October 2017
Bull Trout Intervention and Bull Trout Working Group
Meeting Minutes

Meetings held October 17, 2017 at the Yakima Basin Fish & Wildlife Recovery Board office

Morning Intervention Meeting Attendees: Todd Newsome (Yakama Nation); Alex Conley (YBFWRB); William Meyer, Scott Kline, Gabe Temple & Josh Rogala (WDFW); Cassandra Weekes & Connor Parrish (MCFEG); David Child (YBJB); Pat Monk, Jeff Thomas & Jason Romine (USFWS). On the phone: Maureen Small (WDFW); Sierra Franks & Gregg Kurz (USFWS).

Afternoon BTWG Attendees: Mitch Long (KCT); Alex Conley (YBFWRB); Cassandra Weekes & Connor Parrish (MCFEG); William Meyer, Eric Anderson, Scott Kline & Josh Rogala (WDFW); Ashton Bunce (Yakama Nation); Tom Matthews & Eric Merten (USFS); Jose Vazquez, Jeff Thomas & Pat Monk (USFWS); David Child (YBJB); Richard Visser (USBR). On the phone: Gabe Temple (WDFW).

Morning Meeting: Intervention Working Session

A half-day intervention working session was held before the Bull Trout Working Group meeting to discuss bull trout active intervention. The meeting began with Alex Conley providing an overview of highlights from the 2017 Salvelinus confluentus Curiosity Society meeting. Alex discussed lessons learned from the Clackamas bull trout reintroduction and Middle Fork Willamette Basin reestablishment of bull trout, pathogens, and the feasibility assessments that were completed. Others who attended the meeting also noted highlights of what they learned.

Todd Newsome presented the updated Taneum Reintroduction proposal. Gabe Temple explained the redd-to-redd survival analysis that he did using existing literature and local data. A target stocking density of 30 age-0 bull trout per 100m was chosen. The data was extrapolated over the 10km of suitable stream habitat to determine 3000 age-0 bull trout would be required to achieve a rearing density of 30 age-0 fish per 100m of lineal stream. However, in the wild, it's estimated that fry survival is 20-40%. Captive rearing bull trout for one year would circumvent the high mortality rate of age-0 fish. Using a natural survival rate of 20%, the stocking density was scaled back to a total of 600 age-1 fry per 10km to account for high survival of fry reared in captivity.

It's proposed to stock 600 age-1 bull trout to 10 km of Taneum Creek for 5 years. After 5 years, stocking densities will be reassessed based on lessons learned. The number of age-0 fish may be increased to achieve a maximum rearing density of 30 fish/100m while discontinuing the captive rearing to age 1 phase of the project. It's also proposed to reduce the number of age-0 fish translocated to Taneum Creek annually to account for any measurable increase in density arising from natural production. See *Experimental Bull Trout (Salvelinus confluentus) Translocation/Reintroduction Study in Taneum Creek Washington* by Newsome et al. for a detailed overview.

The group discussed potential donor stocks for translocations, mixing genetics of source stocks, adfluvial vs. fluvial life histories, imprinting, PIT tagging, a feasibility analysis framework, and permitting.

Determine and Prioritize Next Steps

Cassandra walked the group through the summary of intervention next steps that was generated from the Excel spreadsheet the group completed together over the course of the first two meetings. The summary provided an overview of next steps for Ahtanum, North Fork Tieton, Crow Creek, Gold Creek, Box Canyon Creek, Kachess River, Teanaway and Taneum.

The group prioritized the following elements to assist with evaluating intervention proposals:

1) **Fish salvage program development**: identify salvage methods and locations, with initial focus on Gold and Kachess; evaluate how best to use salvaged fish for re-release, captive rearing or propagation. *Also explore idea of capturing year zero downstream migrants (SF Tieton, Box?).*

2) **Reintroduction evaluation**: evaluate potential reintroduction locations (*Taneum and/or Teanaway?)* and source of fish and techniques to use for reintroductions.

3) **Develop proposal for use of habitat above Peekaboo Falls**: review and continue to collect habitat data, evaluate options and design and implement solutions if warranted.

4) **Nutrient evaluation and pilot project** (proposed for YBIP funding; evaluate broadly, with proposed pilots in Box, Kachess, Crow?) Funded separately.

5) **Ahtanum population evaluation**: identify current limitations in FMO and spawning/rearing habitat and develop project proposals to address them; evaluate options to capture fish or eggs and use in supplementation program.

6) **Evaluate options for brook trout control** (*NF Tieton and Teanaway as pilot sites?)*

Afternoon Meeting: Bull Trout Working Group

1. Review and Approval of Agenda

2. Bull Trout Action Plan (BTAP) update

Cassandra Weekes led a review of the BTAP Gold Creek actions that the group updated together in 2016. The group suggested updates to a few of the actions and requested a new action be added for Gold Creek outreach coordination and strategic planning. Cassandra will incorporate the updates and circulate the draft to the Bull Trout Working Group for final review and comment.

3. Bureau of Reclamation update

Richard Visser provided an overview of USBR projects. The Bull Trout Enhancement Plan is now being referred to as the Bull Trout Enhancement (BTE) Report for regulatory reasons. The BTE projects have been restructured; two projects moved from Phase I to Phase II: Cold Creek Passage and USFS Kachess Watershed Health. It was also determined that the Gold Creek USFS bridge needs a geomorphic assessment to ensure a longer spanning bridge will not create a delta and/or make passage conditions worse; a geomorphic assessment was added to the list.

The Bureau of Reclamation is aiming to have the supplemental EIS ready for release by January 1, 2018.

The Yakima Basin Integrated Plan (YBIP) project list for bull trout will be reviewed and finalized by the YBIP Habitat Subcommittee. Richard noted the YBIP Habitat Subcommittee wants to hear from the Bull Trout Working Group and asked the group for feedback on the project list. The group supported the project list that was presented. Richard reminded the group that there is 1.5 million dollars allocated to Clear Creek Dam fish passage. The project list will ultimately go to the YBIP Executive Committee for approval.

4. eDNA Update

Connor Parrish provided an update on the bull trout eDNA project. The crew has completed sampling for the season. A total of 347 samples were collected in the upper Yakima Basin. Mid-Columbia Fisheries collected 200 samples, USFWS collected 103 samples (NF Teanaway and tributaries), and the USFS collected 44 samples (Swauk Creek and tributaries).

Mid-Columbia Fisheries collected samples in:

- Waptus Watershed (Waptus River & Spinola Creek)
- Cle Elum Watershed (Cle Elum River, Big Boulder & Fortune Creeks)
- Cooper River Watershed (Cooper River, Lemah Creek, Unnamed trib.)
- Kachess tributaries (Box above the falls, Mineral above the falls, Kachess above the falls, Gale, Thetis, Lodge, No Name Creeks)
- Keechelus tributaries (Meadow, Cold, Coal, Rocky Run, Resort, Townsend, Wolfe Creeks)
- Mainstem Yakima tributaries (Silver, Cabin, Log, Cole, Big, Greek, Jim, Little Creeks)
- North Fork Taneum and tributaries (Butte & Lookout Creeks, Unnamed trib.)
- South Fork Manastash

The Rocky Mountain Research Station expects to have the samples analyzed and the final report written in about 9 months.

The group supports seeking funding to conduct eDNA sampling in the Naches arm of the Yakima Basin next summer.

5. Clear Creek Dam Trap and Transport Update

Jeff Thomas provided an update on the Clear Creek Dam Trap and Transport Project. The North Fork (NF) Tieton River had a record high number of 39 bull trout redds this year, which is a little over two-times the 10 year average. Adult bull trout capture efforts have occurred between July-August in 2016 and 2017 and a total of 36 NF Tieton bull trout have been captured and transported above Clear Creek Dam and released into Clear Lake.

New this year, a rapid genetics analysis was conducted on each fish to ensure only NF Tieton River bull trout were transported above the dam. This summer six South Fork Tieton, two Indian Creek, and 2 hybrids were captured but not transported above the dam. Six NF Tieton bull trout were transported above the dam in 2017.

11 of 19 NF Tieton bull trout that have been transported above Clear Creek Dam between 2016 and 2017 were detected up the NF Tieton Tieton River this spawning season. Jeff Thomas is writing another annual report; it's expected to be completed in February.

6. Salvage: 2017 Lessons Learned, 2018 Planning

Josh Rogala and William Meyer discussed salvage efforts. 2017 was a pilot season to determine if salvage efforts could be successful in Gold Creek and/or Kachess River. Gold Creek was logistically challenging and salvage efforts were not as successful as the Kachess River. One night-time salvage effort at Kachess yielded 140 YOY bull trout using dip nets to scoop the fish out of isolated pools.

A few lessons learned:

- We need dedicated funding and staff to support salvage.
- We started too late in 2017. We began efforts the first week in July and we should have been out in early to mid-June, especially in Gold Creek.
- Gold Creek is much more logistically challenging than the Kachess River. Gold Creek dewaters for a longer reach, has a wider channel with more isolated pools, it's a longer trek to release fish, and access is more difficult.
- We didn't go out often enough. Checking every other week, for the purposes of salvage, is too long of a wait.
- Backpack electrofishing for YOY bull trout, day or night, had limited success. It's effective for larger fish but not YOY.
- The group netting effort at night worked very well, but it is labor intensive and required people to volunteer their time at night on short notice, which was difficult.

Lastly, we need a real plan for these fish. Captive rearing? Translocation? Release Gold fish above Gold Creek falls or Kachess fish in Mineral Creek? When we move them upstream of the dewatered reach there's no guarantee they're going to stay there; they may move back downstream.

The group agreed to reserve the morning session before the December Bull Trout Working Group meeting to discuss salvage and plan for 2018.

7. 2017 Yakima Basin Bull Trout Redd Counts

Eric Anderson provided an update on bull trout redd counts. The Yakima Basin redd counts continue to be depressed. Surveys did not get done in the American River, Kettle Creek or Crow Creek due to the Norse Peak fires and subsequent closures. Deep Creek and Indian Creek continued to be very low compared to the 10 year average. The North Fork Tieton had the highest number of redds since counts began! Surveys in the upper Yakima Basin are just beginning.

Ahtanum Creek (NF and MF only): 11 redds
Rattlesnake Creek: 18 redds
American River (Union only): 9 redds
Crow Creek: no survey due to fire
SF Tieton River: 191
Indian Creek: 37
NF Tieton River: 39 redds
Deep Creek: 59 redds
Box Canyon Creek: 2 redds (1 more pass needed)
Gold Creek: surveys upcoming
Kachess River: surveys upcoming

8. Fires in Bull Trout Habitat

Alex Conley discussed the burn severity in bull trout spawning and rearing areas:

- The Union Creek drainage burned at high and moderate severity.
- 1.5 – 2 miles of the American River and Kettle Creek burned at low to moderate severity; trees falling in the floodplain
- Crow Creek upper watershed burned at high and moderate severity; risk of ash and debris flows during rain events
- SF Little Naches headwaters burned at a high severity
- MF and SF Teanaway headwaters burned at a high severity

9. USFS Cle Elum Ranger District Culvert Inventory

Eric Merten provided an overview of the culvert assessment the Cle Elum Ranger District did during the 2017 field season. The cost of the culvert assessment in Manastash and Taneum was $4,000. Eric showed an example of an undersized culvert in Cougar Gulch and how he is using HEC-RAS modeling to design a culvert sized to pass wood during a 100-year flow event.

Eric showed WDFW's FPDSI database and noted that areas that are unsurveyed appear as if they have no culverts that impede fish passage. The USFS data will be submitted to WDFW to update the FPDSI database.

10. KCT's Upper Yakima Projects: Next Steps

Mitch Long discussed Kittitas Conservation Trust's (KCT) projects at Box Canyon and Kachess River, both of which are high priorities for KCT. Mitch needs technical assistance to determine how much wood to place and where to place it, how to anchor it, etc.

Mitch proposed to do the Kachess assessment simultaneously with design so when the assessment is completed the designs will also be complete and the project can move forward quicker. He will be coordinating a Kachess technical working group meeting. He requested any Kachess data that folks have to share.

Mitch will be finalizing designs and beginning permitting for Gold Creek. He has money for a Gold Creek design charrette and also for an outreach/communication meeting.

12. Closing Items; Topics for the Next Meeting

The group suggested topics for the next meeting:

- Mo Small: Transitioning Yakima bull trout genetics baseline to SNPs
- Scott Kline: Box Canyon and Kachess data update
- Ashton Bunce: Brook trout white paper
- Eric Merten: Wood inventory in Kachess River
- Alex Conley: Temperature database

Others??

December working session before the Bull Trout Working Group: 2018 salvage planning.