



# LEGACY FUND

## RESTORATION EVALUATION REPORT

Technical Panel Findings and Recommendations—2025



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## Technical Panel Findings and Recommendations—2025

### REPORT TO THE MINNESOTA LEGISLATURE

Senate Environment and Natural Resources Finance Committee

Senate Environment and Natural Resources Policy and Legacy Finance Committee

House Environment and Natural Resources Finance and Policy Committee

House Legacy Finance Committee

Lessard-Sams Outdoor Heritage Council

Clean Water Council

Parks and Trails Legacy Advisory Committee

Submitted by the Minnesota Department of Natural Resources (DNR) and the Minnesota Board of Water and Soil Resources (BWSR)

### Legislative Charge

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Clean Water Fund: M.S. 114D.50, Subd. 6

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MN DNR/BWSR

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Minnesotans have invested in clean water and healthy lands through the Clean Water, Lands, and Legacy Amendment, and the state is committed to ensuring these projects deliver meaningful results. Each year, the Restoration Evaluation Program (REP) reviews funded restoration projects to track progress, highlight successes, and identify opportunities to strengthen outcomes.

In 2025, the Restoration Evaluation Program Panel reviewed 24 stream restoration projects across Minnesota. These projects represent a wide range of goals, scales, and site conditions. Most projects are on track to meet stated goals and are applying current science and best practices. The panel found that projects are generally implemented well, and investments are being used effectively to improve stream and floodplain health.

The review also highlighted areas for improvement:

- **Understanding site conditions:** Baseline data are often incomplete, making it difficult to measure ecological improvements.
- **Project scale:** Some projects address localized issues where greater consideration of watershed-scale drivers is warranted.
- **Integrated expertise:** Teams often lack integrated coordination and expertise across key components of stream health: hydrology, geomorphology, biology, water quality, and connectivity.
- **Goals and objectives:** Objectives are not consistently measurable or tracked over time.
- **Vegetation and maintenance:** Plans for planting and long-term site care are deficient.

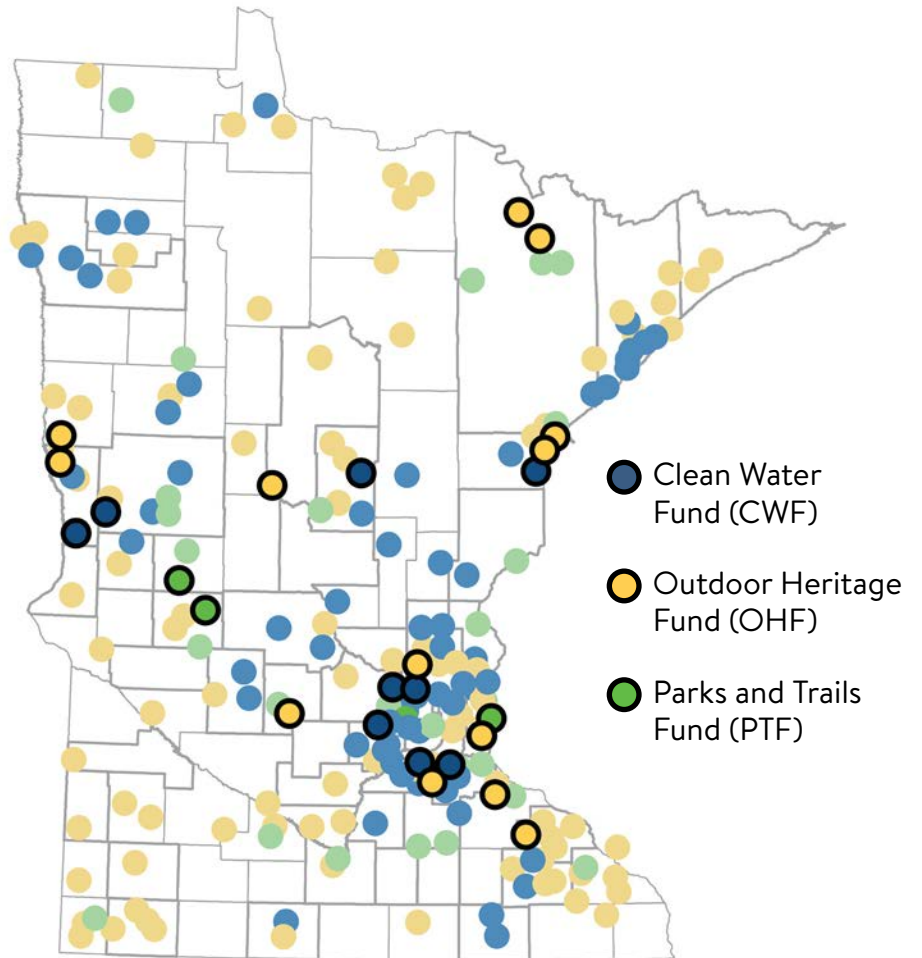
To address these gaps, the panel recommends a comprehensive approach to stream restoration (page 12) and improved practices for planning and managing vegetation for stream projects (page 18).

REP staff support these practices through reports, presentations, and targeted training to ensure restoration investments yield lasting ecological benefits.



## PROJECTS EVALUATED IN 2025

Circled dots represent projects evaluated in 2025; plain dots represent projects evaluated in previous years. Project evaluations from 2025 are available in Appendix A Program Process and Project Evaluations. Dots may represent more than one project site.



# 2025 EVALUATIONS SUMMARY

## EVALUATED PROJECTS

Projects were completed using three Legacy Funds:

- Clean Water Fund (CWF)
- Outdoor Heritage Fund (OHF)
- Parks and Trails Fund (PTF)



Summary	CWF	OHF	PTF	All Funds
Project sites in evaluation program pool	652	11,523	1,437	13,612
Project sites evaluated to date 2012 - 2025	124	160	40	324
Project sites evaluated in 2025	9	14	1	24

## STATUTE CHARGE

As statute directs, projects are evaluated relative to *the law, current science and stated goals*. Statute also directs the panel to determine *any problems with the implementation and provide recommendations on improving future restorations*. Detailed project evaluations are provided in *Appendix A Program Process and Project Evaluations*.

## STATED GOALS

Most projects evaluated in 2025 (83%) were on track to meet or exceed their stated goals. This is consistent with the overall rate for stream restoration projects and higher than that of non-stream restorations. The table below summarizes project evaluations from 2012 to 2025.

	Stream Restorations	Non-Stream Restorations	All Restoration Types
<b>Total Projects</b>	<b>94</b>	<b>230</b>	<b>324</b>
Achieved stated goals	82%	74%	77%
Minimally achieved stated goals	15%	24%	21%
Did not achieve stated goals	3%	2%	2%



2025 Stream Restoration project goals generally fell into five overarching themes:

### **Hydrology & Floodplain Connectivity**

Focused on restoring natural water flow, managing energy, and protecting infrastructure. Actions include:

- Remeander & Channel Restoration: Restore natural stream sinuosity to reduce water velocities and bank shear stress.
- Floodplain Reconnection: Re-engage streams with their floodplains to mitigate downstream sediment transport and flood risks.
- Flood Hazard Mitigation & Infrastructure Optimization: Reduce flood damage, increase dam safety, and improve culvert suitability.

### **Geomorphology & Bank Stabilization**

Improving stream structure and sediment transport through:

- Channel Stabilization & Bank Protection: Use natural design, bioengineering, and structural improvements to reduce erosion and prevent lateral migration.
- Sediment Transport Efficiency: Narrow channels to create deeper pools and higher-quality substrates.

### **Water Quality & Thermal Management**

Enhancing chemical and physical water properties:

- Nutrient & Pollutant Reduction: Target phosphorus, sediment, and turbidity.
- Thermal Regulation: Lower water temperatures through shading and baseflow protection to support cold-water species.
- Biota-Specific Standards: Maintain water chemistry to support robust aquatic life.

### **Habitat & Ecological Integrity**

Supporting biodiversity and life cycles for fish and wildlife:

- Aquatic Habitat Enhancement & Fisheries Management: Improve instream cover, pool-riffle complexes, and trout populations.
- Aquatic Organism Passage: Remove or replace barriers to restore connectivity for game and non-game species.
- Riparian & Pollinator Health: Restore native vegetation and pollinator habitats while removing invasive species.

### **Community Engagement & Recreation**

Improving public access, safety, and awareness:

- Public Safety: Replace hazardous dams with navigable rock rapids.
- Recreational Expansion: Enhance corridors for angling, hiking, and other public uses.
- Project Visibility: Increase public awareness of restoration efforts for education and outreach.



## CURRENT SCIENCE

Most stream projects evaluated in 2025 (75%) incorporated best practices aligned with current science. This rate is comparable to overall stream restorations, and slightly lower than that of non-stream restorations. The table below summarizes project evaluations conducted between 2012 and 2025.

	Stream Restorations	Non-Stream Restorations	All Restoration Types
<b>Total Projects</b>	<b>94</b>	<b>230</b>	<b>324</b>
Used current science	77%	88%	85%
Partially used current science	22%	9%	13%
Did not use current science	1%	3%	2%

However, the panel identified several issues related to the application of current science, including:

- **Floodplain benching limited** by property boundaries and infrastructure available space.
- **Riffles/weirs did not maintain sufficient water depth** for fish passage.
- **Widely spaced rootwads led to erosion and instability** from eddy scour.
- **Overreliance on in-stream structures** without channel form analysis.
- **Design did not utilize opportunities for natural stream meandering** despite available space.
- **Design failed to incorporate natural stream sinuosity** resulting in a straightened channel that deviates from best practices.
- **Cost and design complexity constraints** limited comprehensive restoration.
- **Sharp channel bends** near infrastructure increased risk of erosion.
- **Over-steepened riffles** caused downstream erosion.
- **Inadequate watering and maintenance** caused high vegetation mortality and invasive species encroachment.
- **Use of invasive species sod mats** (reed canary grass) for bank stabilization conflicted with habitat goals.



## PROBLEMS WITH IMPLEMENTATION

Stream restoration projects occur within dynamic, complex landscapes where implementation challenges are common. Among 2025 stream projects, 58% were completed without reported problems, slightly lower than the rate for overall stream restorations and notably lower than for all restoration types combined.

However, as stated above, 83% of 2025 stream projects were on track to meet their stated goals. This contrast suggests that, while stream projects may encounter more implementation challenges, most are able to adapt and successfully overcome them. The table below summarizes project evaluations conducted between 2012 and 2025.

	Stream Restorations	Non-Stream Restorations	All Restoration Types
<b>Total Projects</b>	<b>94</b>	<b>230</b>	<b>324</b>
Problems with implementation	35%	23%	27%
No problems with implementation	65%	77%	73%

While not all problems can be predicted or prevented, the panel identified situations where problems arose that could be avoided in future projects. Problems with implementation included:

- **Design choices driven by site constraints and adjacent development** (e.g., stormwater features, limited floodplain access).
- **Field adjustments deviated from design plans during construction** that altered structures, storage capacity, or habitat features.
- **Hydrologic and stormwater challenges**, including runoff inputs and storm-driven channel changes.
- **Vegetation and invasive species management issues**, including reinvasion and need for adaptive management.
- **Limited documentation leading to uncertainty of implementation actions** (e.g., missing as-built plans).
- **External and logistical constraints**, including staffing, costs, and material handling challenges.



# EVALUATION PANEL RECOMMENDATIONS

A critical component of restoration evaluations is identifying issues and providing guidance to project managers to improve future restorations.

Statute directs the panel to determine  
*...any problems with the implementation of restorations, and if necessary, recommendations on improving restorations.*

The emphasis of reporting is also directed in statute  
*...the report shall be focused on improving future restorations.*



# ONGOING PANEL RECOMMENDATIONS

Based on evaluations since 2012, the panel has made recommendations to strengthen restoration efforts, including improved:

**Comprehensive Planning for Stream Projects:** Detailed project planning and consistent implementation will produce the best outcomes in stream restoration. Expanded on page 12.

**Vegetation for Stream Projects:** Well-established vegetation is critical for the long-term success of stream projects. Expanded on page 18.

**Documentation:** Documentation of goals and actions is critical for planning, tracking, and achieving successful restorations.

**Project Review by Technical Experts:** Utilize technical experts in the review and planning of complex projects.

**Design Criteria for Lakeshore Projects:** Utilize minimum design criteria to mimic shoreline's natural structure and vegetation.

**Project Teams:** More comprehensive project teams should be used to improve ecological outcomes.

**Restoration Training:** Continued development and implementation of training is essential to promote science-based practices.

**Phased Approach for Buckthorn Management:** A phased approach to buckthorn management that incorporates the timing and sequencing of actions is needed to achieve effective, long-term control.

**Seed Selection and Implementation:** Guidance during early planning for seed mix selection and implementation is needed to support more consistent planting success.

**Climate Change Contingency Planning:** Contingency plans for variable weather conditions are an important part of restoration planning in a changing climate, especially for native vegetation establishment.

**Alum Treatment Approach:** Consider lake characteristics, longevity of treatment and specific monitoring needs.

**Implementation of Common Carp Barriers:** Utilize integrated pest management plans, site specific designs and pair with other management efforts.



Details regarding Ongoing Panel Recommendations are available on the evaluation program website:

[dnr.state.mn.us/legacy/restoration-evaluation.html](http://dnr.state.mn.us/legacy/restoration-evaluation.html)

# 2025 PANEL RECOMMENDATIONS

## UTILIZE A COMPREHENSIVE APPROACH FOR STREAM RESTORATIONS

### COMMON CHALLENGES OBSERVED

The panel identified several recurring issues and opportunities for improvement in how stream restoration projects are planned and implemented. These challenges relate directly to the need for comprehensive project planning, which helps ensure projects address root causes, integrate multiple components of stream health, and set measurable goals for evaluating success.

Key challenges include:

- Assessing the ecological improvement from a project is often difficult due to limited documentation of pre-project site conditions.
  - Vague project goals lacking clearly defined, measurable, and time-bound objectives, making it difficult to evaluate success. This issue is particularly pronounced for ecological goals in stream projects, such as vegetation, invertebrates, and in-stream habitat, where specific metrics are frequently absent.
  - Project funding and scale frequently fall short of a project's ambitious ecological goals.
  - Some projects focus narrowly on localized issues, such as bank erosion, without fully addressing watershed-scale drivers like hydrology, connectivity, geomorphology, and floodplain interactions.
- Comprehensive stream restoration is hindered by lack of multidisciplinary expertise across all five components of watershed health, isolating components such as sediment transport and habitat connectivity, rather than treating these and other components as part of an interconnected system.
  - Permitting is sometimes treated as a substitute for technical review, reducing opportunities for comprehensive design input.
  - Habitat beyond the channel, including riparian, floodplain, and upland areas, is often overlooked, and follow-up maintenance such as watering, weeding, and reseeded is frequently missing.





## CORE RECOMMENDATIONS

To address these challenges, the panel recommends funders, project managers, and partners implement the following practices to improve project planning, strengthen outcomes, and support long term success of stream restoration projects:

- **Strengthen Project Planning and Baseline Data:** Require projects to document pre- and post-project conditions using metrics consistent with the project's goal(s) and objectives (e.g., geomorphic, hydrologic, and biological indicators).
- **Require clear measurable objectives, and related monitoring:** Establish measurable, time-bound objectives, and monitoring plans, including ecological metrics such as vegetation and habitat response. Utilize a SMART goals process for establishing and tracking goals.
- **Align Project Scale with Underlying Drivers:** Prioritize projects that address watershed-scale drivers, including hydrology, sediment transport, and floodplain connectivity, rather than isolated impacts. Support both large, comprehensive projects, and appropriately scoped smaller projects, with clear communication of limitations and expected outcomes.
- **Ensure Project Feasibility:** Align project scope, budget, and timeline with stated stream restoration goals.
- **Promote Early and Ongoing Technical Review:** Engage interdisciplinary expertise early in planning and incorporate targeted technical review beyond permitting requirements. Promote coordination among team members throughout planning, design, construction, and monitoring.
- **Incentivize Comprehensive, Multi-Benefit Projects:** Use funding criteria or scoring systems to prioritize projects that deliver multiple benefits across stream health. Encourage inclusion of floodplain, wetland, riparian, and in-stream habitat components as part of a system-wide approach.
- **Integrate the Key Components of Stream Health:** Incorporate screening questions or application requirements that explicitly address a comprehensive and integrated approach to stream health: biology, connectivity, geomorphology, hydrology, water quality. Encourage project designs that integrate these components rather than treating them as separate tasks.
- **Ensure Land Access:** Require applicants to demonstrate sufficient land access and site control to address the full scope of the problem.



## TOOLS

To help project teams implement these recommendations effectively, several tools and resources are available to guide planning, design, and evaluation. In addition to government agencies' technical staff resources, the following resources help ensure projects are comprehensive, scientifically grounded, and aligned with best practices for long-term ecological success.

### **Writing Meaningful Goals and SMART**

**Objectives:** The link below explains how to write meaningful goals and SMART objectives - Specific, Measurable, Achievable, Relevant, and Time-bound - to clearly define goals, track progress, and improve accountability in planning and evaluation efforts.

[health.state.mn.us/communities/practice/resources/phqitoolbox/objectives.html](https://health.state.mn.us/communities/practice/resources/phqitoolbox/objectives.html)

### **Minnesota Wetland Restoration Guide:**

This guide includes a strong planning section that explains how to develop clearly defined goals and objectives, and how measurable outcomes can help ensure wetland restoration projects are feasible, effective, and aligned with program priorities and ecological benefits.

[bwsr.state.mn.us/mn-wetland-restoration-guide](https://bwsr.state.mn.us/mn-wetland-restoration-guide)

### **MN Watershed Health Assessment**

This framework uses five components (Biology, Connectivity, Geomorphology, Hydrology, and water Quality) to view natural systems. Each component brings a different perspective and a consistent approach for exploring complex landscapes.

[dnr.state.mn.us/whaf/5-component/index.html](https://dnr.state.mn.us/whaf/5-component/index.html)

### **Minnesota DNR Watershed Health Assessment Framework (WHAF)**

supports consistent evaluation of watershed-scale drivers and ecological conditions.

[dnr.state.mn.us/whaf/index.html](https://dnr.state.mn.us/whaf/index.html)

### **Minnesota Stream Quantification Tool**

**(SQT)** and associated Stream Function Pyramid is a mitigation banking credit for streams that provides a structured framework for assessing and tracking stream functions.

[bwsr.state.mn.us/minnesota-stream-quantification-tool-and-debit-calculator](https://bwsr.state.mn.us/minnesota-stream-quantification-tool-and-debit-calculator)  
[stream-mechanics.com/stream-functions-pyramid-framework/](https://stream-mechanics.com/stream-functions-pyramid-framework/)





**Channel Restoration Design Report Template** outlines the critical information needed for robust project documentation, permitting, and construction planning.

Using the template to complete the design report helps guide designers to ensure that causal processes, project scale, objectives, and design approach are all carefully considered and aligned. The report can serve as a reference during the design, construction, permitting, and project evaluation phases and support adaptive management and application to other projects. This report should also help to expedite permitting, environmental review and mitigation processes.

This template is based on guidance from the MN Stream Practitioners, a group of local, state and federal agency staff focused on field-based aspects of monitoring, assessment and restoration of stream systems.

## DESIGN REPORT TEMPLATE ELEMENTS

*(additional context in italics)*

1. Project Summary
  - a. Introduction – abstract (*Project description, focus, history, length*)
  - b. Funding sources
  - c. Project team – Owner and team. Note expertise of team members regarding 5 components of watershed health (*main project contact and who will be overseeing project construction (critical for in field determinations) and vegetation observation/inspection*)
2. Project Overview
  - a. Location (*map, land ownership*)
  - b. Watershed history, condition, geology and characteristics (*E.G. WHAF scores, current and historic land use, direct stream impacts, ecology, etc*)
  - c. Existing channel condition
    - i. Condition driving restoration (*why is this project needed, what is it trying to address (stability, habitat?), what are the underlying cause(s) contributing to the need for restoration*)
    - ii. General Physical Description
    - iii. Drainage Area
    - iv. Geomorphic data summary
    - v. Habitat evaluations
    - vi. Biological and/or water quality conditions
3. Goal(s) and Objectives
  - a. Project Goal (*high level statement of the general stream conditions you're trying to achieve*)

- b. Objectives (*how will you know if the project goal has been achieved – objectives should be quantifiable, detailed (E.G. Reduce bank erosion by 90%, increase mean pool depth ratios by 25%, etc) and temporally bound with some indication of recovery time frames*)
- 4. Design Methodology
  - a. Consideration of approach and alternatives based on site
    - i. Constraints (*physical, chemical, biological, sociological, economic, and political*)
    - ii. Risks (*determined by constraints, existing conditions and up and downstream processes*)
  - b. Reference Reach Description (*criteria used to determine channel dimension, pattern and profile*)
  - c. Proposed Channel Dimension determination; describe methods for determination of discharge (*Q*) and cross-sectional area (*CSA*)  
*Bankfull channel dimensions are foundational to restoration, on which all other design values are based. For this reason, this section should include a robust explanation of how all channel dimension values were determined, preferably with multiple lines of evidence.*
  - d. Substrate selection (*expand on where riffle mobility is acceptable and where grade control may be needed, show shear stress calculations*)
- 5. Additional Project considerations
  - a. Flood modeling (*no-rise, FEMA requirements*)
  - b. Habitat considerations (*both riparian and in-channel*)
  - c. Permitting and Environmental Review (*list the expected permits needed and responsible permitting Agency & status*)
  - d. Vegetation plans (*Highlight and/or provide detailed information regarding vegetation restoration strategies including a comprehensive planting plan which uses science-based information for the establishment and maintenance of native vegetation. This includes proper site preparation, invasive species removal, diverse species selection following MN state guidelines, installation timing and techniques, as well as long term operation and maintenance*)
  - e. Mitigation (*Include SQT worksheet*)
  - f. Geotechnical data
  - g. Access, easement and material sourcing
- 6. Appendix
  - a. Design Parameter tables
  - b. Hydraulic Report
  - c. Hydrologic Report
  - d. Wetland delineation
  - e. Geotechnical reports
  - f. Other

# 2025 PANEL RECOMMENDATIONS

## IMPROVE VEGETATION FOR STREAMS

### COMMON CHALLENGES OBSERVED

Well-established vegetation is critical to the long-term success of stream restoration projects, providing bank stabilization, habitat, and ecological function. The panel identified several recurring challenges in planning, establishing, and maintaining vegetation to improve outcomes.

Key challenges include:

- Vegetation plans are often underdeveloped in stream project plans, with limited detail in construction documents.
- Seeding plans and seed mix are not established onsite.
- Inadequate site preparation leading to poor vegetation establishment (invasives, clay soil, lack of amendments).
- Little or no woody vegetation was used in areas where woody root structure could have improved project stability.
- Reed canary grass, buckthorn, hybrid cattail and other weedy plant dominance suppresses desired vegetation without ongoing management.
- Hydrology and light conditions do not always align with selected species (e.g., shaded sites underperform).
- Plug plantings can fail without watering or strategically timed planting.
- Northern projects lack region-specific seed mixes and guidance.
- Inconsistent Conservation Corps Minnesota (CCM) crew training and coordination on vegetation best practices.
- Lack of performance standards for planting and tree survivorship.
- Insufficient long-term maintenance and follow-up management.





## CORE RECOMMENDATIONS

To address these challenges, the panel recommends funders, project managers and partners implement the following practices to improve vegetation establishment and long-term success in stream restoration projects:

- **Require clear vegetation plans:** Include specifications for seed mixes, plant types, planting methods, timing, and site-specific management strategies as a standard project component.
- **Emphasize proper site preparation:** Use thorough invasive species control, and apply soil amendments and ground covers (e.g. compost, temporary seed mixes, chipped woody material), when appropriate prior to planting.
- **Align species with site conditions:** Match plant selection to hydrology, light, and soil moisture. Plant plugs in late fall where watering is not feasible.
- **Utilize Offline Periods:** Establish vegetation offline of flows, when possible, to maximize vegetation success.
- **Promote staggered and strategic planting:** Use phased seeding to improve diversity and allow better control of invasives (e.g., grasses and sedges first, frost-seed forbs in year 2 or 3).
- **Increase woody vegetation establishment and riprap planting:** Enhance bank stability, habitat quality, and erosion control by establishing shrubs, trees, and vegetated riprap where feasible.
- **Develop region-specific guidance:** Provide tailored seed mixes and planting strategies for northern or rocky soils.
- **Set performance standards and plan for maintenance:** Establish survivorship targets, monitoring requirements, and sufficient budgets for reseeding or supplemental plantings.
- **Improve coordination and training:** Provide technical support and training for crews implementing plantings and ensure ongoing oversight throughout project establishment.

## TOOLS

To help project teams plan and implement effectively, several tools and resources are available to guide vegetation planning, establishment and monitoring.

### **Native Vegetation and Biodiversity Collaborative**

[bwsr.state.mn.us/Vision-for-Native-Vegetation-and-Biodiversity](https://bwsr.state.mn.us/Vision-for-Native-Vegetation-and-Biodiversity)

- BWSR Native Vegetation Establishment and Enhancement Guidelines
- Native Vegetation Advisory Team Report

### **BWSR Wetland Restoration Guide**

[bwsr.state.mn.us/mn-wetland-restoration-guide](https://bwsr.state.mn.us/mn-wetland-restoration-guide)

### **BWSR Seed Mix Webpage**

[bwsr.state.mn.us/seed-mixes](https://bwsr.state.mn.us/seed-mixes)

### **MN Noxious Weed Guide**

[files.dnr.state.mn.us/eco/invasives/noxious-weeds.pdf](https://files.dnr.state.mn.us/eco/invasives/noxious-weeds.pdf)

# STREAM RESTORATION RESOURCES

Legacy Fund stream projects across the State have shown the benefits of comprehensive planning and interdisciplinary expertise resulting in improved stream health as well as the successful establishment of diverse native plant communities. These three projects serve as models for how restoration goals are effectively realized on the ground.

## OUTDOOR HERITAGE FUND

### **Gorman Creek Restoration: Revitalizing the Driftless**

Gorman Creek, a cold-water gem in Wabasha County, faced significant degradation from legacy sediment, bank erosion, and a disconnected floodplain. To address these degradations, a partnership was formed between the Wabasha County Soil and Water Conservation District (SWCD), Minnesota DNR, and Trout Unlimited. An assessment of Gorman Creek's desired natural flow of water and habitat prioritized resetting the stream channel alignment, moving it away from eroding cut-banks and re-connecting the natural floodplain. Two years post construction, instream habitat for trout is significantly improved, and diverse native vegetation is established in the uplands. This success was enabled by strong interdisciplinary coordination across the project team.





## CLEAN WATER FUND

### Chaska Creek: Improving Habitat

Historically, segments of Chaska Creek were straightened into drainage ditches, resulting in high-velocity flows, severe bank erosion, and sediment loading into the Minnesota River. Project managers with the Carver County Water Management Organization established goals to reduce nutrient pollution, enhance aquatic habitat, and improve channel stability in a section of Chaska Creek. Well-crafted short term and long term goals, guided by a feasibility study and detailed design report, set the stage for successful outcomes. In addition to reconnecting the new meandering channel to its floodplain, diligent planning and management have ensured that the restored native vegetation provides robust, long-term habitat benefits.

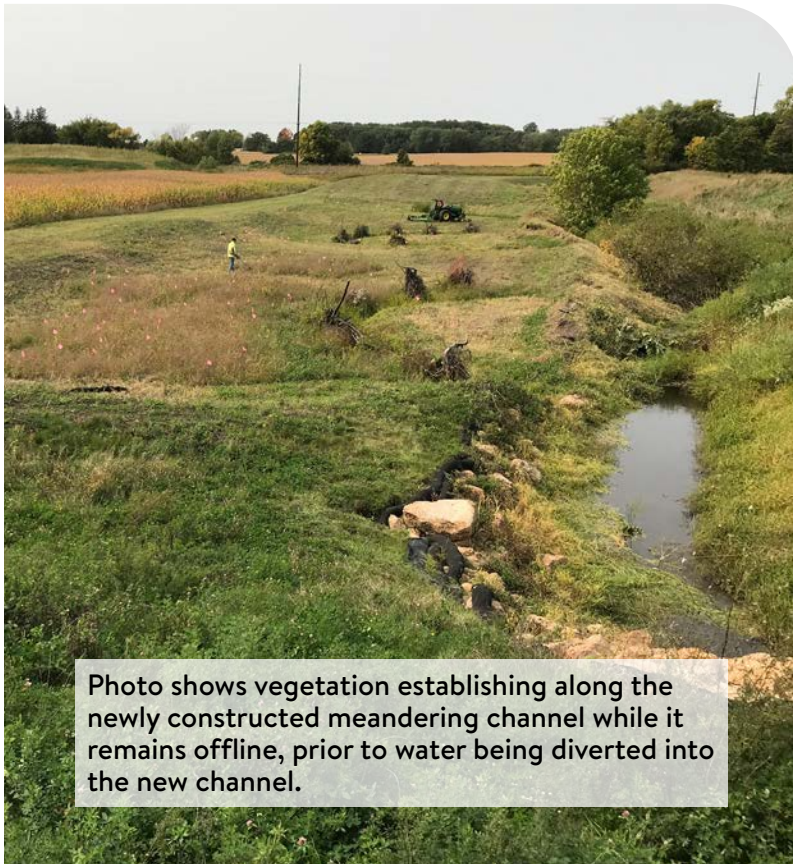


Photo shows vegetation establishing along the newly constructed meandering channel while it remains offline, prior to water being diverted into the new channel.





## CLEAN WATER & OUTDOOR HERITAGE FUNDS

### **Red River Valley: Restoring Wolverton, North Branch Buffalo and Whiskey Creeks**

Streams in Minnesota's Red River Valley are set on the flat, fine sediments of glacial Lake Agassiz. Twentieth century agricultural drainage projects straightened these streams and degraded habitat by widening and deepening their channels and disconnecting them from their floodplain. Project teams with Buffalo Red Watershed District, Wilkin Soil and Water Conservation District and Minnesota DNR devised strategies to effectively improve habitat and reduce flooding in agricultural fields. The project team's partnerships with agricultural landowners and careful consideration of their flooding concerns led to successful comprehensive projects. By remeandering these streams and creating a widened floodplain these projects are providing multiple benefits for habitat and agriculture for decades to come.



# IMPROVING FUTURE RESTORATIONS

By turning field evaluations into actionable recommendations and translating lessons learned into best practices for Minnesota's conservation community, the evaluation program facilitates more effective, high-quality restorations statewide.



## BUILDING A LEGACY OF EXPERTISE

The evaluation program ensures lessons learned from completed projects directly inform future work by bringing together practitioners to share their knowledge and expertise. Recent examples include:

**2025 MN Water Resources Conference:** **Organized** a packed special session on stream restoration highlighted strong demand for turning evaluation data into practical, real-world improvements.

**2026 Upper Midwest Stream Restoration Symposium:** Shared field-tested best practices drawn from Minnesota's evaluation results with regional experts.

**Local Government Unit Forum:** Briefed Minnesota DNR LGUs on proven approaches to launch projects effectively and avoid common pitfalls.

**Improving Restorations Webinar Series:** Now in its fifth year, this partnership with the University of Minnesota Extension promotes improvement through applied stories from restoration practitioners, emphasizing actionable lessons connected to the previous year's recommendations.

- **2026 Focus:** Natural Channel Design and stream restoration planning in real-world contexts.
- **Engagement:** Averaging 160 participants per session, reflecting strong demand for applied, field-based learning.





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