



Rocky Reach Hydroelectric Project
FERC No. 2145

2017 Annual Work Plan 2016 Progress Report

Completed per Rocky Reach Settlement Agreement, Sections 15.1.1 & 15.6.5

Reports provided by Chelan PUD Forum Leads:

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2016 Completed Activities

Rocky Reach Hydroelectric Project 2016 Progress Report

Forum	Activity
Rocky Reach Recreation Forum	<ul style="list-style-type: none"> Ⓢ Lincoln Rock State Park Swim Beach Improvements: Swim beach project complete in fall of 2016, small asphalt patching this spring Ⓢ Lincoln Rock Cabin Loop complete one season or operation complete Ⓢ Daroga State Park enhancements: Group camp restroom and RV hook-ups complete
Rocky Reach Fish Forum	<ul style="list-style-type: none"> Ⓢ Monitoring of 340 tagged adult lamprey to evaluate benefit of fishway improvements to aid adult Pacific lamprey passage. Ⓢ Chelan PUD tagged 186 adult lamprey at RRH, additional fish tagged downstream; largest study anywhere on Columbia R. Ⓢ Initial Lamprey passage data indicates an improvement in net ladder passage efficiency from 47% (2004) to 70+% (2014) Ⓢ Turbine Intake screens in Units 1 & 2 not monitored for juvenile lamprey impingement in 2016 per the RRFF decision of bi-annual in 2013 Ⓢ Discussion with RRFF for possible alternative approaches to achieve NNI for Pacific Lamprey, juvenile studies not feasible Ⓢ 2016 white sturgeon release number 2,250 fish per RRFF agreement, to compensate for reduced half-sibling adult crosses Ⓢ Resident fish monitoring completed 2013; RRFF set timeline for next resident fish studies – 2023
Rocky Reach Wildlife Forum	<ul style="list-style-type: none"> Ⓢ Payment Agreements executed for BLM, WDFW, and USFS for work approved under new 5-year Plan (2016-2020) Ⓢ Wildlife monitoring and weed management completed as direct by FERC & RRWF in 2016. Ⓢ Annual monitoring and weed management completed as directed by the FERC and Ute Ladies' Tresses Subcommittee

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2016 Completed Activities (cont.)

Rocky Reach Hydroelectric Project 2016 Progress Report

Forum	Activity
Rocky Reach Cultural Forum	<ul style="list-style-type: none"> Ⓢ Completed archeological monitoring of 13 sites within the Rocky Reach Hydroelectric Project Ⓢ Hosted the 2016 River Ramble at Rocky Reach Dam Ⓢ Reached agreement on consultation protocol and decision to revise and update the Rocky Reach Historic Properties Management Plan (HPMP)
401 Water Quality	<ul style="list-style-type: none"> Ⓢ Submitted Gas Abatement Plan to Ecology on April 1, 2016 Ⓢ Submitted Gas Abatement (TDG) Annual Report to Ecology on January 19, 2017 (extension past December 31, 2016) Ⓢ Continuing to collect annual TDG and temperature data in forebay and tailrace Ⓢ Submitted Aquatic Invasive Species (AIS) Report to Ecology and the Rocky Reach Fish Forum (Draft for review February 21, 2016)
Project Operations	<ul style="list-style-type: none"> Ⓢ Submitted Draft Operations Plan (included Fish Spill Plan) on February 24, 2016 to designated stakeholders

2017 Recreation

Rocky Reach Recreation Forum – 2017 Work Plan

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
ADA upgrades to Lincoln Rock restroom loop #1	Start planning	Complete by 2019	none	As needed	Plan and start design in 2018
Daroga Shoreline Interpretative trail	Start design and permitting	Complete by 2019	none	None required	Design, permit and construct in 2019

2017 White Sturgeon

Rocky Reach Fish Forum – White Sturgeon 2017 Work Plan

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
White Sturgeon Supplementation	<p>Per RRF agreement, release 2,250 juvenile white sturgeon in 2016.</p> <p>Fourth year of tagged fish monitoring and evaluation occurred in 2016.</p> <p>Review of WS population models to determine if applicable to determine reservoir carrying capacity.</p> <p>RRFF Discussion of effects of WS supplementation levels (6,500 juveniles annually) on Pacific Lamprey populations and conflict with achievement of Pacific Lamprey populations and Management Plan goals for Rocky Reach.</p>	2016	Population Monitoring and 2016 SOA decision on stocking levels for 2016 through 2020.	Monthly White Sturgeon Subcommittee technical meetings and Fish Forum meetings for updates and approvals.	<p>Release 2,250 juveniles April 2017.</p> <p>Adult brood collection and or larval collection for culture and release of juvenile sturgeon in 2018, based on mark-recapture monitoring and half-sibling adult crosses.</p> <p>Continue annual monitoring and evaluation of tagged fish to evaluate growth, survival, forage items and reservoir use locations to guide future supplementation. RRF discussions of potential negative interactions with other lamprey, other species.</p>

2017 Bull Trout

Rocky Reach Fish Forum – Bull Trout 2017 Work Plan

License Measure	Activity	Activity Timeline	Forum Decision	Consultation or Meetings	Next Steps
Annual Report to USFWS	2016 Annual Bull Trout Monitoring and Incidental Take Report	Report due April 15, 2017	None in 2016	2016 incidental Take is within allowable Take limits as No lethal Take observed. USFWS meetings, conference calls, and Incidental Take 48-hour reporting. 2016 Monthly Fish Forum Meetings for updates.	2017-18 Continue annual reports to USFWS. Continue annual bull trout passage counts at Rocky Reach Fishway. Complete 2016 Annual report to USFWS by 4/15/2017.
10-Year Radio-Telemetry check-in study	Scope and write Plan for 2018 bull trout study	December 2017 Study Plan Prep			Scope and write 2018 radio-telemetry study Plan for 10-year incidental take check-in. Study to confirm incidental take remains within limits.

2017 Pacific Lamprey

Rocky Reach Fish Forum – 2017 Pacific Lamprey Work Plan

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
Evaluate Upstream Lamprey Passage Rates and Ladder Modifications via PIT-Tag Study of Adults	Continue to monitor fishway for PIT-tagged lampreys to assess fishway passage rates. 2016 study results show 98.8% passage rate for adult lampreys, 162/164 tagged adults passed successfully; Best lamprey passage rate on Columbia River	March 2016– August 2017	RRFF requests second year of study needed to assess passage rate success	Fish Forum monthly meetings and Pacific Lamprey Technical Subcommittee meetings	2017 - Conduct second adult Lamprey Rocky Reach Passage and Study. 2017 Fish Forum to develop adult Lamprey passage rate target for Rocky Reach
Conduct Bi-annual Juvenile Lamprey Impingement Monitoring	Monitor for impingement of juvenile lamprey on turbine Unit 1 & 2 intake screens	May-June, 2017	Review Results	Fish Forum Monthly meetings	Conduct monitoring in May-June 2017 per the RRFF decision in 2013
Measurement of Impacts on Juvenile Lamprey Downstream Passage	Ongoing RRFF review of acoustic tag technology to enable unbiased tagging of juvenile lamprey. Chelan PUD to use pikeminnow predator control program to examine potential predation on juvenile lamprey at Rocky Reach dam and reservoir	January - Dec	None expected for 2017	Fish Forum Monthly meetings; Pacific Lamprey Subcommittee	Wait for tag technology and physiology studies of tagged juveniles to accept tag, and unbiased methods to conduct paired release studies of juvenile lamprey dam passage. Sample northern pikeminnow gut contents for presence of juvenile lamprey
No Net Impact	RRFF began to scope methods to determine and calculate to NNI for adult lampreys once adult passage studies are completed. Project effects still not measureable for juvenile lamprey downstream passage at the Projects	January- Dec 2017	RRFF acceptance of alternative path(s) using Adaptive Management to achieve NNI	Fish Forum Monthly meetings; Pacific Lamprey Subcommittee	2017-2018. RRFF to define NNI and develop calculations and scope projects to achieve NNI based on measure adult passage rates, once passage studies are completed in 2018

2017 Resident Fish

Rocky Reach Fish Forum – Resident Fish 2017 Work Plan

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
Resident Fish Monitor & Measure Relative Abundance and Species Comp	No resident studies in 2016; Funded (approx. \$100,000) to rear 30,000 lbs. of rainbow trout; Funded (\$50,000) for resident fish enhancement measures;	Next study 2023; Funding occurs annually	10-year check-in study set for 2023	Fish Forum monthly meetings	Next monitoring study 2023 in Rocky Reach Reservoir. Continue annual funding for resident fish
Resident Fish Monitoring Plan	Scope and Design check-in study for 2023	2022	First of three additional studies during License	Fish Forum monthly meetings	Conduct next evaluations: 2023, 2033, 2043

2017 Wildlife/Habitat

Rocky Reach Wildlife Forum – 2017 Work Plan

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
Agency funding (WDFW , BLM, USFS)	Project management, reimburse for work completed	Ongoing	None	Annual meetings in late fall with each agency to establish project schedules and budgets	Implement approved measures (FERC & RRWF) Execute Payment Agreements for new Plan
Wildlife Monitoring	Conduct annual wildlife monitoring as directed by RRWF	Conduct monitoring for approved projects, provide summary reports	Propose wildlife monitoring projects Approve project proposals	Late fall meeting with RRWF to summarize monitoring results and propose monitoring for 2018	Conduct 2017 monitoring Provide annual summary reports to RRWF
Integrated Terrestrial Invasive Plant Control Plan	Conduct annual weed control project(s) as directed by RRWF	Conduct weed control for approved projects, provide summary reports	Propose weed control projects Approve project proposals	RRWF meeting in late fall to summarize weed control work and propose monitoring for 2018	Conduct 2017 weed control project Provide annual summary reports to RRWF
Sun Cove Conservation Easement	none	When necessary	None	As necessary	Preserve property until buffer is necessary

2017 Ute Ladies' Tresses

Rocky Reach Wildlife Forum –2017 Work Plan

License Measure	Activity	Activity Timeline	Subcommittee Decisions	Consultation or Meetings	Next Steps
Integrated Terrestrial Invasive Plant Control Plan	Implement Integrated weed control Plan	Spring and Fall weed control as approved by Subcommittee	Propose and approve 2017 weed control Plan	Late fall meeting for 2017 project close-out; , 2018 weed control proposals	Review monitoring reports, conduct site visit(s), implement approved weed control Plan
Spiranthes Existing Populations Monitoring, Reporting, and Mapping	Monitoring and reporting	August – Sept surveys Sept- Dec report	Review reports, prioritize threats, consider required 2018 5-year monitoring areas/effort	June 2017 meeting to update threat matrix (post-fire), Fall meeting to review annual monitoring efforts and consider 2018 required 5-year monitoring	Annual monitoring and report (by December 31)

2017 Cultural

Rocky Reach Cultural Forum – 2017 Work Overview

License Measure	Activity	Activity Timeline	Forum Decisions	Consultation or Meetings	Next Steps
Develop TCP Plan	Develop Plan	TBD	Complete and Approve Plan	Schedule regular forum meetings to implement provisions within the HPMP.	Implement Plan
Conduct Site Surveys and Treatment	Continuous as needed	2016	Approvals	Schedule regular forum meetings to implement provisions within the HPMP.	Continue to consult with Forum on any project impacts (e.g. discovery)
Curate Items	Complete	2016	Complete	N/A	Complete
Cultural Resource Monitoring Plan	Complete	2016	Revising per discussion with forum	Forum to approve.	Implement Plan
Education Interpretive Plan	Complete	2016	Complete	Schedule regular forum meetings to implement provisions within the Plan.	Consult with Forum on additional opportunities to further public education on cultural resource issues.

2017 401 Certification

Rocky Reach Water Quality – 2017 Work Plan

License Measure	Activity	Activity Timeline	Consultation or Meetings	Next Steps
Annual Gas Abatement (TDG) Plan	Complete Plan	Due to Ecology April 1	Ecology review and approval.	Provided to Ecology on Feb 13 for review of draft. Final due to Ecology April 1.
Gas Abatement Plan (TDG) Annual Report	Complete Report	Due to Ecology Dec 31	Ecology review	Provide a draft to Ecology October 31
TDG Monitoring	Monitoring	Year round	NA	Annually
Temp Monitoring – Forebay/Tailrace	Monitoring	April - Oct	NA	Annually
Aquatic Invasive Species Report	Annual Report	Draft to Ecology & RRF Feb 19 Due to FERC April 1	Ecology & RRF consultation on draft	File with FERC by April 1
Quality Assurance Project Plan Report (Water Quality Report)	Annual Report	Draft to Ecology March 1 Due to FERC May 1	Ecology review and approval. FERC approval.	Annual report provided to Ecology on March 10. Submit to FERC on May 1.
TMDL Measures	Monitoring	Ongoing		Ongoing
WQPP	Develop plan	Project specific	Ecology review and approval	As needed

2017 Project Operations

Rocky Reach Project Operations – 2017 Work Plan

License Measure	Activity	Activity Timeline	Consultation or Meetings	Next Steps
Annual Operations Plan (Article 402)	Complete Annual Plan	Submit draft for agency and Tribes review. Final to FERC by April 1.	Draft provided to agencies and Tribes for comment on Feb 24, 2017	Incorporate comments and submit to FERC by April 1.