Yakima Bull Trout Working Group February 14, 2019 Meeting

Morning Work Session on Fish Rescue Review and 2019 Plans

Meeting convened at 9:30 AM at the YBFWRB Office

Attendees

Alex Conley (YBFWRB), Emily Smith and Connor Parrish (MCFEG), Russ Byington (YN), Mitch Long and Melissa Speeg (KCT), Scott Kline, William Meyer, Josh Rogala, Marc Divens and Darren Friedel (WDFW), Eric Merten (USFS), Jason Romine and Rob Randall (USFWS)

By Phone: Richard Visser (USBR), Judy Neibauer (USFWS), Michael Callahan (Ecology), Todd Newsome and Dave Fast (YN)

Following introductions, the group reviewed the morning agenda.

Scott Kline then gave a presentation on the 2017-2018 bull trout fish rescue efforts. He noted that:

Gold Creek 2018 Fish Rescue Efforts: In 2018, 3 bull trout were captured during rescue efforts that totaled 11 people days. The group noted that Gold Creek dewaters earlier than other areas and that in the future we should be out in June to start watching the water levels and preparing for rescue efforts. On Gold Creek there is one release site for the rescued bull trout, an upstream release point where the trail hits the stream that takes about 2 hours round trip to get to.

Kachess River 2017 Rescue Efforts: Scott displayed a graph of the rescue and snorkel survey timeline along with the flow of the Kachess River during the 2017 season. It was brought up by Josh that there were some small rescue efforts while out doing other monitoring in 2016, but nothing was documented. In 2017 only one night rescue was executed, and a total of 9 people days was spent. During the snorkel surveys done in 2017 there was 256 young-of-year and 12, age 1 or older seen, 7 YOY were rescued during snorkeling. Between August 1 and 10, the remaining 125 young of year bull trout were rescued and relocated. When the reach they were relocated to was surveyed on October 11, 2017, only 10 young of year and 4 age 1 or older were found. Josh noted that he has seen fish stranded fish lower down by the reservoir but could not get a positive ID of the species. He recommended that in the future rescue efforts also include the reservoir bed reach.

Kachess River 2018 Rescue Efforts: A total of 59 people days were spent on rescue efforts on the Kachess River in 2018. The rescue efforts in July included 7 night and 3 daytime events, during which 817 young of year and 73 one year or greater bull trout were caught. The rescued bull trout were taken upstream to 4 locations, one at the trail crossing and three just above the trail crossing. When a crew snorkeled the upper sections in early October where the fish were released previously, they found 13 young of year and 15 age one or older bull trout.

Scott showed a Catch per Unit Effort (CPUE) graph displaying fish caught per time unit. It was easiest to catch fish when the flow was low. Based off Scott's observations there was not much difference in efficiency between the dipnets and the electro shocker. It was noted that the electroshocker was used at a very low power setting to avoid harming fish in the gravel, and that time of electrofishing and subsequent dipnetting was estimated, making CPUE results imprecise.

Scott noted that in the future he planned to document what method caught which fish when both dipnets and electroshocking are in use, so that we can get a better comparison of the catch per unit effort for each method. Judy noted a paper by Russell Thurow on the efficiency of capturing fish in rivers that included data from sampling on the Kachess River, and that it would be good to review that data and compare efficiencies to current efforts and proposed techniques like minnow traps. She noted that they used blocknets and had to monitor them closely for impinged young of the year moving downstream. Scott and Judy emphasized the need for standards to consistently record active fishing time for CPUE calculations.

The group brainstormed why snorkel surveys after the fish were released documented fewer fish than expected. The group wondered:

1. Are low numbers resampled due to low sampling efficiency (something that could be estimated using mark-recapture and/or repeat survey efforts in the future)?
2. Are relocated fish moving out of the release area (with young of year presumably moving back downstream, potentially back to dewatering areas)?
3. Are there high mortalities in the release reach, due to predation, handling mortality, or increased density dependent mortality due to increased competition for food?

The group noted that while it is odd that we have not detected more fish in post-release surveys, we need to remember that without the rescue efforts, we can be assured that 100% of transported fish would have died.

Yakama Nation Fish Project: Russ Byington, the bull trout biologist for the Yakama Nation led the group in a discussion of the 2019 captive rearing program. The captive rearing program plans to take a portion of the YOY bull trout from Gold Creek and Kachess River and rear them in the La Salle rearing facility until fish are large and healthy enough to release. Fish will be PIT tagged, their genetics will be sampled, and detection arrays will be installed in both streams, in order to monitor success.

The group noted the desire to tag the fish that will not be reared in a hatchery, but rather released upstream, with an understanding that there is a 60 mm minimum length requirement for fish to be PIT tagged under existing permits. The group brainstormed ideas for tagging smaller fish, including using bioluminescent, adipose fin clips, or bismark brown, and proposed conducting tagging experiments in the hatchery to determine tag longevity and any tagging associated handling impacts.

The group noted that genetic parentage analysis would also be an effective way to identify and track the survival and reproductive success of transported fish. Richard Visser emphasized that such analysis was not currently a part of the project budget, and that modifications would need to show that it was a cost-effective way to address specific questions with management implications.

Mitch Long and others also encouraged Russ to think about public outreach. Touring the Hatchery when they have bull trout in it would be a good way to reach the public; Mitch noted he would be interested in bringing some of his Gold Creek volunteers down.

A discussion of questions was raised:

a) Will adding a high number and or larger bull trout in one location risk exceeding the carrying capacity of the stream and result in increased density dependent mortality? It was noted

that demographic surveys and isotope analysis can give information on food web dynamics and life cycle specific survival; participants also noted that habitat improvement is being pursued to increase habitat capacity. Life cycle models were mentioned as a way to understand limiting factors and the role of habitat capacity.

b) Will the reared fish need to be held at an acclimation site before being released? It was mentioned that there might be good information on char acclimation from eastern brook trout hatcheries and Montana work with bull trout hatcheries. This information would inform whether relocating captive-reared bull trout directly to the reservoir would be possible or not.

2019 Rescue Plans: Scott Kline led the group through a presentation on his plans and questions for 2019 bull trout rescue efforts. He covered:

Capture Methods: Dip netting will be the primary capture method. Electroshocking will also be used again in 2019, but only around woody debris (where dip netting has poor capture rates) after an initial attempt with dip nets. Minnow traps baited with trout eggs, tuna or other bait will also be used to be used to catch YOY to see if these provide an efficient way to capture bull trout. The traps and bait will be modified and tested for the health and safety of the fish prior to any rescue efforts. The group discussed the opportunity of conducting trap and bait tests in existing hatchery facilities.

Relocation Options: Rescued fish will either be relocated upstream in the same system or transported to the rearing facility. The maximum number of fish that can be relocated to the rearing facility is 2,000 per tank, with one tank available for Kachess fish and one tank for Gold Creek fish. The group discussed how to decide which fish to move to the rearing facility; Scott noted that his target was 50%, until the available facility space is full. The group briefly discussed possible genetic selection impacts of how/when transported fish are chosen. An important logistical issue to consider is the need to limit how much differential growth rate occurs between bull trout delivered early in the season versus late in the season. The time between earliest and latest bull trout delivered to the rearing facility could be 1.5 to 2 months and the fish will be fed a diet designed for fast growth in an optimal temperature environment. While the rearing facility has some capacity to split existing tanks to accommodate differential growth, it is limited.

Monitoring Effectiveness- The fish in the rearing facility will be PIT tagged prior to release. Most of the instream relocated fish will be under the 60mm minimum size for a PIT tag. Each stream with relocated and tagged fish will be equipped with a PIT tag detector, detectors will be in place from early July until high flows in November. The group reviewed possible pit tag antenna locations and the logistics of installation. Plans are to install at least 2 detectors in 2019.

Effectiveness of Demographic Survey Detection: A pre-relocation survey will be done to determine existing population densities followed by a post relocation survey to assess relocation success. Block nets may be used to create a more controlled environment to get an understanding of observational success. Block nets will also be useful to determine post handling mortality rates. The group noted that nets are fragile and using them is time intensive (as they must be regularly checked to avoid mortality of impinged fish). If it is decided that block nets are too much of a risk and tagging for <60 mm fish is not available we will only be able to track and have information on the larger than 60 mm fish.

Others Topics: Mitch noted that in Gold Creek, it will be challenging to relocate fish the same day that they are caught due to the time required to hike in to the release site. He noted that downstream of Gold Creek Pond there is a wetland complex that is groundwater fed and has beaver activity that might be a possible relocation location. Mitch is collecting data there for instream restoration; Alex mentioned that Ashton had data on that site from her thesis, and that it was full of brook trout.

Scott reviewed his proposed calendar of fish rescue and demographic survey efforts for the 2019 field season. Jose noted that USFWS staff from the Leavenworth Fisheries office would be available to assist with rescue efforts. Connor Parrish mentioned that he has penciled in help from MCFEG on Wednesdays and Thursdays so Scott will adjust the majority of night-time work to those nights.

Scott and Russ committed to arranging a subcommittee to discuss the topics raised and finalize plans for the logistics of the 2019 rescue efforts.

The morning session ended at 12:15