

O'Dell Creek Post-Restoration Vegetation and Rare Plant Monitoring Study

Date: 10/23/2020

Project License Article for Project Proposal:

Priorities 1, 2 and 3: 2188 License projects which meet License Article requirements and PM&E for fisheries, wildlife populations and habitats, that includes native plants, rare flora and wildlife habitat in the Madison River Watershed and 2) primary tributaries of the Madison River and adjacent lands and 3) provide tangible benefits for fisheries and wildlife habitats through deliverables associated with this project including monitoring reports and rare plant management plans that can be used to guide future restoration and wetland conservation projects. Proposed project supports Article 423 objectives of wildlife enhancement that includes specific goals, objectives, and standards to **enhance native plants and wildlife populations on the lands and waters** associated with the project; including identification of specific protection, mitigation, and enhancement strategies for wildlife habitat.

Justification: Project results can be used for future enhancement and restoration methods to conserve rare wetland plant populations and similar wetland habitats found in the northern Great Basin and Rocky Mountain regions.

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

Location Narrative: The proposed project is located 2 to 8 km (1 to 7 miles) south of Ennis, Montana in the Madison River Watershed. Mean floodplain elevation is 1567 m, approximately 4 km (2 miles) west of the Madison Range. Spring creeks found on large river floodplains are critical restoration targets in order to preserve headwater water quality, critical wetland functions, wildlife habitat, rare plant populations and mitigate for warming river temperatures. O'Dell Creek and its spring creek tributaries provide ample cold groundwater discharge and diverse wetland habitat crucial for the Madison River fishery, wildlife and contain exceptionally rich wetland plant and plant community diversity, including large populations of rare and endemic plant species.

Geo Code: 45.2632036/ -111.74109343 (Phase 10)
45.28955057/-111.7425227 (Phase 14)
45.32344846/-111.73224481 (Phases 15-16)

Project Cost: \$6,000.00

TAC Funds (Cost-Share) Requested for Project: \$6,000.00 TAC Funds (Cost-Share)

I. Introduction: Calcareous spring creek wetlands are the only habitat for several globally or regionally rare wetland plant species. The O'Dell Creek floodplain contains large populations of 5 rare plant species with 4 additional rare species found in adjacent upland habitat on the Madison River terrace. Suitable habitat is largely found on private lands crucial for species' conservation. During the past 15 years, the O'Dell Creek floodplain has been successfully

restored in 15 Phases that has enhanced or improved rare plant habitat. Vegetation monitoring plots will be revisited for Year 9 data in Phase (Granger Ranch) and additional non-permanent plots will be established in Phase 14 (Longhorn Ranch) and Phase 15 (Fever Point, Granger Ranch). Post-restoration monitoring provides data that can be used to guide future wetland restoration projects and management of wetland habitat, rare plants and wildlife that use these areas for brood rearing, nesting, feeding and migratory staging.

II. Objectives:

- 1) Assess rare plant population sizes and map locations on Granger and Longhorn Ranch properties that includes O'Dell Creek tributaries and in other suitable habitat in the floodplain;
- 2) Establish new plots in Phases 14-16 where additional rare plant populations are found;
- 3) Examine habitats and continue post-restoration monitoring in Phase 10 plots on the O'Dell floodplain;
- 4) Develop rare plant management guidelines for each rare species found on the O'Dell Creek floodplain and distribute plans to private and public entities.

III. Methods:

Non-permanent vegetation monitoring plots will be established in new sections of restoration in Phase 14 and 15. Each plot will be recorded with a GPS unit and photo points. Vegetation data is collected from 10 m sq plots positioned at intervals along a 50 m long transect. Transects are positioned to capture variation in vegetation composition, hydrology, soils or topography. Canopy cover estimates are assigned for all vascular plant taxa, litter, bare ground, bryophyte and standing water. Mid-point canopy cover values are assigned for all species. All data collected will be compared with previous years' datasets and analyzed using R or similar statistical software program.

Rare plant population monitoring data is collected using 1 m sq plots positioned at intervals along non-permanent transects that vary from 30 to 50 m long. Different age class values (mature flowering, mature vegetative, seedling) are assigned for each rare species to determine increase in population size over time. Rare plant populations will be marked with GPS unit to produce a map of all rare plant populations found that will be used for management purposes.

IV. Schedule:

Project work will begin in mid-May 2021 and will be completed by late October 2021 (see scheduled activities and due dates below).

Month	Activity	Deliverable
May	Collect field data of rare plant populations and survey new areas on the O'Dell floodplain for rare plants; establish new plots	
July	Collect data in monitoring plots in Phase 10;14-16	
August	Survey areas of the floodplain for additional rare plants, collect data from established plots	
September	Complete rare plant surveys and analyze field data	
October	Analyze field data, compile literature review for each rare species-draft monitoring report and rare plant management plans	Monitoring report and rare plant management plans
November		Distribute management plans to agencies and organizations

V. Personnel:

Tara Luna, private contractor and ecologist, will oversee all project work, conduct field data collection, analysis and report completion. Contractor will provide own transportation and equipment necessary for project work.

VI. Budget:

	TAC Funds Requested	Total
Direct Labor	5,000.00	5,000.00
Travel and Living	300.00	300.00
Materials	0.00	0.00
Other Direct Expenses	700.00	700.00
Direct Overhead	0.00	0.00
Total Amount Requested:		\$6,000.00

Cost-share funding sources:

In-kind contributions by the contractor will include any additional survey work requested by landowners, collaborators and NWE to fulfill restoration, management and compliance objectives.

VII. Deliverables:

Following completion of field work, the proposed project will result in:

- 1) Summary of monitoring data for rare plant taxa and post restoration vegetation monitoring results in Phases 10-15.
- 2) Management plan for each rare plant species found on the project site (minimum of 5 species).

Project completion and success will be demonstrated by completion of field work, data analysis, and an annual vegetation monitoring report. A management plan for each rare species will be developed for landowners, private entities, federal and state agencies to more effectively conserve, restore, enhance and manage rare plants found in riparian and wetland habits in southwestern Montana and the Tri-State area. Management plans will guide landowners and managers on specific methods that can enhance, conserve or protect rare plant populations.

VIII. Cultural Resources.

There will be no ground or soil disturbance associated with vegetation monitoring and rare plant surveys during the course of this project. The proposed project will be conducted solely in areas that have been surveyed and cleared by a Cultural Resource Manager (Phases 10, 14, 15) and that has been approved by a CRM consultant.

IX. Water Rights.

Vegetation monitoring will not involve ground or soil disturbance associated with active restoration or wetland enhancement at the project site. Previous restoration activities have followed the State of Montana DNRC "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration". All field work shall comply with Montana water rights, existing laws or policies and NWE'S water rights guidelines associated with wetland restoration projects.