AM Work Session on Bull Trout Redd Survey Methods and Logistics

Attendees: Gary Torretta, Alex Conley, Eric Merten, Connor Parrish, Marc Divens, Judy Neibauer, Jason Romine, Jennifer Tam, Cassandra Weekes, Gabe Temple, Scott Kline, Pat Monk.

2018 Redd Survey Logistics

After the group briefly reviewed the proposed agenda for the am session, Marc presented his scheduling spreadsheet for this fall's redd surveys. The group discussed the following points:

- Deep Creek spawning occurs early; it was suggested that the first pass occur in late august or right after Labor Day, and that the last survey there be done by the third week or so in September. The group noted that the proposed October date for the last survey is late for Deep Creek.
- Mark asked the group what crew size was needed for the Kachess surveys. People noted that two people can do the entire survey, but that it also works well to break it into two 2 people crews. Surveys should include both the Upper Kachess and Mineral Creek to the falls.
- For the North Fork Tieton, the group noted that October is late for surveys, as the last few years of trapping data show that spawning there normally occurs in early September. Only four people are needed, but some of those need to have prior experience with the survey routes, as stream channels and conditions change in the large wetlands (e.g. it was noted that Hellbender Creek wasn't accessible last year). It also can save wasted travel time if someone goes ahead of time to confirm that the flows and turbidities are appropriate for a survey.
- Rescheduling the South Fork Tieton survey to avoid the 10/8 federal holiday.
- The group briefly discussed the Crow Creek surveys. This is time intensive due to the long hike in, and has only found a few redds each year. It was proposed that the main goal should be to determine presence or absence, and that eDNA might be an easier way to do this. However, it was noted that to be reliable, eDNA data would need to be from just downstream of the spawning reach, which would require essentially the same access hike. It was also suggested Crow Creek surveys may not need to be done every year.
- Participants agreed to review the remaining vacant slots in Mark's survey schedule and get back to him about which surveys they can join.

The group then discussed additional areas that would benefit from exploratory redd surveys, including:

- American River from Union Creek to Mesatchee Creek (in between the two index areas) and upstream of Mesatchee Creek (upstream of the index area).
- Rattlesnake Creek from the North Fork confluence upstream to the index area, including Hindoo and Dog Creeks. It was noted that in Rattlesnake Creek and the Upper Yakima, care needs to be taken to distinguish bull trout and chinook redds.

- The group discussed doing exploratory redd and snorkel surveys of Spinola Creek (Waptus trib.) and perhaps the Waptus River upstream of the lake this year, in preparation for additional eDNA sampling next year, but concluded that it made sense to combine all of these next year given the logistical challenges of accessing the area.
- The group discussed the possibility of combining a redd survey and a snorkel survey on the Upper Yakima and of a redd survey on Cabin Creek, but noted that Cabin Creek was hard to access. Further discussion was deferred.
- It was recommended that the MF Ahtanum survey be done by two crews to allow for extending the survey upstream of the current index area.

The group also discussed doing eDNA and/or and exploratory survey above the SF Tieton falls, and highlighted the value of doing eDNA sampling in Nile Creek and the Little Naches.

Alex demonstrated the "Team Up" interactive calendar, but the group agreed that the spreadsheet shared by Marc would work well for this year, and suggested that a shared digital calendar be explored next year.

The group also discussed the status of efforts to incorporate bull trout redd survey data into Greg Lippert's WDFW redd survey database. Marc noted that data has been updated for recent years, and others expressed interest in learning how to access and query the data. It was suggested that Greg be invited to come to a future meeting to give a demonstration.

The group briefly discussed when to collected gps data (2nd or third pass) and how to compile the GPS data. Marc, William and Greg Lippert will coordinate on the best GPS-point naming protocol to use, and Cassandra will provide the spreadsheet used to submit data to Greg. Connor volunteered to act as the coordinator for GPS data this year. Jason noted that older pre-GLONASS GPS units were actually less accurate that modern cell phones, which work well even away from cell coverage when in airplane mode.

Marc agreed to provide write in the rain printed data forms for use this year.

<u>Proposed Pilot of Digital Data Collection</u>

Marc noted that he was working with Greg Lippert and others to pilot digital data collection using free iPads provided by WDFW. Marc noted the following advantages:

- You can look at the data look at it real-time… i.e. on the second pass you'll be able to see what was marked on the first pass;
- Data can be automatically uploaded instead of manually entered;
- Data is stored in a central server and can be accessed from a PC.

Marc noted that he hoped to test the iPad based data form this summer on the Upper Yakima surveys (Box, Kachess and Gold), and to run it side by side with our traditional methods to compare speed, etc. It was noted that it might also be good to compare the methods on surveys with higher redd densities, like the South Fork Tieton. Marc noted that Greg, Leslie, and Andrew Murdock would be available to help

out. The group also discussed the possibility of using barcoded flagging tape to allow data from multiple passes to be rapidly recorded and linked together. Gabe noted that he had worked with using iForms to set up field survey systems, and that he had two iPad minis available for use. He noted the value of portable power packs and car adaptors when using iPads.

Potential Application of Upper Columbia Redd Survey Protocols and Forms

Judy presented a PowerPoint on the redd survey forms and methods used by Andrew Murdoch and company in the Upper Columbia. They are conducting more intensive surveys in order to identify representative reaches that would provide the best data with less intensive surveys in future years. They are also collecting detailed information on redd conditions, hydraulics, etc. The group expressed that they wanted to better understand the value of this more intensive survey method before increasing the complexity of our data sheets, and Judy agreed to organize a call to discuss this approach. People noted that taking a more intensive approach like this would likely require funded, dedicated survey crews like those used in the Upper Columbia. The group agreed to revisit the topic in the winter, and suggested that this be incorporated into a January Bull Trout Working Group meeting agenda. It was also suggested that some Yakima representatives contact John Crandall about joining one of the Upper Columbia surveys to observe the methods in action.

Reviewing and Developing Guidance Documents for Redd Surveys

- Eric and William have developed detailed maps of the start and end points for index reaches for each population.
- Judy Neibauer promised to send Marc the redd survey reach write ups that were done to guide the field events during the Yakima Basin SCCS meeting.
- The group agreed it would be valuable to have a standard form (paper or digital) to provide information on surveys for each population that would include:
    - Travel directions and times
    - Recommendations on survey timing
    - Number of participants needed
    - Maps of survey reaches and access
    - Survey descriptions

Discussion of the Objectives and Potential Uses of Redd Data

The group noted that currently the main use of the redd data that has been collected has been to develop the summary spreadsheet of redd numbers over time by population, and that while the data is not perfect (e.g. likely undercounting of redds), it provides a good indicator of trends in population abundance over time. The group noted that it would be valuable to look at how trend data could be normalized to reflect differences in survey effort between years. The group discussed other possible uses of the data, including:

- Looking at within-reach redd distribution over time;

- Looking at the timing of spawning across years and across populations;
- Redd locations and timing to habitat conditions and disturbances (e.g periods of limited reservoir bed passage);
- Evaluating impacts of climate change on redd timing and location;
- Look at changes in distribution across reaches.

The group also noted the potential value of doing a more consistent job of tracking barriers, habitat conditions and mortalities during redd surveys to allow for additional analyses, and of better coordinating existing and future stream temperature data collection to make it easier to incorporate into analyses.

The group noted two primary uses for this data:

1) To guide proposed translocation and supplementation efforts, and,
2) To allow analysis of the status of populations relative to viability criteria identified in the USFWS Recovery Plan.

The group noted that to better understand what data and analyses would be valuable for #2 above, it would be good to do a dry run of using the viability analysis methods identified Appendix E of the Recovery Plan, and the data compiled in the 2012 BTAP threats assessment tables. The group proposed setting this up as an exercise as part of the October or January Bull Trout Working Group meeting.

Afternoon Full Yakima Bull Trout Working Group Meeting

Attendees: Pat Monk, Gary Torretta, Alex Conley, Eric Merten, Connor Parrish, Marc Divens, Judy Neibauer, Melissa Speeg, Elizabeth Torrey, Todd Newsome, Dave Fast, Mitch Long, Rob Randall, Jason Romine, Michael Callahan, Kelsey Green, Tricia Snyder, Jennifer Tam, Gabe Temple, Scott Kline, Jose Vasquez, Josh Rogala, Jeff Tayer, Tricia Snyder, Cassandra Weekes

On phone: Paul Hoffarth

After introductions, the group briefly reviewed the topics covered in the am session for those that were not present. Judy provided an update on $2,500 she obtained from the USFWS science support budget to run bull trout genetics samples. This should allow for testing of 40+ samples, including the existing back log of tissue samples and Clear Lake samples collected by USFWS.

1. Yakima Bull Trout Action Plan Review and Update

The group quickly reviewed and approved the BTAP Action Updates for the Rimrock populations that were discussed in detail at the last Bull Trout Working Group; only minor typographic edits were made. The group then reviewed the Deep Creek population actions from the BTAP and proposed changes (see separate document with proposed revisions). The proposed changes will be circulated prior to the next Bull Trout Working Group Meeting. At that meeting, the Deep Creek changes will be up for approval, and we will consider updates to the American and Rattlesnake population actions.

2. Yakama Nation Bull Trout Project Update

Todd Newsome provided an update on the new Yakama Nation-led bull trout project. Partners have met and Todd (YN), Scott Wiley (Reclamation) and Judy Neibauer are putting together a Biological Assessment for salvage and captive rearing of bull trout. Cindy, Sierra and Judy are writing the Biological Opinion. Scott is working on final draft that should be done by Sept. 1, and submitted as a final to USFWS by Nov. 1, to allow fully permitting by June 1, 2019. It will cover salvage, captive rearing, pit tagging and installation of pit tag arrays at Kachess, Box and Gold and other monitoring.

Gabe asked if we can also leverage WSDOT I-90 funds and bull trout monitoring investments, including PIT tag antennas on Keechelus Tributaries. The group recommended following up with Paul James or Patty Garvey-Darda.

After the captive rearing permit is in hand, the group will start a feasibility study for translocation efforts (with Taneum as the initial receiving area), using fish from Upper Yakima salvage efforts, or from the Chiwawa or South Fork Tieton. The group briefly discussed factors that would drive the choice of the source for fish to translocate; Pat Monk noted that it does not appear life history is genetically driven and that migratory life histories are likely to develop from both fluvial and ad-fluvial donor stocks.

Todd noted that the Yakama Nation is completing the bull trout bio position description and the final project budget, which will need to be approved by reclamation. They plan to have the bio hired by mid to late October and the associated tech hired shortly after. Staff will be based in the Reclamation office.

USFWS staff visited the LaSalle Hatchery visit to look at the facility and discussed security issues, the need for lids over the tanks, recommended light levels, etc. Todd would like to install a backup well for the hatchery.

Todd asked the group to start thinking about whether or not they would recommend translocating bull trout to above the impassable falls on the South Fork of Tanuem Creek. He now has a complete year of temperature data in the SF Taneun that documents that it stayed very cold all year. He noted it is one of the most pristine habitat areas in Basin in SF Taneum—and that only cutthroat and cascade frogs are present. Jeff Tayer noted that there are lots of scenarios that could be discussed about how we might translocate fish above barriers as the climate warms up.

The group discussed Pit tagging yearlings fish and combining that with genetic parentage analysis (which could also be done with tissue from fry too small to tag that are being caught in salvage efforts) to determine actual and effective population sizes of our at-risk populations.

Several participants recommended keeping Ahtanum Creek on the front burner for population enhancement efforts, in order to stabilize and grow that population before its unique genetics are lost.

3. Salvage/Fish Rescue Update

Scott Kline & Mitch Long described the salvage efforts carried out to date in the Upper Kachess River. A total of 464 fish were caught and relocated, and size and water quality measurements were taken of the pools they were found in. The first round of salvage was conducted in conjunctions with the WDFW demographic surveys. Fish caught have been a mix of young of the year and age 1+ and larger, with only one fish large enough to release in the reservoir instead of upstream.

Mitch noted that the fish caught likely represent only 20-25% of the fish present in the pools. The group discussed whether we could corral more resources to divide into two crews, and noted the desire to begin salvage efforts in Gold Creek as flows drop there.

Judy noted the need to coordinate salvage efforts, and emphasized that WDFW should take lead as they have the permits and can effectively compile required information for the Section 6 reports back to USFWS. She emphasized that for USFWS, fish salvage means collecting of dead fish, and that what we are doing should be properly referred to as fish rescue. The group noted the desire to discuss fish rescue planning for 2019 once the YN bull trout biologist is on board.

Pat and Rob snorkeled below Keechelus Dam and saw one or two bull trout. They also made two visits to below Kachess Dam, but could not observe any fish. They will return after flip flop to resurvey. At this time they do not have permission from USFWS to capture and move bull trout seen below the dams, but Scott Wiley is working on adding it to the permits.

4. Yakima Basin Integrated Plan Updates

Jeff Tayer led a discussion of the current status of Yakim Basin Integrated Plan Projects. The Kachess Drought Relief Pumping Plant Supplemental EIS has been completed and there are currently ongoing discussions between the Roza Irrigation District, Ecology and Reclamation about how to address the

proposal's impacts on bull trout. The only bull trout element in the EIS is provision of fish passage at The Narrows between Upper and Lower Kachess Lakes, but that other elements of the Bull Trout Enhancement package were still being considered. Jeff asked for detailed descriptions and budgets on proposed habitat actions in Box Canyon, Kachess and Gold Creeks (Mitch volunteered), fish rescue efforts (Scott Kline volunteered), and monitoring and short-term fixes for reservoir bed passage (Josh Rogala volunteered). Jeff thanked the group for the proposals developed at the last BTWG meeting for how the proposed 1.7 million of YBIP state funding for bull trout enhancement could be used, and noted that those recommendations were being considered as Ecology finalizes its YBIP budget request for 2019-21.

5. Clear Creek Dam Fish Passage Update

Pat Monk updated the group on Reclamation's work designing fish passage facilities for Clear Creek Dam on the North Fork Tieton River. He noted that they expect to have feasibility-level designs and a cost estimate by the end of Sept, and a technical working group meeting in October. The cost will likely determine how quickly the project moves forward.

Jason Romine updated the group on the 2018 trap and haul program. 23 NF Tieton fish were captured below the dam and moved upstream after genetic test results were in. Two Indian Creek and two SF Tieton fish were captured and were released below the dam. Four hybrids were dispatched. Of all these fish only one NF Tieton fish and one Indian Creek fish were recaptures tagged in previous years.

There is a new PIT tag antenna at Bake Oven Flats on the SF Tieton, which picked up one tagged SF Tieton fish moving upstream. This antenna will help understand when fish are migrating in the SF Tieton, which should help evaluate the impact of the seasonal barrier falls at the mouth of SF Tieton.

6. Reservoir Bed Passage Monitoring Update

Josh Rogala of WDFW updated the group on his monitoring of fish passage conditions across the reservoir beds. He has been visiting most of the streams that cross exposed reservoir beds (SF Tieton, Indian Creek, Deep Creek, Gold Creek, Box Canyon Creek and the Upper Kachess River) every week, and has sent out a weekly email update with photos and information (contact Josh if you would like to be on his email list). At this time passage is available at all sites, and he has done some minor channel tweaking. He does not anticipate needing to do any artificial channel building for passage this year.

7. Forest Fire Update

Gary Torretta gave a quick update on the status of the Miriam Creek fire, which is burning adjacent to the North Fork Teiton River. The fire may prevent access for spawning surveys this fall. The group also noted the recent high- flow/sediment event in Union Creek and the American River, which moved lots of fine sediment from last year's fire into the creek, filled several large pools, and killed holding chinook and bull trout. It was also noted that the fires there had reduced wood loading.

8. eDNA Sampling Update and Planning

Jose Vasquez noted that USFWS gathered eDNA samples from 30 sites in the North Fork Little Naches this field season. He asked for recommendations on areas to sample with their remaining field time. The group suggested the South and Middle Forks of the Little Naches, as well as Quartz and Pileup Creek, as both are listed as Critical Habitat. SF Little Naches has a lot of accessible habitat. Dave Fast also suggested Nile Creek, above of Orr Creek. Connor noted that he had submitted an application to Bring Back The Natives for 2019 field work, and that the WNTI grant application cycle is open now.

9. Kittitas Conservation Trust Bull Trout Project Updates

Mitch Long updated the group on the Kachess River assessment. KCT has hired Interfluve to complete the assessment, and they have finalized the QAPP with Ecology. Next they need to install groundwater monitoring stations.

Mitch will schedule a full-day meeting on Gold Creek Pond in order to look at 7-9 alternatives and how they can meet both bull trout and recreational goals. NEPA will need to be done on selected alternatives so a final decision on how to approach the project can be made by the USFS.

For the Box Canyon Large Wood Placement Project, KCT has submitted a road use application to brush the road to the proposed log staging site so that they can start stockpiling logs for placement in August 2019. There may be opportunities to use Kachess Campground hazard trees with root wads. They will need about 360 logs total, and may need to purchase the rest somewhere else.

10. Ahtanum Creek Update

Cassandra Weekes updated the group on Yakima Tributary Access and Habitat Project (YTAHP) work in the Ahtanum watershed, noting that:

- The North Yakima Conservation District's Herke fish screening & habitat enhancement project will screen the last major unscreened and uncontrolled water diversion on Ahtanum Creek and install a roughened channel and large woody debris to restore in-stream and floodplain connectivity.

- WDFW staff from the Fish Passage Program are completing the Ahtanum Fish Passage and Screening Survey assessment, which is looking for fish screening needs or repairs, passage barriers and habitat restoration opportunities on all the private land on Ahtanum Creek from the mouth to the DNR boundary upstream on the forks. Only a handful of landowners declined access to the crew, and the cost will likely be ½ the original proposed budget. YTAHP is interested in surveying other areas, and would like suggestions on future survey priorities from the BTWG.

11. Bull Trout Task Force Update

Connor Parrish gave a brief update on Bull Trout Task Force activities and noted that the Upper Yakima crew has noted a real decline in the number of recreational rock dams, but that the Naches crew

continues to run into many recreational dams. He noted that this year 70 rock dams have been removed and outreach completed with over 325 people.

12. Closing Items/Next Steps:

The group discussed possibly combining a fall BTWG meeting with a Clear Creek Dam Fish Passage work group meeting. They also proposed dusting off the 2012 threats analysis and evaluating current Yakima Core area status using the methodology described in Appendix E of the USFWS Bull Trout Recovery Plan.