

## **2022 Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds**

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

**Priority 1:** 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

**Priority 2:** 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

**Priority 3:** 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

### **All TAC project proposals must include the following information:**

Project Title: Middle Missouri River Radio Telemetry Study

Date: November 2, 2021

Explain how this Project addresses a specific Project 2188 License Article(s):

Article 417: 1) Protect and provide for the recovery of Threatened and Endangered species and other species of special concern in the Missouri River downstream of Morony Dam. 2) Monitor the relative abundance of the most common fish species in the Missouri River downstream of Morony Dam. 3) Provide assistance to FWP for ongoing evaluation of pallid sturgeon recovery in the Missouri River downstream of Morony Dam.

Provide justification for Priority 1, 2 or 3 (above) that you selected:

This radio telemetry project monitors fish movements in the Missouri River (Priority 1) and tributaries such as the Marias River, Teton River, and Judith River (Priority 2).

Project Sponsor (submitted by): Luke Holmquist, Biologist, FWP

Location of Proposed Project:

Narrative; Missouri River from Morony Dam to Fort Peck Reservoir; Lower Marias River (Below Tiber Dam); Lower Teton River

Geocode (in decimal degrees ex 46.89743)

Site: Morony Dam	Lat: 47.58159	Lon: -111.05972
Site: Tiber Dam	Lat: 47.58159	Lon: -111.09705
Site: Fort Peck Headwaters	Lat: 47.55384	Lon: -107.92449

Total Project Cost: \$141,005

Other associated funding: \$87,850

- \$49,946 annual USBOR funds (5-year contract; 2016-2021) extended through 2022
- \$28,904 by USFWS Section 6 funding personnel on this project
- \$5,000 WAPA-USFWS funding for Pallid Sturgeon radio transmitters
- \$4,000 WAPA-USFWS funds to Bozeman Fish Technology Center for blood plasma steroid analysis

TAC Funds Requested for Project: **\$53,155**

I. Introduction; brief statement of project to be completed with pertinent background information.

Radio telemetry has been an invaluable tool for advancing our understanding of fish movements in the Missouri River above Fort Peck Reservoir. The Missouri River between Morony Dam and Fort Peck Reservoir is a semi-regulated system, and movements of several fish species in relation to environmental conditions are of particular interest. This includes the impacts of anthropogenically altered discharge and temperature, on federally endangered species and species of concern. In 2022, efforts will focus on relocating fish that are currently tagged throughout the year and also implanting additional radio tags into wild and older year-class hatchery-origin pallid sturgeon (HOPS). Currently the radio-tagged population of fish includes two wild pallid sturgeon, seventy HOPS (sixty-one 1997 year-class, six 2005 year-class, one 2006 year-class, one 2007 year-class, and one 2009 year-class), nineteen shovelnose sturgeon, fifteen smallmouth buffalo, four bigmouth buffalo, one walleye, and ten freshwater drum. In addition to tracking and tagging new fish, we replaced radio tags that were implanted into pallid sturgeon prior to 2016. These tags are advertised to have an 8-year battery life, however, are only guaranteed to last ~6.5 years. Beginning in 2019, many of the transmitters implanted in 2013 and 2014 were not relocated, and it is suspected that battery life expired over winter, making it impossible to target those individuals for tag replacement. During the 2021 field season transmitters were replaced in five 1997 year-class pallid sturgeon. Many of the pallid sturgeon containing expiring tags have been serially sampled in successive years for information about spawning periodicity and age/size at first maturity. Keeping active transmitters in fish is vital to improving and increasing knowledge regarding fish sexual maturity and spawning ecology for this endangered species. In 2021, new transmitters were also implanted into ten freshwater drum, one smallmouth buffalo, one bigmouth buffalo, one wild pallid sturgeon, two 2005 year-class pallid sturgeon, one 2006 year-class pallid sturgeon, and thirteen 1997 year-class pallid sturgeon.

A combination of boat and stationary telemetry receivers have been utilized in recent years. The land based stationary receivers provide important spatial and temporal data regarding course movements and habitat used by tagged fish in this stretch of river. In 2021, we maintained and downloaded fifteen land-based stations between Carter Ferry and Fort Peck Reservoir, including four stations on the Marias River and one on the Teton River. The ten land-based stations on the Missouri River include: Carter Ferry, Fort Benton, Loma area, Coal Banks, Judith Landing, Stafford Ferry, Bird Rapids, Power Plant Ferry, King Island, and Roads End. Many of these stations have been maintained for over a decade and antennas, cables, and in some cases the telemetry receiver and switch box are showing signs of and experiencing the effects of aging. We typically service one receiver a year when problems arise (bad batteries, decreased detection efficiency, etc.), however as the current SRX400 receivers continue to age, they are malfunctioning more frequently. Keeping this array functioning allows for many more telemetry contacts at a much lower cost than if we relied on boat relocations alone. We plan to begin slowly phasing out the SRX400 receivers in favor of the more feature rich SRX1200 units. In most years, we estimate that roughly 40% of the fish relocations have been by boat; thus, the ground stations effectively more than double our telemetry contacts. Furthermore, the array of land based stations generates a continuous monitoring effort at multiple locations, which is not possible with boat based tracking efforts.

II. Objectives; explicit statement(s) of what is intended to be accomplished.

1. Manually track from Fort Benton to Fort Peck Reservoir at least once per month from April through October.
  - a. Enter data and combine with land-based telemetry network data in existing data file.
2. Increase telemetry effort to monitor spawning related movement and habitat use of reproductively-active pallid sturgeon in May and June.
  - a. Identify pallid sturgeon spawning and aggregation sites.
  - b. Use information collected to inform the timing and location of larval sampling efforts.
3. Continue to implant radio tags into HOPS and wild pallid sturgeon that exceed 2000 g.
  - a. Replace any expiring radio tags in HOPS and wild pallid sturgeon.
4. Continue to conduct reproductive assessments, including gonadal biopsies and blood samples, in all wild, 1997 year-class, and other older age classes of HOPS.
  - a. Assess known reproductively active female pallid sturgeon pre- and post- spawn
  - b. Transfer samples to Bozeman Fish Technology Center in a timely manner so that maturity and sex will be known and can inform tracking efforts.
5. Maintain and improve the existing land based telemetry station array and download stations at least once every 6 weeks.
  - a. Enter and proof downloaded data using manual tracking and tagging data.

III. Methods; description of how Project objectives will be accomplished.

-See schedule below.

IV. Schedule; when the Project work will begin and end.

January..... Download data from stations every 5-6 weeks and summarize data and prepare report.

February ..... Download data from stations every 5-6 weeks and summarize data and prepare report.  
 March ..... Download data from stations every 5-6 weeks and summarize data and prepare report.  
 April ..... Prep gear, install stations, manually track fish, download data from stations, and maintain stations.  
 May ..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 June ..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 July..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 August ..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 September..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 October..... Manually track fish, download data from stations, install new radios, and maintain stations.  
 November..... Download data from stations every 5-6 weeks and summarize data and prepare report.  
 December..... Download data from stations every 5-6 weeks and summarize data and prepare report.

V. Personnel; who will do the work? Identify Project leader or principal investigator.

Fish Tech IV; 0.45 FTE filled by incumbent Michael Schilz (\$17.61/hour plus with benefits)

-Additional Staff;

Luke Holmquist – Project Lead; Biologist funded by NWE and FWP  
 Jacob Williams- Conservation Technician funded by NWE and FWP  
 Nate Beckman - Fish Technician funded by NWE and USFWS

VI. Project budget must include amounts for the following:

Materials

-Supplies & Materials ..... \$ 3,500  
 -Boat Gas (\$500/month for 8 months)..... \$ 4,000  
 -Telemetry Receiver Service Fees ..... \$ 1,300  
     -(2 receivers @ \$100 shipping, \$350 service fee, \$200 replace battery)  
 -Iridium Satellite network data fees (10,000 credits).....\$ 800  
  
 -MATERIALS TOTAL..... **\$ 9,600**

Direct Labor

-NWE funded Wages/Benefits for Tech II (0.45 FTE, 940 hrs) ..... \$27,016  
     -Science Technician (Fisheries Tech 4) \$28.74/hour including benefits  
     -Position Currently held by Michael Schilz  
  
 -DIRECT LABOR TOTAL..... **\$ 27,016**

Travel and Living

-Trailer Pad at Loma (7 months at \$150/month)..... \$ 1,050  
 -Kipp Electric Bill (6 month and \$50 per month) ..... \$ 300  
 -Entire Day Per Diem (\$30.5/day; 13 days/month; 8 months)..... \$ 3,172  
 -Partial Day Per Diem (\$23/day; 6 days/month; 8 months)..... \$ 1,104  
 -Vehicle Mileage (2000 miles/month; \$0.38/mile; 355.20 a month; 7 months).....\$ 7,806  
  
 -TRAVEL AND LIVING TOTAL..... **\$ 13,432**

Project funds to FWP..... **\$ 50,048**  
 Direct Overhead on Labor (11.5%):.....**\$ 3,107**  
**TOTAL NWE FUNDING REQUESTED..... \$ 53,155**

All contribution sources–

Materials

-USBOR funded Boat Gas ..... \$ 1,200  
 -WAPA-USFWS funded steroid analysis materials to BFTC (approximate)..... \$ 1,000  
 -WAPA-USFWS funded radio tags to FWP.....\$ 5,000

-USBOR Field Gear.....\$ 300  
 -MATERIALS TOTAL..... \$ 7,500

Direct Labor

-WAPA-USFWS funded blood steroid analysis at BFTC.....\$ 3,000  
 -USBOR funds to FWP for personnel services  
   - Science Tech (Band 4); 0.55 FTE (\$18.79/hour plus benefits).....\$ 38,194  
 -USFWS funds (Section 6) to FWP for personnel services  
   - Science Tech (Band 4; 0.35 FTE (\$18.79/hour plus benefits).....\$ 28,904  
 -DIRECT LABOR TOTAL..... \$ 70,098

Travel and Living

-USBOR Funded Mileage.....\$ 1,680  
 -USBOR Funded Travel .....\$ 1,472  
 -TRAVEL AND LIVING TOTAL..... \$ 3,152

Overhead

-USBOR Annual Overhead.....\$ 7,100  
 -CONTRIBUTION OVERHEAD TOTAL.....\$ 7,100

**TOTAL FUNDS = \$ 87,850**

VII. Deliverables: Annual Report submitted September 2023

How will “success” for this project be monitored or demonstrated?

-Annual Report submitted September 2023

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:

-No ground disturbance is associated with this project

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC’s “Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities”, issued by the Water Resources Division on 9March2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines:

-No wetland development associated with this project.

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- [Andrew.Welch@Northwestern.com](mailto:Andrew.Welch@Northwestern.com)
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to: Andy Welch, Leader Hydro License Compliance, NorthWestern Energy, 1315 N Last Chance Gulch, Helena, MT 59601; 406-444-8115 (office); 406-565-7549 (cell); [Andrew.Welch@northwestern.com](mailto:Andrew.Welch@northwestern.com).