

## **O'Dell Creek Post-Restoration Vegetation and Rare Plant Monitoring Data Analysis and Publication**

**Date:** 10/28/2021

**Project 2188 License Article(s)** : The proposed project will provide a 12 year wetland vegetation restoration data set that has provided direct benefits for fisheries and wildlife habitat in the Madison River Watershed and the spring creek headwater tributaries (Priority 2) of the Madison River; and by providing scientific results (Priority 3) from wetland restoration techniques and response of diverse wetland vegetation types to techniques used; and identification of important wildlife and fisheries habitats found at this site that can guide future wetland restoration projects.

**Project Sponsor** (submitted by): Tara A. Luna (Rocky Mountain Botany Consulting)

**Project Location:** All data has been previously collected at O'Dell Creek Floodplain, Madison County, Montana.

**Narrative:** The proposed project is to examine and analyze all previous years' data sets collected from monitoring plots on the O'Dell Creek restoration site. Data analysis will be conducted off-site in home office setting.

**Geocode:** 45 N.2632036/ -111W.74109343

**Total Project Cost:** \$3,100.00

- I. **Introduction:** Post restoration and rare plant monitoring data has been collected during the past 11 years on the O'Dell Creek floodplain. The proposed project objective is to examine, analyze and summarize all previous years' data sets using R statistical analysis software and present results into a final monitoring report and a draft, peer-reviewed journal article for publication.

### **II. Objectives:**

1. Examine and enter all data from previous years monitoring plots for statistical analysis; plot data will include restoration vegetation monitoring plots located in Phases 2,4,5,6,8,9 (Granger and Longhorn Ranches) and rare plant monitoring data (2014-2021).
2. Analyze all post-restoration vegetation monitoring data collected during the last 11 years using R statistical analysis software; conduct ordination analysis of rare wetland plant community types and present results.
3. Present all results from restoration and rare plant monitoring data into final report and develop draft, peer-reviewed article based on project results for publication in scientific, peer-reviewed ecology or botanical science journal.
4. Following review, submit final version of journal article for publication.

### **III. Methods:**

All data will be entered into R Statistical Software database. Post restoration monitoring plots, established during different years and in varying wetland plant communities, will be analyzed for trends in species richness and community types. An ordination analysis will be used to determine all wetland plant associations present on the O'Dell Creek floodplain.

**IV. Schedule:**

Data analysis will begin January 1<sup>st</sup>, 2022. Project results will be completed no later than September 1<sup>st</sup>, 2022, and a final report for Northwestern Energy will be delivered no later than September 30, 2022. A peer-reviewed draft article will be submitted to a journal no later than December 1<sup>st</sup> 2022.

**V. Personnel:** Tara Luna (Rocky Mountain Botany Consulting) is the principal investigator for this project. Contractor will provide own equipment necessary for project work.

**VI. Budget:**

	<b>TAC Funds Requested</b>	<b>Total</b>
• Direct Labor	2,400.00	2,400.00
• Direct Costs (Publication Fees estimated)	700.00	700.00
		<b>Total: \$ 3,100.00</b>

**Deliverables:**

Two deliverables will be completed: 1) a data analysis summary report for Northwestern Energy and Project Partners; and 2) a draft, peer-reviewed research article presenting project data and results that will be submitted for publication in a research journal.

**VII. Cultural Resources.**

No Field work or ground disturbing activity is associated with this project. All data analysis will be conducted in home office setting. No Cultural resources or potentially sensitive cultural areas will be disturbed during this project.

**VIII. Water Rights.**

There is no field work or ground disturbing activity associated with this project proposal and does not impact any State of Montana water rights, existing laws or policies and NWE'S water rights guidelines associated with wetland restoration projects.