



# Legacy Fund 2019 Restoration Evaluation Update

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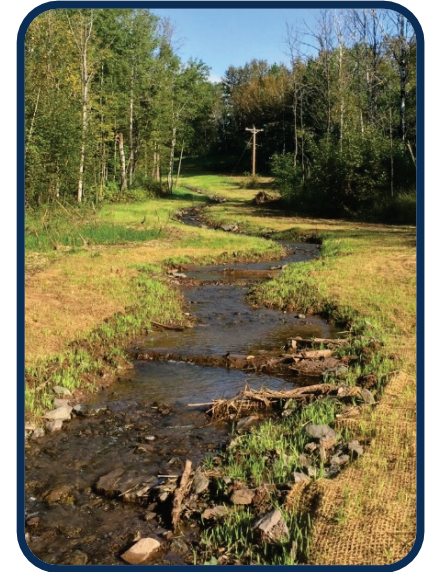
Minnesota Department of Natural Resources  
Minnesota Board of Water and Soil Resources

Little Stewart River - OHF



# Current Legacy Fund Project Pool

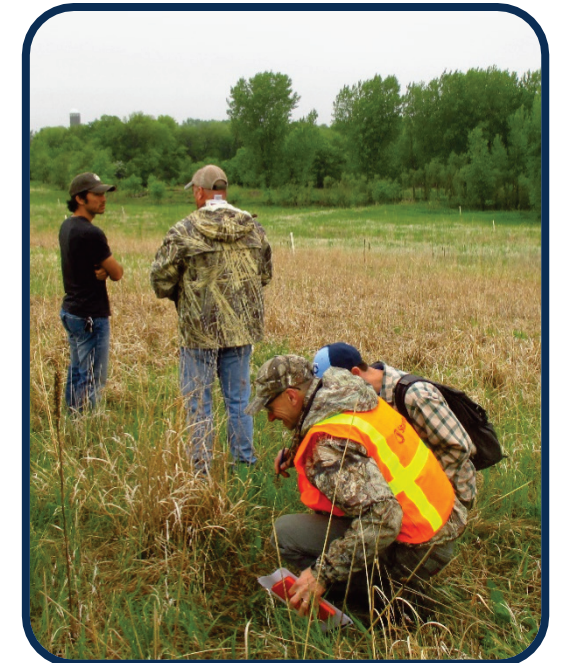
- 5,916 completed restorations or enhancements
- Fractions of an acre to 30,000+
- <\$100 to multi-million \$ budgets
- Public and private land
- Variety of project managers





# Statute Mandate

- Projects stated goals
- Utilization of current science
- Identify problems with implementation
- Improve future restorations







# Evaluating Projects

- Contact project partners
- Collect project information
- Establish project goals
- Visit the project
- Review all projects with the Restoration Evaluation Panel



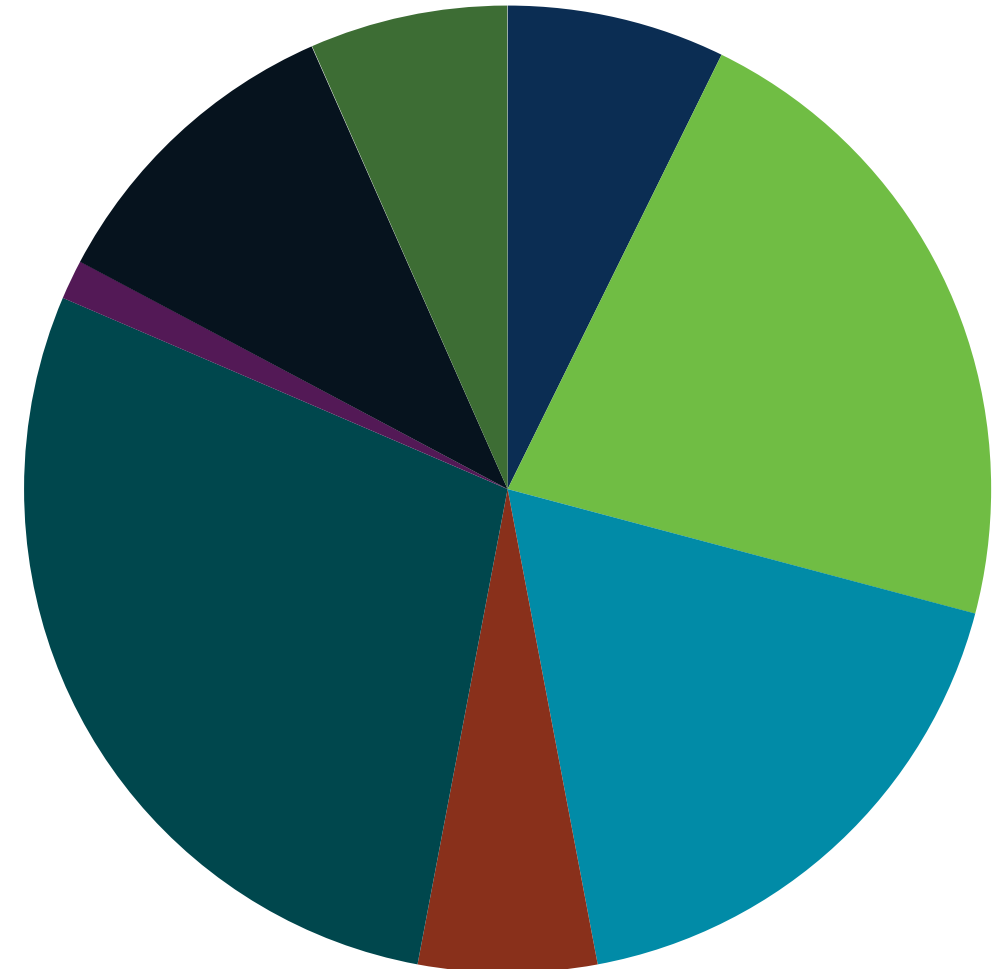




# Who are our assessors?

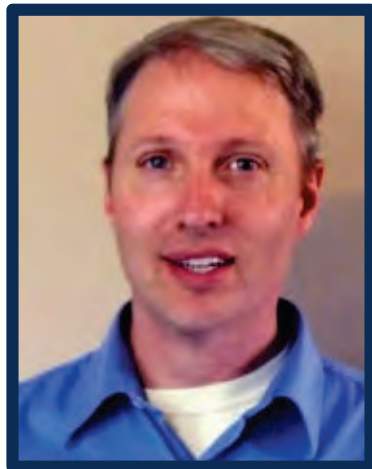
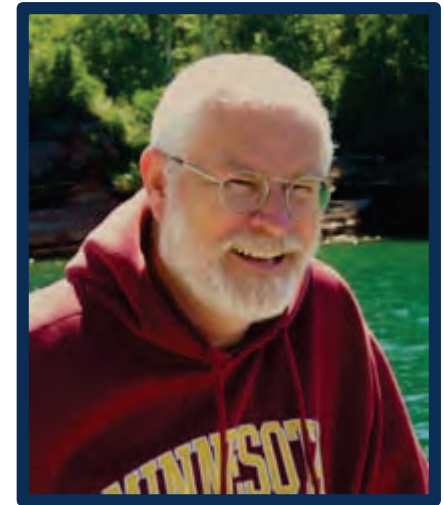


- BWSR
- DNR
- EOR
- HDR
- Stantec
- Great River Greening
- Cardno
- Wenck





# Restoration Evaluation Panel





# Communicate Results

- Share successes, challenges, and lessons learned to improve restorations.





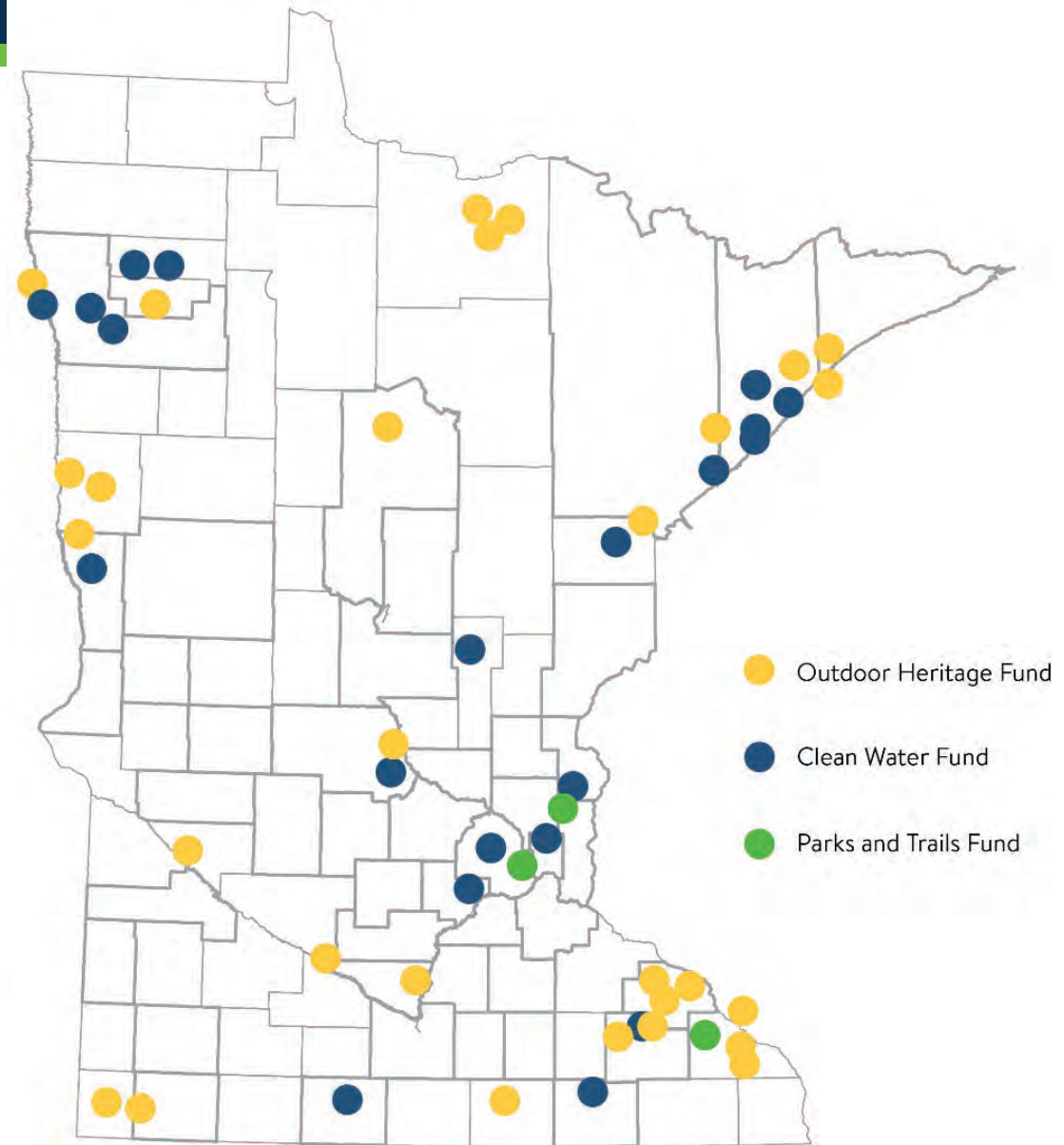
# Focus on Stream Projects

- 63 stream projects evaluated
- 7 stream projects revisited
- 31 project manager organizations



## STREAM PROJECTS EVALUATED 2012-2019

*Dots may represent more than one stream project site. A list of projects evaluated is available in Appendix B.*







# Rat Root River

## Koochiching SWCD and Rainy Lake Sport Fishing Club:

Working to restore the walleye fishery

- Remove fish passage barriers
- Improve water quality
- Provide spawning beds

Monitoring to see if it is working and what to do next







# Lawndale Creek

## **Trout Unlimited :**

Restoring a spring-fed prairie stream

- Straight ditches through a WMA
- New meandering channel
- Improved habitat and hydrology

Monitoring shows substantial biological response







# Knowlton Creek

## Minnesota Land Trust and MN DNR:

Responding to flood damage and changing climate

- Designed with extreme precipitation in mind
- Replaced culverts with bridges
- Stabilized natural stream and off-channel pools

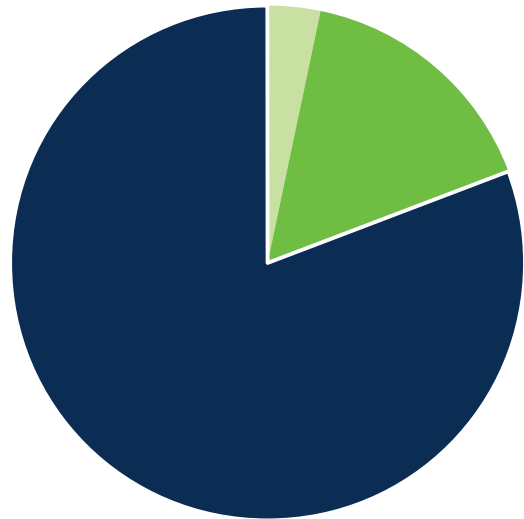
Partnership and working with neighbors in multifunctional landscape





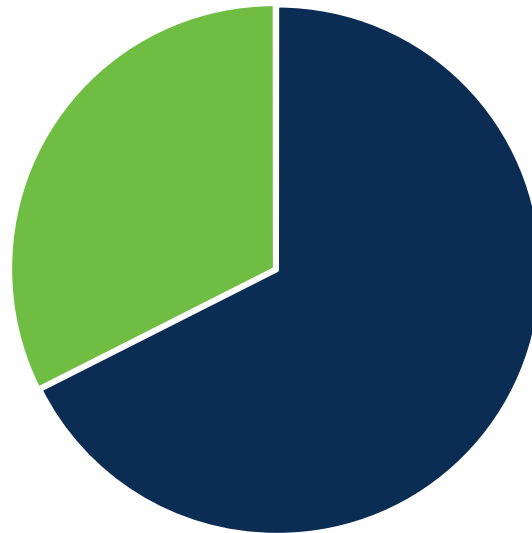
# Restoration Evaluations to Date

## Utilized Current Science



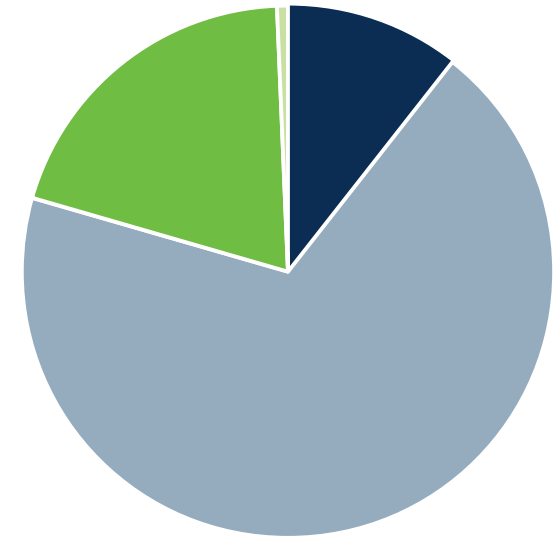
■ No ■ Portions ■ Yes

## Problems with Implementation



■ No ■ Yes

## Meet Stated Goals



■ Exceed the stated goals  
■ Achieved the stated goals  
■ Minimally achieved stated goals  
■ Likely not achieved stated goals



# Improving Application of Current Science

- Ensuring project goals align with design to maximize habitat & clean water benefits
- Planting diverse native vegetation targeted to site conditions
- Ensuring restoration techniques are executed using best practices





# Avoiding Problems with Implementation

- Providing detailed information in restoration plans
- Having experienced experts provide construction oversight
- Sufficient treatment of invasive species during site preparation





# Factors of Success

There are common characteristics that successful stream restoration projects share. Incorporating these characteristics into future projects will improve restorations.

## 1 Making a Plan

Knowing the root causes of problems

Having clear, common goals among stakeholders

Having community support





# Designing the Project

## 2 Designing the Project

hydrologists

Collaborating and getting feedback

Getting the details down on paper

ecologists

engineers

geomorphologists

Bringing diverse, professional perspectives to the table



## 3 Doing the Work

Hiring trained,  
experienced  
professionals



Having construction  
oversight guiding  
installation



Collaborating  
with a team if  
the plan changes





# Maintaining the Benefits

4

## Maintaining the Benefits

Having someone in charge of monitoring

Having resources to respond if needed

Having time to do the monitoring





5

## Moving Forward

Evaluate what's working

Share stories of success and challenges

Adjust as we learn





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# Four Stream Evaluation Take-home Messages

- Stream projects are just as successful other projects
- Consequences of failure can be more significant
- Maintenance and repair is less certain for stream projects
- Stream findings continue to underscore the value of standing Panel recommendations



# Thank You!

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<https://www.dnr.state.mn.us/legacy/restoration-evaluation.html>