

# Rocky Reach Fish Forum

Wednesday, 1 July 2015

1:00 – 4:00 p.m.

Chelan PUD Second Floor Conference Room

Wenatchee, WA



Meeting called by Steve Hemstrom

Notes taken by Heidi Kunz

Chairperson, Tracy Hillman

## ***Attending Representatives:***

Hemstrom, Steve	Chelan PUD	(509) 661-4281	steven.hemstrom@chelanpud.org
Kerec, Matt (phone)	Alcoa	(412) 553-4361	matthew.kerec@alcoa.com
Rose, Bob (phone)	YN	(509) 865-5121	rosb@yakamafish-nsn.gov
Verhey, Patrick	WDFW	(509) 754-4624	patrick.verhey@dfw.wa.gov

## ***Attending Participants:***

Hillman, Tracy	BioAnalysts	(208) 321-0363	tracy.hillman@bioanalysts.net
Jackson, Chad (phone)	WDFW	(509) 754-4624 x250	chad.jackson@dfw.wa.gov
Keller, Lance	Chelan PUD	(509) 661-4299	lance.keller@chelanpud.org
Kunz, Heidi	Chelan PUD	(509) 661-4758	heidi.kunz@chelanpud.org
Nelle, RD	USFWS	(509) 548-7573	RD_Nelle@fws.gov
Rainey, Steve	USFWS (Consultant)	(503) 260-6990	wsteverainey@aol.com
Underwood, Alene	Chelan PUD	(509) 661-5192	alene.underwood@chelanpud.org

## Meeting Minutes

### **I. Welcome and Introductions**

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

### **II. Agenda Review**

The agenda was reviewed and approved.

### III. Review and Approval of Meeting Minutes

Minutes from the 3 June RRFF meeting were reviewed and approved.

### IV. Review of June Action Items

- Alene Underwood will contact Ann Gannam regarding her contracting questions. **Complete**
- RD Nelle will send the Lamprey Passage report to the RRFF before the July meeting. **Ongoing**
- Steve Rainey will present findings to the RRFF in July. **Complete**
- Tracy Hillman and Teneille Hatmaker will coordinate and schedule a WebEx for the RRFF meeting. **Complete**
- Steve Hemstrom will meet with the Fishway Attendants and report back to Steve Rainey. **Complete**
- Steve Hemstrom will send monitoring data to Rod O'Connor after 15 June. **Ongoing**
- Tracy Hillman will add the lamprey passage figures to the June RRFF meeting notes. **Complete**
- Lance Keller will distribute release numbers by location to the RRFF. **Complete**
- Members of the RRFF will identify questions for the modelers. **Complete**
- Tracy Hillman will contact the experts at UBC to begin coordinating a conference call. **Ongoing**
- Tracy Hillman will send EwE papers to the RRFF to help them develop questions for the experts. **Complete**
- Tracy Hillman will identify the major themes for the workshop and send those to the RRFF for review. **Complete**

### V. Pacific Lamprey

#### Rocky Reach Project Effects

Tracy Hillman reported that the Pacific lamprey subgroup met in June. No proposed recommendations were made for the RRFF during the subgroup meeting. The subgroup discussed technical and policy issues. The inclusion of survival studies is one of the issues that continues to be unresolved. Chelan PUD is working with Anchor QEA to evaluate suitable rearing and spawning habitat for lamprey upstream from each of the major hydroelectric projects on the Columbia and Snake rivers.

Steve Hemstrom agreed that the RRFF still needs to reach agreement on if and when juvenile lamprey passage survival studies can be conducted, and what to do in the meantime. Chelan PUD's position is that if they are funding and mitigating for effects that either haven't been shown or haven't been studied, then survival studies can be deferred. Some members of the RRFF do not agree with this position. Steve Hemstrom believes the technical issues of studying juvenile lamprey will make unbiased survival studies difficult to conduct. Chelan PUD would like to defer survival studies if they are funding No Net Impact (NNI). They would like to defer Section 4.2.3 in the Pacific Lamprey Management Plan

and move to Section 4.4.

Steve Hemstrom suggested that the next subgroup discussion could focus on the technical issues of the proposed NNI projects as put forward by the Yakama Nation and RRF parties instead of focusing on whether or not survival studies will be conducted. Members of the RRF agreed with this direction. Tracy Hillman stated that during the next subgroup meetings, he will attempt to keep the discussion on the technical issues versus the policy side.

Bob Rose suggested scheduling three successive months of meetings for the subgroup. Tracy Hillman will send a doodle poll in order to schedule Pacific lamprey subgroup meetings for the next 3 months. Because the focus of the meetings will be to discuss the technical aspects of the NNI objectives, which are the same for both the PRFF and RRF, members agreed to meet jointly with the PRFF Subgroup.

Steve Hemstrom described the information contained in the memorandum from Anchor QEA on Lamprey Geospatial Modeling. Steve stated that there had been discussion about how to analyze the future data from an NNI perspective to determine what the overall level of Project effects could be based on Rocky Reach's position in the accessible Columbia Basin. He also questioned what we would expect if more fish make it upstream. Table 1 in the memo included potential accessible rearing and spawning habitat for Pacific lamprey upstream from each of the major hydro projects in the Columbia River basin. Mapping was based on information in the *streamnet* database and data on spawning habitat for Chinook salmon. The information included both mainstem and tributaries. Table 2 in the memo showed the availability of potential Pacific lamprey rearing and spawning habitat in the Columbia River Basin (in square meters). For example, 4.5% of the total potential rearing habitat and 6.1% of the total potential spawning habitat for lampreys lies upstream from Rocky Reach Dam. Upstream of Rocky Reach Dam includes the Columbia River and the Entiat, Methow, and Okanogan tributaries. Steve stated that the study did not consider spawning and rearing habitat to be the same areas, because some spawning habitats do not always provide the correct sediment for juvenile lamprey rearing. Steve commented that this information can be used to help determine expectations for the future.

RD Nelle commented that it would be interesting to compare this information to steelhead. Steve Hemstrom will determine if the watershed area for the Okanogan (in Figure 1 in the memo) includes Canada. Tracy Hillman asked if Pacific lamprey rear above large lakes. RD Nelle responded that there are historical records that indicate that juvenile lamprey occurred above Lake Wenatchee. RD said historically they have also been in the Okanogan. The Anchor QEA memo will also be discussed in the subgroup meeting.

**Action Item:**

- **Tracy Hillman will send out a doodle poll in order to schedule Pacific lamprey subgroup meetings for the next three months.**

**Update on Rocky Reach Screen Monitoring**

Steve Hemstrom reported that the Rocky Reach screen monitoring is complete, but he has not yet reviewed the information (video tape). The monitoring period was from 15 May through 15 June.

### Update on Artificial Propagation

Steve Hemstrom reported that contracts for the Artificial Propagation work have been sent to the Yakama Nation, USFWS, and Umatilla/NOAA for their review and signatures.

### Update on 2014-15 Rocky Reach HDX-PIT Lamprey Detections

Steve Hemstrom reported that Chelan PUD is still monitoring PIT tags in adult Pacific lamprey at Rocky Reach Dam. Chelan PUD had intended to shut down the 2014 study, but fish tagged in 2014 are still moving through the fishway. Table 1 below shows fishway detections in 2015 of adult lamprey that were tagged and released as part of the 2014 study. There were four fish tagged and released in 2014 that have been detected in 2015. Two of the fish were detected in the fishway in 2014, but did not pass. The other two fish were not detected at Rocky Reach any time in 2014. These four fish have not yet passed the fishway as indicated by detections on the most upstream antenna (termed RR07).

**Table 1.** Rocky Reach 2015 in-fishway detections of adult lamprey tagged and released in 2014 as part of the 2014 Rocky Reach passage study. Table prepared June 17, 2015.

HDX Tag Number	Date Tagged	Date Released	Date of First Detect at RR in 2014	Over-Wintered Below RR?	2015 First Detection at RR	2015 RR Antenna Detected	Detected at exit and Passed in 2015?
A326DCB	7-31-2014	8-1-2014	8-6-2014	YES	5-23- 2015	RR03	In progress
17F7A369	9-9-2014	9-10-2014	No Detections	YES	5-20-2015	RR03	In progress
17F7A36F	9-18-2014	9-19-2014	No Detections	YES	5-31-2015	RR03	In progress
17F7A248	9-9-2014	9-10-2014	9-11-2014	YES	6-4-2015	RR06	In progress

Steve will continue to monitor the fishway through 15 July. He would like to continue running the antennas to detect fish that are being tagged downstream by Grant PUD. Tracy Hillman asked if there is any evidence that a fish could pass Rocky Reach Dam undetected. Are there arrays upstream in tributaries that could be used to determine detection efficiencies at Rocky Reach Dam? RD Nelle responded that USFWS owns a half-duplex array system, but they have not installed it because of permitting issues. Steve Hemstrom reported that the initial half-duplex results showed between 75-78% passage, which isn't far off from the ladder fishway count conversion between Rock Island and Rocky Reach. For every fish that was counted at Rock Island, in addition to every fish that Grant PUD released above Rock Island, the total conversion rate for those that reached the top of Rocky Reach was 82%. The fallback rate and re-count of lampreys at Rocky Reach Dam is unknown, and escapement of adults into

the Wenatchee River is unknown and not included in the conversion rate. Thus, the conversion rates are considered minimum estimates.

Table 2 below has information on two fish that were captured in the Rocky Reach juvenile fish bypass system. Both fish were tagged and released in 2014. It is unknown if the fish were pre- or post-spawn, or how long they can be expected to live post-spawn.

**Table 2.** Rocky Reach juvenile Fish Bypass System sample observations of PIT-tagged adult Pacific Lamprey. Lampreys were tagged in 2014 for the Rocky Reach upstream passage study. Bypassed lampreys were transported and successfully re-released by crews upstream of Rocky Reach Dam at Turtle Rock on the day of capture in the Bypass. Lamprey may have been post spawn.

HDX Tag Number	Date Tagged	Date First Released in 2014	Date First Detected at RR in 2014	Date of last Detect and passage in 2014	Over-Wintered Above RR?	Date Collected in RR JFBS	Re-release Location
A326D0F	8-26-2014	8-27-2014	9-1-2014	9-4-2014	Yes	6-11-2015	Turtle Rock
A326D3E	8-14-2014	8-15-2014	8-16-2014	8-22 2014	Yes	6-15-2015	Turtle Rock

**Action Item:**

- **Steve Hemstrom will send the Rocky Reach HDX-PIT lamprey detection tables to Tracy Hillman to include in the July meeting notes.**

**Presentation on Lamprey Passage at Tumwater Dam**

Steve Rainey gave a PowerPoint presentation on Pacific lamprey passage at Tumwater Dam (see Attachment 1). While Steve was setting up his presentation, Tracy Hillman asked when trapping for broodstock begins at Tumwater Dam. Alene Underwood responded that steelhead trapping takes place 24 hours a day, 7 days a week, February through April. Spring Chinook trapping takes place in June and July and summer chinook takes place after that.

Steve Rainey estimated the Tumwater discharge during his visit on 30 June to be about 1,100 cfs. Steve Hemstrom commented that with SG-21 and SG-22 fully open, the estimated velocity was 0.55 and that the velocity would increase as flow goes up. On site, the fishway operators explained to Steve Rainey that they do not touch SG-21 and SG-22 until higher flows occur, and then they throttle them down. Steve Hemstrom commented that he thinks the operators may throttle the gates more often than that. Steve Rainey said he would like to include in his final report information on how often SG-21 and SG-22 are being opened and closed. Steve Rainey indicated that the gate velocities are an important factor to consider for successful passage. He would like to look at the gates again during higher flows next spring. Steve Rainey will submit a final report in the next few weeks. Patrick Verhey commented on weighing the cost of adding a lamprey passage structure versus the cost of making changes to the fishway itself,

and that it may be less expensive to add a lamprey passage structure. Steve Rainey would prefer to study the existing structure at different discharge levels to identify where the concerns are and then decide what to do about the problems.

**Action Items:**

- **Steve Rainey will email Tracy Hillman a copy of his power point presentation to include with the July meeting notes.**
- **Steve Rainey will send his final report on Pacific lamprey passage at Tumwater Dam to RD Nelle in the next few weeks.**

## **VI. Bull Trout**

### **Bull trout and Tumwater Dam**

No updates to report.

## **VII. White Sturgeon**

### **Update on Release of Juvenile Sturgeon**

During the last meeting, members asked Lance Keller to provide the number of juvenile sturgeon released at each location in 2015. Lance provided the following information:

<b>Hatchery Source</b>	<b>Release location</b>			
	<b>Entiat</b>	<b>Daroga</b>	<b>Gallagher Flats</b>	<b>Total</b>
Columbia Basin	1,251	1,207	1,266	<b>3,724</b>
Chelan	929	921	926	<b>2,776</b>
<b>Total</b>	<b>2,180</b>	<b>2,128</b>	<b>2,192</b>	<b>6,500</b>

Lance reported that the fish were not divided equally into thirds for release at each location. This was done to avoid splitting a tank in half and handling the fish from that tank one additional time.

### **Update on Juvenile Rearing**

Lance Keller reported that juvenile lamprey at both Columbia Basin and Chelan Hatcheries have hatched and are on feed. There was little loss of juveniles at Columbia Basin Hatchery. Chelan Hatchery experienced normal loss prior to hatchery. Fish are being fed about eight times per day. Total numbers

are not yet available.

### Phase 2 Sturgeon Conservation Program (Ecopath with Ecosim)

Tracy Hillman reported that he emailed Steve McAdam and Villy Christensen of UBC to see if they would be interested in helping the Priest Rapids Fish Forum (PRFF) and RRF with estimating carrying capacity using the Ecopath with Ecosim (EwE) model. He also asked them if they have any questions for the forums and if they are available for a conference call. Tracy has not yet received a response from Steve or Villy. Tracy had previously asked both Forums to identify questions they would like to ask Steve and Villy. The Forums identified the following questions, which Tracy will share with Steve and Villy.

1. Has the Ecopath with Ecosim model ever been used to estimate fish carrying capacity?
2. What data are needed to populate the model? *The Forums have sturgeon monitoring data, resident fish data, benthic invertebrate data, and water quantity and quality data.*
3. What level of certainty can we expect in estimates of carrying capacity?
4. How many years of data are needed to increase the precision of estimates?
5. How sensitive is the model to movement of sturgeon into and out of the populations (i.e., violation of a closed population)?
6. Can carrying capacity be identified before monitoring detects density-dependent effects?
7. If suitable data are available, how long will it take to run the model and estimate carrying capacity for sturgeon?
8. Can the model highlight Pacific lamprey and sturgeon interactions?
9. Are there examples where the results from the model have resulted in management decisions?
10. What kinds of management questions can be addressed using the model?

PRFF identified 21, 22, and 23 July as potential dates for a conference call. The RRF agreed that these dates would also work for them. Tracy will provide these dates to Steve and Villy to determine which day works best for them. Tracy will work with Grant PUD to set up the call using the PRFF conference number. Alene Underwood asked if there will be consultation fees for Steve and Villy, and who would be responsible for paying them. Tracy said that Steve and Villy will probably not ask for compensation for their time on the call.

#### Action Items:

- **Tracy Hillman will compile the list of questions on the Ecopath with Ecosim model for Steve McAdam and Villy Christensen from the PRFF and the RRF and send them to the Forums for final review and approval. Tracy will then share them with Steve and Villy.**
- **Tracy Hillman will schedule a conference call with Steve McAdam and Villy Christensen.**

### Update on Proposed White Sturgeon Workshop

Tracy Hillman reported that the White Sturgeon Workshop has been tentatively scheduled for September or October with both Forums meeting together on the day of their regularly scheduled

meetings. Tracy identified four major themes that could be used to guide the workshop:

1. Given that the required front loading of the project area is completed for both programs, what guidance is given in the White Sturgeon Management Plan on future stocking levels?
2. How will monitoring data be used to guide future stocking levels and is the current level of monitoring sufficient to identify density dependent effects?
3. How do we estimate carrying capacity and how will it be used to guide future stocking levels?
4. If carrying capacity cannot be estimated in a short time period, what stocking strategy will be used in the interim?

Tracy Hillman reported that the PRFF discussed having a panel of policy experts attend the workshop. They discussed having questions identified ahead of time that can be addressed at the workshop. The following experts were identified as candidates to serve on the expert panel during the workshop: James Crossman, Ray Beamesderfer, Larry Hildebrand, Paul Anders, Scott Blankenship, Katie Jay, Andrea Schreier, Steve McAdam, Villy Christensen, and Mike Parsley. Tracy Hillman commented that the experts may ask for compensation for their time and travel. Chelan PUD will discuss this with Grant PUD.

**Action Items:**

- **Tracy Hillman will share the four major workshop themes with the policy representatives and ask them for specific question they would like to discuss during the workshop.**
- **Tracy Hillman will contact the policy experts to determine their availability for the White Sturgeon Workshop in September or October.**
- **Tracy Hillman will contact the outside experts to see if they would be interested in participating in the workshop.**

## **VIII. Next Meeting**

The next regular meeting of the RRFF will be on Wednesday, 5 August 2015 from 1:00 to 4:00 p.m. in the Chelan PUD First Floor Park's Conference Room.



# Attachment 1

## Presentation by Steve Rainey on Rapid Assessment of Adult Pacific Lamprey Passage at Tumwater Dam

### **Rapid Assessment of Adult Pacific Lamprey Passage at Tumwater Dam**

**February 18 – Site Visit and Investigation**

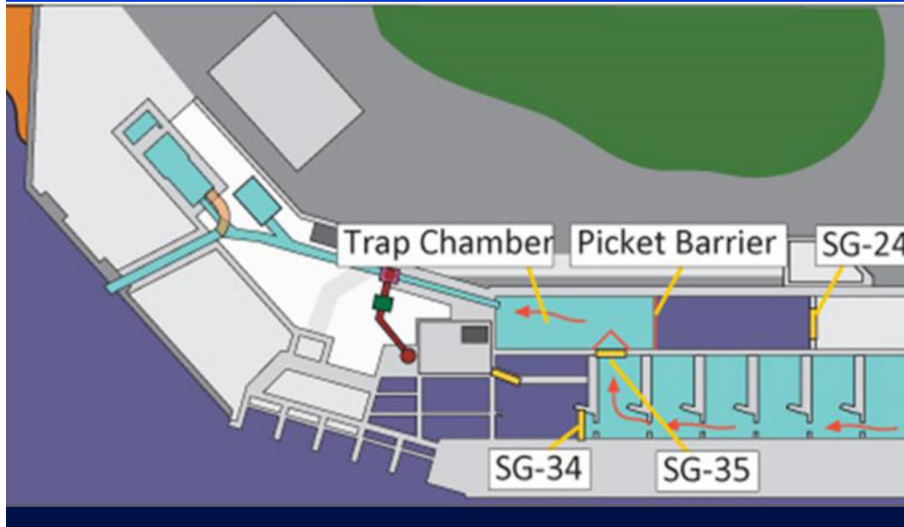
**February 27 – 1<sup>st</sup> Draft Circulated**

**June 4 – 2<sup>nd</sup> Draft Circulated**

- Includes referenced to possible lamprey blockage,**
- Requires field affirmation of hydraulics,**
- Set back of Final Report to include RRFF feedback and field readings**

## Description:

Possible Lamprey Blockage during Trapping Operation  
Slide 1 – Close SG-34 and Open SG-35

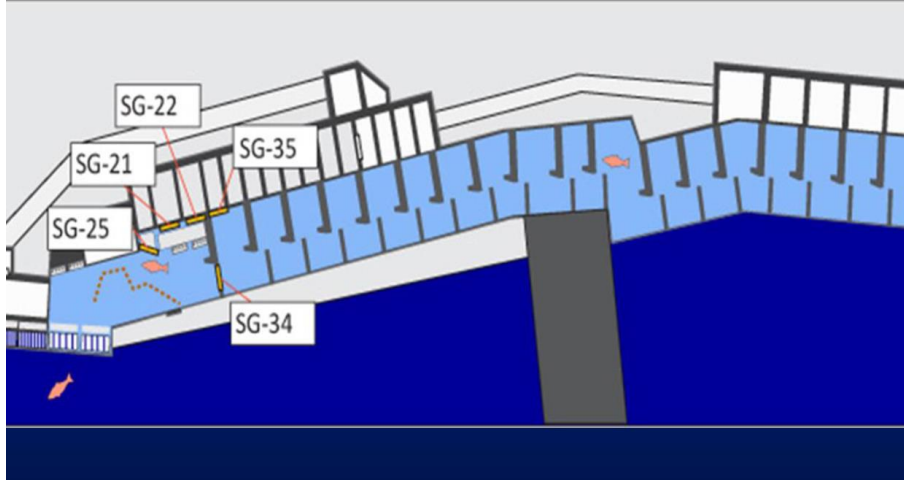


## Description:

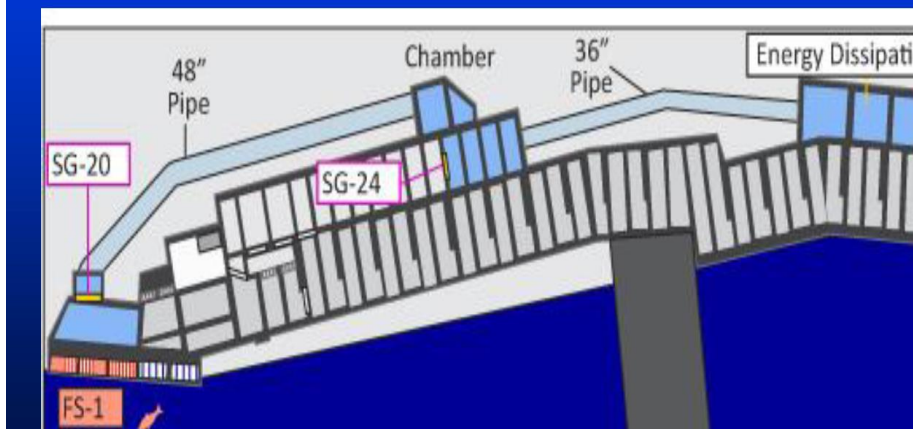
Possible Lamprey Blockage during Trapping Operation  
Slide 2 – Close SG-34 and SG-35



**Possible Lamprey Blockage – Trapping Operation**  
**Slide 3 – Open SG's 21 & 22 to route flow to Trap Holding Pool**



**Possible Lamprey Blockage – Trapping Operation**  
**Slide 3 – SG-24 at Downstream End of Holding Pool**  
is pre-set and takes added flow at higher river stages



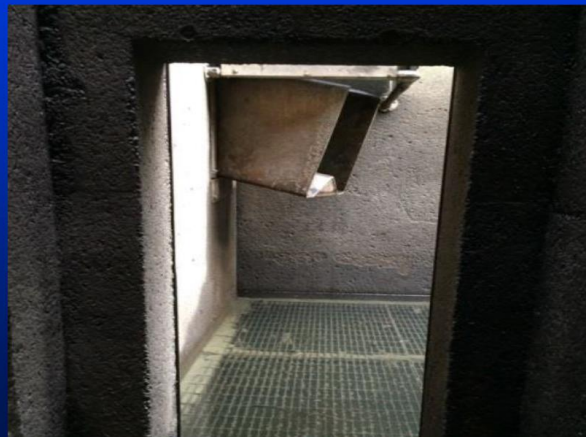
**Slide Gates 21, 22, 34, and 35**

NOTE: SG 21 and 22 are set full open



**Floor Screen – Inflow to Adult Holding Pool  
from SG's 21 and 22  
(as seen through SG-25)**

NOTE: Water surface kept at shroud elevation



## **June 30 Observations:**

**Low River stage, with less than a 1.0 ft head over dam crest (Flow about 1100 cfs)**

**SG 21 and 22 left full open by operators**

**Holding pool water surface kept near lower shroud elevation to curtail jumping**

**No overflow at SG 24**

**Differential across SG's 21 and 22 = 0.55 ft**

**SG 21 and 22 velocities around 6 ft per second**

**No lamprey blockage at low river stages**

## **June 30 Observations**

### **What about higher river stages???**

**Assessed  $Q_R = 3000$  cfs**

**Forebay elevation rises another 0.8 ft**

**Head differential across fully-open SG 21 and 22 increases to 1.3 ft**

**Velocity through SG 21 and 22 about 9.1 fps**

**At higher river stages, SG 21 and 22 differentials increase**

**Appears to be a probable lamprey blockage at mid-range and higher river stages**

## **Tentative Conclusions for Final Report**

**It is probable that most lamprey are not able to pass fully-opened SG's 21 and 22 during fish trapping operations at mid-range and higher river stages**

### **Recommendations**

- 1. Conduct a telemetry study to assess whether lamprey are able to enter the Tumwater fishway-trap, as on the Yakima (both spring and fall periods)**
- 2. Identify whether there is a location within the ladder, where lamprey are not able to pass upstream during trapping and non-trapping operations**
- 3. Confirm or disprove preliminary assessment that SG's 21 and 22 are lamprey blockages at mid-range and higher river stages**

## **Final Tumwater Fishway-Trap Lamprey Passage Rapid Assessment Report**

**Integrate latest findings**

**Collate RRFF comments**

**Finalize report before August 1**