

LEGACY FUND RESTORATION EVALUATION REPORT

Technical Panel Findings and Recommendations | 2021





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Technical Panel Findings and Recommendations-2021

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

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PHOTOGRAPHIC CONTRIBUTIONS

All photos MN DNR

LEGISLATIVE CHARGE

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EXECUTIVE SUMMARY



When Minnesotans passed the Clean Water, Land and Legacy Amendment in 2008, they did so with high expectations. As projects have moved forward throughout the state, so too have efforts to ensure that the projects are meeting those expectations.



This report summarizes annual work to evaluate Legacy Fund restorations. This effort is intended to support project partners in maximizing the impact of Minnesotan's investment. The Department of Natural Resources (DNR), Board of Water and Soil Resources (BWSR) (agencies), and the evaluation panel (panel), continue to work together to improve restorations throughout the state.

This report summarizes evaluations of 26 project sites done in 2021, and panel recommendations based on 226 evaluations conducted since 2012. Projects evaluated in 2021 are largely on track to meet stated goals and are utilizing current science. However, the panel did identify areas for restoration improvement including maximizing habitat and water quality benefits of lakeshore restoration projects and maintaining plant material origin information. The panel has also made recommendations for future work. The panel's recommendations are promoted by program staff through reports, presentations, and targeted trainings.

RECOMMENDATIONS

EXPANDED RECOMMENDATIONS:

- Improved Documentation
- Improved Design Criteria for Lakeshore Projects

ONGOING RECOMMENDATIONS

- Improved Project Teams
- Improved Restoration Training
- Improved Planning for Stream Projects
- Improved Vegetation for Stream Projects
- Evaluation Process Improvement



PROJECTS EVALUATED

PROJECTS EVALUATED IN 2021

Dots may represent more than one project site. Circled dots represent projects evaluated in 2021; plain dots represent projects evaluated in previous years. Project evaluations from 2021 are available in Appendix A Program Process and Project Evaluations.





2021 EVALUATIONS SUMMARY



EVALUATED PROJECTS

Projects were completed using three Legacy Funds:

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



| | CWF | OHF | PTF | All Funds |
|--|-----|------|------|-----------|
| Project sites in evaluation program pool | 370 | 5087 | 1325 | 6782 |
| Project sites evaluated in 2021 | 10 | 11 | 5 | 26 |
| Project sites evaluated to date | 85 | 111 | 30 | 226 |

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.

CURRENT SCIENCE

Most projects evaluated to date (83%) utilized best practices within the range of current science. However, the panel identified opportunities to improve the use of current science. These opportunities for improvement include:

- Maximize habitat and water quality benefits of lakeshore restoration projects using natural and vegetative materials
- Collect and retain plant material information to understand how plant origin affects restoration outcomes and to inform future work

STATED GOALS

Most projects evaluated to date (80%) were on track to meet or exceed their stated goals. Projects goals include:

- Creating native prairie and pollinator habitat
- Restoring drained wetlands
- Restoring natural hydrology after dam removal
- Restoring conifer forests
- Improving moose habitat
- Reducing sediment and nutrient loading
- Stabilizing eroding shoreline
- Increasing native plant cover on shorelines
- Improving habitat through invasive species management

Ongoing monitoring and maintenance are generally required for these projects to provide habitat and other benefits into the future.

PROBLEMS WITH IMPLEMENTATION

Most projects evaluated to date (72%) were implemented without problems. While not all problems can be predicted or prevented, the panel identified situations where problems arose that could be avoided in the future. Project managers can avoid these problems by applying the following best practices:

- Sufficient treatment of invasive species during site preparation
- Sufficient protection and watering of native plant species during establishment
- Identifying staff and funding resources for future management actions



RESTORATION 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.



EXPANDED PANEL RECOMMENDATIONS

IMPROVED DOCUMENTATION

(First detailed in 2012 Report)

Documentation is critical for understanding, tracking, and achieving successful restorations. Documenting clear outcome-based goals is crucial for establishing a common understanding and tracking progress.

ROLES OF PROJECT MANAGERS

- Collect and retain plant material information to understand how plant origin affects restoration outcomes and to inform future work
- Consistently document restoration project data in a simple and accessible format
- Ensure that details of implemented actions are recorded and coupled with the initial plan
- Designate one project partner to permanently store project data

ROLES OF FUNDING ORGANIZATIONS

- Develop checklist of key project data to be archived by project partners
- Provide targeted training and grant guidance for project managers

IMPROVED DESIGN CRITERIA FOR LAKESHORE PROJECTS

(First detailed in 2014 Report)

The panel recommends that project managers establish consistent minimum design criteria for lakeshore projects. These criteria will allow screening for projects that provide a base level of environmental benefit aligning with Fund goals. Design criteria should be specific to site conditions and constraints.

If shoreline erosion control is needed, bioengineering practices using vegetation and natural materials should be prioritized to provide the best ecological outcomes. These practices should be selected to mimic the shoreline's natural structure and vegetation, as well as accommodate for dynamic lake conditions such as water level fluctuations or ice and wave action. Potential bioengineered stabilization practices used in combination with native plantings include coir logs, brush bundles, and live stakes. Tree and shrub roots should also be promoted to provide long term stabilization.

Additional guidance and links can be found in BWSR's Native Vegetation Establishment and Enhancement Guidelines as well as DNR's Maintaining and Restoring Natural Shorelines:

bwsr.state.mn.us/node/8806

bwsr.state.mn.us/sites/default/ files/2022-10/Lakeshores%20Oct22.pdf

dnr.state.mn.us/lakescaping/maintainingand-restoring-natural-shorelines.html

ROLE OF PROJECT MANAGERS

- Maximize habitat and water quality benefits of lakeshore restoration projects using natural and vegetative materials
- With guidance from state agencies, establish minimum design criteria based on programmatic goals and local conditions that integrate with existing direction for shoreline restoration from total maximum daily load or local water plan
- Promote the ecological value of establishing design criteria
- Use improved criteria when recruiting, screening, and approving projects with landowners

ONGOING PANEL RECOMMENDATIONS



IMPROVED PROJECT TEAMS

(First detailed in 2015 Report)

More comprehensive project teams should be used to improve ecological outcomes and better meet Fund goals.

ROLES OF PROJECT PARTNERS

- Use multidisciplinary project teams appropriate to project scale/complexity
- Engage state agency, local government units and technical experts early in the planning phase

ROLES OF FUNDING ORGANIZATIONS

- Include project team requirements in requests for proposals
- Continue to make staff available for consultations

ROLE OF STATE AGENCIES

• Consult with project partners regarding technical specifications

IMPROVED RESTORATION TRAINING

(First detailed in 2012 Report)

Continued development and implementation of training is essential to promote best practices and improve restorations.

ROLES OF LEGACY FUND RESTORATION EVALUATION PROGRAM

- Compare needs identified from evaluations with existing trainings
- Identify gaps and opportunities for targeted trainings
- Integrate program findings and recommendations into existing trainings

Additional resources on training can be found at the University of Minnesota Extension's Ecological Restoration Training website: extension.umn.edu/courses-andevents/ecological-restoration-trainingonline.



RECOMMENDATIONS continued



IMPROVED PLANNING FOR STREAM PROJECTS

(First detailed in 2018 Report)

Project managers should complete detailed project planning for all stream projects. This information is particularly valuable for stream/river restorations due to the complexity, cost, and associated risks. This planning process should include:

- Identifying problems (e.g. stressors or impairments)
- Articulating specific project goals
- Designing strategies to address identified problems and specific goals based on a stream assessment
- Budgeting funds adequate to achieve goals
- Documenting project partner capacity and roles to execute and maintain the project

ROLES OF PROJECT PARTNERS

- Engage state agencies, local government units and other technical experts early in, and throughout, the project planning phase
- Secure financial, staff and/or contract resources to complete appropriate project planning

ROLE OF STATE AGENCIES

• Identify and promote best practices in consistent project planning detail

IMPROVED VEGETATION FOR STREAM PROJECTS

(First detailed in 2020 Report)

Well established vegetation is critical for the long-term success of stream projects. While cover crops can provide temporary stabilization, establishing native vegetation takes planning and maintenance especially in dynamic stream systems that are subject to frequent flooding.

ROLES OF PROJECT PARTNERS

- Establish and apply performance standards for vegetation
- Consistently apply BWSR's Native Vegetation Establishment and Enhancement Guidelines focusing on diverse native vegetation
- Incorporate climate resiliency into vegetation planning

ROLE OF STATE AGENCIES

• Provide science-based, up-to-date guidance on the use and maintenance of native vegetation

EVALUATION PROCESS

(First addressed in 2012 Report)

The Restoration Evaluation Program should implement strategic processes to achieve the stated goal of improving future restorations.

ROLES OF THE LEGACY FUND RESTORATION EVALUATION PROGRAM

- Revisit evaluated sites to inform the accuracy of initial assessments and refine assessment methods
- Create and facilitate communications highlighting decision making, challenges, and successes in project implementation
- Track environmental, social and operational factors that influence success of projects to guide future policy and practice
- Track panel recommendations through project data and project partner surveys to gauge application of recommended actions



IMPROVING FUTURE RESTORATIONS



Maximizing the benefits of Legacy Funded restorations requires evaluating projects to learn what's working, engaging experts to promote current science, and communicating recommendations so they can be implemented.

EVALUATING PROJECTS

In 2021, we visited 26 project sites. In addition to visiting a number of forest habitat restorations as requested by the restoration evaluation panel, we visited projects in new counties completed by a variety of project partners. Combining these evaluations with previously completed site visits provides a broader view of the implementation of Legacy Funds, the benefits they are providing, and opportunities to maximize the benefits of the funds for Minnesotans.

PROGRAM ACTIVITIES 2012-2021

226 PROJECTS EVALUATED (ALL HABITAT TYPES)

ENGAGING EXPERTS

To understand how the Legacy Fund **Restoration Evaluation Program** can help support practitioners, we conducted a project partner survey asking people what they need to do their best work. Practitioners wanted more trainings to learn from experts. One way our program meets this need is by helping coordinate training opportunities for practitioners to engage with experts. In 2021 program staff coordinated a special session at the Minnesota Water Resources Conference focused on measuring the benefits of stream restoration projects. Five stream restoration experts shared the underlying science and their experience monitoring the effectiveness of their stream restoration projects.

COMMUNICATING WITH STAKEHOLDERS

For panel recommendations to make a difference, they need to be communicated to the stakeholders engaged in planning, funding, and implementing restorations in the state.

We work to increase the reach of the panel's recommendations by engaging targeted stakeholders. For example, in 2021 program staff worked with the University of Minnesota Extension to organize a series of webinars focused on Improving Restorations attended by more than 930 participants.

extension.umn.edu/environmentaleducation/improving-restorations



MORE THAN 5000 STAKEHOLDERS REACHED

ADDITIONAL RESOURCES

RESTORATION EVALUATION PROGRAM WEBSITE

dnr.state.mn.us/legacy/ restoration-evaluation.html

APPENDIX A PROGRAM PROCESS AND PROJECT EVALUATIONS

Irl.mn.gov/edocs/ edocs?oclcnumber=823766285



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