

Project Title: O'Dell Creek Revegetation Monitoring Project

Date: November 18, 2024

Applicability to Project 2188 License Article(s)

The O'Dell Creek Revegetation Monitoring Project will provide on-the-ground monitoring of the past 5 years of revegetation work completed within the O'Dell Creek drainage on stream restoration project floodplains. The stream restoration and revegetation projects offset impacts to river resources associated with Project 2188 (Madison-Missouri River). The project meets the purpose and intent of License Article 423, which requires development of a vegetation and wildlife monitoring and enhancement plan intended to enhance native plants and wildlife populations on Project 2188 wildlife habitats adjacent to the Madison River. Specifically, NorthWestern Energy is successfully enhancing Project 2188 wildlife habitats through funding aimed to protect, restore, and enhance riparian, wetland, and upland habitats on private lands. Past Phases 1 – 5 of the O'Dell Creek Revegetation Projects have restored woody riparian vegetation to the O'Dell Creek Restoration Project areas on both the Granger Ranches and Longhorn Ranch land holdings, and this O'Dell Creek Revegetation Monitoring Project will provide a comprehensive review of vegetation restoration work to date, and will help inform future revegetation efforts aimed at the restoration of vegetation and wildlife habitat.

Priority Classification

The O'Dell Creek Revegetation Monitoring Project classifies as a Priority 2 2188 license project. The project is located on O'Dell Creek, a major cold-water spring creek tributary to the Madison River, within 0.4 miles of the Madison River, and will address limiting factors related to degraded wildlife habitat, wetlands, and aquatic resources.

Project Sponsor(s): River Design Group, Inc. (now part of SWCA)
Longhorn Ranch
Granger Ranches, L.P.

Location of Proposed Project

The proposed Revegetation Monitoring Project is in Madison County approximately five miles south of the town of Ennis, Montana, on the Longhorn Ranch and Granger Ranches, both working cattle ranches. It is located in Sections 20, 21, 28, 29, and 33 of Township 6 South, Range 1 West, and Sections 4 and 9 of Township 7 South, Range 1 West.

Geocodes: 25-0423-33-1-01-01-0000; 25-0423-28-1-01-01-0000; 25-0423-29-1-01-01-0000;
25-0334-04-1-01-01-0000.

Latitude (Center of Project Area): 45.267 **Longitude (Center of Project Area):** -111.731

Total Project Cost: \$20,358

WildTAC Funds Requested for Project: \$20,358

I. Introduction

O'Dell Creek and its spring creek tributaries are important ecological connections to the Madison River, providing a source of cool fresh water to the river as well as a variety of aquatic, riparian and terrestrial habitats that are utilized by a host of plant and animal species. Woody riparian vegetation provides stream shading which reduces stream temperatures and improves cover for aquatic species. Over time, woody vegetation on streambanks also provides a source of large woody debris to the stream, which improves fish habitat conditions by promoting pool formation and aquatic habitat heterogeneity. In addition, woody riparian vegetation serves as a seed source for other floodplain areas and provides habitat for a wide range of avian species and small and large mammals. As seen in vegetation reference reaches downstream of the project area, woody vegetation was likely a large component of the O'Dell Creek riparian system prior to anthropogenic modifications including land clearing for grazing and agriculture.

Since 2005, 18 phases of stream and wetland restoration have resulted in the restoration of 16 miles of spring creek and ~900 acres of wetlands in the O'Dell Creek drainage. Since 2019, woody plant revegetation efforts along the stream and wetland restoration project areas have resulted in the planting of 7,600 willow cuttings, 868 nursery-grown woody shrubs and trees, and 50 nursery-grown large cottonwood trees throughout the stream and wetland restoration project areas. This project will monitor the effectiveness of the Revegetation Phases 1-5 in the establishment of woody riparian vegetation at the O'Dell Creek restoration project area.

II. Objectives

The objective of the O'Dell Creek Revegetation Monitoring Project is to assess current planted woody riparian vegetation survivorship and condition, evaluate project effectiveness in meeting design criteria, determine if maintenance is required on any portions of the revegetation project as a whole, and to inform future revegetation projects in the O'Dell Creek drainage. The project will provide a clear and reliable understanding of revegetation project effectiveness and establish adaptive management approaches. Revegetation work in the last 5 years has included planting willow cuttings in trenches on the O'Dell Creek floodplain, planting nursery grown containerized plant stock in various sizes across floodplains, establishing large cottonwood tree clusters to provide additional vertical structure and shelter and nesting sites for birds, and building browse exclusion fences around naturally occurring willows (Figure 1). This Revegetation Monitoring Project will cover all phases of previous vegetation restoration work. Specific objectives of the project are below.

1. Monitor and document plant survivorship and condition on all vegetation planted in Revegetation Project Phases 1-5 (installed in 2019-2024).
2. Monitor and document efficacy of wildlife browse exclusion fences around both planted vegetation and existing willows.
3. Perform cost-benefit analysis of the revegetation efforts.
4. Provide recommendations for improvement of revegetation projects.

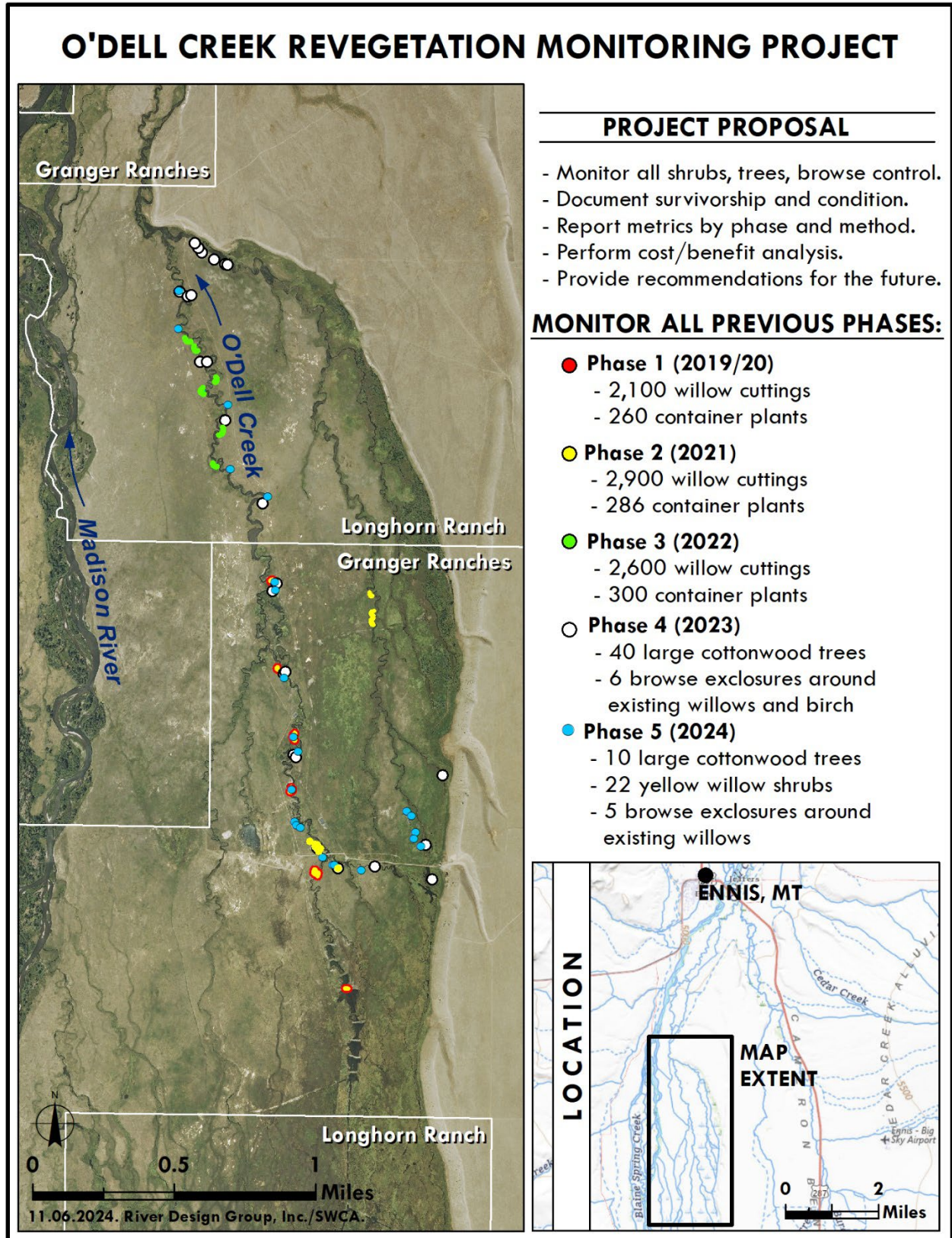


Figure 1. O'Dell Creek Revegetation Monitoring Project Proposal.

III. Methods

Revegetation project monitoring will occur in the 2025 growing season, in late June or early July 2025 when the vegetation is fully leafed out but prior to the dry summer. RDG’s ecologist/wetland scientist Selita Ammond, PWS, will perform all aspects of the project, including field work, data analysis, and reporting. Ms. Ammond designed and has provided oversight of the Revegetation Phase 1-5 implementation and is well informed on all aspects of the 5 years of woody species revegetation work that has occurred on site.

Data collection will include documentation of percent survivorship of all plants within all planting units and individual cottonwood trees outside of planting units, as well as an estimate of absolute percent canopy cover of the species within each planting unit. In addition, plant condition will be documented by vigor category, based on a visual estimation of shrub/tree expansion, leaf-out, and/or canopy cover. A GPS point will be taken at each planting unit and each cottonwood location, and each point will be assigned a unique identifier. Descriptive characteristics will be entered into the GPS database including year planted, total number of plantings, condition of browse exclusion fence, as well as the survivorship and vigor categories. Photo points will be taken with a GPS enabled field camera.

Following data collection, a revegetation monitoring report will be written which will include a summary of all data, a cost/benefit analysis of the revegetation work by phase, and conclusions regarding the effectiveness of project phases in meeting objectives. Opportunities for adaptive management will be outlined and conclusions will be based on realistic expectations of riparian vegetation establishment. Varying levels of success will also be tied to specific implementation techniques if applicable.

IV. Schedule

RDG will perform the field monitoring of the revegetation projects in June/July 2025, and the exact week of monitoring will depend on the weather and season to ensure the best monitoring conditions will be present on the ground. Data analysis will occur following the field effort, and cartography and reporting will be completed by the end of October 2025.

Table 1. O’Dell Creek Revegetation Monitoring Schedule (2025).

Task	June	July	August- October
Task 1. Project Management			
Task 2. Monitoring Field Work			
Task 3. Cartography and Reporting			

V. Personnel

RDG will be responsible for all aspects of the project. RDG is an approved consultant on NorthWestern Energy’s Qualified Vendor’s List for stream and wetland restoration services. RDG has prepared and implemented all previous phases of stream and wetland restoration on O’Dell Creek except for Stream Restoration Phases 1 and 2, and has designed and implemented Revegetation Phases 1-5. Selita Ammond, PWS, will serve as the project manager and will perform all work aspects. John Muhlfeld will provide

project review with an emphasis on translating results of the revegetation monitoring to ground conditions and restoration phases.

VI. Budget

The table below includes a not-to-exceed cost estimate to perform the Scope of Work. The total cost to perform the SOW is \$20,358.

Cost Estimate: Revegetation Phase 4 Project	
Task 1. Project Management	\$ 828
Coordination with NorthWestern Energy and Landowners	
Task 2. Vegetation Monitoring Field Work	\$ 8,280
On-the-ground field work	
Task 3. Reporting	\$ 9,936
Data analysis and report	
Task 4. Direct Costs	\$ 1,314
Mileage	\$ 442
Per Diem	\$ 272
Lodging	\$ 600
Total TAC Funds Requested	\$ 20,358

VII. Deliverables

The project deliverable will be a report which includes results of the monitoring effort, evaluation of revegetation project effectiveness in establishing woody riparian vegetation throughout the project sites, identification of improvements to the design, and other considerations to inform future vegetation restoration work.

VIII. Cultural Resources

Cultural resources will not be impacted as the project does not involve ground disturbance.

IX. Water Rights

Streams or wetlands will not be impacted with this project, and Montana water rights laws, policies, and guidelines do not apply.