

Rocky Reach Fish Forum

Wednesday, 5 April 2017

1:00 – 4:00 p.m.

Chelan PUD First Floor Conference Room

Wenatchee, WA



CHELAN COUNTY

Meeting called by Steve Hemstrom

Chairperson, Tracy Hillman

Notes taken by Katja Gottbrecht

Attending Representatives:

Hemstrom, Steve	Chelan PUD	(509) 661-4281	steven.hemstrom@chelanpud.org
Lewis, Steve	USFWS	(509) 665-3508 x14	stephen_lewis@fws.gov
Rose, Bob*	YN	(509) 865-5121	rosb@yakamafish-nsn.gov

Attending Participants:

Clement, Marcie	Chelan PUD	(509) 661-4186	marcie.clement@chelanpud.org
Gottbrecht, Katja	Chelan PUD	(509) 661-4757	katja.gottbrecht@chelanpud.org
Hillman, Tracy	BioAnalysts	(208) 321-0363	tracy.hillman@bioanalysts.net
Keller, Lance	Chelan PUD	(509) 661-4299	lance.keller@chelanpud.org
Miller, Donella*	YN	(509)945-0132	mild@yakamafish-nsn.gov
Nelle, RD	USFWS	(509)548-7573	RD_Nelle@fws.gov
Padgett, Michael*	Alcoa	(412)553-4545	michael.padgett@alcoa.com
Underwood, Alene	Chelan PUD	(509) 661-5192	alene.underwood@chelanpud.org

* Joined via phone.

Meeting Minutes

I. Welcome and Introductions

Tracy Hillman welcomed everyone to the Rocky Reach Fish Forum (RRFF or Forum) meeting. Participants introduced themselves.

II. Agenda Review

The agenda was reviewed and approved with the addition of discussions on milfoil eradication and white sturgeon broodstock collection.

III. Approval of Meeting Minutes

The March meeting minutes were reviewed and approved with edits.

IV. Review Action Items

- Alene Underwood will provide the RRFF with a revised copy of the Tumwater Dam Lamprey Passage Feasibility Study. **Ongoing**
- Ralph Lampman will provide an update on the detection of the adult lamprey released in 2016 downstream from and within Tumwater Dam. **Ongoing**
- Steve Hemstrom will contact the Army Corps of Engineers to see if they have examples of loss in distribution vs loss from mortality for adult lamprey or a similar fish. Steve has emailed the Army Corps of Engineers and is waiting for a response. **Ongoing**
- Steve Hemstrom will check with Alene Underwood on the timeline for the Tumwater Dam feasibility analysis and reporting. **Complete**
- The RRFF will review and send comments on the Total Dissolved Gas Abatement Alternatives Analysis Report to Marcie Clement by 1 April 2017. **Complete – no comments were received.**
- The RRFF will review and send comments on the 2016 AIS Monitoring Report to Marcie Clement by 21 March 2017. **Complete – no comments were received.**
- Steve Lewis will check into who will represent the USFWS on the Rocky Reach Policy Committee. **Ongoing**
- Lance Keller will provide the sturgeon diet analysis survey report to the RRFF in April or May. **Ongoing**
- Steve Hemstrom will check with Alene Underwood to see if the RRFF can meet jointly with the PRFF to discuss adult lamprey NNI. **Complete**
- The RRFF will send comments on the draft Monitoring Study to Quantify Dam Passage and Tributary Escapement to Steve Hemstrom by 22 March 2017. **Complete – no direct**

comments about the report were received. Comments on the 2016 report can still be sent to Steve Hemstrom.

- Steve Hemstrom will describe how the Monitoring Study to Quantify Dam Passage and Tributary Escapement met the objective under each section of the draft report. **Complete**
- Ralph Lampman will provide the RRFF with a report describing results from the 2016 release of adult lamprey in the Wenatchee River by 15 March 2017. **Ongoing**
- The RRFF will send additional agenda items to Tracy Hillman for the proposed regional lamprey coordination workshop. **Complete**
- Tracy Hillman and John Ferguson will prepare a final agenda for the workshop. **Complete**
- Steve Hemstrom will provide information on the 21 June 2017 fish passage workshop in Oregon to Tracy, who will disseminate it to the RRFF. **Complete**
- The RRFF will send comments on the 31 January 2017 biological memo to Steve Hemstrom. **Complete - Steve Hemstrom received comments from Ralph Lampman.**
- Steve Hemstrom will share PIT-tag array detection efficiencies for salmon to Ralph Lampman. **Ongoing**
- The RRFF will reply to Steve Hemstrom regarding hypotheses on Rocky Reach Reservoir Project effects on adult lamprey. **Complete - Steve Hemstrom received no hypotheses or replies. Hypotheses can be discussed during the 3 May joint meeting with RRFF and PRFF.**

V. Aquatic Invasive Species and Water Quality

Aquatic Invasive Species (AIS) Update

Marcie Clement reported that the RRFF did not submit any comments on the Draft Annual Aquatic Invasive Species (AIS) Report.

Milfoil Eradication

Marcie Clement indicated that the Chelan County Noxious Weed Control Board (Weed Board) is asking Chelan PUD to do a chemical treatment every two years on milfoil at boat launches and swim areas. Currently, the techniques Chelan PUD uses to control milfoil include public education and monitoring. Chelan PUD also uses a harvester to clear boating lanes for recreational use. The AIS report notes that milfoil has been present in the Columbia River for several decades and Chelan PUD has not observed the spread of milfoil during their monitoring surveys. Chelan PUD is not opposed to chemical treatment, but they believe there is an appropriate place and time for its use. Chelan PUD wants to be sure they balance the requirements of the Weed Board with Chelan PUD's obligations and responsibilities with the Endangered Species Act (ESA) and the requirements of their 401 and FERC license.

Marcie said she would like Julie Sanderson from the Weed Board to present their request/proposal to the RRFF so the Forum has a chance to ask questions and voice any concerns they may have regarding a potential chemical application. Marcie will provide the RRFF with the following documents:

1. The Dye Report from Aquatechnex, LLC (2013)
2. Chelan PUD's Comment Letter to Ecology Regarding the Permit Application to Apply Herbicide
3. The Chemical Used on the 2015 Entiat Project by Aquatechnex, LLC

4. Ecology's Responses to Comments
5. Coverage Letter from Ecology
6. Permit Terms and Conditions

Tracy Hillman will invite Julie to the June RRF meeting.

Total Dissolved Gas Report Update

Marcie Clement reported that the RRF did not submit any comments on the Draft Total Dissolved Gas (TDG) Report.

Action Items:

- **Tracy Hillman will invite Julie Sanderson, Chelan County Noxious Weed Control Board, to the June RRF meeting to discuss the Board's request for Chelan PUD to chemically treat milfoil in the project area.**
- **Marcie Clement will send Julie Sanderson's contact information to Tracy Hillman.**
- **Marcie Clement will forward a copy of Chelan PUD's comment letter to the RRF.**
- **Steve Lewis will forward a copy of the USFWS comment letter to the RRF.**
- **The RRF will send questions for Julie Sanderson to Tracy Hillman, who will send the questions to Julie to help her prepare for the discussion in June.**

VI. White Sturgeon

Juvenile Rearing

Lance Keller reported that 2,278 juvenile sturgeon were PIT-tagged and scute-marked at the Chelan Hatchery. During tagging, 27 juvenile sturgeon died, which is unusually high for Chelan PUD's seasoned tagging team. The mortalities were thought to have been caused by the small size of the fish (no place for a tag); necropsies were performed on the fish and some internal bleeding was noted. Of the 27 fish that died, 17 were from one pond. It is unknown if these fish were from the Wells Hatchery. There was one additional shed tag, bringing the final juvenile sturgeon count to 2,250, the targeted release number for 2017. All of the remaining 2,250 fish are doing fine and recovering; there have been no additional mortalities. Chelan PUD staff will return to the Chelan Hatchery the third week in April to do QA/QC to make sure all fish have retained their tags, and to get a final measurement of weight and length before release.

The target date to release these fish is late April or early May. Chelan PUD staff are tracking river flows and temperatures and hope to release the fish when river temperatures are close to the temperature of the hatchery environment. Release locations, outlined in the Monitoring and Evaluation Report, include Gallagher Flats (above Beebe Bridge), Daroga State Park, and the Entiat Boat Launch.

Monitoring and Evaluation Timeline

Lance Keller reported that Chelan PUD is conducting an internal review of the 2016 draft monitoring report prepared by Blue Leaf Environmental. Lance will send the draft report to the RRF before the May meeting.

Brood Stock Collection

Lance Keller reported that for the last several years, Chelan and Grant PUDs have been very successful in collecting broodstock downstream from McNary Dam. Because of higher flows this year, however, lower-river co-managers are discussing the idea of allowing mature adults to spawn naturally in the river. That is, higher flows tend to be associated with high natural recruitment, and given that there has been no natural recruitment in John Day Reservoir since 2012, some entities prefer that the fish spawn naturally in the tailrace. WDFW and CRITFC are considering letting the PUDs remove six females and six males from the spawning population, or possibly three females and three males. If the PUDs cannot collect broodstock downstream from McNary Dam, co-managers are discussing the collection of broodstock from Bonneville Pool or downstream from Bonneville Dam. Lance is concerned that progeny from broodstock collected downstream from Bonneville Dam may increase entrainment of their progeny released in the project area, because sturgeon downstream from Bonneville Dam are mostly anadromous (adults migrate into freshwater to spawn and juveniles migrate to the ocean to grow). That is, he is concerned with incorporating anadromous parental-origin juveniles into the resident sturgeon population in the project area. Lance said the lower-river co-managers will reconvene on Friday, 7 April to discuss broodstock collection. Chad Jackson, Donella Miller, or Tom Skiles (CRITFC) will send Tracy Hillman an update after their meeting. If McNary Tailrace is not an option for collecting broodstock, Tracy will organize a RRF conference call to discuss alternative broodstock collection locations.

Action Items:

- **Lance Keller will provide a copy of the draft 2016 sturgeon monitoring report prepared by Blue Leaf Environmental to the RRF by late April.**
- **Chad Jackson, Donella Miller, or Tom Skiles (CRITFC) will send Tracy Hillman an update on broodstock collection after their Friday conference call.**

VII. PACIFIC LAMPREY

Pacific Lamprey NNI Estimation

Tracy Hillman confirmed there will be a joint meeting of the RRF and PRFF on Wednesday, 3 May to discuss lamprey NNI. In the morning, the group will provide brief updates on sturgeon issues including broodstock collection and juvenile sturgeon releases. Mike Clement (Grant PUD) and Steve Hemstrom (Chelan PUD) will then talk about adult lamprey passage results to date, followed by a discussion of NNI.

The NNI discussion will include two parts. The first part will include discussions on how to calculate adult passage success and determine if anything can be done to improve fishway passage. If nothing can be

done in the fishway to further improve adult passage, the group will then determine how to estimate NNI (Part 2). Steve Lewis asked if the group would agree on a particular percentage after assessing the numbers. Tracy said he hopes this can be accomplished, but acknowledged the groups may need more time.

Action Item:

- **Tracy Hillman will send out an agenda for the joint RRF/PRFF Pacific lamprey NNI meeting.**

2016 PIT-Tag Study Objectives

Steve Hemstrom reported that he emailed to the RRF a memorandum on 22 March that addresses how the 2016 Chelan PUD PIT-Tag Study met the objectives of the study (at the request of Bob Rose). Steve Hemstrom remarked that overall he is satisfied that the report addressed what Chelan PUD had hoped to determine. The only unknown is if Chelan PUD will get more detections in 2017 from lamprey that were tagged and released in August 2016. Steve Hemstrom then briefly addressed a few of Steve Lewis' comments on the memorandum.

First objective: "Continue to assess adult Pacific lamprey passage behavior at Rocky Reach Dam using FDX- PIT technology to evaluate the in-fishway passage improvements Chelan PUD completed in 2011 to increase adult passage rates." Steve Lewis commented that conversion rates are high during dry years and low during wet years and that incremental fishway improvements and dry years since 1996 may have been larger factors in high conversion rates. Steve Hemstrom responded that conversion between raw physical fishway counts at Rock Island (RI) Dam and Rock Reach (RR) Dam comport well with Chelan PUD's PIT-tag estimates, both indicating a high passage rate. Steve Hemstrom will do a correlations analysis but noted that from what he has seen, rates of flow do not significantly affect conversions. From Chelan PUD's viewpoint, if conversion rates between RI and RR in dry years are higher because flows are lower, then that should be statistically recognizable, and Hemstrom suggested that if that's the case, then lamprey should have trouble swimming through the 20 miles of Columbia River (RI reservoir) during higher flows. This would also say something about the ability of adult lamprey to travel up the Wenatchee River and Tumwater Canyon during higher flows, which would be even a greater problem for them than the Rock Island Reservoir. Steve Hemstrom will consult hourly/daily flow rate data and conversion rate data for Rocky Reach and look into it further.

Second objective: "Estimate adult Pacific lamprey passage success at Rocky Reach Dam to allow comparison to passage rates at other Projects on the Columbia River, per the PLMP." Steve Lewis commented that while he agrees with the intent of addressing this particular objective, he added caution that we are basing this claim on the draft version of this study and not the final. Steve Hemstrom responded that dam passage is one thing, but based on the results of other studies, it is impossible to know where 100% of the fish you release in a given study end up. He remarked that of the 211 lamprey released in 2016, so far 169 have been detected, and he hopes to have more detections in 2017.

Third objective: “Estimate the proportion of volitional escapement into mid-Columbia River tributaries.” Steve Lewis asked if the 3.3% refers to lamprey released only at Rocky Reach, or the entire segment of mid-Columbia River hydroelectric projects. Steve Hemstrom clarified that the 3.3% refers to the fish that Chelan PUD released at Kirby Billingsly Hydro Park for this study in 2016; the report noted escapement rates and where the fish went. Chelan PUD will see how the final detections of full-duplex PIT-tags turn out and Chelan will have an estimate, perhaps just not what they had expected. Measuring escapement rates of lamprey is something that worries Steve Hemstrom, what with the consideration of chemical treatment of milfoil in or near the mouth of the Entiat River.

Tracy Hillman asked if this memorandum could be incorporated into the final report as an appendix. Steve Hemstrom replied that he would rather the report itself address the objectives, and will work with Blue Leaf Environmental so there would not be outstanding questions after reading the report. Bob Rose added that perhaps some of this could be elaborated on in the discussion section of the report. Bob thanked Steve Hemstrom for taking the time to provide linkages between study objectives and study results.

Action Item:

- **Steve Hemstrom will do correlation analyses between river flows and conversion rates and will send those analyses to the RRF.**

2017 Pacific Lamprey Study

Steve Hemstrom reported that he has been working with Blue Leaf Environmental on defining and refining the objectives for the 2017 Pacific Lamprey Study. Chelan PUD will be developing a contract, study objectives, and a study plan in the near future. The PUD’s main goals are to address any elements of the 2016 lamprey plan that were not answered previously, to get a comparable data set in 2017 (to what happened in 2016), and to be sure to do what was agreed to in the Pacific Lamprey Management Plan for the Rocky Reach license. Steve Hemstrom asked for comments and suggestions from the RRF, asking for no large changes to the scope of the study.

Grant PUD is allowing Chelan PUD access to the Priest Rapids fish ladder to collect adult lamprey for the 2017 season. Steve Hemstrom expects the contractor (likely Blue Leaf) will collect between 200 and 300 adult lamprey. Hemstrom noted there is no run forecast yet, but that adult lamprey have already been seen at Bonneville Dam. The group discussed how adult lamprey forecasts are made, if they are accurate, and if a large early run means a good year or not. Steve Hemstrom posited that the time of arrival to the Columbia River for some lamprey may be related to how far the host (e.g., a whale) ventures and on ocean conditions (e.g., ocean temperatures). Tracy Hillman remarked that work by Josh Murauskas and others has shown a correlation between lamprey abundance and host abundance in the ocean. Perhaps host abundance could be used to estimate good versus poor return years for lamprey. Steve Hemstrom remarked that he has seen a statistically significant correlation between lamprey hosts (hake, pollock, and cod) and lamprey returns in the same year or one year later.

Steve Hemstrom added that Chelan PUD is continuing to maintain and download half-duplex PIT-tag monitoring stations at Rocky Reach Dam. There are four different sites with half-duplex antennas at the dam. The intent is to capture information that may come from the more than 500 half-duplex PIT-tagged lampreys released by the Warm Springs Tribes this year between Bonneville and McNary dams. Steve Hemstrom does not have tag codes yet, but noted any information Chelan PUD can get from lower-river released lamprey is of interest.

Steve Hemstrom has been wondering if there is a correlation between number of fish counted at Bonneville Dam and the number of fish counted at Rocky Reach Dam, and if that percentage is relatively consistent over time. If there are count problems at Bonneville Dam, but the problem remains stationary over time (a constant bias), then the number of fish counted at Bonneville Dam can be used to estimate escapements to Rocky Reach Dam. Steve Hemstrom wonders if half-duplex tag rates could show a rate that is different from that for fish released in the lower systems. Bob Rose suggested counts at The Dalles Dam may be more reliable and those can be compared to counts at Rocky Reach Dam. Steve Hemstrom remarked that until dams downstream (including Bonneville and McNary) are able to provide better counts (or any counts) of adult lamprey, then it is hard for the dams upstream to know what they are working with. Steve Hemstrom will look into count data from The Dalles and will report back to the RRF if he finds anything of interest.

Action Items:

- **The RRF will send their comments on the 2017 full-duplex study to Steve Hemstrom before the release of the 2017 study plan.**
- **The RRF will send comments to Steve Hemstrom on anything they see in 2016 study that should be included in the 2017 study.**
- **Steve Hemstrom will look at lamprey counts at The Dalles Dam and compare those to counts at Rocky Reach Dam.**

Regional Lamprey Workshop

Tracy Hillman sent out the agenda for the Regional Lamprey Workshop via email on 4 April 2017. The Workshop will take place on Thursday, 13 April from 10:00 am - 3:30 pm in the large auditorium at Douglas PUD. Tracy noted that during the morning session, each of the PUDs will give a brief overview of results from their 2016 studies (if the results are incomplete, they will simply provide an update) and then discuss studies they plan to do in 2017. Following the PUD presentations, Daniel Deng from PNNL will talk about the newest developments in tagging technology for adult and juvenile lamprey. Tracy encouraged the PUDs to give short presentations to allow more time for Daniel's presentation and for questions. In the afternoon, Bob Rose will talk about adaptive management, which will then lead to a discussion on hypotheses about why adult lampreys are not making it to the Wells Project (including predation, pheromones, mainstem spawning, and translocation). The last agenda item will be a discussion about actions needed in 2017 and beyond, and if a rolling three-year action plan is needed to facilitate study planning and implementation. Tracy said he will join the workshop in the afternoon.

As an aside, Tracy mentioned with the retirement of Keith Truscott, Director of Natural Resources, from the Chelan PUD, Alene Underwood will assume Keith's fisheries responsibilities and Michelle Smith will

assume Keith's licensing and parks responsibilities. Alene Underwood confirmed that Michelle Smith is the main Rock Island licensing contact.

Action item:

- **Tracy Hillman will coordinate with John Ferguson to see if Daniel Deng (PNNL) can have more time for his presentation and questions during the lamprey workshop.**

Historical Occurrence of Lamprey Upstream from Tumwater Dam

Steve Lewis reported that the USFWS received an email from Chelan PUD requesting information about potential lamprey spawning/reproduction in the area upstream from Tumwater Dam. He inquired if the request is linked to the Tumwater Dam Feasibility Study. Steve Hemstrom replied no, the request is not linked to the study, but more about what intrinsic potential for lamprey existed historically above the Tumwater Dam site and how many adult lampreys went to and used the upper Wenatchee Basin for spawning. Steve Hemstrom confirmed a list of citations he received from RD Nelle regarding historic lamprey observations in the Tumwater Dam area: 1935 - two individuals seen (presumed adults) at Tumwater Dam; 1949-1950 - six individuals (presumed juveniles) seen at Lake Wenatchee; 1949 to 1951 - an unknown number (presumed juveniles) seen at Lake Wenatchee; 1955 - lamprey (presumed juveniles) noted as "abundant" seen at Tumwater Dam; 1958 - one of unknown age at Lake Wenatchee; 1981-88 - ammocoetes noted by Steve Hays during the Tumwater Fishway Redevelopment Study.

Steve Hemstrom noted he is not convinced that the data support that there were ever thousands of lampreys in Tumwater Canyon at the site of Tumwater Dam (Steve noted this reflects his personal scientific opinion, not that of Chelan PUD). Steve Hemstrom expects that some parts of the Wenatchee River could be very productive, including perhaps areas above Tumwater Canyon, but if lamprey historically could only move through the canyon during lower river flows, there would be a problem with lamprey traversing higher flows in the springtime to reach the Tumwater Dam site. Steve Hemstrom would like to work out these issues of biology and expectations and be more sure in the number of lamprey that Chelan PUD could expect to see upstream of Tumwater Dam naturally. Steve Hemstrom noted that when looking at the number of adult lamprey available between Rock Island and Rocky Reach dams, the physical number of lamprey that could be available there even if they all made it to Tumwater is small.

Update on Tumwater Dam Feasibility Study

Alene Underwood updated the Forum on the status of the Tumwater Dam Feasibility Study. The study is still going through internal PUD review and PUD staff are responding to questions regarding what makes sense, what is the biology and scientific expectations of the project, what are the anticipated costs, and what does the license say. After the internal questions are answered, the report will be shared with the Forum. Steve Lewis asked if the study delves into historical production and does it offer alternative analyses. Alene responded that there was a criteria analysis of 14-20 alternatives, which were narrowed down to the top few alternatives. The study is primarily the pros and cons of what may or may not be feasible from an engineering perspective. Alternatives considered but rejected, as well as meeting

minutes from the rapid assessment etc., are appended to the report to give context and the basis for the feasibility study.

VIII. Bull Trout

Rocky Reach Bull Trout Study

Steve Lewis reported there will be a meeting between the USFWS and Chelan PUD on 8 May at the USFWS building on Easy Street to discuss the 2018 Chelan PUD Bull Trout Study. RRF members and participants are welcome to attend.

The Bull Trout Study is a license requirement to evaluate incidental take levels authorized to Chelan PUD in the USFWS Bi-Op to the actual take levels observed, and to confirm that the Chelan PUD is still within take levels. The 2008 collections of bull trout for the 2008 study were conducted in May/June at Rocky Reach Dam. Steve Hemstrom indicated Chelan PUD and the USFWS will talk about timelines and other pieces for the 2018 study. Steve Hemstrom noted that he does not want to be working on the Bull Trout Study and trapping bull trout, and also have a Pacific Lamprey Passage Study occurring simultaneously as the two studies could affect each other. Steve Lewis remarked that if the scope of the 2018 study is agreed upon and changed from the 2008 study, a letter can be submitted to FERC saying the organizations are working together and for the sake of minimizing mortalities, this is how the study will be changed (with everyone on board). Steve Lewis proposed starting talks now in order to give the FERC time to respond to any proposed changes to the study. Changes may include things like minimizing take, smaller tags, etc. Steve Lewis brought up the study at Wells where they are discovering high levels of bull trout mortality, presumably from tag/tagging effects. Steve Lewis remarked that in the past, Steve Hemstrom had said he wanted to replicate the 2008 study to verify what is going on, but studies like the one at Wells Dam have shown high levels of tag mortality due to predation or handling. Steve Lewis suggested that Chelan PUD could do something like Andrew Gingrich did at Douglas PUD with using existing PIT-tag information to draw conclusions. This would also be less expensive than a radio-tag study. Steve Lewis just wants to be sure FERC is notified and involved. Alene Underwood remarked that ultimately FERC would ask if Chelan PUD has USFWS on board, as the requirement originated with them, but she understands it takes a while to go through the Chelan PUD processes. Alene reiterated Chelan's position that they want to be able to draw meaningful conclusions between the 2008 and 2018 studies.

RD Nelle asked if the study will be put out for contract or if it will be done in house. Steve Hemstrom confirmed that the study will most likely be contracted out. Alene added that Scott Hopkins from the Chelan PUD will also be attending the 8 May meeting with the USFWS. Scott is a newly hired full-time fisheries biologist that has worked for the Chelan PUD on a seasonal capacity for several years. Scott has extensive experience in fisheries bypass operations at Rock Island and Rocky Reach dams and in PIT-tag and acoustic-tag survival studies.

Action Item:

- **RRFF members are encouraged to attend the bull trout meeting with the USFWS and Chelan PUD on 8 May at the USFWS building on Easy Street.**

IX. Next Meeting

The next meeting of the RRFF is a joint meeting with PRFF to discuss Pacific lamprey NNI. The meeting is scheduled for Wednesday, 3 May 2017 from 9:00 to 4:00 p.m. and will be held at the Grant PUD office in Wenatchee at 11 Spokane St, Suite 205B (second floor of the GO USA building).