

**NorthWestern Energy
Madison Fisheries Technical Advisory Committee Meeting
December 10, 2018**

Location Montana Fish, Wildlife and Parks Office
1400 S 19th Ave
Bozeman, Montana

Time: 9:30-3:00pm

9:00 Welcome - Brent Mabbott, NorthWestern Energy, facilitated the meeting.

Introductions were made, and the following attended this meeting:

Andy Welch	NWE	andrew.welch@northwestern.com	444-8115
Jordan Tollefson	NWE	jordan.tollefson@northwestern.com	443-8907
Brent Mabbott	NWE	brent.mabbott@northwestern.com	490-1801
Mary Gail Sullivan	NWE	marygail.sullivan@northwestern.com	497-3382
Grant Grisak	NWE	grant.grisak@northwestern.com	268-2299
Bruce Roberts	USFS	broberts@fs.fed.us	
Allison Stringer	USFS	astringer@fs.fed.us	522-2525
Dale Olson	USFS	dolson02@fs.fed.us	925-0897
Darin Watschke	USFS	dwatschke@fs.fed.us	682-4253
David Moser	MFWP	davemoser@mt.gov	994-6938
Travis Horton	MFWP	thorton@mt.gov	994-3155
Travis Lohrenz	MFWP	tlohrenz@mt.gov	682-7807
Don Skaar	MFWP	skaar@mt.gov	444-7409
Chris Boone	BLM	ctboone@blm.gov	702-4759
Jeff Dunn	TU	Jeffrey.dunn@tu.org	579-0516
Chelsea Pardo	MRF	chelsea@madisonriverfoundation.org	682-3148
Christine Verhille	MSU	Christine.verhille@montana.edu	994-4844
Ethan Kunard	MCD	ethan@madisoncd.org	682-7289
Kristi Webb	New Wave	kwebb@nw-enviro.com	239-4884

A quorum was present with a representative from NorthWestern, Montana Fish Wildlife and Parks, U.S. Forest Service and Bureau of Land Management.

Agenda revisions There were no revisions made to the agenda.

MADTAC Business

- Recent NWE staff changes/ MADTAC changes
 - Addition of Jordan Tollefson and Grant Grisak
 - Brent Mabbott retirement (Spring 2019)
 - Bruce Roberts retires in 2019, Allison will be taking over.
- Review of Notebook contents
 - Brent recommends another meeting with biologists in January 2019 to review flows in the lower Madison River and spawning and rearing habitat for brown trout (refer to Dave Moser's paper in notebook)
 - Agenda
 - Budget

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- 2019 proposals
- Appendices -
 - Minutes from 2018 MAD TAC Annual Meeting, December 1, 2018
 - MAD TAC PM&E Plans submitted to FERC in 2018
 - Approved by agencies prior to submittal to FERC, pending official FERC approval
 - MOU (Missouri and Madison)
 - Minutes from Biologist Meeting, February 26, 2018
 - Guidance for Landowners and Practitioners in Stream and Westland Restoration Activities
- Status of Fisheries Completion reports filed with FERC
 - Submitted to FERC November 21, 2018
- Spring/Summer public meetings? Ennis and West Yellowstone
 - NorthWestern proposes to continue public meetings. Great opportunity to keep public connected, but always a challenge to get the public to attend.
 - Brent will coordinate with shops and outfitters and see when a more opportune time to conduct meetings might be.
 - Beneficial to have two meetings at the different locations (Ennis and West Yellowstone)

TAC Funding Conversation

MAD TAC has not historically funded planning activities. Question for group about the option of funding proposals focused on planning activities in order to get some new projects going. Historically TAC wants on-the-ground projects. If it's a planning effort, then we need to look at prioritization of the proposed work. NorthWestern (Brent)- no problem with proposing a planning project for funding but will have to evaluate how it fits within prioritization of projects. Madison River Foundation has funded some planning efforts in the past. TAC will likely prioritize on-the-ground projects vs. planning project. Bruce Roberts – we had this discussion 10-12 years ago. Previously the discussion was with agency folks with fully funded positions, so the question was “why would funds need to go to planning?”. But now we have non-profit groups (TU, MRF, MCD), so the dynamics and players at the table are different. TAC agrees focusing on the on-the-project work first. Andy Welch – good to think about how the proposal relates to the 2188 license articles. Funding should be coordinated with a direct link to the license (refer to Appendices in Notebook for license requirements). As a side note Brent mentioned the Madison TAC has spent about \$3 million with about \$6 million matching funds from 29 different entities (last 18 years).

2018 Bypass flow tests – Jordan

- NorthWestern upgraded the hydraulic system at Madison Dam's restoration gates to allow for improved performance
- June 27, 2018 – planned plant trip under high flow (34 minutes to get back to baseline flow)
- September 24, 2018 – planned plant trip under low flow (44 minutes to get back to baseline flow)
- At high flow there was 0.2 ft drop observed at Norris and at low flow it was about 0.35 ft drop observed at Norris
- Travis H. – what does that stage drop mean in regard to shoreline habitat and stranding? Trying to understand what does a plant trip mean to aquatic habitat, seasonal impact, etc..
- Dave M. – would 0.35 ft impact redds? Literature indicates brown trout do not make redds in upwelling areas. Ron Spoon has observed brown trout redds in upwelling locations.

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- Andy – It will be good to try and quantify these impacts. From an operational stand point there is a limit of what NorthWestern can do. Plant trips occur to protect equipment. With upgrades, the plant trip has 17 minutes (warning process), 23-30 min travel time depending on flows, and a total restoration time of about 43 minutes depending on flows.
- Total restoration time was 34 min in June (high water) and 43 min in Sept (low water) and the operations plan allows 40 minutes. NorthWestern plans on coordinating with operators to find out what is possible at facility then work with biologists (MAD TAC) to develop a new restoration plan.
- FWP – anticipates minimum impact to aquatics, but it would be beneficial to quantify and know what a plant trip does so FWP can provide info to public when asked.

2019-2020 Madison Plant work – Andy

- Warning systems in place to let public know of plant trips
- Improvements to system (automation)
- Northwestern going to replace 4 generating units in Madison Powerhouse (2019-2020)
 - o Draft amendment application
 - o Same flow line, same footprint
 - o Four new units to be installed
 - o Shut down powerhouse so flows go through the bypass channel (fall 2019 – end of 2020)
 - Bypass flows are normally 80-200 cfs. During construction bypass flows will be around 1100 cfs (as an example)
 - o Public will be notified, and we'll likely see influx in whitewater kayakers.

2018 Budget

Budget – Year 2018	Balance
US Bank Balance 12/31/2017	\$147,484
2018 MADTAC Budget	\$403,901
2018 MAD TAC Payments	\$307,724
US Bank Reserve Account 2018	\$96,177
Total 2019 Reserve Account	\$243,661
Dedicated funding in 2019 – 010-18 French Creek	\$30,000
Reserve Funding Available in 2019	\$213,661
Dedicated funding in 2019 – 010-18 French Creek	\$30,000
	2019 Budget \$411,979

Review of 2018 Projects

ID	Project Title	Agency/Contact	Priority	Approved Cost	Paid
001-18	FWP-Personnel and Operations	FWP	1	\$161,899	\$161,899
002-18	FWP Office Space	FWP	1	\$6,000	\$5,400
003-18	WCT Genetics	FWP	2	\$0	\$0
004-18	Sun Ranch Hatchery	Drake	2	\$10,000	\$10,000

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ID	Project Title	Agency/Contact	Priority	Approved Cost	Paid
005-18	Emergency/Contingency Fund	NWE	1	\$10,000	\$9,953
006-18	Habitat Project Consultant Assistance	FWP	1	\$10,000	\$1,528
007-18	BH/DL FS Seasonal	FS	1	\$9,000	\$9,000
008-18	Custer/Gall NF Seasonal	FS	1	\$6,000	\$6,000
009-18	Rating curve	FWP	1	\$2,184	\$2,080
010-18	French Creek Barrier	FWP	3	\$30,000	In 2019
012-18	Elk River Barrier design	FS	1	\$7,500	\$7,500
013-18	MOA with FWP	FWP/NWE	1	\$ -	\$ -
015-18	Spanish Fork Barrier	FWP/FS/Turner	3	\$45,000	\$75,000 (2017 approved pymt \$30,000 pd in 2018)
016-18	MOA with FS	FS/NWE	1	-	-
017-18	Study of Temperature Requirement MWF	MSU/FWP	1	\$20,000	\$19,365
018-18	Wall Creek Fish Barrier	USFS		\$7,500	
	Total			\$325,083	\$307,725

Summary Discussion for 2018 Projects

001.18 FWP Personnel (Travis L. - PowerPoint presentation of activities in 2018)

002.18 FWP office space

003.18 Westslope Cutthroat Genetics

- Approved \$10,000, but FWP has not submitted anything

004.18. Sun Ranch Hatchery (Buddy Drake)

- FWP has their own facility in Anaconda operating and won't be utilizing or funding the Sun Ranch Hatchery.
- Previously Sun Ranch Hatchery funded by TU, NPS, and NorthWestern.

005.18 Emergency/Contingency Fund – stage gages and backpack shockers purchased

006.18 Habitat FWP Consultant Assistant (private consultant out of Townsend)

- NorthWestern hasn't been billed yet, Brent needs billed by Wednesday, December 12, 2018. FWP will submit bill for 2018 to Brent.

007.18 BH/DL USFS Fisheries Tech (Bruce Roberts)

- Elk River and Will Creek Barrier IDT Reviews
- Gravelly Sheep Allotment EIS
- Barnett Creek E-fishing
- Standard Creek e-fishing
- Ruby River Arctic Grayling

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- Ruby Creek headwaters burned 2018 – moderate severity
 - o Monument Creek Fire
 - o Reviewed drainage to look at hill slope erosion, movement, etc.
- Wigwam Fire – Wigwam Creek (past WCT Conservation)
 - o Water quality monitoring (retardant drops)
- Bell Lake Algal Bloom/Landslide? 2018 outlet Repair
 - o Huge landslide event (not a major algal bloom)
 - Water color related to landslide event
 - o Outlet structure failed (irrigation)

008.18 Custer/Gall USFS Seasonal Techs (Darin)

- review of project activities and progress for the year

09.18 Rating Curve - complete

010.18 French Creek Barrier

- No responses from contractors after first BID posted. Posted a second time. Bidding period just closed recently. Contract was awarded. Construction will begin after high-water in 2019. Scheduled to be completed in Fall 2019. Money is held until 2019.

012.18 Elk River WCT Restoration

- Design Cost \$14,150 (Dale White on USFS lands)
- Cost effective to use Dale (in-house P.E.) for projects on federal lands
- \$355,000 estimate to build
 - o Priorities need to align before project will get built, so shelved for now.

WF Madison River Stream Restoration (Darin)– funding provided but project not completed in 2018.

- Grizzly bears delisted, but sensitive species on USFS lands. Paperwork couldn't get finished. Wildfire season 2018 interrupted. Then grizzly bear was re-listed. So new process... working on this project still.
- Goal is to get some LWD enhancement and improve habitat (get some pools) for WCT. 98% pure, but habitat is not great. Update pending for 2019.

013.18 MOA with FWP -complete

015.18 Spanish Fork Barrier – you-tube video made by Bairco Construction, Inc.

- project is complete
- treat lake and then have grayling and WCT in lakes in future
- NorthWestern feature on internal internet page for company

016.18 MOA with FS -complete

017.18 Study of Temperature Requirement MWF (MSU)

- Dr. Christine Verhille - Department of Ecology Montana State University
- PPT Presentation to group on proposal in 2018 and progress and proposal for 2019
- Received \$20,000 from MAD TAC in 2018.
 - o 2018 Study:
 - Fish sampled from upper Madison - upstream of Ennis Lake from two reaches
 - 42 RB – remote lab test (switch in species)
 - Switched to RB because MWF disappeared in the summer months
 - Preliminary measurements that optimal temperature for juvenile RB in upper Madison River is between 17-23 °C
 - Tested 4 fish at 25°C and 2 fish died.

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- Fish sampled upstream of Ennis Lake from two reaches
 - The preliminary data show optimal metabolic range 17-23 °C.
 - Immune and stress status
 - Sampled 81 fish (31 MWF, 36 RB, 14 LL)
- 2019 Proposal
 - RB – add more data points
 - Develop metabolic curve for LL and MWF
 - Continue to sample molecular markers for immune status
 - Research help find out when are fish more susceptible for disease? and help in management of hoot owl closures, etc..
 - Using separate funds (Side Channel Productions) for video of project
- FWP – see work helps explain why things happen. Would like to see work shift downstream of reservoir. Below reservoir is the max that the fish can tolerate/inhabit... not looking at actual management tool but more explain what's happening. Can you mimic diurnal shifts in Madison River in laboratory experiment?
- MSU - Mobile lab takes fish and implements test and release back to river. Goal to study river fish behavior and not allow time for fish to modify behavior in lab.

018.18. Wall Creek Barrier Design

- Design complete
- \$254,125 cost estimate for construction
- Attempt to break ground in August 2019
- NEPA and Cultural complete

Review and discuss 2019 Proposals

Voting members include one representative from NorthWestern, one representative from MFWP, and at least one representative from a Federal agency (USFS/BLM). Agency decides on voting member. TAC will review all proposed projects and then vote at the end.

2019 Proposals

ID	Project Title	Agency/Contact	Priority	TAC Funding Request	Approved Cost
001-19	2188 Operations and Personnel	FWP	1	\$197,299	\$187,299
002-19	Ennis Office Rent	FWP	1	\$6,000	\$6,000
003-19	Westslope Cutthroat Genetics	FWP	2	\$7,650	\$0
004-19	Sun Ranch	Drake and	2	\$10,000	\$0
005-19	Emergency/Contingency fund	NWE	1	\$10,000	\$10,000
006-19	Habitat Project Assistance	NWE	1	\$10,000	\$10,000
007-19	2019-2026 USFS Seasonals	USFS	1	-	-
008-19	BH/DL FS Seasonal	USFS	1	\$9,000	\$9,000
009-19	Custer/Gall NF Seasonal	USFS	1	\$6,000	\$6,000
010-19	Tepee Creek Barrier Blasting	USFS	2	\$26,930	\$26,930

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ID	Project Title	Agency/Contact	Priority	TAC Funding Request	Approved Cost
011-19	Cum Effects of Private Ponds	FWP	3	\$15,000	\$10,000
012-19	Hebgen Creel Survey	FWP	1	\$71,960	\$71,960
013-19	Wall Fish Barrier	USFS	2	\$100,000	\$60,000
014-19	Study of Temp Requirements MWF	MSU/FWP	3	\$60,344	\$30,000
015-19	Jacks Creek	MCD	2	\$44,000	\$44,000
016-19	Three Dollar Bridge MRF	MRF	1	\$50,000	\$10,000
017-19	Meadow Creek	FWP	2	\$34,370	\$29,370
	Total			\$658,553	\$510,559

2019 Proposals

001.19 FWP Personnel and Operations

- Increase in request
- FWP goal to create a supervisory biologist, coordinate native species projects in region (arctic Grayling and WCT)

002.19 FWP Office Space

003.19 WCT Genetics

- Contribution from Parks \$10,000 and from TU \$5,000

004.19 Sun Ranch Hatchery

- FWP has own facility in Anaconda. In 2017 meeting, meeting notes indicate someone needs to be present at the meeting to support/justify the proposal.

005.19 Emergency/contingency Fund

- Only spent on projects that have been approved by TAC

006.19 Habitat Project Consultant Assistance

007.19 2019-2026 USFS Seasonal

- Propose \$15,000 annually (008.18 and 009.19 proposals total) with 2% increase through 2026 for USFS techs
- Long-term approval 2019 through 2026.

008.19 BH/DL FS Seasonal \$9000

009.19 Custer/Gall FS Seasonal \$6000

- Bruce to submit proposal to Brent

010.19 Teepee Cr Barrier Blasting

- USFS about ready to lose blasting program (next year or two... unknown).
- Remote site. Concern that USFS may not have ability to implement blasting work and costs will likely go up. Roadless area, non-wilderness. Two trails into headwaters. No trails to the barrier site. Propose sling-load explosives to location.
- Rock drill purchased a few years ago for this purpose. If USFS loses rock drill, then who does it go to?
- Currently a 10 ft barrier. When complete it will be about 13 ft.

011.19 Cum effect is of Private Ponds

- Ponds can be developed on private property via exempt well (10ac-ft water).
- There were 4 private hatcheries in MT. Two hatcheries have closed due to issues like PKD or invasive species. Private land owners are going out-of-state to stock fish. Stocking from out of state via permitting process has increased substantially in the last few years. FWP does not have regulatory control on species coming from out of state.
- Idea behind proposal is to develop a scope of work, solicit contractors, award contract, approve final deliverables, make recommendations to FWP regarding future of permitting ponds. Guess it will take \$30,000. Literature work, GIS component, etc. Madison River as one drainage... Request for \$15,000.

012.19 Hebgen Creel Survey

- Historically stocked about 100,000 RB in Hebgen Reservoir each year.
- About 9% return to creel from Hatchery origin. Last stocking done in 2015.
- Landowners tell Brent – not catching any big fish anymore. Catching a lot of fish but not large (>22 inches).
- Dave Moser – propose monitoring and find out public satisfaction. FWP proposes technician. Monitor post- non-stocking. Mandated in license article to complete monitoring. Last creel survey in Hebgen was in 1993.

013.19 Wall Creek Fish Barrier

- 96% pure WCT
- Access to barrier construction site is challenging
 - o USFS road is in bad condition and public don't want it improved
- Private owner will allow access through private land
- Funding sources have changed since proposal submittal. In-hand USFS has \$25,000 matching funds in hand. If secure FF \$60,000, then up to \$85,000. Hope to build in 2019, but not likely.
- Brent – potentially dedicate funding in 2019 and another amount in 2020. Discussed concept of allocated specified amount of \$\$ for barriers annually to allow agencies to leverage other funding and know secured funding for barrier work will be available from MAD TAC. This would be something like a MOU... something to think about.

014.19 Study of Temp Requirements

- Christine – proposed to solidify RB metabolic curve and add MWF and LL. Then we would have data for upper Madison River. We think it will be difficult to catch enough fish in the lower Madison to develop a curve. The costs proposed keeps the mobile lab running in the summer 2019.
- There is concern that these results do not provide a management tool, but will explain the mechanism of what we see.

015.19 Jacks Creek

- Phase 1 – completed in 2018
- Phase 2 – additional slope restoration proposed 2019
 - o \$80,000 match

016.19 Three Dollar Bridge MRF

- Proposal came out of restoration planning
 - o 20 projects for the next 10 years
- Priority project – high public use
 - o \$45,000 committed for Project.
- Ideally completing work in 2019 (spring)

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- MRF responsible for maintenance
- FWP can provide \$40,000 from fees collected at site and reduce TAC funding request

017.19 Meadow Creek

- Have not pursued a match yet. Approval on private land. Not eligible for 319 Grant until DEQ finishes the TMDL. South Meadow will be eligible once the 319-grant funding is available. Establishing relationships with landowners will help future projects.

2019 TAC Vote on Proposals

Andy recommends TAC votes separately on revised funding amount for MSU study (proposal 014-19) before voting on all proposals.

014-19 Temperature Study MWF for funding \$30,000

- NorthWestern vote is No
- USFS vote is Yes
- FWP vote is Yes
- BLM vote is Yes

Final vote by team for entire package (with modified costs listed in Table under approved cost column) per discussions during meeting.

- NorthWestern vote is Yes
- USFS vote is Yes
- FWP vote is Yes
- BLM vote is Yes

Final Vote – Proposals in approved column approved by all voting members (USFS, BLM, FWP, NorthWestern).

2019 Budget

US Bank account est. 1/1/2019	
2019 MAD TAC Budget *includes reserve funding	\$625,640
2019 MAD TAC Proposal Budget submitted	\$658,553
2019 MAD TAC Proposals Approved	\$510,559
2019 Total (Balance and Reserve Account)	\$115,081

Next Year's Meeting

When does the MAD TAC want to have next year's meeting? Will send out an email next September 2019.

Meeting Adjourned 2:44 PM

Action Items

- Brent – set up meeting for Biologists in January to discuss Dave Moser's Report.
- Bruce – submit seasonal tech proposal to Brent.