

NorthWestern Energy Thompson Falls Hydroelectric Project (No. 1869)
Annual Thompson Falls Technical Advisory Committee Meeting

December 8, 2020, 9:00am – 2:00pm

9:00 Welcome

- Jon Hanson, NorthWestern Energy, facilitated the meeting. A list of attendees is provided at the end of the meeting summary. PowerPoint presentations provided today will be on the website along with meeting minutes.

2. Introductions

- Review of Agenda

3. Thompson Falls TAC Business

- We have a quorum present with a voting member present from FWP, CSKT, FWS, and NorthWestern Energy.
- New Website: <http://www.northwesternenergy.com/environment/thompson-falls-project>
- Memorandum of Understanding (MOU)
 - Renew through term of existing license.
 - Renewed MOU, effective January 1, 2021 and expires end of current license (2025)
 - Signed by voting members: NorthWestern, FWS, FWP, CSKT

4. Review 2020 Activities

- Fish Ladder Operations, Results and Baseline Fisheries Monitoring
- Jon Hanson presented PowerPoint with summary results provided
 - Refer to PowerPoint presentation for details
 - Modified Annual Reporting (starting in 2019) to make it considerable shorter with focus on topics of key interest.
- 2020 ladder operations
 - March 20 – October 19 (closed May 27-June 15, 20 days)
 - 194 operating days in orifice mode
 - Peak CFR streamflows ~79,100 cfs on June 2
- 2020 ladder fish count
 - 1 Bull Trout, 394 salmonids, 1,193 non-salmonids
 - Jason – see a strong decline in LSSU, NPMN, PEA in Noxon over the years and lines up with trends observed at the ladder.
 - No Walleye this year
 - Bull Trout – July 17 (320 mm, 262 g), WF Thompson River genetic assignment
 - 19.3 C and 23,500 cfs
 - Not previously tagged
 - Released live upstream
 - WCT genetic samples taken in 2020 and recently submitted for analysis.
 - Internal Fish Passage Efficiency 2020 – 93% of salmonids detected in the lower pools were detected in the holding pool (sample size 46 salmonids). 71% of non-salmonids detected in the lower pools were detected in the holding pool (sample size low, 14 fish). Combined internal passage efficiency about 85%.

- Ascent times from lower pool (7/8) to the holding pool. Salmonids median 1.8 hrs (range 0.9 – 18.8 hrs). Non-salmonids median 3.2 hrs (range 1.6 – 12.9 hrs).
- Fallback – 2 fish (RB, LL) detected downstream of dam within 14 days after initial ascent and release upstream of dam.
- Supplemental Flow Review
 - Ladder provides 46 cfs attraction flow during non-spill
 - Modified gate panel with ½ board (addition of ~125 cfs) removal on a weekly interval
 - Hypothesis – higher number of fish as a result of additional attraction flow to ladder entrance and to falls area
 - April, August, Sept switched weekly (during no spill period)
 - Initial review of data - No apparent difference

5. 2021 Ladder Operations

- No changes from 2020.

6. 2021 Ladder Operations

- Temperature and Protocol (no changes from 2020)
 - No tagging for salmonids above 20 °C. Bull trout still plan to tag and anesthetize but the call can be made at the ladder by the ladder operators depending on condition of the fish at that time.
 - Daily checks (including weekend) at the ladder when temps ≥ 23 °C.
- Species to Pass
 - WE, LT, EB, EBxBULL, SMB do not pass
- Continue to Operate in Orifice Mode
- Genetic sample for BULL, WCT, and any Rainbow hybrids
- In 2020, just took clips for WCT. Proposing to take clips from WCT and Rainbow hybrids in 2021.
- Recommend continue 2020 protocols in 2021. No objections from TAC.

7. Thompson River PIT Tag operations

- Thompson River array operational issues (not working) August 30, 2019 to August 19, 2020. Installed in 2014 with Gland's thesis work. All new antennas installed and more permanent design and anchoring system (70-foot width) August 2020.
- Fishtrap and WF Thompson River arrays – new antennae installed in tributaries in 2020. As in mainstem initially installed in 2014 for Gland's thesis work. Major upgrade and improvements including new control boards. Tributary systems were challenging to operate continually (2014-2020). Anticipate better data collection capabilities with less interruptions.
- 2020 Thompson River array detections data presented for August 19 – November 11, details for 2020 detections will be in the Annual Report.

- 2020 Prospect Creek array detections
 - Since 2018, total of 14 ladder fish detected in Prospect (out of 756 salmonids tagged at the ladder during this time)

8. Baseline Fisheries 2020

- Spring Electrofishing in Reservoir
- Fall Electrofishing in CFR above the islands and Paradise to Plains
- Fall Gillnetting in Reservoir
- Electrofishing goals – to detect changes in community with upstream fish passage
 - During spring sampling recaptured 1 WCT, 1 RB, 1 LL and then during the fall sampling one RB.
 - Recommend future discussions to discuss intent and value of data from electrofishing. Identify question and if method is addressing objectives.
 - Refer to PowerPoint for result details. Details will also be provided in the Annual Report.

9. 2020 TDG Monitoring and Results (NorthWestern - Jordan)

- Jordan provided PowerPoint (refer to website for copy).
- TDG monitoring during spill season in 2020
 - Above Main Dam
 - Highland Bridge (below Main Dam)
 - Birdland Bay Bridge
- 2020 peaks
 - 87,835 cfs (June 4, 2020) – at plant
 - TDG peaks 105% above dam, 124% at High Bridge below main dam, 119% at Birdland Bay Bridge
- Water quality samples 2020
 - Three sampling events to supplement 2019 water chemistry data
 - Above reservoir, above powerhouses, Birdland bay bridge (2019)
 - Above powerhouses, below old powerhouse, Birdland bay bridge, Prospect, and additional below powerhouses in fall (2020)
- No numeric standard for nutrients for the CFR
 - Metals – Arsenic and Iron below water quality standard
 - Metals (numeric standard are hardness dependent) – Copper, Zinc, and Cadmium below water quality standard
 - Lead – above water quality standards at Birdland Bay Bridge (May 29) three samples above and the rest below.
 - NorthWestern did additional sampling in the fall 2020
 - Not detecting Lead below old powerhouse, but at Birdland bay bridge
 - October 2020 – sampled below the old powerhouse, new powerhouse, mouth of Prospect creek, below Hwy 200 bridge, Thompson Falls state park, in addition to other samples.
 - Detection of lead was only at Birdland Bay Bridge (nowhere else)

- Not sure what's going on at the site. It might be geologic related.
- Not coming from Reservoir, Powerhouses, or Prospect Creek

10. 2020 Project Progress Reports

○ Thompson River Property Acquisition (FWP)

Jason Blakney - Closed on 40-acre property acquisition in September 2020. The property boundary includes either side of the Thompson River. This acquisition provides future protections from subdivision development near the mouth of the Thompson River.

FWP will develop a designated parking area with walk in access only. FWP endeavors to maintain the rugged and undeveloped character of this area to limit traffic in the area and conserve the natural setting for aquatic and terrestrial resources.

FWP plans on naming the park **Confluentus Corner**.

○ Fishtrap Creek Habitat Enhancement (LCFWG, Brita Olson)

Through the implementation of the Fishtrap Creek Habitat Enhancement Project in 2020, the amount of in-stream large wood was doubled throughout a 4,000-foot wood-limited reach upstream of one of the primary Bull Trout spawning reaches in the Thompson River drainage. Relatively low densities of Westslope Cutthroat Trout and Bull Trout have been documented in this project reach. Through habitat enhancement, increasing in-stream habitat complexity and diversity, this project aims to increase the carrying capacity of this reach for native trout. Thirty (30) log structures were built, consisting of over 100 pieces of large wood.

Fundraising for this project was completed in the fall and winter of 2019/2020. The RFP for this project was issued in spring of 2020 and a contract was awarded to Traver's Excavator Service with Milner Brothers Logging working as subcontractors. In late July, the project was completed by the Milner Brothers, equipped with chainsaws and a cable yarder. Construction oversight was provided in tandem by Christine Brissette (TU) and Josh Schulze (Lolo National Forest). Trees from upland areas were fallen directly into the creek and/or placed with the yarding equipment. Additional debris found in the floodplain was also utilized in building structures, in order to incorporate attached rootwads. These techniques were utilized in order to strategically place wood while minimizing disturbance to streamside areas.

This project was supported by the Thompson Falls TAC as well as match funds from the National Forest Foundation, Sanders County Resource Advisory Committee and in-kind contributions from the Lolo National Forest.

○ West Fork Fishtrap Creek Road Realignment

Through the implementation of the West Fork Fishtrap Creek Road Realignment Project in 2020, approximately 600 feet of stream adjacent road was removed. The junction of the West Fork Fishtrap Creek Road (7609) and Fishtrap Creek Road (516) was moved, changing the alignment from a “Y” running along the stream to a “T”. The abandoned road segment was decommissioned, creating floodplain enhanced with log and slash structures, transplants, and willow cuttings. A newly constructed segment of West Fork Fishtrap Creek Road was built, oriented perpendicular to Fishtrap Creek rather than parallel to it. This was constructed according to designs engineered by the Lolo National Forest, with additional embankment recommended by the contract in order to increase safety. Overall, this project reduced the length of road directly adjacent to Fishtrap Creek, reduced sediment delivery potential from these roads and will allow for more vegetation to grow and eventually provide shade and future woody debris recruitment to the stream.

After delaying this project in 2019, additional fundraising was undertaken in the fall and winter of 2019/2020. The RFP for this project was revised and issued in spring of 2020 and a contract was awarded to Elk Creek Contracting. In late July and early August, the project was completed by the contractor, with construction oversight provided by Trout Unlimited, participation from the Lolo National Forest, as well as additional help from project partner and volunteers who consulted on the project in the field and collected willow cuttings for installation in the floodplain. Upon completion, the project was also seeded with a Lolo National Forest native riparian seed mix.

Additional work that will be completed in this project is post-runoff monitoring in spring of 2021, photo point collection, and native tree planting on the upland slope above the floodplain. The project area will be monitored to ensure the newly constructed floodplain is performing as expected, as well as for weeds and establishment of native riparian vegetation. Montana Fish, Wildlife & Parks will be monitoring fisheries through this reach annually.

The project was supported by the Thompson Falls TAC as well as match funds from the National Forest Foundation and in-kind contributions from partners and volunteers.

Total approved funding in support of this project from the Thompson Falls TAC was \$30,627.15. Following any maintenance and monitoring costs incurred in 2021, any balance remaining will be returned to the Thompson Falls TAC as directed by NorthWestern Energy.

- **Misc. Emergency Fund**

NorthWestern utilized \$2,259 from the emergency funding to replace Biomark tributary reader equipment in the Thompson River drainage in 2020.

11. Review End-Of-Year 2020 Budget and Reserve Account

2020 Reserve balance	\$126,046
Annual Contribution CY2020	\$100,000
TAC Projects (Funds Spent in 2020)	-\$117,263.75
Reserve Account Rollover	+\$995
Ending Reserve Account Balance 2020	\$108,782

Fund capped at \$250,000

12. 2021 TAC Proposals and Funding

Agency/Entity	Project Proposal 2021	TAC Funding Requested	Total Project Costs
The Conservation Fund	01-2021 Thompson River Land Interest Acquisition Investigation	\$15,000	\$20,000
FWP	02-2021 Big Rock Creek Barrier Design and Public Scoping	\$34,000	\$34,000
NorthWestern	03-2021 Habitat Project Assistance	\$5,000	NA
NorthWestern	04-2021 Emergency Fund	\$10,000	NA
TOTAL Requests		\$64,000	
TOTAL Approved		\$64,000	

- **01-2021 Thompson River Land Interest Acquisition Investigation (Jason Blakney, FWP)**

Investigate the potential for The Conservation Fund to acquire land interests (fee title or conservation easement) from Green Diamond Resource Company (Green Diamond) in the Thompson River watershed, and subsequently convey those land interests to its partners. (NOTE: TAC funds are not being requested for the actual purchase of land interests at this time. Instead, TAC funds are being requested to pay for the administrative process to investigate the potential to acquire those land interests.)

Determine land interest(s) to be acquired. Estimate purchase price of land interest(s) to be acquired. Determine potential funding sources and partners to complete the purchase. Negotiate a purchase and sale agreement with Green Diamond to complete the purchase. (NOTE: If an agreement is reached with Green Diamond, the completion of due diligence for that agreement and the closing of that transaction are not included in this project proposal. A separate proposal may be submitted later to complete this work.)

- **02-2021 Big Rock Creek Barrier Design and Public Scoping**

Big Rock Creek is one of three drainages and the upper most tributary occupied by Bull Trout in the Thompson River watershed (Figure 1). The stream enters the Thompson River 32.6 river miles (RM)

upstream of its confluence with the Clark Fork River, where Brown Trout represent over 95% of the trout community in this section of the mainstem. Sampling in the lower portions of Big Rock Creek at RM 1.3 in 2010 and 2013 (and in 2019 near RM 0.5) portray a fish community comprised of similar numbers of Westslope Cutthroat Trout (WCT) and Brown Trout, with one Bull Trout encountered in 2010. Further upstream in the drainage the fish community is dominated by Bull Trout and WCT, with an occasional Brown Trout occurring.

The Bull Trout in Big Rock Creek are thought to exhibit a stream resident life history based on 1) a lack of captures in the mainstem Thompson River near the creek; 2) the observation of resident adult-sized fish at several sections; 3) analyses that portray among the lowest genetic diversity (i.e., allelic richness and expected heterozygosity) of 49 Bull Trout population evaluated in the Clark Fork River-Lake Pend Oreille basin of Idaho and Montana (DeHaan et al. 2016) ; and 4) no individuals that genetically assign to the stream have been captured in the Clark Fork River below Cabinet Gorge Dam (Bernall and Duffy 2019).

Starting in the early spring (2021), a subgroup of the TAC will work together to identify a group of experts to review the available data and discuss the pros and possible cons of permanently isolating a Bull Trout population in Big Rock Creek. Constructing a barrier to protect Bull Trout is a relatively new concept and we want to be sure the idea is well vetted and ensure that this is the best available management tool to accomplish that.

For the second step MFWP would work with local partners and a selected contractor to choose a suitable location for a fish barrier. Prior to this MFWP would conduct electrofishing surveys to determine which natural cascades in the lower portion of Big Rock Creek block most Brown Trout. The contractor will then develop a site-specific design for a fish barrier (possibly with two alternatives). An EA would be released for public scoping once a barrier location and design plan had been finalized. Once the public scoping process is completed, MFWP would seek to acquire funds for barrier construction, likely from the Northwestern Energy Thompson Falls TAC and MFWP Future Fisheries Improvement Program.

TAC Discussion – TAC agreed the preliminary request of \$15,700 was inadequate for a preliminary barrier design. Additional funding was proposed (\$30,000) for the barrier design plus \$4,000 for other efforts (genetics, environmental analysis, etc.) identified in the proposal. The proposal plus additional funding (total funding request \$34,000) was approved unanimously by the TAC.

- **03-2021 Habitat Project Assistance**

Habitat projects intended to benefit Bull Trout have been funded under the direction of the TAC since 2010. Federal and state fish and habitat management agencies typically identify and help direct resources to these valuable projects.

To date, viable habitat projects have been difficult to identify and getting projects started with conceptual designs, locating funding sources, and permitting are all components that non-profit organizations like Trout Unlimited and Lower Clark Fork Watershed Group have been instrumental in

assisting with. This proposal would be used to help fund their time to look at projects identified by management agencies and begin to coordinate and develop more detailed plans for implementation and funding.

- **04-2021 Emergency Fund**

This fund will be used for, but not be limited to, emergency purchasing of equipment, scoping potential stream rehab proposals, and support of 2021 approved proposals.

During ongoing operations and proposal work there are times when this approved proposal would allow for immediate funding of equipment, stream restoration assessments or other conditions that may require immediate attention. This proposal will eliminate (within the \$10,000 limit) the need for TAC approval of a new proposal for spending of TAC funds.

TAC discussion – Ladd may provide 50 genetic samples (Bull Trout) from the middle Clark Fork tributary for analysis in 2021.

Jon – Proposals total \$64,000. Jon (NorthWestern) makes a motion to pass all four projects as shown in table above in meeting summary, with increase to 02-2021). Kevin (FWS) seconds (FWS) motion. Voting: Unanimous Yes – NorthWestern, FWS (Kevin), FWP (Don), and CSKT (Craig). Four Projects approved by the TAC.

13. Next Meeting(s)

- Ladd – recommends tour of TAC funded projects when pandemic transpires
 - Late May or June
 - Jon will coordinate with Ladd and Jason to set up dates.
- Relicensing Process - Study Plan Meeting Scheduled for January 6, 2021
 - Zoom format
 - Morning Meeting 9AM
 - Evening Meeting (TBD)

14. Adjourn 11:25 AM

December 8, 2020 Meeting Attendees:

Name	Affiliation
Andy Welch	NWE
Grant Grisak	NWE
Jordan Tollefson	NWE
Jon Hanson	NWE
Mary Gail Sullivan	NWE
Craig Barfoot	CSKT
Mike Hensler	MFWP
Ladd Knotek	MFWP
Marc Terrazas	MFWP

Name	Affiliation
Pat Saffel	MFWP
Don Skaar	MFWP
Harvey Carlsmith	MFWP
Jason Blakney	MFWP
Shana Bernall	Avista
Josh Schulze	USFS - Lolo
Brita Olson	LCFWG
Christine Brissette	TU
Kevin Aceituno	USFWS
Ginger Gillin	GEI
Kristi Webb	New Wave