

**Water Resources Technical Advisory Committee
Meeting Notes
September 11, 2018
Noxon Emergency Services Building**

WRTAC Representatives Attendees:

Avista – Eric Oldenburg
Bull River Watershed Council – Kathy Ferguson
Idaho Department of Fish and Game – Ken Bouwens
Montana Fish, Wildlife and Parks (MFWP) – Ryan Kreiner
Montana Dept. of Environmental Quality – Randy Apfelbeck
Noxon-Cabinet Shoreline Coalition – Rick Robinson
Panhandle Chapter Trout Unlimited – Bill Love
U.S. Fish and Wildlife Service – Kevin Aceituno
U.S. Forest Service (USFS) – Doug Grupenhoff

Other Attendees:

Avista – Nate Hall, Shana Bernall, Lisa Vollertsen, Susan Drumheller, and Sean Moran; Lower Clark Fork Watershed Group – Brita Olson; Montana Fish, Wildlife and Parks – Jason Blakney and Mike Hensler (showed up at 10:28).

General Updates:

- Consent mails:
 - One consent mail was approved since the spring Management Committee (MC) meeting. This consent mail was for \$10,000 to conduct a LiDAR survey of the future stream restoration site up Crow Creek as well as to provide \$10,000 additional dollars for the Prospect Creek PIT tag array.
- Budget Update
 - Eric discussed a correction regarding funding of the Westslope Cutthroat Trout Experimental Passage project during 2017. There were no concerns from the group.
- 2019 project plans and annual work summaries
 - Project plans for 2019 are due to Avista on November 1. If you have a new project you would like to propose for next year you need to be working with the appropriate Program Leader so that deadline can be met. Project plan guidelines will be sent to the Program Leaders within the next couple weeks. The 2018 Annual Work Summary guidelines will also be sent to the Program Leaders in a couple of weeks.
- Grant writer update
 - Susan Drumheller provided a grant writer update. She is working with Ruth and Brita on a 319 grant for the Simms project in the Vermilion River and submitted the application yesterday for \$200,000. Should know by Oct. 26th if they receive the grant. She is also working on AIS grant reporting which was

funded this year by a DNRC grant. She will be coordinating grant funding strategy talks this year and working on a future fisheries grant for Crow Creek restoration and Phillips 66 has corporate philanthropy funding available that could be used for the Crow Creek project. Received a \$100,000 grant from Bureau of Reclamation to help Brita assist with stream restoration projects. Ruth and Susan available to help with project planning for 2019.

- Update on past property acquisitions
 - Two lots in Granite Creek (3/4 acres) - Avista has managed the properties for 15 years similar to how IDFG manages their property. Avista recommended keeping the same management plan and the WRTAC agreed.
 - 20 acre parcel on Prospect Creek – Avista has owned and managed the property for 10 years. There is little activity on this property, so Avista recommended no change in management of this property and the WRTAC agreed.
 - Nate provided an update on recent conservation easements: Recently finalized a conservation easement on the East Fork Bull River on property Bob Stein purchased which the Kanisku Land Trust (KLT) will hold.

Review of 2018 projects to date:

Appendix A: Idaho Tributary Habitat Acquisition and Fishery Enhancement Program

Tributary Habitat Acquisition and Enhancement

1. Habitat Restoration Scoping Fund

- Funds used to review Caribou, Hellroaring and Trestle Creek project prioritization bid documents.
- Recent visit to Johnson Creek to look at the mouth which dries up when the lake is low. This is the same time that Bull Trout are migrating into the tributary. The dry reach is a result of woody debris built up; Ken will be putting in a project plan in 2019 to remove some of the debris to allow water flow to move sediment in the system. Will be working with a private landowner to get permission for the work.

2. Habitat Restoration and Acquired Property Maintenance and Monitoring Fund

- Conduct gravel conditioning annually at Sullivan Springs since there is very little run off since spring fed system, so to remove algae rake the area and loosen up the gravel for better spawning substrate for kokanee.
- Update on Trestle Creek timber management
 - Had a helicopter sale for a portion of the timber harvest. Left quite a bit of timber, and the only thing left is slash disposal (burning piles); rehabbing roads and doing some seeding; netted \$300,000 dollars that is being split between appendices A and K; treated around 30 acres.
- Twin Creek – finished lower parking area and will be finishing upper parking area this fall; permanent signs have been installed; allowing walk in recreation only. Contracting to get a portion of the field hayed to maintain weeds until a restoration

- plan can be developed. Kudos to IDFG personnel and IDFG wardens who helped with violations over the summer months.
3. Priority Native Salmonid Habitat Acquisition and Conservation Fund
 - Talked to the Idaho Club about land near the mouth of Trestle Creek; decided not to move on that property. Conceptually agreed to contribute \$6,000 toward a Forest Stewardship funding a 58-acre KLT conservation easement on the Pack River.
 4. Lightning Creek Rootwad Salvage
 - Plan to use some of the logs for DNRC project at mouth of Spring Creek. The area did get burned over, so there is concern about the longevity of the logs for use in restoration projects and the logs are getting older. Depending on the decision on longevity will wait to make a decision on decking the logs.
 5. Habitat Prioritization Evaluation for Trestle Creek
 - Hired a contractor to do the work. Field work is beginning.
 - Federal Lands Access Program (through the highway administration) has a goal to increase access to public ground. They are working with local counties and awarded 1.6 million dollars to pave the Trestle Creek Road. IDFG will be working with them on the plan and will use funding for Alta Engineering to help match those funds. The design for project won't start until 2020, so IDFG and others can provide input on the design (approx. 4 miles of road).
 6. Habitat Prioritization Evaluation for Caribou and Hellroaring Creeks
 - Brought in Pack River Watershed Council personnel to help with project. Formed a Pack River technical team to be implementers to develop a pack river restoration strategy. Area has been heavily harvested, so restoration may need to occur outside of the stream bed. Hired contractor to perform the study.
 7. Pack River Temperature Monitoring
 - Ongoing project and discussing where to house the data.
 8. Spring and Mosquito Creeks Pathogen Survey
 - Continuing to work with lab to get a final report together. Learned that IPN distribution is pretty wide spread, but only found in Brook Trout, with the exception of one Brown Trout.
 9. Idaho Field Station Planning
 - Working on evaluating a final location (either Trestle Creek or Cabinet Gorge Hatchery); next step is to do a cost comparison to see if there is a benefit to combining the field station with a facility at the Fish Handling and Holding Facility site.
 10. Lightning Creek Large Woody Debris and Recruitment Project
 - Goal to start wood accumulation downstream. The problem is there is quite a bit of erosion in the lower portion of the drainage where there are slivers of private land. Hoping to get a pilot project up and going; could not find a contractor willing to work on the project due to its low cost; construction may occur in November working on getting new bids.
 11. Idaho Land Conservation Strategy

- The project is complete and the final document is being used strategically to find land.

12. Twin Creek Restoration Revegetation

- Planted willows on the bank; planted in the late fall and then cut off the willows, so with low run off the water ran over the top and good growth. Bank remained stable following high flows. Have a good tool to plant a high number of willows; tool belongs to Avista; built to fit hammer on excavator not sure if it would work on others. Will plant more plants in the upland area this fall and be done with the project.

Fishery Resource Monitoring, Enhancement, and Management

13. Fish Resource Monitoring, Enhancement, and Management Plan

- This year split out reports for redd counts, stream monitoring and river monitoring. Sampled Berry, Jeru, Mosquito, Spring, SF Grouse and Char creeks.
- Stream sampling occurs on a five year basis; will be compiling a comprehensive report since all streams have been sampled two times.
- Clark Fork River salmonid abundance mark recapture work happened in the spring and will be conducted again this fall (sampled three years in a row); in the future will be a three year rotation.
- Hired a new employee to help with data analysis and reporting.

14. Nate, Eric and Ken will be discussing a long-term plan for adjusting funding for the two funds under Appendix A, so they do not need to ask annually to transfer funds between the two funds.

15. Paul is working with IDEQ on a new project plan for 2019 that will involve temperature monitoring of the lower Clark Fork River downstream of Cabinet Gorge Dam. The goal of this project is to determine whether discharges from Cabinet Gorge Dam at 3,000 cfs result in increased temperatures in the river as compared to discharges at 5,000 cfs. Will most likely be proposed in F5.

Appendix B: Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program

Tributary Habitat Acquisition and Enhancement

1. Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan

- Long-term abundance monitoring: sampled six sites in Graves Creek in cooperation with Appendix C program; sampled two sites in Crow Creek in preparation for future restoration efforts and four sites in West Fork Trout Creek.
- Prospect Creek fish rescue: salvaged 22 Bull Trout and 59 Westslope Cutthroat Trout from stranded pools. Bull Trout released in Crow Creek and Westslope Cutthroat Trout released in perennial portion of Prospect Creek.
- Non-native fish encroachment in Prospect Creek: found two Rainbow Trout farther up than expected; will continue to monitor non-native encroachment.
- Prospect Creek Array
 - Array was installed in August; cost share with NorthWestern Energy and located near the USGS flow gage. Having some issues with interference

which may be from this site. Detected a Westslope Cutthroat Trout tagged in Prospect Creek and a Bull Trout that was transported to Thompson River in 2015.

2. Miners Gulch Stream and Riparian Restoration Project
 - Physical work occurred in 2016. USFS revegetation effort began last spring; seeing 95% survival of plantings; a lot of effort toward keeping vegetation watered. Monitoring of the stream restoration is ongoing, and the site is pretty stable.
3. Vermilion River Sims Reach Restoration Survey and Design
 - Funded a LiDAR flight last year; USFS developed a map that will show the floodplain; also took additional physical measures this year to tie the LiDAR survey with underwater physical survey and working on compiling the information.
4. Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process
 - 59 enclosures on public land along the Bull River downstream of the EFBR. Collaborative project with help from the Lower Clark Fork Watershed Group (LCFWG), U.S. Forest Service (USFS), Green Mountain Conservation District and Montana Conservation Crew.
5. Match Funds for Outreach in Bull River Revegetation (Section 319 Project)
 - Project finished recently with public outreach including a short film created outlining revegetation efforts (can find on LCFWG website).
 - Printed informational signs to put on Avista owned property to describe project along the Bull River (approx. 3.5 miles of stream bank on Bull River have some form of revegetation).
 - Land owner outreach meeting occurred trying to find new rep. for Bull River Watershed Group. Nate will check with KLT on language in conservation easement to see if we can put up signs on the Wood Duck property.
6. Stream Gage Monitoring
 - Managed by USFS and water year info. is available October of each year; Craig Neesvig working on new enclosures that will increase longevity of the equipment.
7. Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance
 - The snotel site was not working in March (ball of snow on site), but began working after they cleaned it off. The site will be maintained in September by NRCS and the USFS will check on it monthly over the winter.
8. Crow Creek Bull Trout Investigation
 - Comparison of Crow Creek and Cooper Gulch; Blakney has preliminary data comparing discharge, LWD, undercut banks, substrate, etc. between the two drainages. He will continue to compile data and provide a draft report in the future.
9. Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning
 - Funding for blanket NEPA for future projects (Graves, Crow and upper Prospect Creek); USFS has completed the NEPA process and should have final decision in a few months. Support letters submitted in July from agencies.
10. Graves Creek Pilot Habitat Enhancement Project

- Group had a site visit and decided there was a need for large woody debris structures to ensure they stay put. Plan to install 2 to 5 structures next year with the help of engineers from Trout Unlimited.
 - Working with TU engineers to provide technical expertise.
11. EF Blue Reach 2 Survey and Design – Phase I
 - USFS completed the design for this project. Have not been able to get landowner permission to do the work.
 12. Dry Creek Sediment Reduction, National Environmental Policy Act (NEPA) Compliance
 - Will not be completed this year. During EA process had input from public, primarily snowmobiling group and still working to get agreement with the group. Need to reengage with the snowmobile group and see if they have any ideas prior to moving forward.
 13. Lower Clark Fork Watershed Group Project Coordination
 - Wrapping up four year 319 contract for Bull River revegetation. Final reporting occurred last month, so wrapped up Bull River revegetation project. Will continue to maintain these projects in the future. Working on preliminary grant funding for Vermilion River, and Graves Creek proposed restoration projects. Also have part-time employee helping to update the Clark Fork River Watershed Restoration Plan which will be available this winter. Help strategize current projects, and is also a requirement for many funding sources.
 - Update the 2011 restoration project summary next year.
 14. Montana Land Conservation Strategy
 - The strategy has been completed. Need to send a copy to Jason.
 15. Habitat Restoration Monitoring and Maintenance Fund
 - Planted riparian veg. in Crow Creek.
 16. Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Fund
 - Landowners on Bull River approached Avista about putting their land in a conservation easement; 126 acre section in area where there are other conservation easements; no inhabitable structures on the site; easement would allow no subdivisions or structures; preliminary appraisal cost of \$700,000 to \$900,000 dollars. There is no commitment for public access. Plan to bring to the MC for approval in a few weeks. Conservation easement would be held by KLT. Would be 50/50 split between Appendix B and K. Nate asked what people's perspectives were on the purchase. The group agreed to move proposal forward to the MC.
 - MC approved LiDAR for Crow Creek.
 - Property on the lower Thompson River is currently in review. American Public Land exchange reached out to the realtor and there may be an offer on the table.
 17. Clark Fork River Westslope Cutthroat Trout Experimental Transport Program
 - Only 24 Westslope Cutthroat Trout transported to Cabinet Gorge Reservoir this year. The goal was to transport 40, but capture rates were lower due to high flows which limited sampling for more than a month in the spring.
 - Issues with Lotek radio transmitters; will be getting reimbursed for the radio transmitters that malfunctioned or could in the future.

- 6 Westslope Cutthroat Trout entered tributaries to Cabinet Gorge Reservoir (5 entered the Bull River including 1 in the South Fork Bull River; 1 in Pilgrim Creek).
- Completed five of the eight sampling events for gonad and hormone analysis on hatchery Westslope Cutthroat Trout.
- Mainstem Bull River PIT array update was installed mid-August and is currently running. Waiting on Blackfoot to install fiber to allow remote monitoring of the site.

18. Crow Creek Restoration Design

- The LCFWG will sponsor funds from both the Thompson Falls Technical Advisory Committee (NorthWestern Energy (NWE)) and the CFSA Management Committee (Avista) to fund the design of a second restoration project in Crow Creek. The Federal Energy Regulatory Commission (FERC) approved a request to extend NWE's project boundary to include funding projects in the Prospect Creek watershed. The funding for the design of this project was approved by the NWE technical advisory committee and will be used to fund design. Therefore, the proposal submitted under Appendix B of the CFSA will not be used to fund this project.

Recreational Fishery Enhancement

19. Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan

- Eight nights of sampling in 2018. 220 mature fish captured; 10% female and 81% of the mature fish were captured near the golf course.
- Fall reservoir monitoring will be occurring in early October.

20. Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs

- Focused on treating areas where recreation was occurring. In August about 31 acres on Noxon Reservoir were treated near boat ramps and 6 acres on Cabinet Gorge Reservoir. Scientific advisory group was formed.
- Six weeks post treatment survey will be occurring soon. Also treated some nearshore areas with dock permits.
- Paul Kusnierz is the hydropower rep on the Upper Columbia Conservation Commission otherwise known as the UC3. This group was established by Montana legislature in 2017 to enhance AIS early detection and rapid response efforts within the Columbia River Basin. Feel free to contact Paul if you have any questions.

21. Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis

- In progress.

22. Mountain Lake Fisheries Monitoring Project

- Visited 10 lakes and fish present in 9 lakes. Of interest, Elk Lake in the Vermilion River had the presence of Rainbow Trout.

23. Thompson Falls Field Station Facility Feasibility Study

- Construction upgrades planned for end of October and personnel may move in by the end of the year or early next year.

24. Lower Bull River Day Use Boat Access Plan and Final Design

- A final design and plan has been made. Had a public meeting and permits are pending. Working on a general management plan for the area. Hoping to get MC approval to allow a residence on site.

- Original plan was for public outreach and design this year and the new plan is to try to get permitting complete and potentially begin construction later this year.
25. Noxon Reservoir Boat Ramp Improvements
- No updates.

Appendix C: Fish Passage/Native Salmonid Restoration Program

1. Native Salmonid Restoration Plan Five-Year Plan (2019–2023)
 - Avista, IDFG, MFWP and USFWS have developed a draft NSRP Five-Year Plan for the 2019-2023 time period. The goal of this plan is to provide the MC with continued and consistent guidance for implementation of the Fish Passage/NSRP Program for the 2019 through 2023 time period. This plan reviews the goals of the previous Five-Year Plan, findings from the implementation of the Appendices in the plan and goals for the next five years. Appendices A, B, C and F5 are the focus of this Five-Year Plan. We are hoping to have this plan approved by the MC at the September 25th meeting.
 - Doug Grupenhoff noted that the AIT leaned more on the GEI 2005 report and there are other drainages (Trout Creek, and others) that maybe should be ranked higher. Responses to this inquiry included assurances that other drainages are important and projects proposed in these other areas would be supported since they have important Bull Trout populations. The WRTAC agreed to move the Five-Year Plan forward to the MC as written.
2. Upstream Fish Passage Program
 - 38 adult Bull Trout captured downstream of Cabinet Gorge Dam; 29 transports to date (close to the mean for this time of year); Region 2 n = 7 (including three Lightning Creek assigned fish); Region 3 n = 18 (16 to Graves, 1 to Vermilion and 1 to Prospect Creek); Region 4 n = 4; one mortality
 - Kevin Aceituno provided an update on transport of Lightning Creek genetically assigned Bull Trout to East Fork Bull River. In 2018 this will only occur when the mouth of Lightning Creek is dry, but the protocol will be revisited annually.
3. Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
 - Only 7 juvenile transports so far (3 Graves, 1 EFBR, 3 Rock). This is below the average of about 15 but not too concerning as the vast majority of juvenile transports start being captured when we get our first good September rains. We are not trapping the Vermilion River again this year, instead, juvenile transports will be captured using electrofishing in late October.
 - 7 of this year's 17 adult transports to Graves Creek were fish that were captured in the permanent weir following the spawn in 2017 and transported back to LPO. Last year, 15 adults were captured in the permanent weir and transported to Idaho following the spawn, so we have already recaptured and re-transported almost half of those. Along those lines, one change for this year is that when we capture post-spawn fish in Graves Creek, we will release half of the males and half of the females downstream of the trap and the other half will be transported to Idaho. The purpose of this is to

directly assess which strategy maximizes the number of years adult Bull Trout are connected with their natal streams.

- We have had discussions with an engineering firm, R2, regarding designing the improvements to the permanent weir. This is the firm that originally designed the permanent weir and they are working on an estimate for designing the improvements. The primary goals behind the improvements are to (1) integrate a more robust version of the drop-height feature for downstream-moving fish, (2) increase capture efficiency for upstream-moving fish, and (3) integrate a component that will give us the option to offer volitional passage to upstream-moving fish without decreasing the capture efficiency for downstream-moving fish. The plan is to get to final design by late February so that we can get permits and contractors in order for August 2019 construction.
 - The East Fork Bull River PIT array was installed last month and an electrician has installed the meter base and breaker and wired power to our equipment. We are just waiting on Northern Lights to put power to the meter. We are also waiting on Blackfoot to run fiber to the site.
 - This is likely to be the last year that we will transport Bull Trout from Rock Creek to Idaho. This is because Rock Creek Bull Trout almost exclusively demonstrate a stream-resident life history. In working with the management agencies, the current direction is to be aggressive in trying to enhance the adfluvial populations in the EFBR, Graves Creek, and Vermilion River but to let the stream-resident subpopulations carry out that life history.
 - Eric noted that his Annual Project Update is late. The report itself is written but he will be including the Graves Creek M&E Plan as an appendix and hasn't wrapped that up, yet.
4. Bull Trout Emigration Study
- This study will focus on the EFBR and Graves (not the Vermilion)
 - The study won't really begin until next summer but in preparation for that, Jason and Sean's crews PIT tagged somewhere around 100 fish each in the EFBR and Graves during abundance monitoring efforts and minnow traps have added an additional 25 in Graves Creek.
 - A graduate student was selected for this project, Maddie Lewis. Maddie completed most of her undergraduate at South Dakota State and finished up in Missoula. Maddie will be working on the comprehensive project proposal as she takes courses in Bozeman this fall and will begin field work next summer.
5. East Fork Bull River Bedload Sediment Sampling 2016–2020
- Sounds like Craig got good samples this year with one closer to bank full. Still not quite as high of flows as we would like to see for this effort but increasing our understanding.
6. Fish Abundance Monitoring
- 2017 report finalized and available.

- 2018 efforts: working with Appendix B on Graves Creek stream electrofishing (106 Bull Trout captured over 6 sections that were >74 mm in total length). Stream electrofishing efforts will be proposed in Appendix B starting next year.
7. Non-Native Fish Suppression Project in the East Fork Bull River
 - Update report out for 2017.
 - 2018 – slight increasing trends in Brown Trout seen again this year. Abundance of Brown Trout still well below pre-suppression levels. 103 Bull Trout caught over 3 sections in upper EFBR including 5 in NFEFBR– good numbers this year.
 8. Fish Capture Facilities Operation, Development and Testing
 - 100% design complete
 - Working with MT and ID DEQ on water quality certifications; we will be getting a letter from MT that states that we do not need a certification since project is proposed in Idaho.
 - JARPA submitted two weeks ago for Army Corp. 404, state water resources, etc. (have 180 days to review).
 - Cofferdam designed to overtop at 80,000 cfs.
 - Slayden hired as contractor (last contractor on the spillway mods).
 - Mobilize on site in March of 2019 and begin construction following spill. Should be operational in 3rd quarter of 2021.
 - Working in the near future to begin updates to the BMP since the design for the Fishway has changed since the document was finalized. If other stakeholders are interested in providing input on this document please let Shana know. The final version will be submitted to the MC for approval.
 9. Bull Trout Digital Online Database project plan
 - The WRTAC agreed to move the project plan on to the MC for approval.

Appendix D: Bull Trout Protection and Public Education Project

1. Bull Trout Protection and Public Education Project, Idaho Department of Fish and Game
 - Angler Incentive Bull Trout numbers continue to be low.
2. Bull Trout Protection and Public Education Project, Panhandle Chapter Trout Unlimited (
 - Film festival at the Panida; Susan worked with Reg to get a grant to bring fly fishing film tour to Thompson Falls, MT. No Trout and About Festival this year due to other circumstances, but the grant for the project can extend into next year. There is public interest to have the film festival again in Thompson Falls.
3. Bull Trout Protection and Public Education Project, Montana Fish, Wildlife and Parks
 - Two kid’s fishing days this year. New classroom education tools being implemented. No Bull Trout violations this year.
4. Lake Pend Oreille Boater’s Guide
 - Includes AIS and Bull Trout identification information. 10,000 copies printed in the late spring.
5. Interpretive Signs and Kiosk Component for Trestle Creek Education Center
 - This project is being pushed back to next year.

- Projected shortfall in funding which will be discussed this fall to keep this Appendix within budget.

Appendix E: Watershed Councils Program

1. Pack River Watershed Council, Bonner Soil and Water Conservation District
 - Education outreach: put out website and newsletter and coordinated volunteers for restoration efforts.
2. Lower Clark Fork Watershed Council Projects
 - Have a website that will include map uploads in future; administrative support for lower Clark Fork River watershed projects; overlap with Appendix B; update of Horn 2011 watershed restoration summary will be occurring next year.

Appendix F1: Clark Fork River water Quality Monitoring Program

1. Clark Fork River water Quality Monitoring Program
 - Sampling has occurred once each month since March 13 and six peak flow samples were collected between May 1 and June 5. Two sampling events remain. The 2017 annual report and 2018 Quality Assurance Project Plan are close to being completed. Please contact Paul Kusnierz if you would like copies of either. The data analysis for the 5-year report is near completion and writing is ongoing. Randy added that the Clark Fork Coalition is taking over some of the monitoring on the upper river and Missoula will no longer be doing the analysis, so looking for new lab to do water quality analysis.

Appendix F2: Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals

1. Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals
 - No sampling occurred this year because the flow trigger was not met by the cutoff date of August 7. The flow trigger was not met until September 3.

Appendix F3: Aquatic Organism Tissue Analysis

- No work was planned for 2018.

Appendix F4: Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities

- We have continuously operated within the General Operating Limits all year and there has been no need to put the Plan into effect.

Appendix F5: Dissolved Gas Supersaturation Control, Mitigation, and Monitoring Operations

- This component of Appendix F5 basically states that Avista will follow the “spill protocol”. The protocol was updated this year to include the use of newly modified spillways 1 and 3.

TDG Monitoring

1. Total Dissolved Gas Monitoring
 - The annual TDG report was sent as a memo to the Gas Supersaturation Subcommittee last week.
 - As you know this was a big flow year... peak flow was 121,000 cfs and at least at one point it was a record year in terms of total volume passed.
 - TDG exceeded 110% on 66 days and 120% on 47 days.
 - High flows this year did result in the loss of some of the TDG monitoring equipment and a short window when TDG was not monitored. Paul will be working with the GSSC to develop a plan to avoid the future loss of data.

TDG Mitigation and Monitoring Program

2. Analysis of Gas Bubble Disease Monitoring Data
 - Paul has synthesized all of the data through 2017 and he presented that at the Western Division AFS meeting last May. He is now working on integrating the 2018 data, re-analyzing, and writing the report.
3. Lake Pend Oreille Stock Identification of Bull Trout
 - Working closely with IDFG personnel to determine how to break out the data (by year, size class and mesh size).
 - And to determine what information could be beneficial to incorporate into the Demography Study.
 - Anticipate a draft report for review by mid-October.
4. Lake Pend Oreille/Clark Fork River Walleye Population Assessment
 - Plan on same program next year with some refinement of areas that have better success for fishing with nets. Will be proposing at the MC meeting this fall a Walleye Anger Incentive Program. Have coded wire tags in some Walleye and reward on those few heads that are turned in with coded wire tags. Will have the project plan in the mail out to the MC.
 - Bill Love noted that Walleye were popular at the food bank 1,050 were brought to the food bank.
5. Lake Pend Oreille Angler Incentive Program
 - Numbers down from last year.
6. Lake Pend Oreille Trap and Gill Net Program
 - Fall sampling efforts began yesterday.
7. Demography of Adfluvial Bull Trout in Lake Pend Oreille
 - On schedule; learning a lot about Bull Trout in the lake and some fish have been captured multiple times.
8. LPO/Lower Clark Fork Strontium Isotope Baseline Collection
 - Summarizing data that will be available soon. Good resolution throughout the system looking at water samples allowing a baseline of the isoscape. Next step is to get information on where Walleye were produced (proportion hatched in LPO or migrated down from Cabinet Gorge or Noxon reservoirs. A proposal for this work will be submitted in 2019. And in the future look at other species.

9. Lake Pend Oreille Bull Trout Survival Study
 - Using data from this study to help inform the demography study.
10. Lake Pend Oreille Nearshore Index Netting
 - Netting first occurred in 2015 in the spring. Plan to do the WCT netting in the fall and will most likely occur in late October which is the same time river estimates will be occurring, so plan on pushing the netting back one year to 2019.
11. Box Canyon Reservoir Northern Pike Suppression
 - No update.
12. Lake Pend Oreille Tributary Creel
 - Creel survey began in January. Good data on spring Rainbow fishery. Efforts reduced during run off and Lightning Creek fire reduced efforts on tributaries. On Pack and Lightning see very little use of tributaries.
13. Eric noted that Paul is working on a temperature monitoring plan that will likely be proposed as a low-dollar cost share among appendices. The goals will be to pull all of the existing temperature data into a single database, develop some standardized protocols including QA/QC procedures, and to better coordinate where we monitor.

GSCP Alternative

14. Gas Supersaturation Control Program Total Dissolved Gas Abatement
 - A lot of tests were performed on units 1 and 3 as well as all of the gates in different combinations. The main idea is that all of the modified spillways on the deep side now perform similarly to the shallow side.
 - Discussions as to whether any additional modifications are warranted will occur among the Gas Supersaturation Committee and if deemed appropriate, proposals for future modifications would be outlined in a project plan and run through the process. Originally, it was proposed that 6 and 7 would be modified this year but that decision will need to be revisited starting with the Gas Supersaturation Committee.

Appendix T: Project Operations Package

1. Project Operations and Coordination
 - For Noxon Reservoir water surface and draft rates have been in compliance.
 - Same for Cabinet Gorge Reservoir.
 - Minimum flows have been above 3,000 cfs and will be above 5,000 cfs from Sept. 15 through October 31st.
2. Priest River Coldwater Bypass Preliminary Design
 - Trying to determine if it is physically possible to build a bypass.
 - Nate noted that the analysis has broadened beyond augmenting with cold water from the lake as one option may be to use ground water. There is some opposition from private landowners and the completion timeline has got pushed back.
 - Panhandle Trout Unlimited assisted the Kalispel Tribe taking temperature measurements on the Priest River; data being compiled to look at instantaneous temperature profiles in the river (70 km monitored in 3 hour period).
3. Cabinet Gorge Fish Hatchery Spring Collection System Upgrade

- The hatchery manager has been monitoring the pumps during low flows (down to 3,500 cfs), and so far there are no concerns, but in the past issues have arisen during years of drought, so we will continue to monitor the pumps and lower Clark Fork River flows.
- The plan is to at least have a back-up pump installed that is part of the system in case one of the other pumps fails.
- Waiting on designs and budget from the contractor for potential improvements to the system.

Next WRTAC meeting January 22nd 2019.

Meeting adjourned at 3:20 pm.