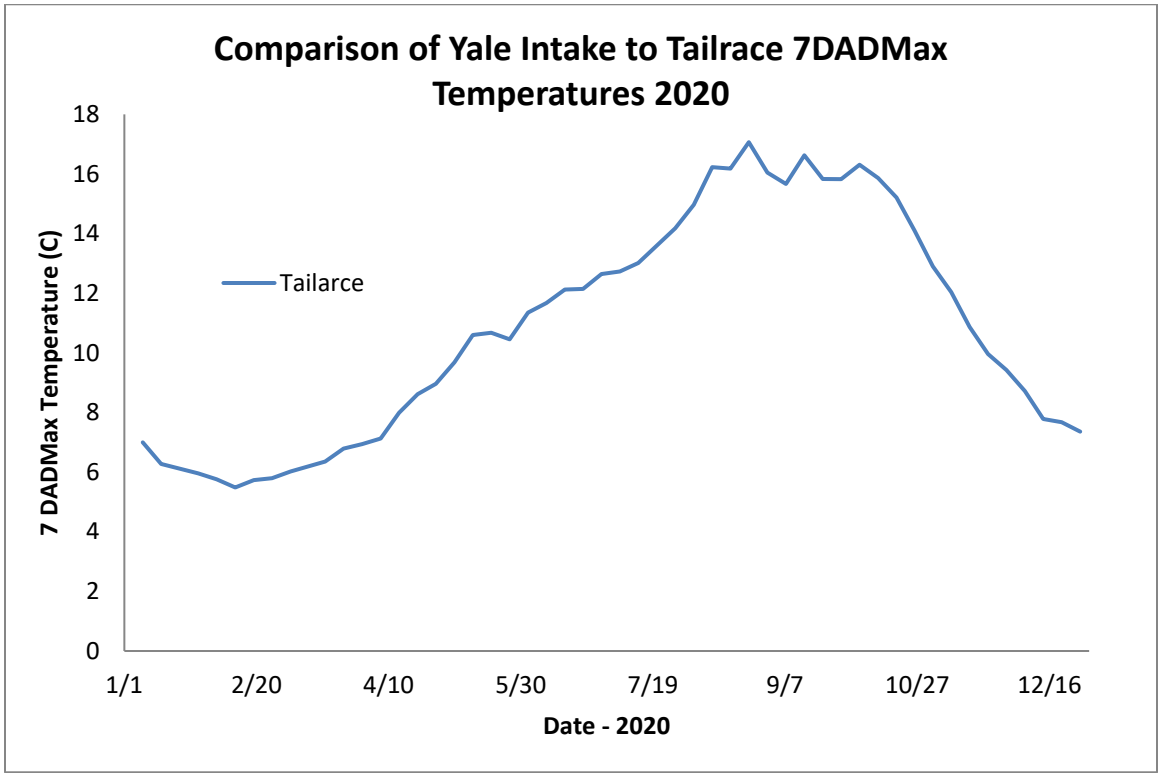
Attachment D includes the following and is saved as a separate file.

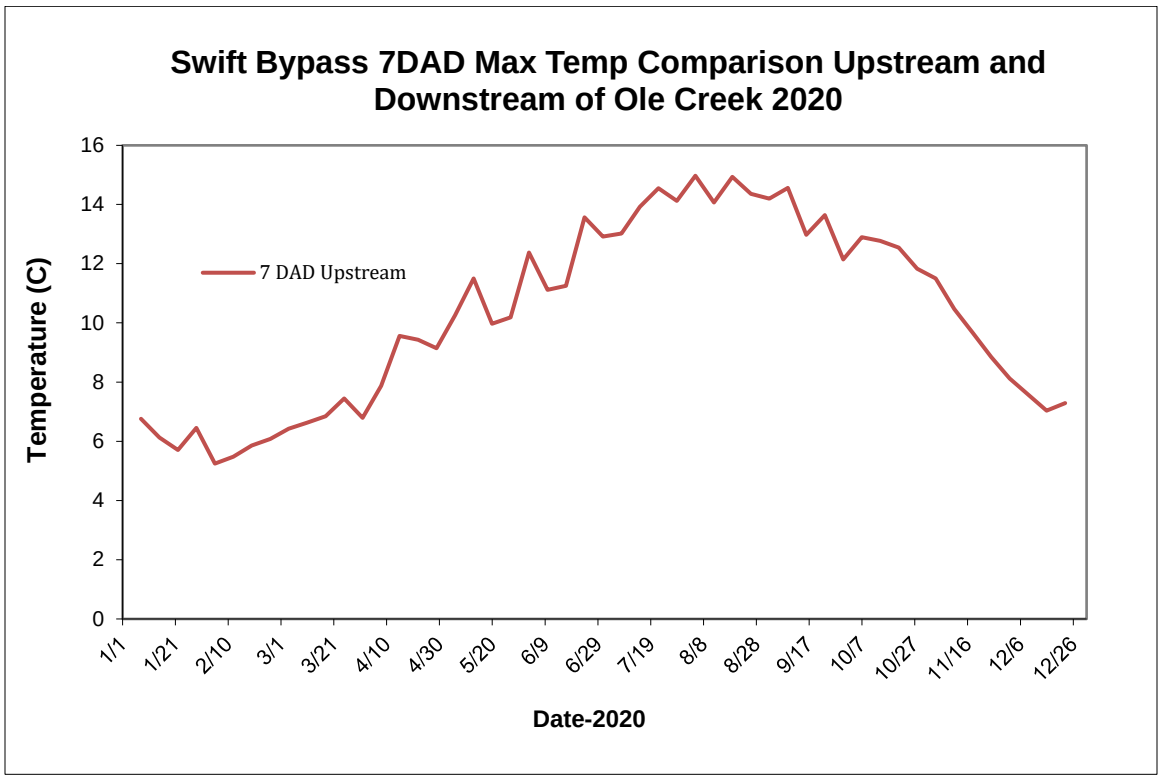
- Lewis River 2020 Fish Passage Program Annual Report
- Lewis River Bull Trout 2020 Annual Operations Report
- Lewis River Bull Trout 2021 Annual Operations Plan
- Yale Reservoir Kokanee 2020 Escapement Report

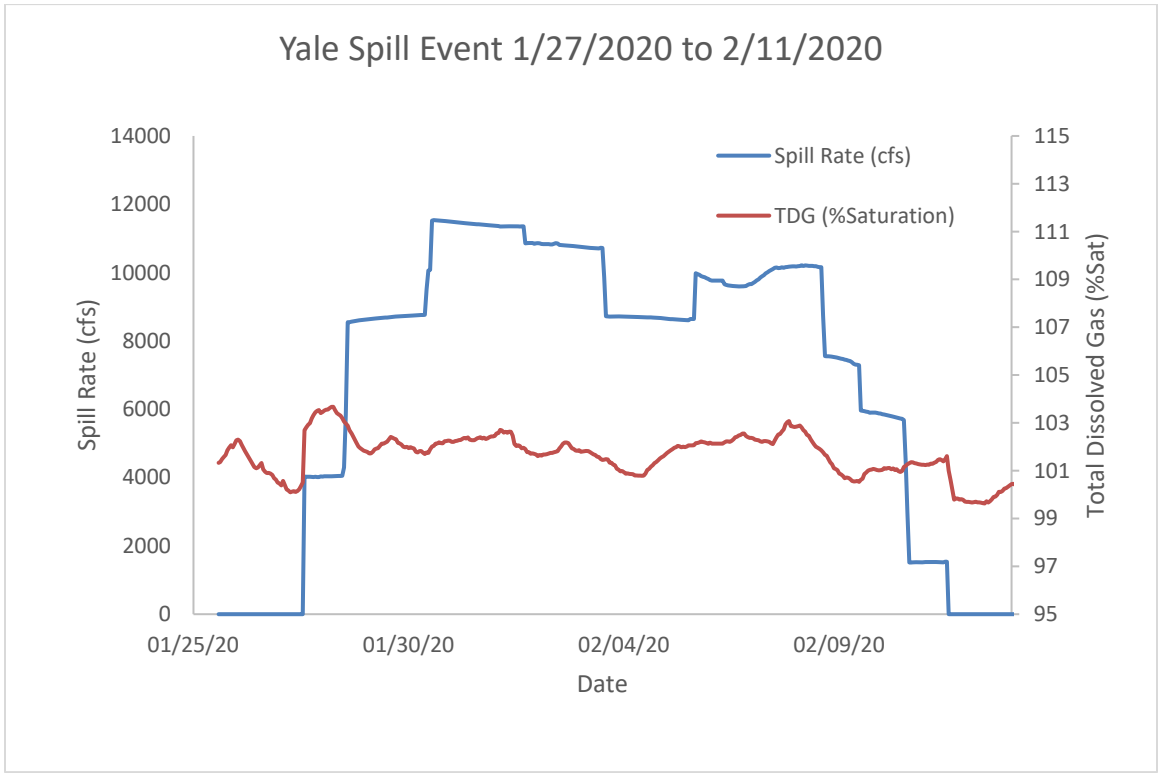
Attachment D
Lewis River Monitoring and Evaluation Program 2020 Annual Report

Attachment E
Yale Water Quality Graphs

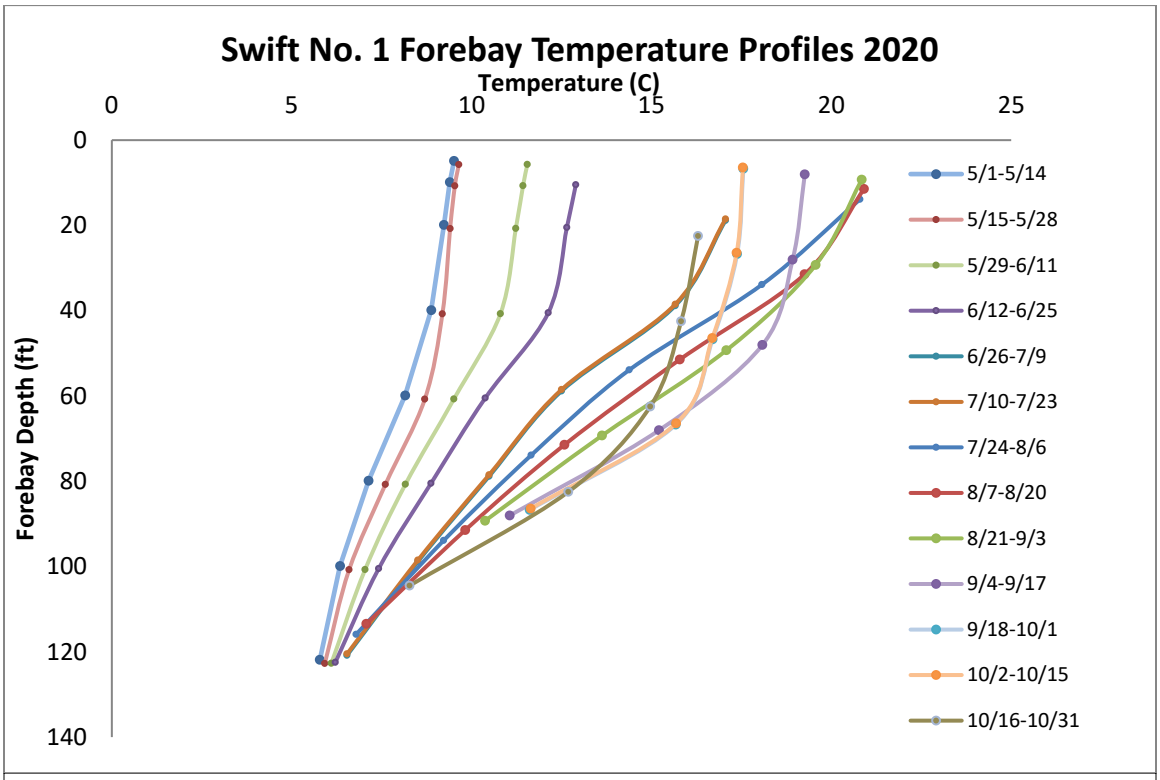

Yale Tailrace Total Dissolved Gas Saturation
Hourly - 2020
Percent Gas Saturation
115
110
105
100
95
90
1/1
1/31
3/1
3/31
4/30
5/30
6/29
7/29
8/28
9/27
10/27
11/26
12/26
Date - 2020

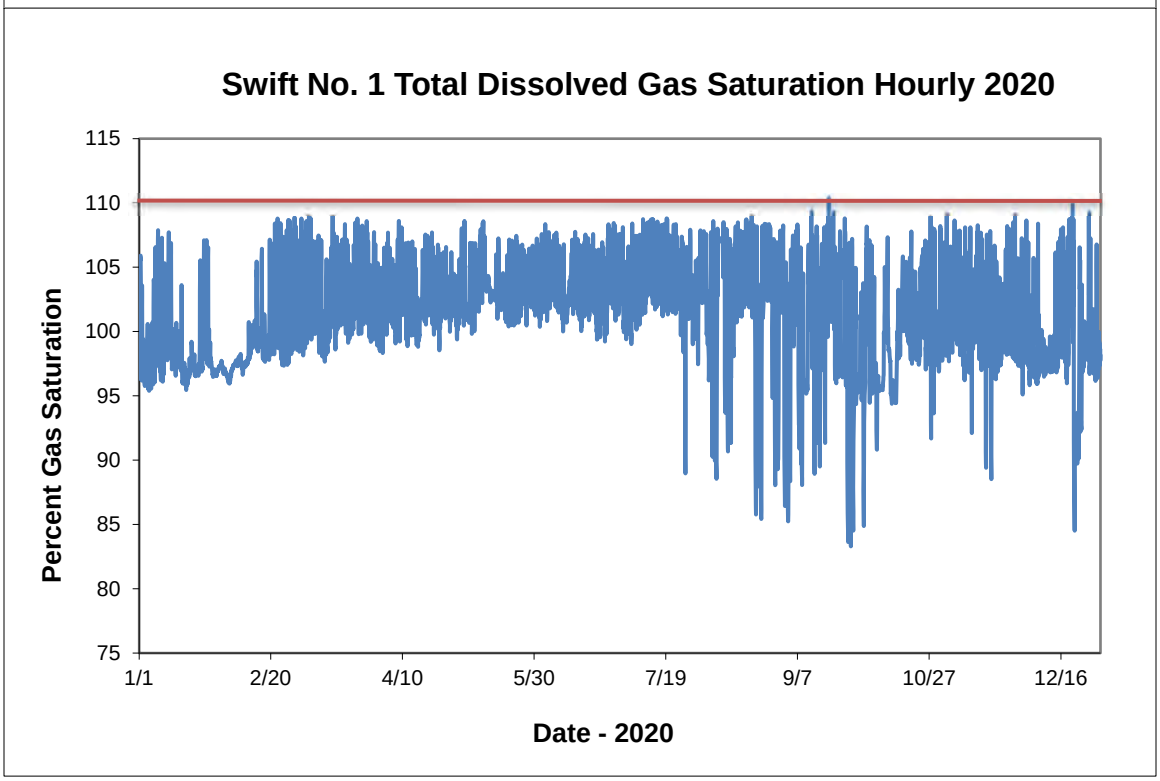

Comparison of Yale Intake to Tailrace 7DADMax
Temperatures 2020
7 DADMax Temperature (C)
18
16
14
12
10
8
6
4
2
0
Tailarce
1/1
2/20
4/10
5/30
7/19
9/7
10/27
12/16
Date - 2020

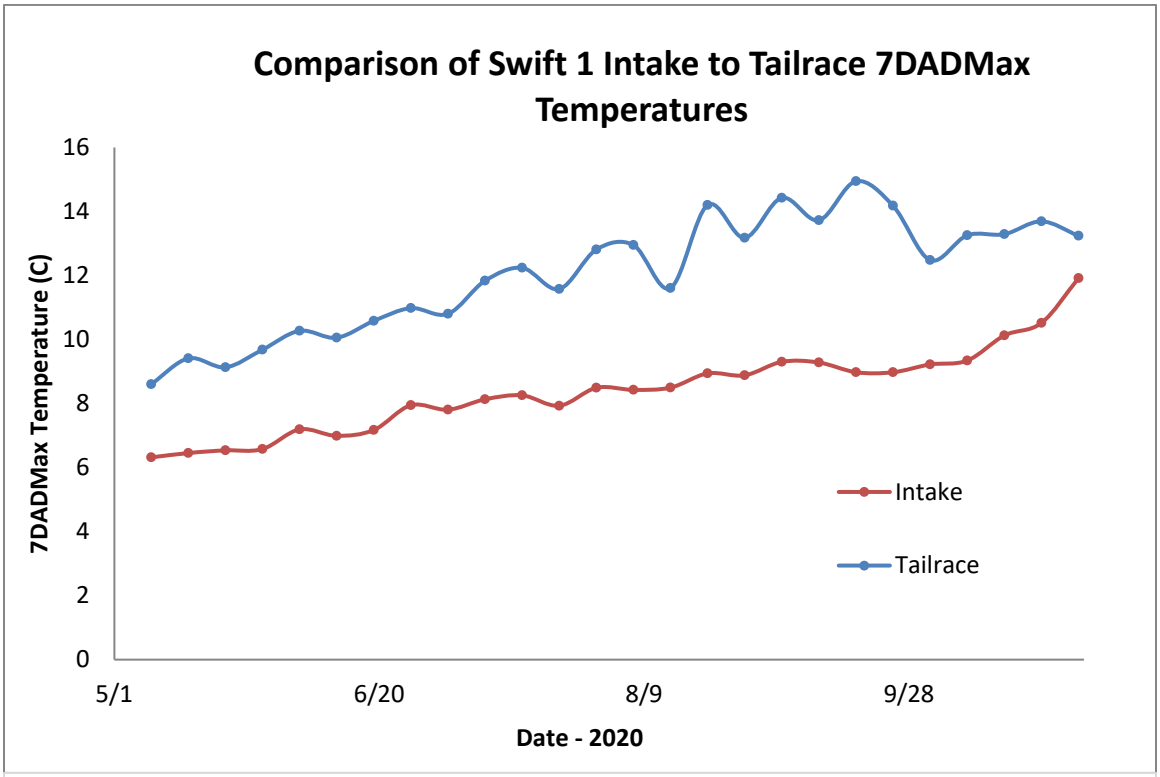

Swift Bypass 7DAD Max Temp Comparison Upstream and Downstream of Ole Creek 2020
Temperature (C)
16
14
12
10
8
6
4
2
0
7 DAD Upstream
1/1
1/21
2/10
3/1
3/21
4/10
4/30
5/20
6/9
6/29
7/19
8/8
8/28
9/17
10/7
10/27
11/16
12/6
12/26
Date-2020

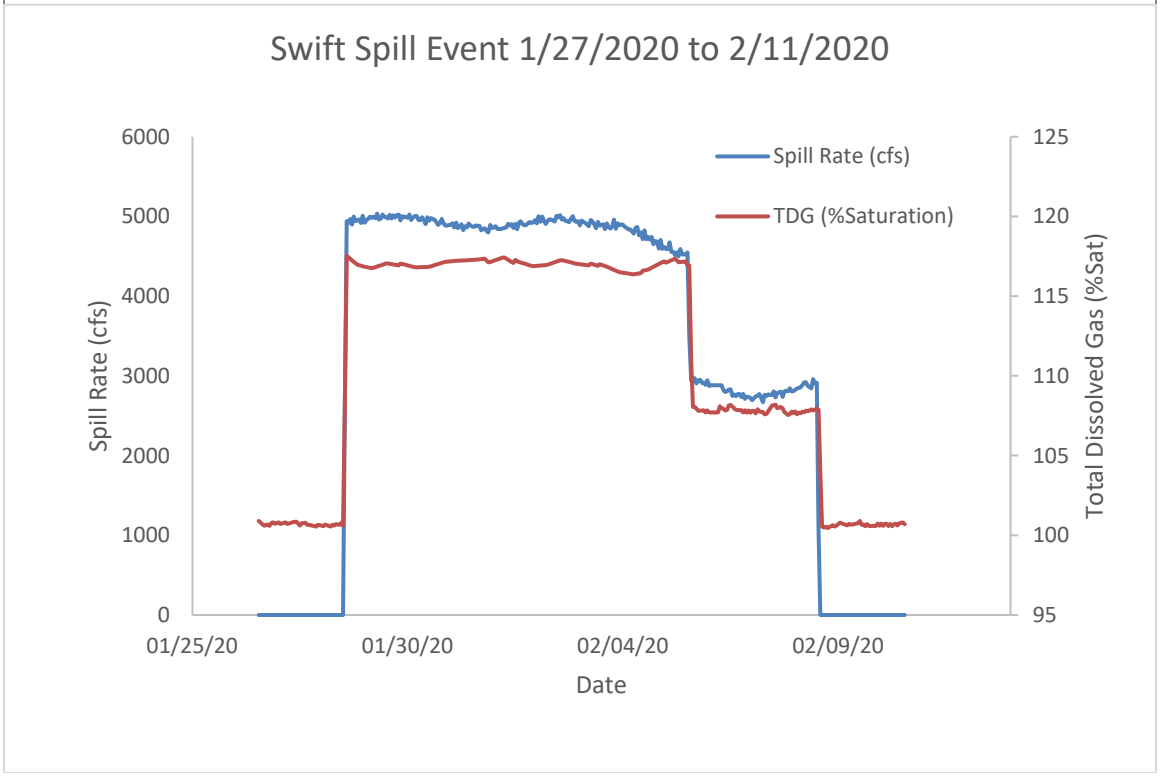

Yale Spill Event 1/27/2020 to 2/11/2020
Spill Rate (cfs)
14000
12000
10000
8000
6000
4000
2000
0
Spill Rate (cfs)
TDG (%Saturation)
115
113
111
109
107
105
103
101
99
97
95
Total Dissolved Gas (%Sat)
01/25/20
01/30/20
02/04/20
02/09/20
Date

Attachment F
Swift No. 1 Water Quality Graphs

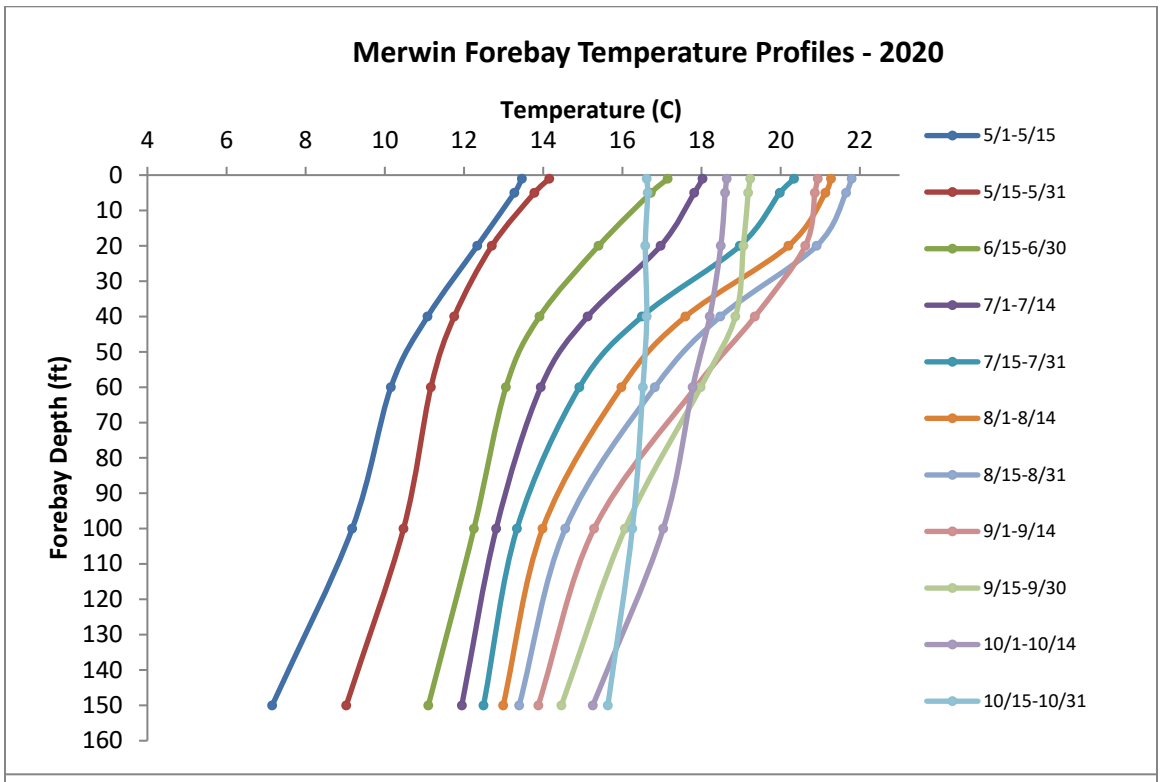

Swift No. 1 Forebay Temperature Profiles 2020
Temperature (C)
0
5
10
15
20
25
Forebay Depth (ft)
0
20
40
60
80
100
120
140
5/1-5/14
5/15-5/28
5/29-6/11
6/12-6/25
6/26-7/9
7/10-7/23
7/24-8/6
8/7-8/20
8/21-9/3
9/4-9/17
9/18-10/1
10/2-10/15
10/16-10/31


Swift No. 1 Total Dissolved Gas Saturation Hourly 2020
Percent Gas Saturation
115
110
105
100
95
90
85
80
75
1/1
2/20
4/10
5/30
7/19
9/7
10/27
12/16
Date - 2020


Comparison of Swift 1 Intake to Tailrace 7DADMax Temperatures
7DADMax Temperature (C)
16
14
12
10
8
6
4
2
0
5/1
6/20
8/9
9/28
Date - 2020
Intake
Tailrace


Swift Spill Event 1/27/2020 to 2/11/2020
Spill Rate (cfs)
6000
5000
4000
3000
2000
1000
0
01/25/20
01/30/20
02/04/20
02/09/20
Date
Spill Rate (cfs)
TDG (%Saturation)
125
120
115
110
105
100
95
Total Dissolved Gas (%Sat)

Attachment G
Merwin Water Quality Graphs


Merwin Forebay Temperature Profiles - 2020
Temperature (C)
4
6
8
10
12
14
16
18
20
22
Forebay Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
5/1-5/15
5/15-5/31
6/15-6/30
7/1-7/14
7/15-7/31
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8/15-8/31
9/1-9/14
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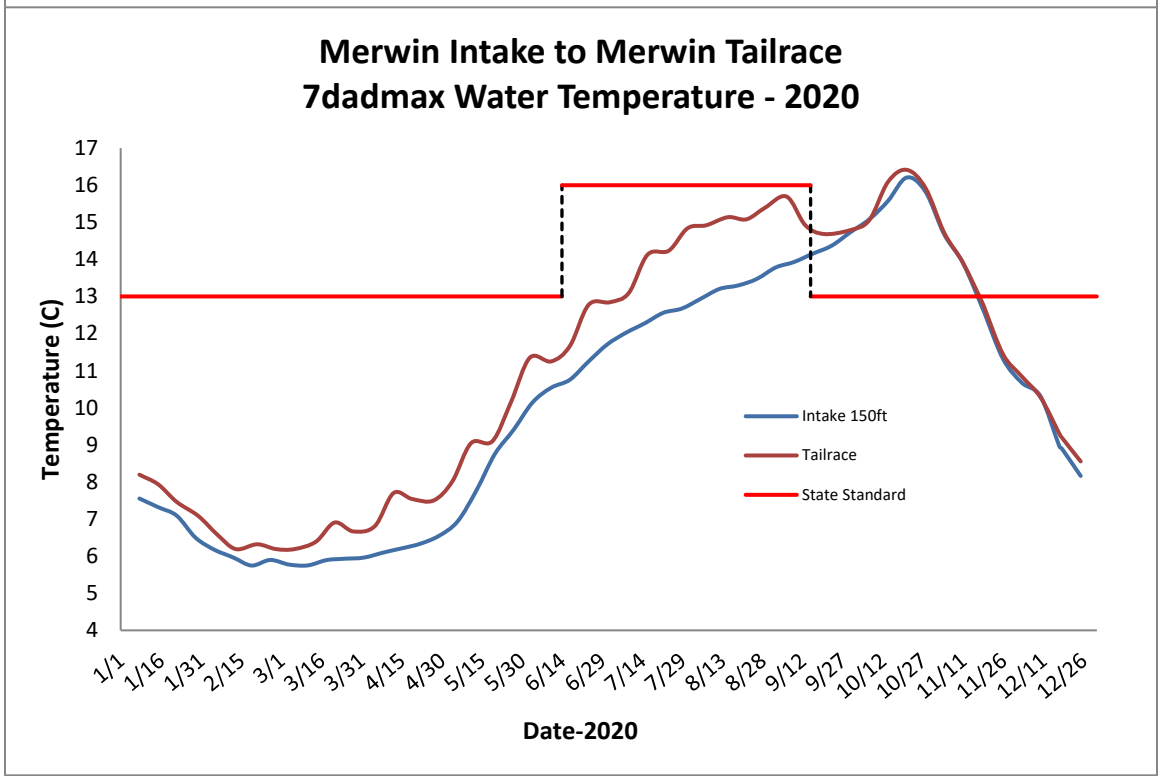
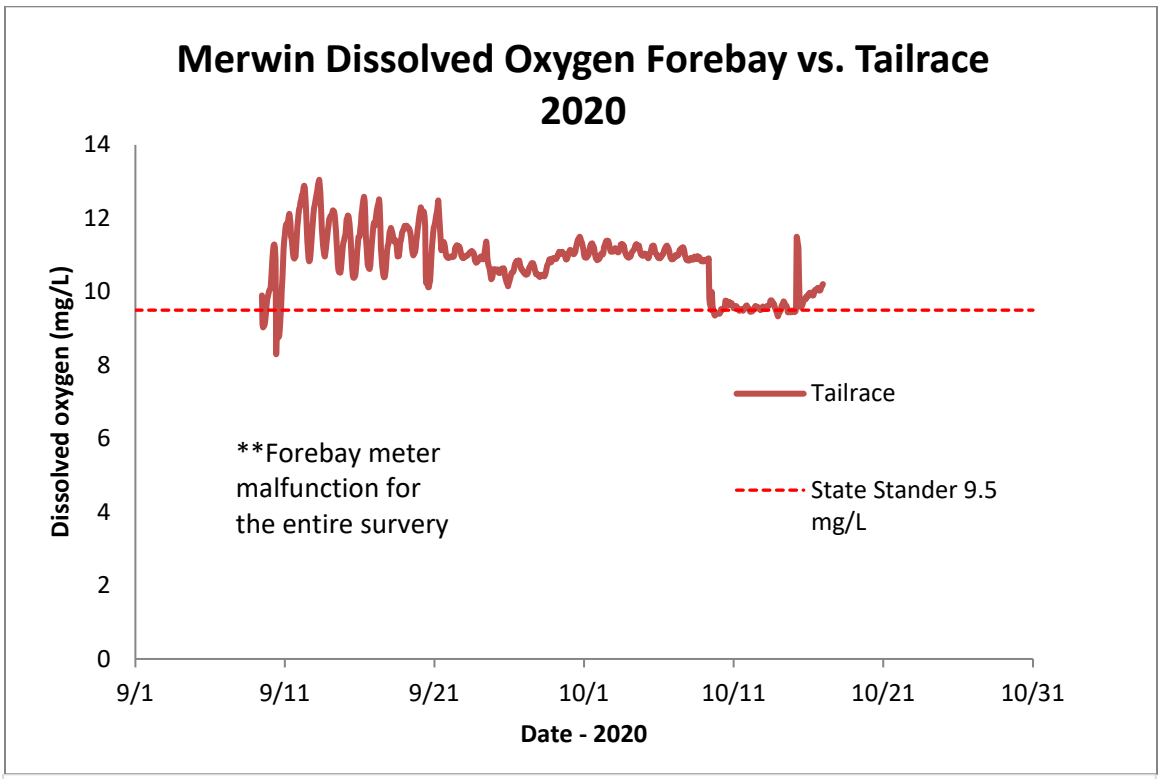
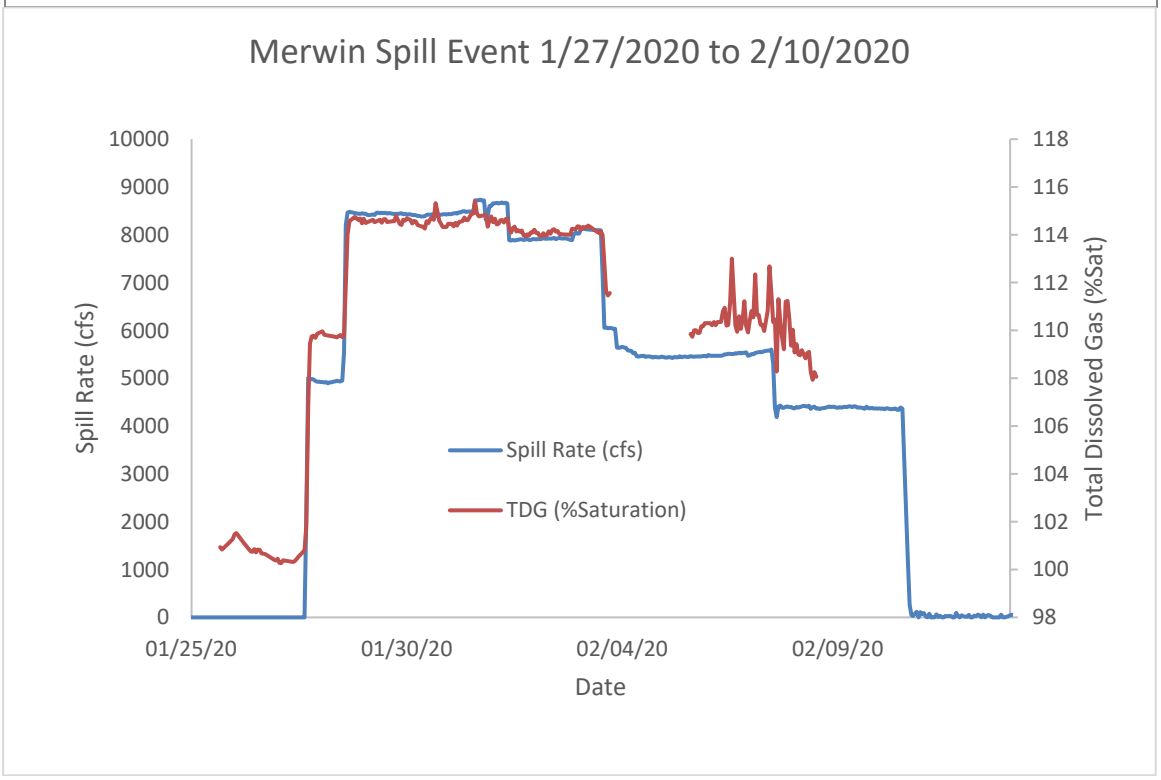
10/1-10/14
10/15-10/31


Merwin Intake to Merwin Tailrace
7dadmax Water Temperature - 2020
Temperature (C)
17
16
15
14
13
12
11
10
9
8
7
6
5
4
Intake 150ft
Tailrace
State Standard
1/1
1/16
1/31
2/15
3/1
3/16
3/31
4/15
4/30
5/15
5/30
6/14
6/29
7/14
7/29
8/13
8/28
9/12
9/27
10/12
10/27
11/11
11/26
12/11
12/26
Date-2020


Merwin Dissolved Oxygen Forebay vs. Tailrace
2020
Dissolved oxygen (mg/L)
14
12
10
8
6
4
2
0
9/1
9/11
9/21
10/1
10/11
10/21
10/31
Date - 2020
Tailrace
State Stander 9.5 mg/L
**Forebay meter malfunction for the entire survery


Merwin Spill Event 1/27/2020 to 2/10/2020
Spill Rate (cfs)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Total Dissolved Gas (%Sat)
118
116
114
112
110
108
106
104
102
100
98
01/25/20
01/30/20
02/04/20
02/09/20
Date
Spill Rate (cfs)
TDG (%Saturation)

Attachment H is saved as a separate file.

Attachment H
Lewis River Wildlife Habitat Management Plan 2021 Annual Plan

Attachment I is saved as a separate file.

Attachment I
Wildlife Habitat Management Plan Annual Progress Report for Operation Phase 2020