

# Lessard-Sams Outdoor Heritage Council Laws of Minnesota 2011 Final Report

**Date:** June 12, 2014

**Program or Project Title:** Technical Evaluation Panel

**Funds Recommended:** \$42,000

**Manager's Name:** Wade Johnson

**Title:**

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**Legislative Citation:** ML 2011, Ch. 6, Art. 1, Sec. 2, Subd. 6(c )

**Appropriation Language:** \$42,000 the first year to the commissioner of natural resources for a technical assistance panel to conduct up to ten restoration audits, under Minnesota Statutes, sections 97A.056, subdivision 10.

**County Locations:** No Counties Listed

**Ecological Planning Regions:**

- No Regions Listed

**Activity Type:**

- Technical Evaluation Panel

**Priority Resources Addressed by Activity:**

- No Priority Resources Listed

## Abstract:

The purpose of this program was to coordinate the restoration evaluation panel (Panel) responsible for annually evaluating a sample of habitat restoration projects completed with Outdoor Heritage Funding and to provide a report on Panel to the legislature and the Lessard-Sams Outdoor Heritage Council.

## Activity Detail

### Design and Scope of Work:

The Department of Natural Resources (DNR) and the Board of Water and Soil Resources (BWSR) are jointly responsible for convening a restoration evaluation Panel to annually evaluate a sample of up to 10 habitat restoration projects completed with outdoor heritage funding, as provided in M.L. 2010, Ch. 361, Art. 1. In 2012 the agencies assigned a coordinator for the Panel who is responsible for identifying the sample of projects to be evaluated by the Panel. As directed in Statute the Panel is comprised of at least five technical experts, including one technical representative from BWSR, one technical representative from DNR, one technical representative from the University of Minnesota or the Minnesota State Colleges and Universities, and two additional representatives with expertise related to the projects being evaluated. The Panel is also represented by an optional six member from Federal or local government. During 2012 and 2013 the Panel consisted of:

Chris Weir-Koetter – DNR, Parks and Trails

Greg Larson – BWSR

Sue Galatowitsch – University of Minnesota

Greg Berg – Stearns County SWCD

Greg Hoch – DNR, Wildlife

Mark Oja – MN NRCS

The Panel evaluated selected habitat restoration projects relative to the law, current science, stated goals and standards in the restoration plans, and applicable guidelines. The coordinator summarized

the findings of the panel and providing the Fiscal Year 2012 restoration evaluation report to the chairs of the Lessard-Sams Outdoor Heritage Council (L-SOHC) and respective Minnesota House and Senate policy and finance committees with jurisdiction over natural resources and Outdoor Heritage Fund spending. The report determined whether restorations were meeting planned goals, identified problems with implementation of restorations and provided recommendations on improving restorations. Three of the six Outdoor Heritage Fund habitat restoration projects evaluated during 2012 season were reported in the Fiscal Year 2012 report, the remaining three are presented in the Fiscal Year 2013 report. Details regarding process, site assessments and findings are available through the Legislative Library: <http://archive.leg.state.mn.us/docs/2012/mandated/121281.pdf>.

Evaluations conducted with ML 2011 funds, reported in the Fiscal Year 2012 report:

Appropriation: ML 09 – 2(a) Accelerated Prairie and Grassland Management

Project: Tatley WMA

Project Manager: MN DNR

Project Sites:

Parcel Name County Twp Rng Sec TRDS # of acres

Tatley WMA Yellow Medicine 114 46 31 11446231 3

Tatley WMA Yellow Medicine 114 46 31 11446231 10

Tatley WMA Yellow Medicine 114 46 31 11446231 10

Tatley WMA Yellow Medicine 114 46 31 11446231 20

Tatley WMA Yellow Medicine 114 46 31 11446231 25

Tatley WMA Yellow Medicine 114 46 31 11446231 2

Appropriation: ML 09 – 5(a) Conservation Partners Grant Program – FY 2010 (ID A111)

Project: Restoration of Critical Forest Habitat in Northeast Minnesota

Project Sites: Caribou Fall Wayside, State Forest Land adjacent to Wolf Ridge, Hut Two Road Finland

Appropriation: ML 09 – 5(a) Conservation Partners Grant Program – FY 2010 (ID A025)

Project: MWA Lake Maria WMA Restoration

Project Manager: Minnesota Waterfowl Association

## Planning

### MN State-wide Conservation Plan Priorities:

- No State-wide Conservation Plans Listed

### Plans Addressed:

- U.S. Fish and Wildlife Service Strategic Habitat Conservation Model

### LSOHC Statewide Priorities:

- Use a science-based strategic planning and evaluation model to guide protection, restoration and enhancement, similar to the United States Fish and Wildlife Service's Strategic Habitat Conservation model

## Sustainability and Maintenance:

This program will be administered according to state law.

It is anticipated that program outcomes will help to create a framework for continuous improvement in restoration practice. However, program work will not be sustained after the period of funding has ended since there are no additional funds available for program activities.

## Outcomes

### Relationship to Other Funds:

- Clean Water Fund
- Parks and Trails Fund

State law requires restoration evaluations be conducted on habitat restoration projects completed with funds from the Clean Water Fund (M.S. 114D.50), Outdoor Heritage Fund (M.S. 97A.056), and Parks and Trails Fund (M.S. 85.53). As provided by law, BWSR is the responsible agency for Clean

Water Fund restoration evaluations; DNR is the responsible agency for Parks and Trails Fund restoration evaluations; and DNR and BWSR are jointly responsible for Outdoor Heritage Fund restoration evaluations (M.L.2010, Ch. 361, Art. 1).

## Budget Spreadsheet

Total Amount: \$42,000

### Budget and Cash Leverage

Budget Name	Request	Spent	Cash Leverage (anticipated)	Cash Leverage (received)	Leverage Source	Total (original)	Total (final)
Personnel	\$39,600	\$37,600	\$0	\$0		\$39,600	\$37,600
Contracts	\$0	\$1,700	\$0	\$0		\$0	\$1,700
Fee Acquisition w/ PILT	\$0	\$0	\$0	\$0		\$0	\$0
Fee Acquisition w/o PILT	\$0	\$0	\$0	\$0		\$0	\$0
Easement Acquisition	\$0	\$0	\$0	\$0		\$0	\$0
Easement Stewardship	\$0	\$0	\$0	\$0		\$0	\$0
Travel	\$2,400	\$1,300	\$0	\$0		\$2,400	\$1,300
Professional Services	\$0	\$0	\$0	\$0		\$0	\$0
Direct Support Services	\$0	\$0	\$0	\$0		\$0	\$0
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0		\$0	\$0
Capital Equipment	\$0	\$0	\$0	\$0		\$0	\$0
Other Equipment/Tools	\$0	\$0	\$0	\$0		\$0	\$0
Supplies/Materials	\$0	\$1,400	\$0	\$0		\$0	\$1,400
DNR IDP	\$0	\$0	\$0	\$0		\$0	\$0
<b>Total</b>	<b>\$42,000</b>	<b>\$42,000</b>	<b>\$0</b>	<b>\$0</b>		<b>\$42,000</b>	<b>\$42,000</b>

### Personnel

Position	FTE	Over # of years	Spent	Cash Leverage	Leverage Source	Total
OHF Restore Evaluation Coordination	0.27	1.75	\$37,000	\$0		\$37,000
State Agency Assessment Staff	0.01	1.00	\$600	\$0		\$600
<b>Total</b>	<b>0.28</b>	<b>2.75</b>	<b>\$37,600</b>	<b>\$0</b>		<b>\$37,600</b>

## Output Tables

**Table 1a. Acres by Resource Type**

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0

**Table 2. Total Requested Funding by Resource Type**

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Table 3. Acres within each Ecological Section**

Type	Metro Urban (original)	Metro Urban (final)	Forest Prairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

**Table 4. Total Requested Funding within each Ecological Section**

Type	Metro Urban (original)	Metro Urban (final)	Forest Prairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Target Lake/Stream/River Feet or Miles (original)**

0

**Target Lake/Stream/River Feet or Miles (final)**

0 miles

## **Parcel List**

### **Section 1 - Restore / Enhance Parcel List**

No parcels with an activity type restore or enhance.

### **Section 2 - Protect Parcel List**

No parcels with an activity type protect.

### **Section 2a - Protect Parcel with Bldgs**

No parcels with an activity type protect and has buildings.

### **Section 3 - Other Parcel Activity**

No parcels with an other activity type.



# **Development and Implementation of a Habitat Restoration Evaluation Program for Legacy Projects**

**FINAL PROJECT REPORT  
November, 2011**

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## PROJECT TEAM

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Forrest Boe, Assistant Director, DNR Parks and Trails  
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**Project Manager:** Rachel Hopper, DNR Office of Management and Budget Services

**Project Team:** Carmen Converse/Ann Pierce (alternate), DNR Ecological and Water Resources  
Paul Dubuque, DNR Forestry  
John Hiebert, DNR Fish and Wildlife  
Greg Larson, BWSR  
Steve Merchant, DNR Fish and Wildlife  
Chris Weir-Koetter, DNR Parks and Trails

## **Laws of Minnesota 2011, First Special Session, Chapter 6**

The statutory requirements, as amended in M.L. 2011, First Special Session, Ch. 6, for conducting restoration evaluations on habitat restoration projects completed with Legacy funds are included in this report for reference.

Parks and Trails Fund: M.S. 85.53, Subd. 5. Restoration evaluations. The commissioner of natural resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two other representatives with expertise related to the project being evaluated. The commissioner may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the commissioner may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with parks and trails funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the parks and trails fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the parks and trails fund may be used for restoration evaluations under this section.

Outdoor Heritage Fund: M.S. 97A.056, Subd. 10. Restoration evaluations. The commissioner of natural resources and the Board of Water and Soil Resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise in the project being evaluated. The board and the commissioner may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the board and the commissioner may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with outdoor heritage funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chair of the Lessard-Sams Outdoor Heritage Council and the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the outdoor heritage fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the outdoor heritage fund may be used for restoration evaluations under this section.

Clean Water Fund: M.S. 114D.50, Subd. 6. Restoration evaluations. The Board of Water and Soil Resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise related to the project being evaluated. The board may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the board may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with clean water funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the clean water fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the clean water fund may be used for restoration evaluations under this section.

## Executive Summary

In 2008, Minnesota voters approved a proposed constitutional amendment to conserve our natural and cultural heritage. The Clean Water, Land, and Legacy amendment dedicates an increase in the state sales tax of three-eighths of one percent for the next 25 years to protect, enhance, and restore our outdoor heritage, surface and ground water resources, parks and trails, and arts and cultural heritage. Passage of the Legacy amendment reinforces the state's continuing efforts to conserve the diversity of lands, waters, and fish and wildlife that provide the foundation for Minnesota's high quality of life and also brings strong expectations for a greater level of transparency and accountability in the use of these public funds.

State law (M.L. 2011, First Special Session, Ch. 6) allows restoration evaluations be conducted on habitat restoration projects completed with funds from the Clean Water Fund (M.S. 114D.50), Outdoor Heritage Fund (M.S. 97A.056), and Parks and Trails Fund (M.S. 85.53). The new law directs the Minnesota Board of Water and Soil Resources (BWSR) and the Minnesota Department of Natural Resources (DNR) to convene for each of the three funds a restoration evaluation panel (REP) containing at least five technical experts who will evaluate a sample of up to 10 habitat restoration projects annually beginning July 1, 2011. The REP will evaluate the restorations relative to the law, current science, stated goals and standards in the restoration plans, and applicable guidelines. The agencies may assign a coordinator for the REP who is responsible for both selecting the projects to be evaluated by the panel and providing reports to the legislature and governing councils on the findings of the panel, determining whether restorations are meeting planned goals, identifying problems with implementation of restorations and, if necessary, providing recommendations on improving restorations. The new law provides for the use of up to one-tenth of one percent of forecasted receipts from each fund to support this work.

In preparation for these new requirements, BWSR and DNR leadership initiated a year-long interagency project, staffed by a project manager and an interdisciplinary team of technical and professional experts, to cooperatively develop recommendations for the formation and implementation of the program, ensuring the effective coordination between the two responsible agencies and consistency in program development. As provided by law, BWSR is the responsible agency for Clean Water Fund restoration evaluations; DNR is the responsible agency for Parks and Trails Fund restoration evaluations; and DNR and BWSR are jointly responsible for Outdoor Heritage Fund restoration evaluations.

BWSR and DNR developed the following goals and objectives for the project:

- *Effectiveness:* A process for evaluating habitat restoration projects will be recommended that provides for transparency and accountability in the use of Legacy funds and supports a collaborative, continuous learning environment that informs future habitat restorations throughout the state.
- *Consistency:* A process will be recommended that provides for consistency in program development and implementation within and across the three funds.
- *Efficiency:* A process will be recommended that allows the responsible agencies to accomplish all program requirements established in law within the budgeted allowances for the program.
- *Partnerships:* Partners will be engaged and involved in the development of the program.

The project team established recommendations for the development and implementation of a Restoration Evaluations Program, including options for administration of the program and recommendations on the process and methods for selecting and evaluating habitat restoration projects and reporting on the panel findings. After development of the recommendations, the team field tested the proposed evaluation process to assess whether the program methodology

would meet the requirements established in law. Recommendations were then made for improvements to the program framework.

This report provides recommendations on the development and administration of a Restoration Evaluations Program in Minnesota. The report provides an overview of the recommended options for administering the program, including the process for selecting and evaluating habitat restoration projects funded by the Clean Water Fund, Outdoor Heritage Fund, and Parks and Trails Fund, and reporting on the findings of the evaluations, as required by M.S. 85.53, 97A.056, and 114D.50. A high-level summary of the evaluation process is available in Appendix I. The report is organized by the following major sections, which address the statutory requirements for the program: program administration, project selection, project evaluation, and report findings.

# PROGRAM ADMINISTRATION

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graph TD; A[Project Selection] --> B[Project Evaluation]; B --> C[Report on Findings];
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Project Selection

Project Evaluation

Report on Findings

# PROGRAM ADMINISTRATION

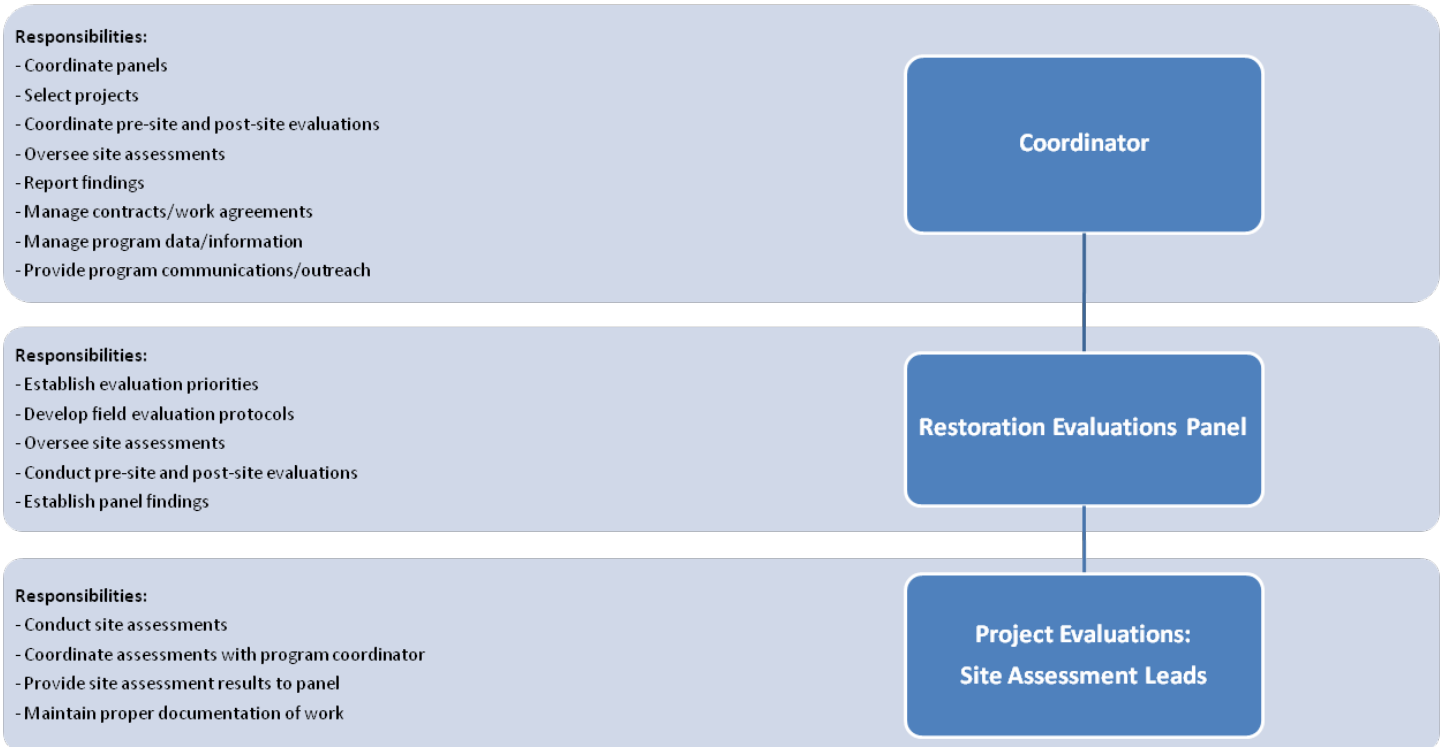
## Program Administration

The Restoration Evaluations Program will be coordinated by the Minnesota Board of Water and Soil Resources (BWSR) and the Minnesota Department of Natural Resources (DNR). BWSR and DNR will create a Memorandum of Understanding (MOU) that establishes shared agency roles and responsibilities, provides for the adequate commitment of resources to administer the program, and ensures consistency in program implementation. Although BWSR and DNR are jointly responsible for program administration, the two agencies will allow for the use of MOUs, contracts, or other administrative mechanisms to both successfully accomplish the work as required by M.S. 85.53, 97A.056, and 114D.50 and achieve the desired goals of delivering an efficient and effective program.

## Administrative Structure

The project team recommends an administrative structure be established that ensures the effective coordination of restoration evaluations between the three funds while minimizing operational costs. The team considered three alternative models for program administration, recommending an administrative model that could best achieve the goals for program efficiency and effectiveness and provide for consistency and transparency in program implementation.

## Administrative Model.



Recommended Administrative Model. The administrative model recommended by the project team establishes one restoration evaluation panel (REP) for all three funds, staffed by one coordinator for the panel and supported by a pool

of technical experts that would perform the site evaluations. The panel would be responsible for establishing priorities for project evaluations, reviewing the selection of projects, providing direction on the site evaluations, conducting post-site evaluations, and making determinations on the habitat restoration projects. The site assessment leads, drawn from the pool of technical experts, would be responsible for conducting the site evaluations and providing the results of the assessments to the panels for evaluation. The site assessment leads would work closely with the coordinator in conducting the pre-site evaluation, take direction from the panel on the site evaluations, and participate in the post-site evaluation to ensure panel queries are adequately addressed. This administrative model minimizes administrative costs by supporting just one coordinator and one panel to oversee the site evaluations for all three funds.

## **Roles and Responsibilities**

The project team recommends the following responsibilities be established for the program coordinator, restoration evaluations panel, and site assessment leads.

### Program Coordinator

The program coordinator would be responsible for coordinating the work of the restoration evaluation panel for the Clean Water Fund, Outdoor Heritage Fund, and Parks and Trails Fund. By law, the coordinator is responsible for the following:

- Identifying a sample of up to ten habitat restoration projects completed with funding from the Parks and Trails Fund, Outdoor Heritage Fund, and Clean Water Fund;
- Securing the restoration plans for the projects selected;
- Summarizing the findings of the restoration evaluation panel or panels; and
- Providing reports to the legislature on panel findings.

According to statute, the commissioner, the board, or both are responsible for assigning a coordinator each year, with DNR responsible for assigning a coordinator for Parks and Trails Fund habitat restoration evaluations, BWSR responsible for assigning a coordinator for Clean Water Fund evaluations, and DNR and BWSR jointly responsible for assigning an Outdoor Heritage Fund coordinator. However, the project team recommends that one coordinator be jointly appointed by the two agencies to manage the Restoration Evaluations Program for all three funds in order to ensure consistency in program implementation. Funding for the position would be supported proportionally by the three funds and a MOU would be utilized to allow for cooperative support for this position.

The team also recommends this position be created as a permanent position. Although the coordinator is not responsible for conducting site evaluations, it is recommended the coordinator attend all or a subset of the site assessments in order to validate the site evaluation process and respond to panel queries in development of the panel findings. The coordinator should therefore possess sufficient knowledge or technical skills related to habitat restorations or evaluation methodologies to contribute to program learning. The coordinator also would be responsible for program communications, data and information management, and contract management, as needed, and should possess the necessary skills and abilities to support these program functions. Given the knowledge, skills, and abilities required to adequately fulfill the job requirements of the position, the team believes the most efficient use of public funds would be support a permanent position that can provide consistency and continuity in program management and administration.

### Restoration Evaluations Panel

By the law, the restoration evaluations panel is responsible for:

- Evaluating habitat restorations relative to the law, current science, and the stated goals and standards in the restoration plans; and
- Providing findings on the evaluations, determining whether restorations are meeting planned goals, identifying problems with implementation of restorations and, if necessary, providing recommendations on improving restorations.

The project team also recommends the panel establish evaluation priorities each year, which could be based on a variety of factors such as predominant habitat type or geographic region. The REP would use these priorities to determine project selection and develop field evaluation protocols to guide the site assessments based on the types of projects selected. Panel membership would include technical experts that are responsible for directing the site assessments and evaluating the projects based on the results of the assessments. The panel also would be involved in both the pre-site evaluation, which involves review of the restoration plans and other project background information, and the post-site evaluation, which involves discussion with project managers on recommendations for improvement, if needed.

As required by state law, DNR and BWSR “may convene a technical evaluation panel” for each of the three funds. This language does not negate the option to convene the same panel for each of the three funds, which is the option recommended by the project team.

#### Site Assessment Leads

Under the administrative model recommended by the project team, the site evaluations would be conducted by site assessment leads. The site assessment leads would be responsible for conducting the site evaluations and providing the results of the assessments to the panels for evaluation. The site assessment leads must be knowledgeable and trained in applying evaluation methodologies to assess the effectiveness of habitat restorations and in the evaluation of habitat functions. The site assessment leads would work closely with the coordinator in conducting the pre-site evaluation, take direction from the panel on the site evaluations, and participate in the post-site evaluation to ensure panel queries are adequately addressed. Services provided by the site assessment leads could be negotiated through the use of contracts, MOUs, or work assignments.

#### Project Managers

Project managers are expected to actively participate in the restoration evaluation process. Project managers work with the program coordinator to provide the necessary project background information. Project managers are also expected to attend the site evaluations to identify for the site assessment leads the project work sites, to provide important project context, and answer any questions that may arise.

#### **Administrative Procedures**

Administrative procedures recommended by the project team include procedures governing panel membership and appointments, panel meetings, panel recommendations, reports and other public records, and the use of contracts and agreements in accomplishing program work. The panel may adopt additional operating procedures to fulfill its duties.

#### Program Coordination

The team recommends a program charter be developed that establishes the program’s purpose, scope, and expectations for interagency coordination of the program.

### Panel Membership

As provided by law, DNR and BWSR are responsible for convening a restoration evaluation panel, “comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise related to the project being evaluated.” DNR and BWSR may also “add a technical representative from a unit of federal or local government” (M.S. 85.53, 97A.056, 114D.50).

The project team recommends that panel members be selected based on their expertise and availability. It is recommended that panel members appointed have specific expertise in prairie/grassland, forest, wetland, or aquatic ecosystems and habitat restoration techniques, so that at least one panel member will have proficiency related to any project being evaluated. The panel may seek the advice and assistance from others with additional expertise to help the panel in its work. Panel members are to be appointed by the two agencies and the project team recommends panel members serve multi-year terms established by the agencies or as provided by law, with vacancies staggered between members to encourage program continuity. For each panel member, an alternate should be identified that is available to serve under certain circumstances, such as when a conflict of interest arises with a panel member. Once the panel is seated, panel members should work with the coordinator to elect a chair or co-chairs and other officers, such as recording secretary, to the panel that rotates annually. The chair or co-chairs will work closely with the program coordinator to ensure the effective coordination of the panel and assist in program communications, if necessary.

As provided by law, panel members shall avoid any potential conflicts of interest and may not be associated with the restoration projects being evaluated. The team recommends panel members not participate in or vote on a decision of the panel relating to a project in which the member has a potential conflict of interest. A member may be removed from the panel by the appointing authority for cause.

### Panel Meetings

As part of the operating procedures, the panel members are expected to participate in all meetings. A meeting occurs when a quorum is present and action is taken regarding a matter within the jurisdiction of the panel. The panel should meet at least quarterly to conduct the business of the panel. However, the chair or co-chairs shall be responsible for convening meetings of the panel as often as is necessary to fulfill its duties. Except where prohibited by law, the panel shall make available to the public meeting minutes, records of decisions, and votes of the members of the panel on any action taken in a meeting.

### Project Evaluations

As part of the operating procedures, the panel shall develop a process that provides for the evaluation of project effectiveness while keeping the process as simple as possible. The evaluation process must be fair, equitable, and transparent. The panel shall develop and implement a process that ensures individual project managers are included throughout the process, including the development of the panel’s recommendations. Project managers must cooperate in providing the coordinator, panel members, and the site assessment leads with project information and access to the project site for evaluation. Site evaluations must be preceded by notice to the project manager and, where possible, should be attended by the project manager.



The panel will develop a set of criteria that would exempt a project from undergoing a site evaluation and the panel shall make no findings or recommendations without a site evaluation or a determination based on these criteria that a site evaluation is not required.

#### Panel Findings

The panel shall present findings in a report to the legislature as consistent with state law. In developing findings, the panel shall determine whether restorations are meeting planned goals, identify problems with implementation of restorations and, if necessary, provide recommendations on improving restorations. Panel findings and recommendations must be documented and endorsed by a majority of the panel members.

#### Reports and Other Public Records

The coordinator is responsible for providing reports to the legislature and legislative councils on the findings of the panel. Copies of the report also must be made available to the public. The coordinator shall make and preserve all records of the program's official activities as provided by M.S. 15.17. Materials classified by law as other than public as defined in M.S. 13 or relating to closed meetings in accordance with M.S. 13D.03 are not required to be provided to the public.

#### Professional and Technical Services

The panel may seek the advice and assistance from others with additional expertise to help the panel in its work. The panel may enter into a written agreement with a federal or state agency in accordance with M.S. 15.51 through 15.57. The panel also may acquire professional and technical services by requests for bids, proposals, or other methods as provided by law. Determinations shall be based on best value, which includes an evaluation of price and other considerations including quality and vendor performance as provided by M.S. 16C.03. A best value determination must be based on the evaluation criteria detailed in the solicitation document. Contract procedures for professional and technical services will be done in accordance with M.S. 16C.08.

# Project Selection: *Overview*

The project selection process is a critical part of the Restoration Evaluations Program and requires coordination beyond selecting the projects to be evaluated. There are three essential steps to the project selection process, which include:

- **Determination of eligible projects.** The coordinator will need to establish the pool of habitat restoration projects from each funding source eligible to be evaluated under the Restoration Evaluations Program. The coordinator will need to work closely with various external parties to determine which legacy-funded projects are to be classified as habitat restoration projects. The goal is to establish a fair and equitable process that allows for the consistent application of standards to assist in determining both what constitutes a restoration project and when a project should be considered a habitat project.
- **Establishment of evaluation priorities.** The project team recommends the restoration evaluations panel be provided the option to establish annual evaluation priorities. Given limited program funding and a potentially large pool of habitat restoration projects eligible for evaluation, setting annual priorities that focus the work of the site assessments may improve program efficiency, reduce costs, and allow for the selection of less dominant restoration project types.
- **Project selection.** By law, the coordinator is responsible for identifying a sample of up to ten habitat restoration projects for each of the three funds – the Parks and Trails Fund, Outdoor Heritage Fund, and Clean Water Fund. The project team recommends a stratified random sampling of projects with suggested criteria for stratifying the projects.

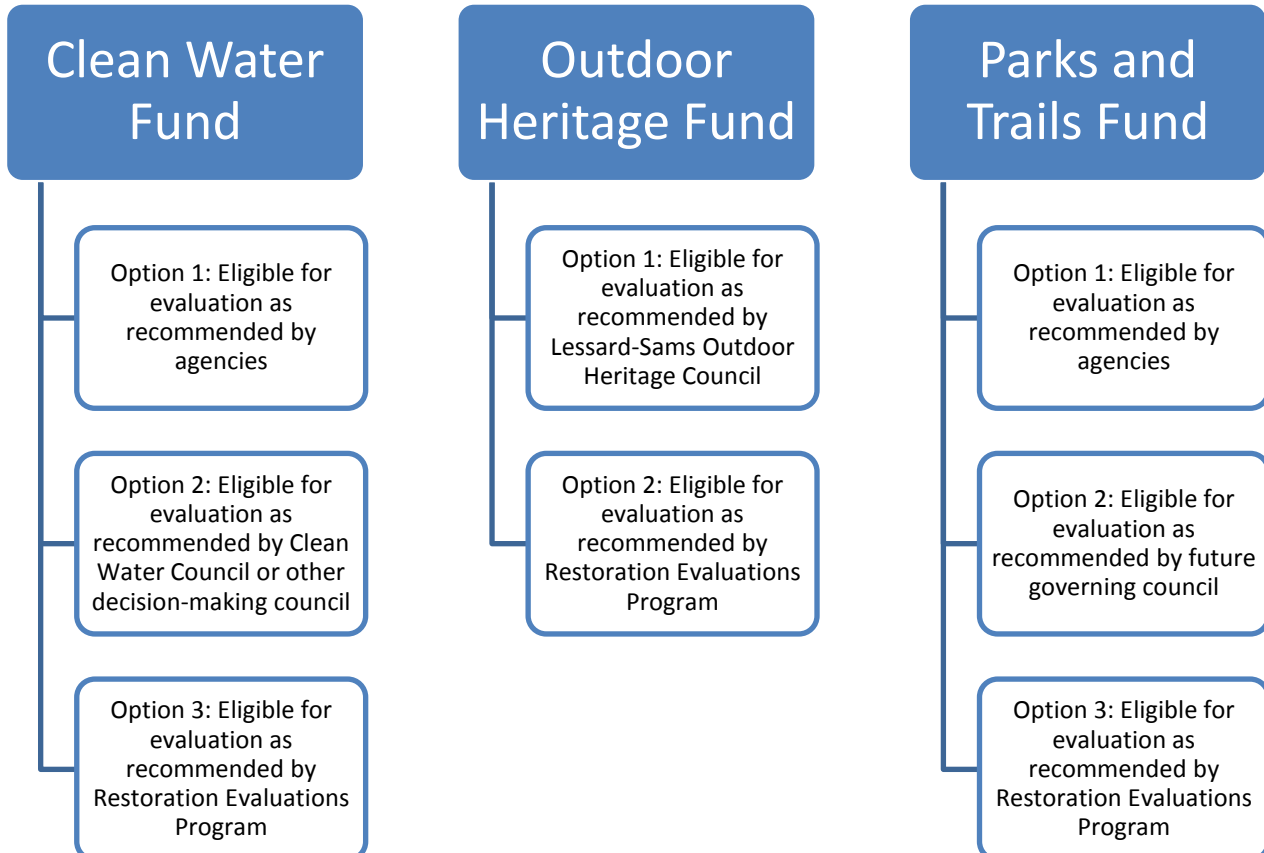


# Project Selection: *Project Eligibility*

## Project Eligibility

Coordinator establishes and maintains pool of habitat restoration projects eligible for evaluation annually

The coordinator is responsible for establishing the pool of habitat restoration projects eligible to be evaluated under the Restoration Evaluations Program. The goal is to ensure the consistent application of standards to assist in determining both what constitutes a restoration project and when a project should be considered a habitat project. For example, there may be instances, particularly in regards to Clean Water Fund projects, where habitat restoration is not a primary goal of a project, but may be a secondary goal, or where restoration actions result in the direct improvement of habitat. The coordinator will need to work with both the panel and external parties to determine the conditions under which restoration projects can be designated as habitat restoration projects. This determination will need to occur before projects may be selected for evaluation. The project team proposes several different alternative options for determining project eligibility. Additional options not proposed by the project team may be available and should be considered by the coordinator.



# Project Selection: *Evaluation Priorities*

## Evaluation Priorities

Restoration Evaluation Panel establishes evaluation priorities each year for project evaluations (e.g., predominant habitat type, geographic region)

The project team recommends the restoration evaluations panel be provided the option to establish annual evaluation priorities. Given limited program funding and a potentially large pool of habitat restoration projects eligible for evaluation, setting annual priorities that focus the work of the site assessments may improve program efficiency, reduce costs, and allow for the selection of less dominant restoration project types.

Once the panel is seated, the project team recommends that the first meeting of the panel include the establishment of annual evaluation priorities. Evaluation priorities could be based on a number of factors of interest to the panel. The panel may choose to establish evaluation priorities based on, for instance, predominant habitat type, allowing the panel to focus on a particular habitat type each year. The coordinator could then apply the project selection methodology to randomly select projects within that habitat type. Alternatively, the panel could establish priorities based on geographic region, such as the prairie pothole region or the metropolitan area. The panel could also establish priorities around types of restoration activities, such as prescribed burning, in order to allow for a comparative evaluation of restoration actions within a given year.

# Project Selection: *Random Sampling*

## Random Sampling

Coordinator selects projects to be evaluated based on panel chair guidance, utilizing project selection methodology to ensure randomized sampling

The project team recommends a stratified random sampling method to select projects for evaluation. A stratified sampling will allow for a diversity of projects to be evaluated by the panels, while a randomized selection will ensure an impartial and equitable selection process.

### **Project Selection Methodology**

The coordinator will use a stratified random sampling framework for selecting up to 10 projects from each of the three funds that will be evaluated by the restoration evaluation panel (REP) each year. Projects will be divided into sampling populations based on predetermined criteria developed by the REP. A random sample from each stratum will be selected, in a number proportional to the number of projects within each stratum. However, the coordinator may choose to use weighting in order to ensure some of the less dominant project types are also evaluated.

The strata, at a minimum, will be based on the following criteria:

- *Project type*: major habitat types will be equally represented within the selected pool, or the coordinator and REP chairs may establish priorities for evaluating specific major habitat types on a rotating basis.
- *Project stage*: a variety of projects, in different stages of implementation (establishment/treatment or post-establishment/post-treatment), will be assessed and the status of the project will be taken into consideration by evaluators and appropriate evaluation methodologies will be applied. Only projects where restoration work has been initiated will be evaluated.
- *Project complexity*: the complexity of projects, from simple to complex, will be represented.
- *Expected project durability*: a selection of projects that address symptoms of larger ecological system drivers will be included in the sample to provide performance information on how long the treatment is sustained following project implementation.
- *Project location*: projects assessed will be geographically distributed throughout the state, unless the coordinator and REP chairs choose to annually establish geographic focal areas for evaluations.
- *Project proposer*: a representative selection of projects based on proposer – governmental, non-governmental – will be included.

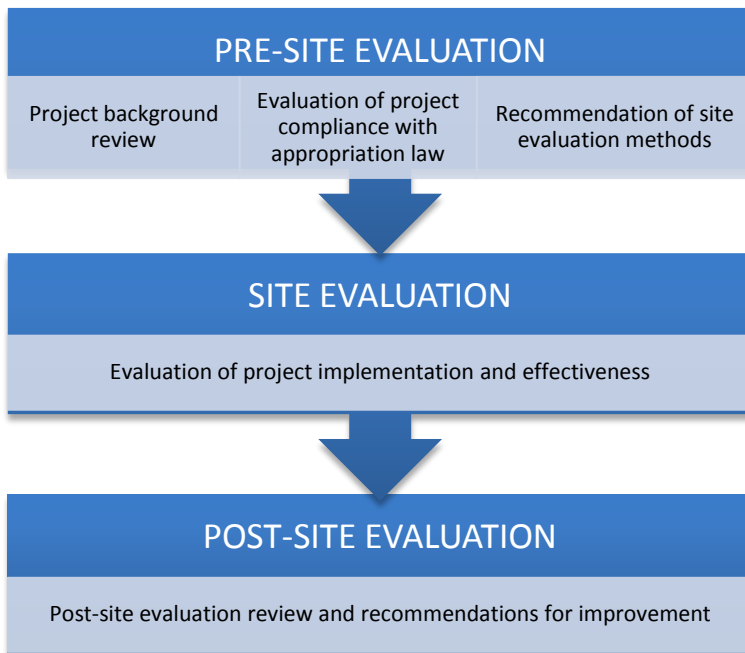
### Guiding Rules:

1. The coordinator will ensure there is no conflict of interest between members of the REP and selected projects. If a conflict of interest is determined, the coordinator and panel chair will appoint an alternate panel member to evaluate the specified project.
2. The number of projects to be evaluated will depend on the level of program funding. Evaluations will be completed within the available budget.
3. If more than five projects are contained within a stratum, the projects will be randomly selected. If less than five projects are contained within a stratum, two representative projects will be chosen by the coordinator or REP.
4. Once a project has been evaluated, it will not be returned to the pool of eligible projects to be evaluated, unless:
  - a. A project is flagged for a follow-up evaluation.
  - b. It is found beneficial to review a small number of project on an intermittent basis to encourage the continuous learning process.
  - c. It is found to be beneficial to assess projects post completion (e.g., Year 7) in order to determine if long-term maintenance needs are being met.

### Important Considerations:

Given limited program resources, it is not recommended that evaluations be conducted on projects that have not initiated on-the-ground work.

# Project Evaluation: *Overview*



The project evaluation process is divided into three primary steps.

- Pre-site evaluation: The pre-site evaluation allows for the coordinator to secure the restoration plans for projects selected for evaluation and to assess project compliance with appropriation law, as required by statute, and also allows for the panel to review selected projects and recommend evaluation methods to the site assessment leads.
- Site evaluation: The site evaluation allows the site assessment leads to conduct field visits to project sites to evaluate project implementation and assess effectiveness of the project to date.
- Post-site evaluation: The post-site evaluation provides for a review and discussion of the site evaluations and results in final panel determinations and recommendations for improvement to projects, if needed.

## Project Evaluation: Overview

The project evaluation process includes three primary components to satisfy requirements in law. Compliance monitoring or evaluation, which is part of the pre-site evaluation, answers the question, “Did the project adhere to requirements established in law?” This type of evaluation involves assessing specifically whether projects met legal and administrative requirements related to the use of legacy funds, which vary by fund. It satisfies the program requirement that the restoration evaluation panel “evaluate the restorations relative to the law” (M.S. 85.53, 97A.056, 114D.50).

The second component of this process is the implementation monitoring or evaluation, which is part of the pre-site and site evaluation, answers the question, “Did project managers do what they said they would do?” This type of evaluation involves determining whether restoration actions were implemented as proposed in the restoration plan, and if not, what factors contributed to a deviation from the plan. This requires both a review of the restoration plan (pre-site evaluation) and a field visit to verify implementation of the restoration project (site evaluation). External factors such as the weather play a critical role in determining both when restoration actions can be performed and often how successful these actions are, so project managers will be requested to participate in the site evaluation to provide this important context to the site assessment leads. Statute requires also that the panel evaluate restorations relative to current science and standards, so the implementation evaluation will also answer the question, “Did project managers use commonly accepted guidelines and best management practices in project implementation?” Again, the participation of the project managers in the site evaluation provides the necessary context for the site assessment leads to understand how the project managers actions utilized current science and best management practices to improve site conditions and adaptively managed any unforeseen issues.

Lastly, effectiveness monitoring or evaluation, which is part of the site and post-site evaluation, answers the question, “Were the restoration actions effective in meeting project goals and objectives?” The site assessment leads will record the site conditions, including any issues that threaten the continued or long-term success of the project, and make a preliminary determination of the success of the project to date based on the site assessment results. The panel will need to use best professional judgment in making a final determination, answering the question of whether the restoration was effective relative to project goals. At least initially, it is likely many of the projects evaluated will not have yet been fully completed, so a final determination of effectiveness is not possible. Panel members, instead, could make a determination based on project implementation, current project status, the identification of potential threats to the restoration, and the plan for dealing with these threats, whether a project is or is not on the correct trajectory for success.

# Project Evaluation: *Pre-Site Evaluation*

## PRE-SITE EVALUATION

Project background review

Evaluation of project compliance with appropriation law

Recommendation of site evaluation methods

The pre-site evaluation shall consist of a project background review, evaluation of project compliance, and a determination of recommended site evaluation methods.

### Pre-Site Evaluation

The pre-site evaluation satisfies the compliance evaluation, answering the question: “Did the project adhere to requirements established in law?” It also allows the panel, responsible for making final determinations on the projects, to review the projects and make recommendations on site evaluation methods to the site assessment leads.

#### Project Background Review

The program coordinator will collect project information to be used by the restoration evaluations panel and the site assessment leads in the pre-site evaluation review. This information will include the restoration plan and additional project background information, if available. The program coordinator will work with project managers of the selected projects to obtain this information.

As part of the pre-site evaluation, the coordinator is responsible for securing “the restoration plans for the projects specified,” (M.S. 85.53, 97A.056, 114D.50). Of the three legacy funds subject to this program, only projects funded by the Outdoor Heritage Fund are currently required in statute to prepare a restoration plan. It is assumed that the majority of restoration projects eligible for evaluation will have restoration plans available. However, if this is not the case, then the following is provided as guidance to project managers for recommended project documentation of restoration projects funded with legacy funds.

#### Project Documentation Standards:

- Project goals or objectives: The project should have clearly defined goals and objectives, against which project success can be measured.
- Project location and setting: A description of the project location should include, at a minimum, the county, township, range, and section where the project is located. A detailed site map with defined project boundaries or similar information (e.g., legal description, aerial photos) should also be included.
- Existing site conditions: Documentation of the existing site conditions is critical to both the development of a restoration plan and assessment of the effectiveness of restoration actions. Documentation of existing site conditions may include some or all of the following:
  - Description of site characteristics (topography, soils, hydrology, land cover, wildlife, special elements)
  - Quantitative baseline data, if available
  - Description of surrounding landscape conditions and land use
- Restoration work plan: The project should have a description of actions and an implementation schedule.
- Long-term management plan: If available, a description of the long-term management plan, including strategies for monitoring and maintenance of the restoration site, should be included.



### Project Compliance with Appropriation Law

The restoration evaluation panel is responsible for evaluating the restorations relative to the law. It is expected the coordinator, as part of the pre-site evaluation process, can gather the necessary information from project managers to ensure legal and administrative requirements were met in the use of legacy funds for habitat restoration projects. Because the requirements vary by fund, may change from year to year, and may be specific to individual appropriations, it is recommended that a quick checklist of requirements be established and maintained annually by the coordinator. For example, M.L. 2011, First Special Session, Chapter 6 provides for appropriations from the Outdoor Heritage Fund for FY 2012, the Clean Water Fund for FY 2012-13, and the Parks and Trails Fund for FY 2012-13, and provides for statutory changes both specific to each of the three funds as well as for all legacy funds.

For FY 2012 Outdoor Heritage Fund appropriations, project managers of habitat restoration projects are responsible for complying with requirements both specific to individual appropriations and applicable to all Outdoor Heritage Fund appropriations, including:

- An ecological restoration and management plan consistent with current conservation science and ecological goals for the restoration site must be prepared and retained for all restoration projects and all new lands acquired
  - Plan should consider soil, geology, topography, and other factors relevant to success of restoration project
  - Plan must include proposed timetable for implementation, including site preparation, establishment of diverse plant species, maintenance, and additional enhancement
  - Plan must identify long-term maintenance and management needs and how these will be financed
- All restoration and enhancement projects must be on land permanently protected by a conservation easement or public ownership or in public waters and open for public use, unless otherwise provided
- Consideration must be given to and timely written contact provided to Conservation Corps Minnesota for possible contracting of restoration and enhancement services. This written contact must be filed with the Lessard-Sams Outdoor Heritage Council within 15 days of execution.

There are no similar requirements established for habitat restoration projects funded by the Clean Water Fund and the Parks and Trails Fund.

The coordinator could review the applicable checklist with project managers as part of the project background and information gathering process. The panel would then review the results of the restoration requirement checklist and make a determination on project compliance as part of the evaluation process.

### Recommendations for Site Evaluation Methods

The panel is statutorily responsible for making determinations on the habitat restoration projects. However, in the administrative model recommended by the project team, the site evaluations are conducted by the site assessment leads, not the panel. In order to reduce the risk of site evaluations not being conducted to the satisfaction of the panel, it is recommended that the panel, during the pre-site evaluation, provide recommendations to the site assessment leads on potential site evaluation methods. An example flowchart of several types of evaluation methods appropriate for primary restoration activities is provided in Appendix II, however this list is considered illustrative not comprehensive. A menu of options such as these may be used by the panel to make recommendations on site-specific evaluations. The ability for the panel to provide recommendations on site evaluation methods ensures that the panel members will have a greater familiarity with the projects being evaluated and a greater understanding of the particular conditions present on a given site, improving the ability of the panels to make informed final determinations.

# Project Evaluation: *Site Evaluation*

## SITE EVALUATION

Evaluation of project implementation and effectiveness

### Site Evaluation

The site evaluation satisfies the implementation evaluation, answering the question, “Did project managers do what they said they would do?” It also provides the necessary context for the panel to make a determination of whether the restoration project was effective in meeting project goals.

After completion of the pre-site evaluation, the coordinator or site assessment leads will coordinate the site assessments for the habitat restoration projects selected for evaluation. Roles and responsibilities may vary depending on how the work of the site assessment leads is arranged – e.g., interagency agreements, contracts, etc. However, the coordinator or site assessment leads will work with project managers to arrange field visits to the project sites. It is recommended that project managers also attend the site visits to identify project work sites, provide important project context, and answer any questions that may arise. It is also recommended that the coordinator attend all or a portion of the site assessments to ensure effective communication of site assessment results.

As part of the site evaluation, the site assessment leads are responsible for producing the following primary products:

- **Evaluation Form for Habitat Restoration Projects:** An evaluation form has been developed by the project team to assist site assessment leads and the panel in answering the key evaluation requirements as required by law for the habitat restoration evaluations (Appendix III). This form, or an alternative evaluation form as recommended by the program, should be completed for every site assessment conducted for this program.
- **Photo Documentation:** Photo documentation should accompany each of the site evaluation forms.
- **Restoration Survey/Analysis:** As part of the site assessment, the site assessment leads should employ an appropriate survey methodology for the site being assessed. In some cases, this may include quantitative survey methods, while in other cases a qualitative discussion is more appropriate. The results from this analysis should be summarized by the site assessment leads and included as part of the materials to be used in the post-site evaluation by the panel.

The project team spent two field days visiting five different restoration projects to test the recommended site evaluation process. The sites visited included the following: an oak seeding project, a invasive species control (buckthorn) project, a shoreland restoration project, a prairie restoration project, and a drainage/native planting project. The project team conducted an informal pre-site evaluation, reviewing project background materials and recommending evaluation methods for the site assessments. The team also tested the evaluation form to ensure that it could adequately address the key evaluation requirements and meet the needs of the site assessment leads. An example of one of the forms filled out by the team is included in Appendix IV. Lastly, the team also conducted both quantitative and qualitative surveys of the sites.

A considerable amount of flexibility will be needed in dealing with the diversity of habitat restoration projects that are likely to be selected for evaluation through this program. Because of this, the project team chose not to either develop or recommend a specific evaluation methodology to be used in the site assessments, but instead devised a menu of acceptable methods for evaluating habitat restoration projects (Appendix II, as previously discussed) and provide habitat-specific restoration evaluation guidelines (Appendix V) as a reference for the key questions that should be considered, parameters that should be evaluated, and standards that should be referenced when conducting the site assessments. Again, like Appendix II, these evaluation guidelines are not meant to be comprehensive, but are illustrative of the types of considerations that will need to be given during restoration evaluations.

It is expected that both the site evaluation process and the supporting tools developed by the project team will continue to evolve as the program is implemented and developed over the years to meet both changing program needs and expectations of the public, practitioners, and the legislature.

# Project Evaluation: *Post-Site Evaluation*

## POST-SITE EVALUATION

Post-site evaluation review and recommendations for improvement

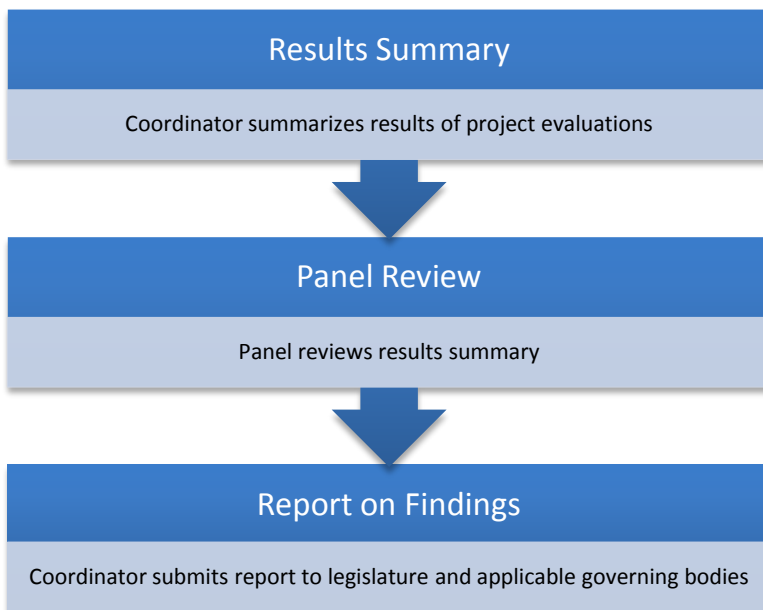
The post-site evaluation provides for a review and discussion of the site evaluations, recommendations for improvement to projects, and final panel determinations.

### **Post-Site Evaluation**

The purpose of the post-site evaluation is to provide the panel with the ability to make a final determination on whether the restoration project was effective in meeting project goals and objectives. Ideally, the post-site evaluation would involve the coordinator, panel, site assessment leads, and project managers in a review and discussion of the site assessment results. This format would contribute to the type of participatory decision-making that most likely would provide for continuous learning within the community of restoration practitioners. However, it may be unlikely given the limited program budget that this type of post-site evaluation format is feasible.

Regardless, the coordinator will be responsible for working closely with the site assessment leads to ensure all project information is compiled and ready for review by the panel prior to the post-site evaluation. The site assessment leads will be responsible for producing the site assessment reports for the panel and being available to answer any follow-up questions the panel may have regarding the site assessments during the post-site evaluation. The panel will be responsible for reviewing the results from the pre-site and site evaluations and making a determination on the projects under evaluation. It is recommended that, if project managers are not actively engaged in this discussion, that they have the opportunity to respond to the findings of the panel prior to a final determination by the panel on the projects. Once a final determination on the projects has been made by the panel, the coordinator will summarize the results and provide a report on the findings of the panel.

# Report on Findings: *Overview*



## **Results Summary and Panel Review**

After completion of the post-site evaluation, the coordinator will summarize the results of the project evaluations and provide a draft report to the panel for review. The panel will review the draft report and, if it approved by a majority of the members, return to the coordinator for submission to the legislature and applicable governing bodies. The project team recommends that the report complement web-based learning opportunities related to legacy-funded habitat restoration projects. The coordinator could work through a number of venues to ensure a web-based learning component is included as part of the final reporting process. Ideally, program sponsors are interested in seeing the two agencies not just comply with the law, but also contribute to a continuous learning environment for restoration practitioners and the general public.

## **Report on Findings**

As required by M.S. 85.53, 97A.056, and 114D.50, the coordinator shall summarize the findings of the panel and provide a report to both the legislature and other governing bodies, if applicable. The statutory requirements related to the report on findings neither specifies whether a separate report is required for each of the three funds, nor whether the report must be submitted on annual basis. However, given that a coordinator may be assigned “each year” to identify a sample of up to ten habitat restoration projects to be evaluated for each of the three funds (M.L. 2011, First Special Session, Ch. 6), it is assumed that the report on findings is part of an annual evaluation process. Also, given that the Outdoor Heritage Fund portion of the program funding is provided on an annual basis and the Lessard-Sams Outdoor Heritage Council requires an accomplishment plan to accompany the annual appropriations, it would be more challenging to communicate annual program outcomes without an annual report. The project team, though, recommends the findings of the panel be included in one report, with distinction made between project findings for each of the three funds. The team believes the more comprehensive the report is on describing restoration outcomes for all three funds, the greater the opportunity for learning among the broader community.

## **APPENDIX I: RESTORATION EVALUATIONS PROCESS OVERVIEW**

### **Step 0: Program Communication**

0.1 Program communications provide clear expectations to potential project managers

### **Step 1: Project Selection**

1.1 Coordinator determines project eligibility

1.2 Panel determines evaluation priorities

1.3 Coordinator randomly selects habitat restoration projects

### **Step 2: Project Background Review**

2.1 Coordinator initiates contact with Project Managers (PMs)

2.2 Coordinator collects and compiles background information for selected projects, including restoration plan and other documentation (e.g., photos, maps, etc.)

### **Step 3: Pre-site Evaluation – Evaluation of Project Compliance and Implementation**

3.1 Restoration Evaluation Panel (REP) reviews selected projects and background information

3.2 REP and coordinator ensure compliance with law (program requirement #1 – law) and review restoration plan implementation (program requirement #2 – current science)

3.3 REP recommends site evaluation methods for site assessment leads

### **Step 6: Site Evaluation – Evaluation of Project Effectiveness**

6.1 Coordinator works with site assessment leads and PM(s) to coordinate site assessments

6.2 Site assessment leads conduct site evaluation after initial project review to evaluate project implementation (program requirement #2 – current science) and assess whether project treatments were effective in meeting project goals (program requirement #3 – stated goals and standards)

## **Step 7: Post-site Evaluation – Site Evaluation Review with PM(s)**

7.1 REP and coordinator review results of site evaluation, with site assessment leads available for follow-up

7.2 REP and coordinator discuss with PM(s) lessons learned and recommendations for improvements, if needed

## **Step 8: Summary of Evaluation Results**

8.1 Coordinator summarizes results of REP(s) project evaluations

8.2 Coordinator submits reports to legislature and applicable governing bodies

## APPENDIX II: EVALUATION METHODOLOGY FLOWCHART

### EXAMPLE EVALUATION MEASURES AND METHODOLOGIES TO EVALUATE HABITAT RESTORATION PROJECTS

RESTORATION ACTIVITY (EXAMPLES)	EVALUATION MEASURES (EXAMPLES)	SURVEY METHODOLOGY (EXAMPLES)
<b>ESTABLISHING VEGETATION (RECONSTRUCTION)</b>		
Transplanting		Density, frequency counts, transects
Seeding	Establishment assessment / establishment survey plot	Qualitative discussion
Includes: vegetation seeding, container/live plant seedling, seed bank utilization, inter-planting natives, no mow projects		
<b>ALTERING EXISTING VEGETATION</b>		
Vegetation removal: trees, shrubs, herbaceous, invasive species, forest thinning	Competition survey plot	Density, frequency counts
Chemical removal: trees, shrubs, herbaceous, invasive species	Species presence-absence survey plot	Dominance tests
Mechanical removal: grazing, shearing, haying, raking, brushing, prescribed burning	Percent area treatment survey plot	Quadrats
		GPS traverse / acres
		Qualitative discussion
<b>SITE PREPARATION</b>		
Mechanical site prep	Percent area treatment survey plot	GPS traverse / acres
Chemical site prep	Percent surface biomass removal survey plot	Density, frequency counts
Prescribed burning site prep	Forest sampling metrics	Basal area, tree height, volume calculations, releves, vegetation sampling transects, species specific measures (point counts, rare species measures)
Bioengineering	Assessment of project materials maintenance / functioning— includes erosion control materials monitoring, appropriate bioengineering techniques applied, etc.	Qualitative discussion
<b>MONITORING VEGETATION</b>		
Site or vegetation condition	Species richness assessment	Basal area, tree height, volume calculations, releves, vegetation sampling transects, species specific measures (point counts, rare species measures)
Desired vegetation protection	Site condition assessment	Qualitative discussion (e.g., native plant community condition ranking guidelines)
Desired vegetation establishment and growth	Wetland, aquatic, grassland standard sampling metrics	Coarse / fine filter habitat approaches (photoplots, case studies)
Targeted species management goals / biodiversity	Targeted species protocols	
<b>HYDROLOGY RESTORATION</b>		
Ditch block	Hydrology monitoring	Wetland delineation
Embankment	Restoration according to plan specifications	Functional assessment (MNRAM, HGM)
Tile manipulation		Monitoring wells
Excavation		Piezometers
		Staff gages



# APPENDIX III: RESTORATION EVALUATION FORM FOR HABITAT RESTORATION PROJECTS

## PROJECT BACKGROUND

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Project Name: \_\_\_\_\_ Date of Review: \_\_\_\_\_  
Project Location (County/Township): \_\_\_\_\_  
Project Manager / Affiliation: \_\_\_\_\_  
Fund: OHF \_\_\_\_\_ CWF \_\_\_\_\_ PTF \_\_\_\_\_  
Project Start Date (Fiscal Year): 20\_\_\_\_\_  
Predominant Habitat Type: Forest \_\_\_\_\_ Prairie/Savanna/Grassland \_\_\_\_\_ Wetland \_\_\_\_\_ Aquatic \_\_\_\_\_ Other \_\_\_\_\_  
Project Type: Is habitat restoration a primary or secondary outcome of the project? Primary \_\_\_\_\_ Secondary \_\_\_\_\_

## PROJECT ASSESSMENT

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1. Does the implementation plan (plan) for the project reasonably allow for achieving the proposed project outcome(s)? Yes \_\_\_ No \_\_\_ If no, explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Is the plan based on current science (best management practices, standards, and guidelines)? Yes \_\_\_ No \_\_\_ If no, explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Is, has, or will the plan (be) implemented as intended? Yes \_\_\_ No \_\_\_ If no, explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. What is the status of the project:  
Treatment establishment phase \_\_\_\_\_  
Post-establishment phase \_\_\_\_\_
5. Where are the plans/record of project decisions/prescription worksheets located?  
\_\_\_\_\_  
\_\_\_\_\_
6. Are corrections or modifications needed to the project to better address proposed outcomes? Yes \_\_\_ No \_\_\_ If yes, explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Broadly speaking, has anything been done or planned that would detract from habitat? Yes \_\_\_ No \_\_\_ If yes, explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Is there any indication of a violation of existing environmental laws or rules (e.g., Wetland Conservation Act)?  
 Yes\_\_\_ No\_\_\_ If yes, explain. \_\_\_\_\_
9. Are considerations for long-term management practical and reasonable? Yes\_\_\_ No\_\_\_ If no, explain. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
10. Are follow-up evaluations needed? Yes\_\_\_ No\_\_\_ If yes, explain. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
11. Additional comments on the restoration project.  
 \_\_\_\_\_  
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**OVERALL EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes\_\_\_\_\_
- b. Minimally meet proposed outcomes\_\_\_\_\_
- c. Meet proposed outcomes\_\_\_\_\_
- d. Likely exceed proposed outcomes\_\_\_\_\_
- e. Greatly exceed proposed outcomes\_\_\_\_\_

Provide an explanation of the reason(s) for the determination, if not described above.

\_\_\_\_\_  
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**SITE ASSESSMENT LEAD**

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Site Assessment Lead(s) Conducting Site Review (Signature Required):

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# APPENDIX IV: SAMPLE FIELD TESTING (RESTORATION EVALUATION FORM)

## SAMPLE FIELD TESTING #1

### PROJECT BACKGROUND

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Project Name: Lost Valley Prairie Scientific and Natural Area

Date of Review: 22 June 2011

Project Location (County/Township): Washington 320 acres T27N R20W within sections 20, 21, 28, 29 (see also attached maps).

Project Manager / Affiliation: Ellen Fuge SNA Statewide Management Coordinator

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 2011

Predominant Habitat Type: Forest  Prairie/Savanna/Grassland  Wetland  Aquatic  Other

Project Type: Is habitat restoration a primary or secondary outcome of the project? Primary  Secondary

### PROJECT ASSESSMENT

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1. Does the implementation plan (plan) for the project reasonably allow for achieving the proposed project outcome(s)? Yes  No  If no, explain.  
Three project outcomes (1) reconstruction of prairie in old field between high quality hill prairies=10.5 acres =unit #11 on the map. (2) Brush and tree removal on slopes of high quality hill prairie<.5 acres west of unit #11 (3) Brush removal especially of buckthorn ( *Rhamnus cathartica*) in area near unit #9.
2. Is the plan based on current science (best management practices, standards, and guidelines)? Yes  No  If no, explain.
3. Is, has, or will the plan (be) implemented as intended? Yes  No  If no, explain. 1) Reconstruction=yes 2) brush removal hill prairie yes 3) brush removal –*R. cathartica* No-not without additional resources and new approaches...
4. What is the status of the project:  
Treatment establishment phase   
Post-establishment phase
5. Where are the plans/record of project decisions/prescription worksheets located?  
SNA adaptive management database Ecological and Water Resources Division MN DNR 500 Lafayette Road St Paul MN 55155.
6. Are corrections or modifications needed to the project to better address proposed outcomes? Yes  No  If yes, explain. (1) The prairie reconstruction utilized seed from the site –this was an important element of the work plan and consistent with SNA guidelines for planting. The diversity of the reconstruction could be enhanced by additional planting of species to reach the goal of higher quality prairie. Much of the best prairie is actually hill prairie so the availability of seed for the more mesic intervening “old field” was limited. (2) Tree and brush removal along the slopes of the high quality hill prairie appears to be very successful to improve the prairie quality. (3) The buckthorn removal project is a very large task and at this point needs a new strategy to control this invasive plant.

7. Broadly speaking, has anything been done or planned that would detract from habitat? Yes\_\_\_ No\_X\_\_ If yes, explain. Rare species persist and management plans for prescribed fire are rotational such that the entire site is not burning every year- with the intent to provide habitat for species that potentially could be reduced in abundance with a complete annual burn of the entire site.
8. Is there any indication of a violation of existing environmental laws or rules (e.g., Wetland Conservation Act)? Yes\_\_\_No\_\_X\_If yes, explain.
9. Are considerations for long-term management practical and reasonable? Yes\_\_\_ No X\_ If no, explain. Long term management especially of buckthorn will require intensified control measures with more funding. Prescribed Fire management of the higher quality prairie slopes combined with selective cutting seems to be effective at sustaining the high quality prairie and related rare species that prompted the protection of the site as an SNA. More frequent and persistent management of the brushy areas would also benefit and improve the results. At the current level of management, at best, the brush is not spreading or invading further, but the area occupied by the brush is also not being reduced.
10. Are follow-up evaluations needed? Yes\_X\_\_ No\_\_\_ If yes, explain. SNA program is in a position to record management activities in the spatial adaptive management database that provides a record of success and place to record changes in management approaches as new invasive species control measures evolve.
11. Additional comments on the restoration project.

## OVERALL EVALUATION

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The project will:

- a. Likely not meet proposed outcomes\_\_\_\_\_
- b. Minimally meet proposed outcomes\_\_X\_\_
- c. Meet proposed outcomes\_\_\_\_\_
- d. Likely exceed proposed outcomes\_\_\_\_\_
- e. Greatly exceed proposed outcomes\_\_\_\_\_

Provide an explanation of the reason(s) for the determination, if not described above.

Prairie reconstruction-Used the Minnesota County Biological Survey condition ranking guidelines for Upland Prairie Systems and determined that the old field reconstruction was about a "C to CD" quality prairie and includes some problem species such as smooth brome and redtop, and rather low diversity. Tree and shrub removal: Using the same condition ranking this removal clearly improved the quality of the hill prairie-a diverse population of native prairie plants exists and the condition ranking is "AB" quality. The presence of buckthorn in especially a moist ravine seems to be a continuing problem that could further degrade this northern area of the site and will require:

1. An intensified approach and financial resources to achieve control,
2. Reduce the area occupied by buckthorn and also other trees and brush, and
3. Reclaim these areas to prairie and improve existing prairie.

## PANEL MEMBER REPRESENTATION

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Restoration Evaluation Panel Representative at Site Review (Signature Required):

John Hiebert, Carmen Converse, Rachel Hopper, Steve Merchant, Ann Pierce, Greg Larson

## SAMPLE FIELD TESTING #2

### PROJECT BACKGROUND

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Project Name: Keystone Road Buckthorn Control

Date of Review: 05/26/2011

Project Location (County/Township): Mille Lacs County 16 acres Sec. 02- T39N, R26W Site # t03926w1020027 (see also attached maps).

Project Manager / Affiliation: Jeff Wilder DNR Division of Forestry

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 2010

Predominant Habitat Type: Forest  Prairie/Savanna/Grassland  Wetland  Aquatic  Other

Project Type: Is habitat restoration a primary or secondary outcome of the project? Primary  Secondary

Common Buckthorn is growing in the understory of two white pine/white spruce stands and an adjacent aspen stand. The white pine stands have been thinned within the last decade and the aspen stand is 22 years old. A diverse understory is beginning to develop, but if left uncontrolled, buckthorn distribution will expand rapidly and out-compete native vegetation and will significantly impede regeneration of conifer and hardwood seedlings. The two pine stands have had a previous buckthorn control project completed in 2006.

Buckthorn is scattered across all three stands and totals roughly 150-200 stems per acre. For stems 2 inches diameter and less treat basal bark with triclopyr ester (Garlon 4) mixed with an oil diluent and dye. For stump sprouts and stems larger than 2 inches diameter cut the stem and treat the stump with the same herbicide listed above. For seedlings, broadcast spray with same herbicide listed above.

### PROJECT ASSESSMENT

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1. Does the implementation plan (plan) for the project reasonably allow for achieving the proposed project outcome(s)? Yes  No  If no, explain.  
Outcomes: Reduce presence and distribution of buckthorn (*Rhamnus cathartica*) - a terrestrial invasive species of concern.
2. Is the plan based on current science (best management practices, standards, and guidelines)? Yes  No  If no, explain.
3. Is, has, or will the plan (be) implemented as intended? Yes  No  If no, explain.
4. What is the status of the project:  
Treatment establishment phase   
Post-establishment phase
5. Where are the plans/record of project decisions/prescription worksheets located?  
DNR Forestry Onamia Field Station PO Box 82, 305 Roosevelt Road, Onamia MN. Buckthorn management locations are mapped and tracked as part of the surrounding management site in the Silviculture and Roads Module (SRM). An SRM actual has been recorded for all treatment actions. Each on-site visit is recorded and includes information such as buckthorn distribution, treatment effectiveness, and need for additional treatment.
6. Are corrections or modifications needed to the project to better address proposed outcomes? Yes  No  If yes, explain.

Project was completed as planned with no complications. This site was treated previously in 2006 with the same method and with good success. We anticipate further reduction in stems per acre with this treatment. However, assessing control effectiveness may be problematic if counting just stems per acre. Contractors may need to differentiate between control on cut/sprayed stumps and newly formed sprouts in other portions of the site.

- 7. Broadly speaking, has anything been done or planned that would detract from habitat? Yes \_\_\_ No X If yes, explain.
- 8. Is there any indication of a violation of existing environmental laws or rules (e.g., Wetland Conservation Act)? Yes \_\_\_ No X If yes, explain.
- 9. Are considerations for long-term management practical and reasonable? Yes \_\_\_ No X If no, explain.  
Long term buckthorn removal may require annual treatments.
- 10. Are follow-up evaluations needed? Yes X No \_\_\_ If yes, explain.
- 11. Additional comments on the restoration project.  
We will anticipate periodic follow-up projects consisting of hand-pulling of buckthorn seedlings and/or herbicide applications. We recommend the seedlings be foliar sprayed with a water/Garlon mix when the rest of the ground layer is dormant in the fall. There will be less collateral damage to desirable plants.

## **OVERALL EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes \_\_\_\_\_
- b. Minimally meet proposed outcomes \_\_\_\_\_
- c. Meet proposed outcomes X \_\_\_\_\_
- d. Likely exceed proposed outcomes \_\_\_\_\_
- e. Greatly exceed proposed outcomes \_\_\_\_\_

Provide an explanation of the reason(s) for the determination, if not described above.

## **SITE ASSESSMENT LEAD**

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Site Assessment Lead(s) Conducting Site Review (Signature Required):

Paul Dubuque, John Hiebert, Rachel Hopper, Greg Larson, Steve Merchant, Ann Pierce, Chris Weir-Koetter

## APPENDIX V: HABITAT RESTORATION EVALUATION GUIDELINES REFERENCE

### Predominant Habitat Type: Aquatic Habitat Systems

(Team Lead: John Hiebert)

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#### Project Phase

*Question:* At what stage of the project is it being evaluated?

*Reasoning:* This will influence questions asked and type of assessment conducted. A treatment/establishment phase evaluation will assess project implementation, while a post-treatment/post-establishment phase evaluation will assess project effectiveness.

#### Treatment/Establishment:

When the project should be evaluated is dependent on the complexity of the project.

1. Simple project is defined as a shoreline site with a shallow slope, consisting primarily of existing turf grass along a shoreline and the project will reestablish native vegetation and only use limited erosion control materials.  
Recommendation - Two months post planting for seedling project, 3 to 4 months post planting for a seeded project.
2. Moderate Project is defined as a shoreline site consisting of turf grass and other non-native vegetation on a shallow to moderate slope with slight to moderate erosion occurring, where the project will reestablish native vegetation and use erosion control or bioengineering techniques. Recommendation – Should be checked at one month and three months post planting to assess the establishment of plants and the condition of erosion control materials.
3. Complex Project is defined as a shoreline site consisting of turf grass and other non-native vegetation on a moderate to steep slope with moderate to severe erosion occurring, where the project will reestablish native vegetation and use a variety of erosion control or bioengineering techniques. Recommendation – Should be checked at monthly post planting to assess the establishment of plants and condition of erosion control materials

#### Post-Treatment/Post-Establishment:

When the project should be evaluated is dependent on the complexity of the project.

1. Simple project is defined as a shoreline site with a shallow slope, consisting primarily of existing turf grass along a shoreline and the project will reestablish native vegetation and only use limited erosion control materials.  
Recommendation – It should be evaluated one year post planting to evaluate overwinter survival of plants, one year and three months post planting to evaluate summer survival and two year post planting.
2. Moderate Project is defined as a shoreline site consisting of turf grass and other non-native vegetation on a shallow to moderate slope with slight to moderate erosion occurring, where the project will reestablish native vegetation and use erosion control or bioengineering techniques. Recommendation – It should be evaluated one year post planting to evaluate overwinter survival of plants, one year and three months post planting to evaluate summer survival and then yearly for the next three years to assess the condition of the plantings and the erosion control materials.
3. Complex Project is defined as a shoreline site consisting of turf grass and other non-native vegetation on a moderate to steep slope with moderate to severe erosion occurring, where the project will reestablish native vegetation and use a variety of erosion control or bioengineering techniques. Recommendation – It should be evaluated one year post planting to evaluate overwinter survival of plants, one year and three months post planting to evaluate summer survival and then yearly for the next three years to assess the condition of the plantings and the erosion control materials.

## **Key Questions**

*Question:* What are the primary framing questions that should be considered specific to the habitat type?

*Reasoning:* This will allow for rapid initial assessment by the Restoration Evaluations Panel and clarify project activities needing further evaluation.

1. What were the project selection criteria and does this project meet these criteria and any other applicable criteria?
2. What types of organisms will benefit from this restoration?
3. What are the environmental benefits of this restoration?
4. What are the goals and objectives for completing this project?
5. Are the goals measurable and reasonable?
6. How are they assessing the success of this project?
7. Do they have a monitoring plan?
8. Do they have a long term maintenance plan?

## **Project Complexity (Major Project Activities: simple ↔ complex)**

*Question:* How straightforward or complex are the major project activities?

*Reasoning:* This will determine the level of complexity of the evaluation and identify potential projects for follow-up evaluations.

1. Simple Projects
  - a. No mow restoration projects
  - b. Limited removal of invasive species and inter-planting of natives
  - c. Sites with no erosion
  - d. Treating turf grass and replanting seeds or seedlings on to site
2. Moderate Projects – adding the following components to a simple project
  - a. In-lake emergent vegetation
  - b. Site fencing
  - c. Shoreline erosion and erosion control materials
  - d. Limited toe protection
3. Complex Projects – adding the following to moderate projects
  - a. Steep slopes
  - b. Existing major erosion
  - c. Ice ridges
  - d. Major toe protection
  - e. High wave action or large fetch
  - f. Bioengineering
  - g. Adding in-lake woody habitat

## **Key Parameters for Evaluation**

*Question:* What are the major habitat components that should be assessed to evaluate project implementation or effectiveness?

*Reasoning:* This will focus evaluations on specific areas of importance and will indicate which evaluation methodologies would be best suited for assessment.

1. Percentage of native vegetative cover in the buffer
2. Percentage of shoreline with in-lake woody habitat
3. Percentage of shoreline with emergent vegetation



4. Density of emergent vegetation along shoreline
5. Quality of maintenance plan, log and evaluation procedures
6. No weeds present in restoration and no obvious gaps in native species
7. Plants in restoration are healthy and actively growing based on the region of the state they are in and conditions of the site (soil type/sunlight)
8. Erosion control and other project materials (mulch, fencing) are being maintained and are still functioning appropriately

### **Major Guidelines/Standards for Project Activities**

*Question:* What are commonly accepted best management practices for major project activities? What commonly accepted guidelines or references would project managers use for this type of habitat project?

*Reasoning:* If project employs commonly accepted guidelines or standards of practice, assumption is that project goals will be met and project is in compliance with requirements.

1. Restore Your Shore – interactive restoration guide
2. Lakescaping for Wildlife and Water Quality – restoration book
3. MNDNR Division of Ecological and Water Resources Shoreland Management Guide
4. Score Your Shore – interactive shoreline habitat rating system
5. MNDNR invasive species guidelines
6. MNDNR Section of Fisheries Shoreland Habitat Program Maintenance Plan – checklist
7. State of Minnesota Office of Grants Management – rules and regulations
8. Prairie and wetland seeding guidelines

### **List of Potential Evaluation Methodologies**

*Question:* What are the commonly accepted methodologies to use for evaluation of projects?

*Reasoning:* Site assessment leads will need a menu of options from which to select for field site evaluations. The methodology selected will depend on project characteristics.

1. Score Your Shore – interactive shoreline habitat rating system
2. MNDNR Section of Fisheries Shoreland Habitat Program Maintenance Plan – checklist

## **Predominant Habitat Type: Forest Habitat Systems**

(Team Leads: Paul Dubuque, Steve Merchant)

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### **Project Phase**

*Question:* At what stage of the project is it being evaluated?

*Reasoning:* This will influence questions asked and type of assessment conducted. A treatment/establishment phase evaluation will assess project implementation, while a post-treatment/post-establishment phase evaluation will assess project effectiveness.

Treatment/Establishment:

- Planting – 3 to 5 years
- TSI – 1 to 3 years
- Site prep – 1 year
- Prescribed burning – 3-5+ years

Post-Treatment/Post-Establishment:

Most projects will be evaluated after a treatment activity or establishment.

### **Key Questions**

*Question:* What are the primary framing questions that should be considered specific to the habitat type?

*Reasoning:* This will allow for rapid initial assessment by the Restoration Evaluations Panel and clarify project activities needing further evaluation.

- What are the objectives? Treatment results must be tied with identified objectives.
- Are there measurable goals? How do we define short-term versus long-term goals? (5 years versus 30 years?)
- How does treatment connect/meet other plan goals? Example – DNR Division of Forestry uses the SRM management objective codes as a way to track and monitor progress toward meeting SFRMP goals.
- Others?

### **Project Complexity (Major Project Activities: simple ↔ complex)**

*Question:* How straightforward or complex are the major project activities?

*Reasoning:* This will determine the level of complexity of the evaluation and identify potential projects for follow-up evaluations.

1. Simple Projects
  - a. Planting
2. Moderate Projects
  - a. Timber stand improvement
  - b. Site prep
3. Complex Projects
  - a. Prescribed burning – will need clear objectives and attainable goals. Almost always will involve pre and post condition class determination. Often, there is a need for repeated burning treatments to consider the project a success. Weather, fire intensity, fuel types, etc. all play a role in influencing the activity.
  - b. Landscape level restoration projects

## **Key Parameters for Evaluation**

*Question:* What are the major habitat components that should be assessed to evaluate project implementation or effectiveness?

*Reasoning:* This will focus evaluations on specific areas of importance and will indicate which evaluation methodologies would be best suited for assessment.

Planting:

1. Tree survival
2. Percent stocking and distribution of planted trees
3. Trees/acre before and after
4. I&D concerns, herbivory
5. Follow-up needs

Timber Stand Improvement (includes mechanical hand release):

1. Woody or herbaceous stems/acre before and after
2. Percent stocking
3. Percent shading or completion with desired species
4. Follow-up needs

Site Preparation (includes mechanical and/or chemical applications):

1. Acres treated
2. Percent of mineral soil exposed or woody species sheared
3. Damage or removal of target species/residual trees
4. Rutting or other site damage (see site level guidelines and ECS program acceptable operating season to minimize compaction)

Prescribed Burning:

1. Percent removal or reduction in woody or herbaceous vegetation
2. Percent reduction in slash or other fuels reduction
3. Percent mineral soil exposure/seedbed conditions-duff reduction
4. Damage-mortality to residual stand
5. Crown scorch levels
6. Second order effects, such as understory

## **Major Guidelines/Standards for Project Activities**

*Question:* What are commonly accepted best management practices for major project activities? What commonly accepted guidelines or references would project managers use for this type of habitat project?

*Reasoning:* If project employs commonly accepted guidelines or standards of practice, assumption is that project goals will be met and project is in compliance with requirements.

1. MFRC Site Level Forest Management Guidelines 2005
2. MN DNR Forestry Regeneration Standards 2006
3. MNR Ontario Silvicultural Effectiveness Monitoring Manual 2001
4. MN DNR Prescribed Burn Handbook 2004
5. MN DNR Forestry Forest Development Manual

6. MN DNR Forestry Pesticide Use Guidelines 2006
7. Contract specifications
8. Others?

### **List of Potential Evaluation Methodologies**

*Question:* What are the commonly accepted methodologies to use for evaluation of projects?

*Reasoning:* Site assessment leads will need a menu of options from which to select for field site evaluations. The methodology selected will depend on project characteristics.

1. MFRC Guideline Monitoring Instruction & Appendix 2009: More detailed evaluation of forest management activities, many measurable parameters to consider.
2. MN DNR Forestry Tree Regeneration Standards: Includes the regeneration check form, plot size, distribution, etc. Can be used to evaluate tree planting, woody or herbaceous competition, absence or presence, and I & D herbivory, damage, etc.
3. MNR Ontario Regeneration Survey Manual: Three assessment methodologies similar to above.
4. MN DNR Forestry Contract Specifications: Methods may vary depending on the project.
5. MN DNR Forestry ECS Program Case Study Manual: Additional methods for measuring vegetation, biodiversity, etc.
6. MN DNR Forestry Cooperative Assessment Manual 2001: Methods for inventory of forest stands, etc.
7. Others?

## **Predominant Habitat Type: Prairie/Savanna/Grassland Habitat Systems**

(Team Leads: Carmen Converse, Chris Weir-Koetter)

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### **Project Phase**

*Question:* At what stage of the project is it being evaluated?

*Reasoning:* This will influence questions asked and type of assessment conducted. A treatment/establishment phase evaluation will assess project implementation, while a post-treatment/post-establishment phase evaluation will assess project effectiveness.

Treatment/Establishment:

Must be defined based on the type of project and its purpose. Complex projects might have stated project goals for years 1-3, years 4-5, year 9 and could be evaluated according to activities proposed to accomplish during each phase. For example, removal of non-native Scotch Pine in a proposed savanna restoration could be accomplished in year #1 (photo documentation); enhancement of native prairie extant at site following prescribed burn (visual/photo documentation), addition of forbs from a nursery or inter-seeding by year #4 (record establishment of 4-5 key species and % cover, presence/absence of invasive species).

Post-Treatment/Post-Establishment:

More additions of species using inter-seeding or transplants to increase biodiversity; follow-up on weed control and other management needs following the principles of adaptive management in later years of project. Years 4-5 and 9 could require a simple sampling of targets (vegetation transect, soil sample, vegetation condition, ranking goal assigned, additional photo documentation).

### **Key Questions**

*Question:* What are the primary framing questions that should be considered specific to the habitat type?

*Reasoning:* This will allow for rapid initial assessment by the Restoration Evaluations Panel and clarify project activities needing further evaluation.

- Goal=concepts/issues that may take many years.
- Activities=tasks to accomplish goal (who is involved and who has lead responsibility, when action takes place, cost, geographic location).
- Stated goals and activities are required-can be simple to complex.
- Schedule of actions to accomplish goals over time that includes evaluation to determine if the schedule is being met and if adjustments are needed.

### **Project Complexity (Major Project Activities: simple ↔ complex)**

*Question:* How straightforward or complex are the major project activities?

*Reasoning:* This will determine the level of complexity of the evaluation and identify potential projects for follow-up evaluations.

Simple Projects:

One or two of the following activities in an easily accessible location:

1. Prescribed burn
2. Haying
3. Invasive species control
4. Woody plant control
5. Grazing

6. Grassland/meadow reconstruction (from cropland, go-back or hayfield) using native grasses/sedges/forbs that are easily established

Complex Projects (examples):

1. Native prairie/meadow/savanna reconstruction with more diverse vegetation compositional goal; native prairie species + jack pine; black, pin, or bur oak, aspen for savanna or parkland
2. Difficult to control invasive species such as Wild Parsnip (or control of a combination of invasive species)
3. Combined management strategies e.g. patch-burn grazing, woody plant removal/fire, staged planting for diversification, rare species habitat with invasive species control
4. Mix of mesic, dry, wet prairie/savanna in project unit

More Complex Projects:

1. Landscape/watershed level project with multiple goals
2. Matrix communities with multiple goals (Blufflands, Prairie Forest Border lake region that includes fens, forests, game species, and other animal species such as prairie obligate insects, grassland birds, badgers, bison, management conflicts with rare species management, private grazing opportunities)

Considerations in simple or complex projects:

- Ease of access to targeted site
- Adjacent land use (herbicide drift, fire breaks, power lines etc.)
- Public use, development within the unit
- Weather/climate
- Breadth of partnerships for the project
- Equipment and staff availability
- Seed/propagule availability
- Scale of disturbance/ processes (hydrology, soil compaction, erosion, development, agriculture, etc.)
- Need for project manager for landscape watershed projects (staff, equipment, and monitoring and contract management)

### **Key Parameters for Evaluation**

*Question:* What are the major habitat components that should be assessed to evaluate project implementation or effectiveness?

*Reasoning:* This will focus evaluations on specific areas of importance and will indicate which evaluation methodologies would be best suited for assessment.

Maintain or construct habitat for:

- Game species (Pheasants, Prairie Chicken, Sharp-tail Grouse, Various Duck species)
  - Multiple wildlife groups
  - Animal species of greatest conservation need
  - Rare species/ aggregations (e.g. Western Prairie Fringed Orchid, Dakota Skipper, Western Hognose Snake, Chestnut-collared Longspur)
  - Native habitats as described in National Wetland Inventories, native plant communities
  - Habitats in complex landscape/ core areas and watersheds (e.g. Aspen Parkland, Buffalo River/Red River, Glacial Ridge, Prairie Coteau, Glacial Lakes, MN River Valley, Wild Rice River, Rock River, Blufflands)
- (Note: Goals could also be soil stabilization, water quality as related to prairie/grassland habitats)

## **Major Guidelines/Standards for Project Activities**

*Question:* What are commonly accepted best management practices for major project activities? What commonly accepted guidelines or references would project managers use for this type of habitat project?

*Reasoning:* If project employs commonly accepted guidelines or standards of practice, assumption is that project goals will be met and project is in compliance with requirements.

Reconstruction Guidelines:

- Minimum=*Native vegetation establishment and enhancement guidelines* MN BWSR 2009.

Examples of other resources follow:

- Field Guides to the Native Plant Communities of Minnesota (MN DNR 2005)
- MN DNR plant database for current country plant lists
- Condition ranking guidelines for native plant community quality (MN DNR)
- Element Occurrence ranking guidelines and observation database (BIOTICS NatureServe)
- Relevé data collection standards (MN DNR)
- MPCA wetland quality monitoring protocol
- MN DNR Invasive species guidelines
- Aerial survey protocol when applicable
- Remote sensing protocol for change detection
- *Going Native: A prairie restoration handbook for Minnesota landowners* (MN DNR 2000)
- *The Tallgrass Restoration Handbook: For Prairies, Savannas, and Woodlands* [Stephen Packard (Editor), Cornelia F. Mutel (Editor)]
- *Restoring Canada's Native Prairies* (John P Morgan, Douglas Collicutt, Jacqueline Thompson)
- *Measuring and Monitoring Plant Populations* (Caryl L. Elzinga, Ph.D., Daniel W Salzer, John W Willoughby; BLM Technical Reference 1730-1; July 1998)
- *Coefficients of Conservatism for the Vascular Flora of Dakotas and Adjacent Grasslands* (Northern Great Plains Floristic Quality Assessment Panel, 2001, USGS)

Management Guidelines:

- DNR Invasive Species Guidelines
- Prescribed burn plan guidelines for site prepared and followed using DNR Operational Order #47 Prescribed Burn Guidelines and the DNR Prescribed Burn Handbook
- Chemical application standards followed using DNR Operational Order #59 Pesticides and Pest Control and per manufacturer's pesticide label and MSDS to included allowed chemicals/surfactants for targeted activity/site, applicator requirements, application period/timing/effectiveness and avoidance of damage to non-targeted features
- The Nature Conservancy Weed Control Methods Handbook: Tools and Techniques for Use in Natural Areas
- Tiling, disking, planting, haying follow agency standards factors such as consider soil compaction, slope, time of year, nesting, pollination, sanitation
- Grazing plan prepared (targeted outcomes. timing, duration, type of grazer, site characteristics)
- Monitoring protocol for targets and databases available to store/link relevant data (point counts for birds using standard protocol, water samples, game harvests, specimens curation using Bell Museum standards, remote sensing/GIS data standards as applied by DNR BWSR)
- Tracking of alteration of hydrology using MPCA/DNR standards (meadows and complexes)

## **List of Potential Evaluation Methodologies**

*Question:* What are the commonly accepted methodologies to use for evaluation of projects?

*Reasoning:* Site assessment leads will need a menu of options from which to select for field site evaluations. The methodology selected will depend on project characteristics.

Project has clearly stated goals (Y/N). If no, project should not continue.

Example: Complex prairie reconstruction

- Follows applicable guidelines/standards (Y/N)

Evaluation year 2-3 (Y/N to below activities)

- # desired plants established
- Mowing conducted to control weedy plants
- Populated Adaptive Spatial Management Database
- Overall evaluation=
  1. Will likely not meet project goal
  2. Will minimally meet project goal
  3. Will meet project goal
  4. Will likely exceed project goal
  5. Will greatly exceed project goal

Evaluation year 4-5 (Y/N?)

- #desired plant established
- Mow/burn
- Control invasive plants
- Populated ASMD, re-set goals if desirable
- Overall evaluation=
  1. Will likely not meet project goal
  2. Will minimally meet project goal
  3. Will meet project goal
  4. Will likely exceed project goal
  5. Will greatly exceed project goal

Evaluation year 9

- Condition ranking guidelines rank (from A best to –D poor) goal achieved? (Y/N)
- Overall evaluation=
  1. Will likely not meet project goal
  2. Will minimally meet project goal
  3. Will meet project goal
  4. Will likely exceed project goal
  5. Will greatly exceed project goal

If overall rank= 3-5, go to maintenance phases (ASMD) or adapts plan and re-set goals or abandon project.

Example: Native prairie maintenance with rare species

- Follows applicable guidelines/standards (Y/N)

Evaluation year 2-3 (Y/N to below activities)

- Collected baseline data on targeted rare species collected and entered into database
- Mowing/prescribed burn conducted to control woody plants and invasive species in to help maintain population of targeted species
- Populated Adaptive Spatial Management Database.
- Overall evaluation=
  1. Will likely not meet project goal



2. Will minimally meet project goal
3. Will meet project goal
4. Will likely exceed project goal
5. Will greatly exceed project goal

Evaluation year 9

- Species sampled using standard protocol and data entered? (Y/N)
- Element Occurrence ranking goal for species achieved? (Y/N)
- Populated ASMD, re-set goals if desirable? (Y/N)
- Overall evaluation=
  1. Will likely not meet project goal
  2. Will minimally meet project goal
  3. Will meet project goal
  4. Will likely exceed project goal
  5. Will greatly exceed project goal

## **Predominant Habitat Type: Wetland Habitat Systems**

(Team Lead: Greg Larson)

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### **Project Phase**

*Question:* At what stage of the project is it being evaluated?

*Reasoning:* This will influence questions asked and type of assessment conducted. A treatment/establishment phase evaluation will assess project implementation, while a post-treatment/post-establishment phase evaluation will assess project effectiveness.

Treatment/Establishment:

Work on site is underway or has been completed for less than three full growing seasons.

Post-Treatment/Post-Establishment:

Work has been completed for more than three complete growing seasons. If a vegetation-related project, a post-review may be warranted, especially if issues are identified during an initial review during establishment.

### **Key Questions**

*Question:* What are the primary framing questions that should be considered specific to the habitat type?

*Reasoning:* This will allow for rapid initial assessment by the Restoration Evaluations Panel and clarify project activities needing further evaluation.

- What is project purpose? Questions should be based on intended outcomes.

### **Project Complexity (Major Project Activities: simple ↔ complex)**

*Question:* How straightforward or complex are the major project activities?

*Reasoning:* This will determine the level of complexity of the evaluation and identify potential projects for follow-up evaluations.

Simple Projects:

- Vegetation-only prescriptions

Complex Projects:

- Vegetation and structural prescriptions

### **Key Parameters for Evaluation**

*Question:* What are the major habitat components that should be assessed to evaluate project implementation or effectiveness?

*Reasoning:* This will focus evaluations on specific areas of importance and will indicate which evaluation methodologies would be best suited for assessment.

Affirmative responses to the following questions would suggest that the project will likely meet or exceed project outcomes:

1. Were commonly accepted specifications used to establish the project?
2. Does a restoration plan exist?
3. Is the site accessible to facilitate maintenance?
4. Will the project sponsor/manager likely maintain the project and perform adaptive management, as needed?

5. Is site management, such as erosion control, site prep, etc. adequate?
6. Does adjacent land use poses a threat to long-term efficacy of the project, including threats from invasive species?
7. Have exceptional weather conditions influenced outcomes?
8. Have corrections and modifications to the project, if any, been planned and considered?

### **Major Guidelines/Standards for Project Activities**

*Question:* What are commonly accepted best management practices for major project activities? What commonly accepted guidelines or references would project managers use for this type of habitat project?

*Reasoning:* If project employs commonly accepted guidelines or standards of practice, assumption is that project goals will be met and project is in compliance with requirements.

- BWSR Native Vegetative Establishment and Enhancement Guidelines, if applicable
- USDA Practice Standards and Specifications, if applicable
- BWSR Wetland Restoration Guide
- Standard operation and maintenance plans available from BWSR, DNR, NRCS, or other applicable agencies

Except for BWSR Native Vegetative Establishment and Enhancement Guidelines (as referenced in legislation), the emphasis should be that 1. A commonly accepted standard and specification was used. 2. Plans exist. 3. The project is or was properly installed. 4. A plan for the long-term maintenance was developed. 5. The project sponsor will perform adaptive management and maintenance in a timely manner.

### **List of Potential Evaluation Methodologies**

*Question:* What are the commonly accepted methodologies to use for evaluation of projects?

*Reasoning:* Site assessment leads will need a menu of options from which to select for field site evaluations. The methodology selected will depend on project characteristics.

Assessment techniques such as MNRAM could be used on “traditional” wetland restoration/rehabilitation projects, but then not until post-establishment, unless a review is done early to gain a before-and-after perspective. The initial review should consist of assessment the project broadly from the following perspective:

1. WILL LIKELY NOT MEET THE PROJECT PURPOSE AND GOAL.
2. WILL MINIMALLY MEET THE PROJECT PURPOSE AND GOAL.
3. WILL MEET THE PROJECT PURPOSE AND GOAL.
4. WILL EXCEED THE PROJECT PURPOSE AND GOAL.
5. WILL GREATLY EXCEED THE PROJECT PURPOSE AND GOAL.

# Legacy Fund Restoration Evaluations, Fiscal Year 2012

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## **Report to the Minnesota Legislature**

Senate Environment and Natural Resources Committee  
House Environment, Energy and Natural Resources Policy and Finance Committee  
House Legacy Funding Division

Lessard-Sams Outdoor Heritage Council  
Clean Water Council

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

Date of Report: November 30, 2012

## Legislative Charge

The statutory requirements for this report, as amended in M.L 2011, First Special Session, Ch 6, are:

**Parks and Trails Fund: M.S. 85.53, Subd. 5.** Restoration evaluations. The commissioner of natural resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two other representatives with expertise related to the project being evaluated. The commissioner may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the commissioner may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with parks and trails funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the parks and trails fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the parks and trails fund may be used for restoration evaluations under this section.

**Outdoor Heritage Fund: M.S. 97A.056, Subd. 10.** Restoration evaluations. The commissioner of natural resources and the Board of Water and Soil Resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise in the project being evaluated. The board and the commissioner may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the board and the commissioner may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with outdoor heritage funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chair of the Lessard-Sams Outdoor Heritage Council and the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the outdoor heritage fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the outdoor heritage fund may be used for restoration evaluations under this section.

**Clean Water Fund: M.S. 114D.50, Subd. 6.** Restoration evaluations. The Board of Water and Soil Resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise related to the project being evaluated. The board may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the board may assign a coordinator to identify a sample of up to ten habitat restoration projects completed with clean water funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel and provide a report to the chairs of the respective house of representatives and senate policy and finance committees with jurisdiction over natural resources and spending from the clean water fund. The report shall determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the clean water fund may be used for restoration evaluations under this section.

## **Contributors**

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### **Estimated cost of preparing this report** (as required by Minn. Stat. 3.197)

	MN DNR / BWSR
Total value of staff time:	\$4,700
Production / duplication	<u>\$100</u>
Total	\$4,800

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## Executive Summary

State law (M.L. 2011, First Special Session, Ch. 6) directs restoration evaluations to be conducted on restoration projects completed with funds from the Clean Water Fund (M.S. 114D.50), Outdoor Heritage Fund (M.S. 97A.056), and Parks and Trails Fund (M.S. 85.53). As provided by law, the Minnesota Board of Water and Soil Resources (BWSR) is the responsible agency for Clean Water Fund restoration evaluations; the Minnesota Department of Natural Resources (DNR) is the responsible agency for Parks and Trails Fund restoration evaluations; and DNR and BWSR are jointly responsible for Outdoor Heritage Fund restoration evaluations. DNR and BWSR (hereafter referred to as the Agencies) have elected to combine the administration and reporting for the three statutory requirements in a single Legacy Fund Restoration Evaluation program. Accordingly, one restoration evaluation panel was created and one combined evaluation report will be produced. The Agencies intend to utilize this formalized and elevated process of assessing project performance to improve “on the ground” conservation outcomes across the State. Working collaboratively with project managers to identify gaps and capture lessons learned in restoration implementation, the agencies plan to disseminate this valuable information back to practitioners to reinforce existing conservation efforts.

Each of the three Legacy Funds reported on has a distinct purpose and distinct focus on restoration projects directed by the Fund’s purpose. The constitutionally directed purpose of the **Clean Water Fund** is **to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation**. Accordingly the primary goal of Clean Water Fund restoration projects is to restore water quality. The Constitutionally directed purpose of the **Outdoor Heritage Fund** is to **restore, protect, and enhance wetlands, prairies, forests, and habitat for fish, game, and wildlife**. Outdoor Heritage Fund restorations are strongly focused on improving specific wildlife habitat conditions. The Constitutionally directed purpose of the **Parks and Trails Fund** is to **support parks and trails of regional or statewide significance**. Restoration projects completed through the Parks and Trails Fund are focused on ecological restoration of natural areas towards a specific community condition on State or Regional park lands. For each of the Funds, projects are evaluated relative to the stated goals of the individual project and with an understanding of the purpose of the particular Legacy Fund.

Nine of eighteen restoration project evaluations completed during the summer of 2012 are described in this report. The remaining nine will be presented in the forthcoming Fiscal Year 2013 report. As directed in statute projects are evaluated relative to:

*the law, current science, and the stated goals and standards in the restoration plan.*

All projects evaluated were determined to have been implemented in compliance with applicable appropriation laws and reporting requirements. Applicable laws for each Fund are addressed in the Project Evaluation section. Observations by field assessors on project effectiveness, trajectory (estimated outcomes based on current conditions) and application of current science are summarized in individual project evaluations and detailed in standard project evaluation forms (Appendix I). Statute for restoration evaluations also directs the report to:

*determine if the restorations are meeting planned goals, any problems with the implementation of restorations, and if necessary, make recommendations on improving restorations.*

The restoration evaluation panel found that projects are overall on trajectories that have the potential to meet planned project goals. However, based on review of site assessments, the restoration evaluation panel did identify three needs and provided accordant recommendations for improving future restorations and the restoration evaluation process.

<u>Need</u>	<u>Recommendation</u>
<p>1. Improved consistency among the different funds in level of basic planning and implementation documentation.</p> <p>(Legacy restoration projects typically fulfill this need though required and internal documentation. The recommendations are intended to improve restoration outcomes though consistency in documentation of essential components)</p>	<ul style="list-style-type: none"> <li>▪ All project narratives should include site specific outcome based goals.               <ul style="list-style-type: none"> <li>○ All projects evaluated have met the existing reporting requirements for each fund to include measurable outcomes. This recommendation is directed at encouraging project managers to briefly state outcome based goals for discrete implementation sites in relation to overall project outcomes.</li> </ul> </li> <li>▪ Project reporting should include essential information on project implementation for ongoing management.               <ul style="list-style-type: none"> <li>○ All projects evaluated have met the existing requirements for each fund to report on project implementation. In some instances this set of information may not provide adequate site specific planning and implementation documentation to serve as guidance for future managers. The set of project site data listed in the Summary of Findings may serve as a guide for the most useful project site data</li> </ul> </li> <li>▪ Project managers should be provided examples of simple well-designed restoration planning and implementation documentation to guide the planning and reporting process</li> </ul>
<p>2. Restoration training</p>	<ul style="list-style-type: none"> <li>▪ Current knowledge of applied restoration practice, including lessons learned from field practice and restoration evaluations, should be disseminated though Statewide restoration training programs</li> </ul>
<p>3. Evaluation process improvement</p>	<ul style="list-style-type: none"> <li>▪ Selected subset of evaluated projects should be reevaluated in future years to track critical aspects of project effectiveness</li> </ul>

## Introduction

In 2008, Minnesota voters approved a proposed constitutional amendment to conserve our natural and cultural heritage. The Clean Water, Land, and Legacy amendment dedicates an increase in the state sales tax of three-eighths of one percent for 25 years to protect, enhance, and restore our outdoor heritage, surface and ground water resources, parks and trails, and arts and cultural heritage. Passage of the Legacy amendment reinforces the state's continuing efforts to conserve the diversity of lands, waters, and fish and wildlife that provide the foundation for Minnesota's high quality of life and also brings strong expectations for a greater level of transparency and accountability in the use of these public funds.

In the interest of greater transparency and accountability, State law (M.L. 2011, First Special Session, Ch. 6) directs restoration evaluations to be conducted on habitat restoration projects completed with funds from the Clean Water Fund (M.S. 114D.50), Outdoor Heritage Fund (M.S. 97A.056), and Parks and Trails Fund (M.S. 85.53). The law directs BWSR and DNR to convene for each of the three funds a restoration evaluation panel (hereafter referred to as the Panel) containing at least five technical experts who will evaluate a sample of up to 10 restoration projects annually. Statute also allows DNR and BWSR to assign a coordinator for the Panel who is responsible for both selecting the projects to be evaluated by the panel and providing reports to the legislature and governing councils on the findings of the panel, determining whether restorations are meeting planned goals, identifying problems with implementation of restorations and, if necessary, providing recommendations on improving restorations.

Restoration is a long term process that requires ongoing monitoring and investment of material, labor and financial support to achieve targeted goals. Evaluating restoration project implementation and progress towards projected goals over multiple years is integral to ensuring desired outcomes. In fulfilling the statutory requirements for restoration evaluations the Agencies hope to facilitate improved outcomes of Legacy Fund restorations through ongoing outcome based assessments.

## Restoration Evaluation Process

### Process Development

In preparation for fulfillment of the new restoration evaluation requirements, BWSR and DNR leadership initiated an interagency project during 2011, staffed by a project manager and an interdisciplinary team of technical and professional experts, to cooperatively develop recommendations for the formation and implementation of the program, ensuring the effective coordination between the two responsible agencies and consistency in program development. As a result of this project a report was produced in November of 2011 that now serves as the guidance document for program administration, project selection, project evaluation, and reporting on findings ([http://www.isohc.leg.mn/materials/resource\\_doc\\_plan/Rest\\_Eval\\_Program\\_Legacy.pdf](http://www.isohc.leg.mn/materials/resource_doc_plan/Rest_Eval_Program_Legacy.pdf)). In the winter of 2011-2012 the Agencies created a job description for a full time restoration evaluation program coordinator position to be housed in DNR. After an interagency interview and selection process a coordinator was hired at the end of March 2012. In the spring and summer of 2012 the Panel was identified and seated, eligible projects were selected, project information was gathered, appropriate site assessors were identified and site visits were scheduled for the 2012 summer field season.

## Roles and Responsibilities

### *Evaluation Panel*

By the law, the Panel is responsible for:

- Evaluating restorations relative to the law, current science, and the stated goals and standards in the restoration plans; and
- Providing findings on the evaluations, determining whether restorations are meeting planned goals, identifying problems with implementation of restorations and, if necessary, providing recommendations on improving restorations.

Statute requires that the Panel includes:

- a. *one technical representative from the Board of Water and Soil Resources,*
- b. *one technical representative from the Department of Natural Resources,*
- c. *one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities,*
- d. *two representatives with expertise related to the project being evaluated.*
- e. *may add a technical representative from a unit of federal or local government*

Members of the Restoration Evaluation Panel are unpaid technical experts who were chosen to fulfill the statutorily required agency representation and provide a balance of needed expertise. To the extent practicable Panel members have specific expertise in prairie/grassland, forest, wetland, or aquatic ecosystems and habitat restoration techniques, so that at least one panel member will have proficiency related to any project being evaluated. The panel may seek advice and assistance from others including Site Assessors with additional expertise to help the panel in its work.

Members were selected from a pool of recommendations submitted by agency staff and other partner organizations. Appointed Panel members are asked to serve terms spanning two fiscal years. As statute permits, a sixth member from a federal agency was chosen to provide additional expertise and perspective to the evaluation process. Panel members serving during Fiscal Years 2012 and 2013 are shown below.

Statutorily  
required member  
(as listed above)

	<u>Panel member:</u>	<u>Affiliation:</u>
a.	Greg Larson	MN Board of Water and Soil Resources
b.	Chris Weir-Koetter	MN DNR Parks and Trails
c.	Sue Galatowitsch	University of Minnesota
d.	Greg Berg	Stearns Co. Soil and Water Conservation District
d.	Greg Hoch	MN DNR Fish and Wildlife
e.	Mark Oja	USDA Natural Resource Conservation Service MN

### *Program Coordinator*

The program coordinator is responsible for coordinating the work of the Panel for the three Funds. By law, the coordinator is responsible for:

- Identifying a sample of up to ten habitat restoration projects completed with funding from the Parks and Trails Fund, Outdoor Heritage Fund, and Clean Water Fund;
- Securing the restoration plans for the projects selected;
- Summarizing the findings of the Panel; and
- Providing reports to the legislature on panel findings.

As recommended by the interagency team that guided the development of the restoration evaluation process, the Agencies worked cooperatively to hire a single coordinator to ensure consistency in program implementation. A proportionate amount of the three Legacy Funds is used to support the coordinator position and a MOU between the Agencies guides cooperative support for this position. The coordinator position is currently housed in DNR's Ecological and Water Resources Division.

### *Site Assessors*

The site assessors are responsible for conducting the site evaluations and providing the results of the assessments, in collaboration with the Program Coordinator, to the Panel for evaluation. Site assessors are selected based on availability and knowledge of restoration applications in the given project habitat type and project location. Site assessors work closely with the coordinator in assessing project materials, conducting site evaluations, and participate in discussion with the Panel to ensure queries are adequately addressed. Services provided by the site assessors are negotiated through the use of contracts, State Interagency Agreements, or work assignments.

### *Project Managers*

Project managers responsible for implementation are expected to actively participate in the restoration evaluation process. Project managers work with the program coordinator to provide the necessary project background information. Project managers are also expected to attend the site evaluations when possible to not only identify project work sites for the site assessors, but to provide important project context, and answer any questions that may arise.

Project manager affiliations vary between Funds and projects. It is vital to acknowledge the diversity of managing organizations and the scope and focus of their practice when evaluating project implementation. Project managers for the three Legacy Fund restoration projects may include, but are not limited to:

- Clean Water Fund Project Managers
  - Soil and Water Conservation District (SWCD) manager or technician,
  - Watershed District staff,
  - Watershed Management Organization (WMO) staff,
  - County Water Resource or Environmental Services staff
  - City Water Resource staff
- Outdoor Heritage Fund Project Managers
  - State agency staff (DNR, BWSR)
  - Federal agency staff (USFWS)
  - County conservation and land management staff
  - Watershed District staff
  - Non-governmental wildlife organizations

- Parks and Trails Fund Project Managers
  - MN DNR Parks and Trails staff
  - Three Rivers Park District (via Met Council appropriation)

### **Site Assessment Process: Working with Project Managers to Evaluate Outcomes**

DNR, BWSR and the Panel developed a process that provides for the evaluation of project effectiveness while keeping the process as simple as possible. A standardized Site Evaluation Form was developed by the Agencies and the Panel to provide essential project information and answer the key evaluation requirements as directed by law. The effectiveness of this form will be improved in future years based on feedback from the Panel, site assessors and project managers.

The project evaluation process strives to include project managers to the extent possible in conducting site visits and communicating lessons learned from project implementation. The Agencies and the Panel believe that facilitating an inclusive evaluation process with project managers will increase the transfer of knowledge between field practitioners and the Agencies and ultimately improve restoration outcomes. An overview of nine project assessments completed in the summer of 2012 is shown in this report. Participants and survey methods are described for each project.

### **Program Reporting**

State law directs DNR and BWSR to “*summarize the findings of the panel and provide a report*” for each of the three funds. This language does not negate the option to convene the same panel and combine the reporting for each of the three funds into one report. This is the option chosen by the Agencies’ program development project team and endorsed by the Panel. The combined administrative and reporting structure will allow for a comprehensive and consistent process, while accommodating for the unique attributes and requirements of each individual Fund.

Eighteen project evaluations were completed during the 2012 summer field season. Nine projects are presented in this Fiscal Year 2012 report. Beginning in Fiscal Year 2013, the Agencies plan to submit the combined Legacy Fund Restoration Evaluation report annually by the end of the Fiscal Year to correspond with the reporting schedule for the Lessard-Sams Outdoor Heritage Council.

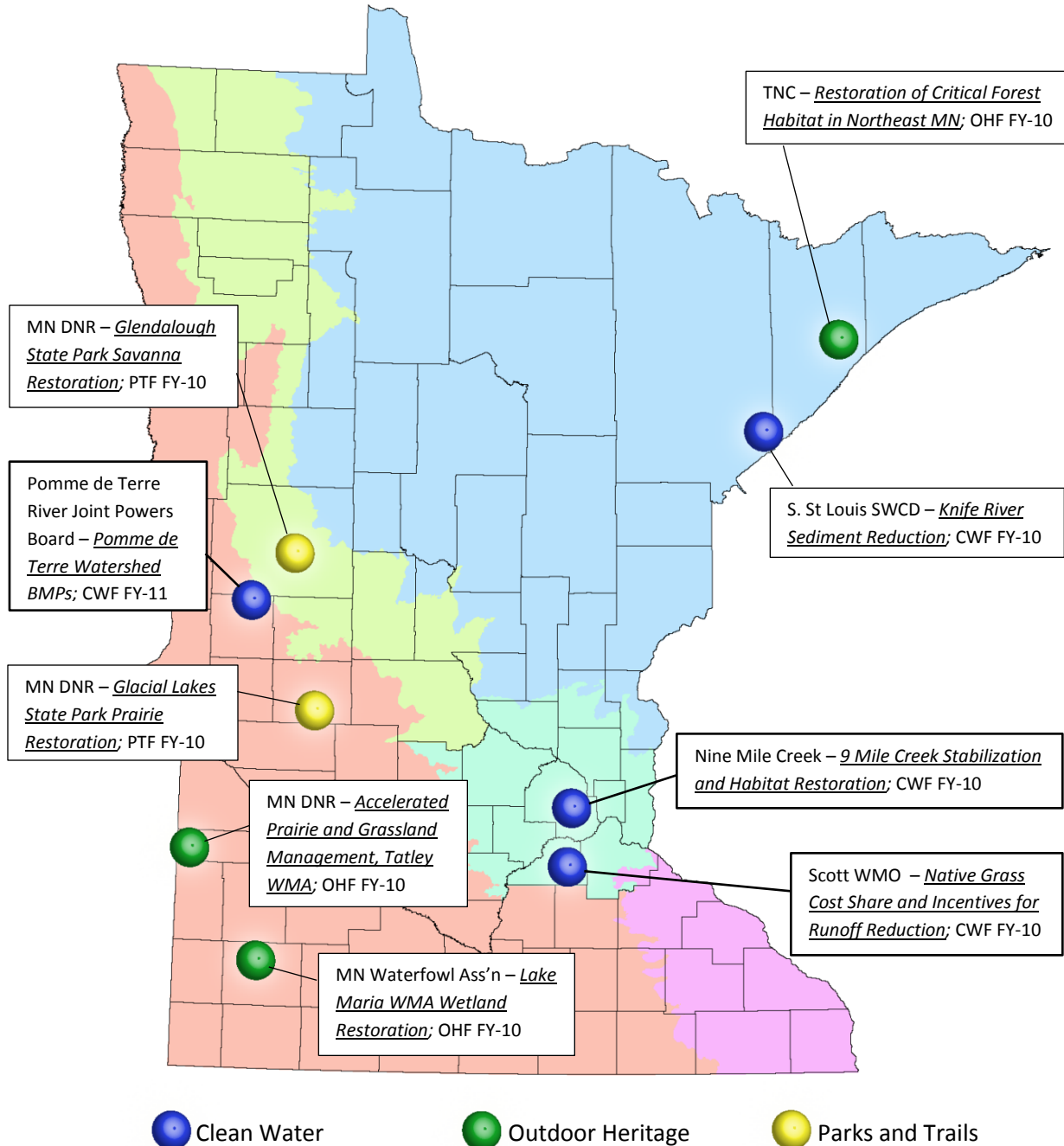
## **Site Assessments 2012**

### **Project Selection**

Projects selected for evaluation during the summer 2012 field season were chosen as a representative sample of project/habitat types and geographic distribution. The panel chose to only include projects from fiscal year 2010 and 2011 appropriations to help ensure that selected projects have moved forward with on the ground work and to provide for the most establishment time possible. Projects with the following criteria were considered eligible for selection for the 2012 field season:

- Statement of “restoration”, “reconstruction”, “re-establishment” or ecological “re-creation” in the project description.
- Manipulation of a substantially degraded site with the goal of returning the site’s natural/historic ecological structure and/or function (e.g. Conversion of an agricultural field to native prairie vegetation; break tile or plug ditch to flood historic wetland).
- For Outdoor Heritage Fund: projects listed in the “restore” category

The number of projects selected varied between Funds and was in proportion to each Fund’s fiscal year 2012 appropriation to restoration evaluation activities. In Fiscal Year 2012, the proportion of funding was 51.2% Clean Water Fund, 25.6% Outdoor Heritage and 23.2% Parks and Trails. The projects described include four from the Clean Water Fund, three from the Outdoor Heritage Fund and two from the Parks and Trails Fund. Project site locations are shown in Figure 1.



**Figure 1.** Location of projects featured in FY-2012 report. Background color delineates Outdoor Heritage Fund Planning Sections.

Many projects included several dispersed sites where restoration activities took place. For the purposes of this document, “project” refers to the set of activities that received funding, “site” refers to discrete locations where restoration work has taken place. For projects that included multiple restoration sites, a smaller subsample of sites was evaluated, as it was not logistically feasible to visit all restoration sites for some projects.

## **Project Evaluation**

As directed in statute, projects are evaluated relative to:

*the law, current science, and the stated goals and standards in the restoration plan*

Laws pertaining to specific funds are addressed in the project evaluation where applicable. Evaluation of current science, stated goals and standards in the restoration plan are described in the site evaluation forms (Appendix I) and summarized in the individual project profiles.

Statute also directs the Panel report to:

*determine if the restorations are meeting planned goals, any problems with the implementation of restorations , and if necessary, recommendation on improving restorations.*

Trajectory towards planned goals and any problems with implementation are addressed in the Site Evaluation forms and the Panel comments for each project.

## **Clean Water Fund**

The constitutionally directed purpose of the Clean Water Fund is:

***to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation***

Consistent with the constitutional purpose, the primary goal of Clean Water Fund restoration projects is to restore water quality. Implementation of these water quality restoration projects is typically directed by a TMDL Study and Implementation Plan that guides the types of projects and locations in the landscape or watershed where restoration activities can support water quality improvement. Restoration sites may engage several habitat types in the landscape including streams, shorelines and various upland land cover types and habitats. In this report, Clean Water restoration projects are evaluated by visual inspection of the structural and/or vegetative components of a selected number of implementation sites within a larger watershed scale water quality project. Assessments are focused on estimated effectiveness, durability and progress towards the stated water quality goals based on conditions at the time of site visit. Observations from these discrete project sites do not represent an evaluation of the overall clean water improvement project. In addition, due to the recentness of the Legacy funds, all of the projects evaluated in this report are in early establishment or still being implemented. Vegetative components may take several years to mature. Assessments from site visits are based on observations of the present and projected conditions of the project site relative to the project goals.

Clean Water Fund Statute 114D.50 Subd. 4. (a) requires:



*A project receiving funding from the clean water fund shall include measurable outcomes, as defined in section 3.303, subdivision 10, and a plan for measuring and evaluating the results. A project must be consistent with current science and incorporate state-of-the-art technology.*

Clean Water Fund restoration projects featured in this report are funded through the competitive grants programs administered by the Board of Water and Soil Resources. All projects reviewed have complied to date with statutory requirements for presenting measurable outcomes and planning to evaluate results. This information is collected through standard reporting to the Board of Water and Soil Resources.

Discussion of the application of current science and progress towards project goals is addressed for each project site in the Project Evaluation Forms in Appendix I.

## Clean Water Fund, Fiscal Year 2010 Native Grass Cost Share and Incentives for Runoff Reduction

Project Sponsor: Scott Watershed Management Organization  
Partners: Scott Soil and Water Conservation District  
Grant Period: January 2010 – December 2011  
Contact: Paul Nelson, (952) 496-8475, pnelson@co.scott.mn.us

### Project Narrative

*Sand Creek and some of its tributaries are impaired for fish IBI and turbidity. Studies by the Scott WMO and its partners have linked turbidity to inorganic sediment which in turn has been linked to both field erosion and channel instability. Geomorphic studies by the Scott WMO found that channel stability is related to past hydrologic changes and increases in runoff to which channels are now responding. This project addresses turbidity and sediment by targeting select sub-watersheds for the conversion of row crops to native grasses. This will eliminate field erosion and increase infiltration to moderate stream flows that have accelerated stream bank erosion.*

*This project promotes the establishment of native grasses as an alternative to row crops to reduce runoff. The project will target a minimum of 75 acres. This practice is particularly popular in the rural residential areas of the county where land owners no longer farm themselves. In addition, a grass product can be harvested and sold to the KODA Electric biomass facility in Scott County. Habitat created will complement the natural area corridors approach included in the County's 2030 Comp Plan.*



Board of Water and Soil Resources

### Evaluation Summary

This project exceeded expectations of seventy-five acres of cropland converted to native grass with over eighty-four acres converted in partnership with eleven private agricultural landowners. Current best practices were used in site preparation, seeding and maintenance activities. Three of the eleven sites installed were visited in August 2012. Sites observed clearly evidenced fulfillment of the project goals of sediment and runoff reduction through their strategic placement in the landscape, with several sites situated downslope of active row crop fields to intercept agricultural runoff and buffer adjacent woodlands and riparian zones. High interest level, involvement and dedication of participating landowners, as well as commitment of Conservation District staff, point to a high likelihood of achieving successful establishment of native grasses and forbs.

### Panel Comments / Recommendations:

- Stated goals were specific, clear and outcome based
- Above average establishment for second year (high percentage of seeded native grass cover)
- Invested, motivated landowners = high expectation of long term success
- For sites with significant existing perennial exotic plant species, ensure thorough site prep

- Projects are situated well in landscape for runoff reduction and nutrient/sediment removal; should consider documenting placement within the catchment / sub-catchment in relation to runoff patterns (e.g. integrate into aerial map overlay)

Three project site evaluation forms are included in Appendix I pgs. 26-34

## Clean Water Fund, Fiscal Year 2010 Nine Mile Creek Stabilization and Habitat Restoration

Project Sponsor: Nine Mile Creek Watershed District  
Partners: City of Hopkins, Hennepin County  
Grant Period: January 2010 – December 2011  
Contact: Kevin Bigalke, (952) 835-2078, kbigalke@ninemilecreek.org

### Project Narrative:

*The Nine Mile Creek watershed is a highly developed, urbanized watershed located in southern Hennepin County. The natural infiltration capacity of soils in the watershed has been diminished by significant coverage with hard surfaces such as streets, parking lots, and buildings. This leads to more rainfall making its way more quickly to Nine Mile Creek.*

*As a result, Nine Mile Creek has experienced stream bank erosion and in-stream habitat loss due to increases in storm water runoff resulting in the creek to be listed on the State of Minnesota impaired waters list for biotic integrity. This means that the fish and other aquatic organisms expected to be found in a healthy creek are not present to the degree they should be. In addition to the increase in hard surfaces within the watershed, portions of Nine Mile Creek have also been channelized and straightened. This project will realign portions of Nine Mile Creek in its historical channel, restoring its meander pattern and in-stream habitat by utilizing bioengineering techniques.*



Board of Water and Soil Resources

### Evaluation Summary

The Nine Mile Creek Stabilization and Habitat Restoration project is an exemplar stream re-meander and bioengineering project in a challenging highly urbanized watershed. A suite of innovative natural stream stabilization techniques consistent with current science based practices are being implemented along this stream section adaptive to the limitations of existing infrastructure and right-of-ways. A site visit was conducted in August of 2012 along the one mile of stream channel modified by this project. At the time of the site visit phases of the project were being implemented or were in establishment. Bioengineering practices and in-stream practices are used in combination to achieve erosion and sediment reduction goals. All practices observed were structurally sound, establishing successfully and being monitored and maintained per plan. Given the project site's constraints and urban watershed, the restoration design is successful in creating a channel with improved stability and greater potential aquatic habitat.

### Panel Comments / Recommendations:

- Laudable project for beginning to address water quality impairments where possible in a challenging urban conditions
- Project success is subject to highly variable hydrologic conditions resulting from the flashy urban watershed; watershed catchment issues also need to be addressed to achieve the long term restoration goal of addressing the biotic impairment

Project evaluation form is included in Appendix I pgs. 35-37

## Clean Water Fund, Fiscal Year 2010 Knife River Sediment Reduction BMP Implementation

Project Sponsor: South St Louis Soil and Water Conservation District  
Partners: Laurentian RC&D, Knife River Stewardship Committee, Knife River Watershed Landowners, Lake County SWCD, St. Louis County  
Grant Period: January 2010 – December 2011  
Contact: Kate Kubiak, (218) 723-4946, kate.kubiak@southstlouisswcd.org

### Project Narrative:

*The Knife River is a popular trout fishing river along the North Shore of Lake Superior. In 1998, it was listed as "impaired" by the MPCA for turbidity (being too muddy). In 2010, a Total Maximum Daily Load, or, water clean-up plan was approved. The major recommendations were to address peak flows (fast water running through the stream channel during and after rain storms or snow melt) and eroding clay streambanks contributing sediment to the river. Through this grant, the South St. Louis Soil & Water Conservation District is working with partners to implement strategies that will help restore the water quality of the Knife and get it off the impaired waters list. Over the past year, the district has been meeting with many people to identify locations for projects to reduce peak flows in the river by tree planting, ditch checks, and other stormwater management practices.*



Board of Water and Soil Resources

### Evaluation Summary

This water quality improvement project applies a multifaceted approach throughout the Knife River Watershed to reduce in-stream sediment. One site installation of this watershed wide project was visited in August 2012. This site stabilized a twenty foot high eroding clay riverbank that was contributing sediment to the Knife River and threatening a private access road and structure. The installation utilized current science in the use of a natural streambank which provides greater flexibility for natural stream channel movement and greater structure for aquatic habitat than “hard armor” rock stabilization techniques. Site installation was completed in the fall of 2011. In June of 2012 the Knife River watershed experienced a 100-500 year flood event. The installed stabilization and integrated woody vegetation withstood flood conditions per plan. This project site clearly contributed to achieving the projects sediment reduction goals and additionally provided improved stream habitat and protected existing structures.

### Panel Comments / Recommendations:

- Good use of innovative natural streambank stabilization
- Impressive proof of practice stability to withstand substantial 500 year flooding event in June of 2012, following September 2011 installation
- Regraded slope above bankfull bench was seeded with MN DOT 350 Native General Roadside Mix (forbs and grasses) for slope stabilization; Slope will require establishment of woody root structure to help ensure slope stability given the potential for over bankfull slope erosion.

Project evaluation form is included in Appendix I pgs. 38-39

## Clean Water Fund, Fiscal Year 2011 Pomme de Terre River Watershed Best Management Practices

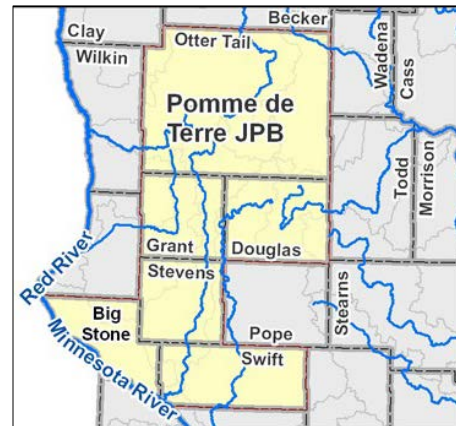
Project Sponsor: Pomme de Terre River Association Joint Powers Board  
Partners: Bigstone County & SWCD, Swift County & SWCD, Stevens County & SWCD, Grant County & SWCD, Douglas County & SWCD, Otter Tail County and West Otter Tail SWCD  
Grant Period: January 2011 – December 2012  
Contact: Joe Montonye, (218) 685-5395, joe.montonye@mn.nacdnet.net

### Project Narrative:

*The Pomme de Terre River watershed is located in west central Minnesota and occupies a portion of six counties. For many years surface water quality within the watershed has been a concern to local government, and in 1982 the Counties and SWCDs within the watershed area formed the Pomme de Terre River Association Joint Powers Board to begin addressing this issue. In 2002 the Pomme de Terre River was placed on the Impaired Waters list for turbidity.*

*The project partners are collaborating to improve surface water quality within the watershed with a grant from the Clean Water Fund. The goal of the project is to promote and assist individual landowners with the installation of practices such as: buffer strips, wetland restoration, rain gardens, shoreland restoration, and water and sediment control basins. Work began on the project in the spring of 2011.*

*Installing these practices will have a cumulative effect towards reducing the amount of sediment and phosphorus in the water. This project's goal is to reduce sediment into the river by 13,000 tons per year and phosphorus by 13,000 pounds per year.*



Board of Water and Soil Resources

### Evaluation Summary

This water quality improvement project applies a multifaceted approach throughout the Pomme de Terre River Watershed to reduce sediment and nutrients in surface waters. A variety of buffer strips, wetland restorations, water and sediment control basins and shoreline restorations are being installed under this project. Three discrete private shoreline restoration sites of this watershed scale project were visited in September of 2012. Shoreline restoration projects are somewhat novel in this agricultural landscape and project managers should be commended for taking on varied best management approaches as a part of comprehensive watershed management. These project site applied best practices in site preparation and shoreline stabilization and we're planted in accordance with BWSR Native Vegetation Establishment and Enhancement Guidelines. The conversion of turf grass to perennial native vegetation and improved stabilization of the shoreline supports the project goals of sediment and nutrient reduction in the Pomme de Terre Watershed. Continued investment and maintenance from landowners will support the success of these projects and encourage "by in" from additional shoreland property owners.

### Panel Comments / Recommendations:

- Good participation / collaboration of landowners; opportunity for outreach / engagement
- Number of species planted should be moderated by current knowledge of anticipated survivorship and landowner capacity for proper identification

- Continuous adding of mulch to shoreline plantings may serve as a nutrient source through leaching; Moving forward this specification should be modified or removed from water quality planting projects

Three project site evaluation forms are included in Appendix I pgs. 43-45

## Outdoor Heritage Fund

The Outdoor Heritage Fund is constitutionally directed to:

***restore, protect, and enhance wetlands, prairies, forests, and habitat for fish, game, and wildlife.***

Consistent with the constitutional purpose, the primary goal of Outdoor Heritage Fund restoration projects is to restore specific wildlife habitat types. Implementation of these habitat restoration projects is typically guided by a statewide or national habitat plan that guides the types of projects and locations in the landscape where habitat restoration activities can best support habitat improvement goals. Restoration sites may engage several habitat types including shorelines, streams, wetlands, grasslands and forests. In this report Outdoor Heritage restoration projects are evaluated by visual inspection of the structural and/or vegetative components of a selected number of implementation sites typically within a larger scale habitat project. Assessments are focused on estimated effectiveness, durability and progress towards the stated habitat goals based on conditions at the time of the site visit. Observations from these discrete project sites do not represent an evaluation of the overall habitat project. In addition, due to the recentness of the Legacy funds, all of the projects evaluated in this report are in early establishment or still being implemented. Vegetative components may take several years or even decades to mature. Assessments from site visits are based on observations of the present and projected conditions of the project site relative to the project goals.

Outdoor Heritage Fund restoration projects included in this report were implemented with fiscal year 2010 and 2011 appropriations and are subject to M.L 2009, Chapter 172, Article 1, Section 2. Subd. 10. Project Requirements <https://www.revisor.mn.gov/laws/?id=172&doctype=Chapter&year=2009&type=0> and M.L 2010, Chapter 361, Article 1, Section 2. Subd. 9. Project Requirements <https://www.revisor.mn.gov/laws/?id=361&doctype=Chapter&year=2010&type=0> These laws direct all projects to plant vegetation and sow seed of ecotypes native to Minnesota to the extent possible and restoration projects to provide an ecological restoration and management plan. Applicable information pertaining to these laws is noted in the individual project evaluations forms in Appendix I. Restoration and management plans for each Outdoor Heritage project are presented in Appendix II.

Discussion of the application of current science and progress towards project goals is addressed for each project site in the Project Evaluation Forms in Appendix I.



## Outdoor Heritage Fund, Conservation Partners Grant, Fiscal Year 2010 Restoration of Critical Forest Habitat in Northeast MN

Project Sponsor: The Nature Conservancy  
Partners: Manitou Collaborative, Sand Lake – Seven Beavers Collaborative  
Grant Period: 2010 – June 2012  
Contact: Doug Thompson, (218) 727-6119, [dthompson@tnc.org](mailto:dthompson@tnc.org)

### Project Narrative:

*This project will address two of the most practical, widely accepted, and urgent needs related to forest habitat restoration in Northeast Minnesota: conifer restoration and improvement in forest productivity. Restoration of commercially and ecologically important long lived conifer species and reforestation of under stocked stands will be implemented on state and county forestland in Northeast Minnesota. The project will provide continued funding for current forest restoration projects initiated by the Manitou and Sand Lake Seven Beavers Collaboratives and fund new projects planned by these multi landowner land management partnerships*



### Evaluation Summary

This project applies current science based practices in conifer forest habitat regeneration across a large landscape in Northeast Minnesota. Forest management prescriptions were developed collaboratively between forestry, ecological, and wildlife experts participating in the Manitou and Sand Lake Seven Beavers Collaboratives to implement treatments which resemble the natural succession of northern mixed mesic forests. Site prep and timber harvests adhered closely to best management practices described in the Minnesota Site-level Forest Management Guidelines, and planted/seeded tree species selection are appropriate to each site according to the MN DNR's Tree Suitability Index. Three conifer regeneration sites were visited in August of 2012. All sites displayed adequate stocking, browse protection and positive trajectory towards the overall project goals. Long term commitment by multi-landowner land management collaboratives indicate future success.

### Panel Comments / Recommendations:

- Clearly stated quantitative objectives
- Numbers of seedling survival / mortality needs to be monitored to track effectiveness
- Long term monitoring will be necessary to gauge successful trajectory

Project evaluation form is included in Appendix I pgs. 46-49

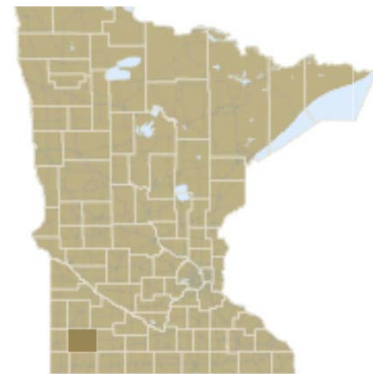
Restoration and management plan is included in Appendix II pgs. 59-60

**Outdoor Heritage Fund, Conservation Partners Grant, Fiscal Year 2010  
Lake Maria WMA Wetland Restoration**

Project Sponsor: MN Waterfowl Association  
Partners: MN DNR Fish and Wildlife, Slayton Area  
Grant Period: 2010 – June 2012  
Contact: Brad Nylin, (952) 767-0320, brad.nylin@mnwaterfowl.com

**Project Description**

*The recently acquired Lake Maria Wildlife Management Area has hydric Type II wetland Soils interspersed throughout the tract and include existing 7 acre basin, restorable wetlands of 25 acres, 8 acres 7 smaller wetlands of 3 acres. This project is a 20-30 acre basin that has a drainage area of approximately 380 acres. This will restore an existing wetland and continue to enhance the Lake Maria WMA as a key component in water quality and clarity to the multitude of lakes and wetlands surrounding it. The benefit will be in restoring a Basin back to its original purpose, both migratory and song bird will benefit as well a multitude of other species.*



**Evaluation Summary**

This project restores permanent wetland conditions to historic hydric soils with the goal of improved migratory bird habitat. Dike construction and hydric soil re-watering is consistent with accepted wetland habitat restoration practices. The project site was visited in August of 2012. Waterfowl were observed utilizing the wetland for forage during the visit. This wetland restoration project provides multiple benefits including added value to surrounding restored prairie and aquatic habitats, water quality enhancement to lakes and wetlands downgradient and protection of a township road from previously disruptive high flows. Project appears to be on a trajectory to meet the habitat goals stated in the project narrative and incorporates well into the existing Lake Maria WMA complex.

**Panel Comments / Recommendations:**

- Need clearer explanation of long term maintenance and how current science is utilized in planning and implementation: Project description would benefit from short written restoration plan to describe outcome based project goals and implementation timeline. Examples or templates of concise restoration plans should be developed by BWSR and DNR and provided to project sponsors. This would promote consistency of responses and minimize additional workload of project sponsors.
- Vegetation management (especially on berm) should be closely monitored to ensure seeding success and guide invasives control

Project evaluation form is included in Appendix I pgs. 50-51

Restoration and management plan is included in Appendix II pg. 61

**Outdoor Heritage Fund, Fiscal Year 2010**  
**2(a) Accelerated Prairie and Grassland Management: Tatley WMA**

Project Sponsor: MN DNR, Division of Fish and Wildlife

Grant Period: 2010 – June 2012

Contact: Bill Schuna, Assistant area Wildlife Manager (507) 537-6464,  
bill.schuna@state.mn.us

**FY2010 Appropriation Language**

*\$1,700,000 in fiscal year 2010 is to the commissioner of natural resources to accelerate the restoration and enhancement of native prairie vegetation on public lands, including roadsides. A list of proposed projects, describing the types and locations of restorations and enhancements, must be provided as part of the required accomplishment plan. To the extent possible, prairie restorations conducted with money appropriated in this section must plant vegetation or sow seed only of ecotypes native to Minnesota, and preferably of the local ecotype, using a high diversity of species originating from as close to the restoration site as possible, and protect existing native prairies from genetic contamination.*



**Evaluation Summary**

The Tatley WMA grassland restoration site is just one of tens of prairie grassland habitat restorations completed by Minnesota DNR under this appropriation. The site was assessed by walkthrough survey in September of 2012. Site preparation and seeding occurred during 2011. Site preparation, seeding protocols and maintenance plans are all consistent with accepted best practices for grassland reconstruction. The prairie seeding has developed well and includes a good diversity of plants with minimal invasive/nonnative cover. The Tatley WMA site clearly achieves the project goals of providing improved upland gamebird grassland habitat.

**Panel Comments / Recommendations:**

- Clear Goals: “provide quality nesting cover for upland birds and waterfowl as well improved upland game bird hunting opportunities”
- Good use of funds to supplement existing grasslands in Agricultural matrix

Project evaluation form is included in Appendix I pgs. 52-53

Restoration and management plan is included in Appendix II pg. 62

## Parks and Trails Fund

The Parks and Trails Fund is constitutionally directed to:

***support parks and trails of regional or statewide significance.***

The primary goal of Parks and Trails Fund restoration projects is ecological restoration of specific habitat types within natural areas of State and Regional parks. Implementation of these restoration projects is guided by State or Regional Park natural area management plans that guide the types of projects and locations in the landscape where restoration activities can best support specific habitat improvement goals. Restoration sites may engage several habitat types including shorelines, streams, wetlands, grasslands and forests. In this report Parks and Trails restoration projects are evaluated by visual inspection of the structural and/or vegetative components of a selected number of implementation sites. Assessments are focused on estimated effectiveness, durability and progress towards the stated restoration goals based on conditions at the time of the site visit. Observations from these discrete project sites do not represent an evaluation of the overall ecological restoration project. In addition, due to the recentness of the Legacy funds, all of the projects evaluated in this report are in early establishment or still being implemented. Vegetative components may take several years or even decades to mature. Assessments from site visits are based on observations of the present and projected conditions of the project site relative to the project goals.

Parks and Trails Fund Statute 85.53 Subd. 2 requires:

*A project or program receiving funding from the parks and trails fund must include measurable outcomes, as defined in section 3.303, subdivision 10, and a plan for measuring and evaluating the results. A project or program must be consistent with current science*

Parks and Trails Fund projects featured in this report were funded under the *Landscape Reconstruction on DNR Parks Lands* program. This program complied with statutory requirements for presenting measurable outcomes and planning to evaluate results. This information is available on the web at: <http://legacy.leg.mn/projects/landscape-reconstruction-division-parks-and-trails-lands>

Project evaluations of Glendalough State Park and Glacial Lakes State Park are presented. Discussion of the application of current science and progress towards project goals is addressed for each project site in the Project Evaluation Forms in Appendix I.

**Parks and Trails Fund, Fiscal Year 2010**  
**Landscape Reconstruction on DNR Parks Lands:**  
**Glendalough State Park, Sunset Lake Savanna**

Project Sponsor: MN DNR, Parks and Trails

Grant Period: 2010 – June 2012

Contact: Cindy Lueth, MN DNR (218) 308-2655, cindy.a.lueth@state.mn.us

### **Program Description**

*This program is to restore acres of state parks and trails land to native plant communities. MS 86A.05 directs PAT to preserve, perpetuate and restore natural features in state parks that were present in the area of the park at the time of European settlement.*

*Restoration of native plant communities is a multi-year process with prairies requiring about a 5 year period and forested sites about 10 years before they are considered established. In cases like prairies or fire-dependent forests, there is a need to insure periodic prescribed burns are conducted to maintain the restoration. Spot treatment of invasives is also needed to insure the restoration doesn't become degraded.*



### **Evaluation Summary**

The Glenadalough State Park Sunset Lake Savanna restoration site is just one of tens of ecological restorations completed through the Parks and Trails Fund appropriation for Landscape Reconstruction on DNR Parks Lands. Goals of this project site are to restore old field and overgrown oak woodland to prairie and oak savanna respectively. A walkthrough site assessment was conducted in September of 2012. Site preparation, seeding and maintenance activities are consistent with current science based practices for ecological restorations in these habitat types. This well implemented restoration site is meeting intended goals of restoring oak savanna and prairie communities through control of invasive nonnative vegetation and reintroduction of native savanna and prairie species characteristic of this geographic area and specific location.

### **Panel Comments / Recommendations:**

- Good documentation of site background / context information
- When possible project components supported by Parks and Trails Fund should be delineated within ongoing projects

Project evaluation form is included in Appendix I pgs. 54-55

**Parks and Trails Fund, Fiscal Year 2010**  
**Landscape Reconstruction on DNR Parks Lands:**  
**Glacial Lakes State Park, STS Prairie and Trucker Prairie East restorations**

Project Sponsor: MN DNR, Parks and Trails

Grant Period: 2010 – June 2012

Contact: Cindy Lueth, MN DNR (218) 308-2655, cindy.a.lueth@state.mn.us

### **Program Description**

*This program is to restore acres of state parks and trails land to native plant communities. MS 86A.05 directs PAT to preserve, perpetuate and restore natural features in state parks that were present in the area of the park at the time of European settlement.*

*Restoration of native plant communities is a multi-year process with prairies requiring about a 5 year period and forested sites about 10 years before they are considered established. In cases like prairies or fire-dependent forests, there is a need to insure periodic prescribed burns are conducted to maintain the restoration. Spot treatment of invasives is also needed to insure the restoration doesn't become degraded.*



### **Evaluation Summary**

The Glacial Lakes State Park prairie restoration sites are just two of the tens of ecological restorations completed through the Parks and Trails Fund appropriation for Landscape Reconstruction on DNR Parks Lands. The two project sites evaluated are STS Prairie and Trucker East Prairie. The project goal for the STS Prairie site is to restore native prairie vegetation on a semi wooded site with patchy native prairie remnants. The STS site has received woody invasives removal and seeding of local ecotype prairie seed. The goal Trucker East Prairie is to enrich existing grassland. This is being achieved through treatment of invasive, nonnative cool season grasses with herbicide and conduct supplemental native prairie species overseeding. Project documentation included thorough background context information. A walkthrough site assessment was conducted in September of 2012. Site preparation, seeding and maintenance activities are consistent with current science based practices for ecological restorations in these habitat types. These well implemented prairie restoration sites meet stated goals for the funded project phases.

### **Panel Comments / Recommendations**

- Good documentation of site background / context information
- When possible project components supported by Parks and Trails Fund should be delineated in ongoing projects

Project evaluation form is included in Appendix I pgs. 56-57

## Summary of Findings

Statute for restoration evaluations directs the Panel to, if necessary, make:  
*recommendations on improving restorations.*

The emphasis of the report is also directed in statute.

*The report shall be focused on improving future restorations.*

## Panel Recommendations – Improving Future Restorations

Overall, the Panel found that projects are on trajectories that have the potential to meet planned project goals. However, the Panel is making recommendations directed at supporting essential components of effective restoration implementation and improving the restoration evaluation process. Through the evaluation process the Panel identified the following three needs that should be addressed to improve future restorations.

### Need: Consistent documentation of essential planning and implementation data

The Panel believes that consistent documentation is a prerequisite to evaluating project success and effectively communicating lessons learned from restoration projects. While many Legacy Fund restoration projects included thorough documentation, the Panel noted gaps in achieving a consistent level of documentation across all funds. The Panel recommends that the following data should be presented in a simple format that will allow funding organizations and future managers to understand the essential project dynamics:

- Project goals or objectives: The project should have clearly defined outcome based goals and objectives, against which project success can be measured
- Project location and setting: A description of the project location should include, at a minimum, the county, township, range, and section where the project is located. A detailed site map with defined project boundaries or similar information (e.g., legal description, aerial photos) should also be included.
- Existing site conditions: Documentation of the existing site conditions is critical to both the development of a restoration plan and assessment of the effectiveness of restoration actions. Documentation of existing site conditions may include some or all of the following:
  - Description of site characteristics (topography, soils, hydrology, land cover, wildlife, special elements)
  - Quantitative baseline data, if available (such as plant species present and abundance, stream channel profile, water quality data)
  - Description of surrounding landscape conditions and land use
- Restoration work plan: The project should have a description of actions and an implementation schedule.
- Long-term management plan: If available, a description of the long-term management plan, including strategies for monitoring and maintenance of the restoration site, should be included.

A template and example project data for this information is anticipated to be included in the Fiscal Year 2013 Restoration Evaluation report. This template is envisioned to help rectify the inconsistencies currently identified by the Panel.

### **Need: Statewide restoration training**

The Panel believes that a critical component of improving future restoration outcomes is compiling and disseminating current science based restoration practices to the community of practitioners throughout the State. Collecting and disseminating exemplar challenges and successes from the field will be an integral part of building this training.

Venues such as the Ecological Restoration Training Cooperative established in 2011 by DNR, BWSR, MN Department of Transportation and the University of Minnesota may help to provide a framework for such training components (<http://cce.umn.edu/Restoring-Minnesota/index.html>). Trainings such as the annual BWSR Academy may also provide opportunities for training in restoration techniques as well as provide information to project managers about the restoration evaluation process (<http://www.bwsr.state.mn.us/academy/>).

### **Need: Evaluation process improvement**

The Panel also identified the need for strategic improvements in the restoration evaluation process to more effectively accomplish statutory goals and contribute to improvement of restoration outcomes. One identified process improvement is to select a subset of evaluated projects for follow up site evaluations in future years to track critical aspects of project effectiveness.

Restoration is a long term process that requires ongoing monitoring and investment of material, labor and financial support to achieve targeted goals. Following restoration project implementation and trajectory over multiple years is integral to ensuring desired outcomes. Projects selected for follow up assessments will be determined by the Panel based on challenging circumstances of the project or other unique temporal attributes of the implementation that make a single site visit inadequate for evaluation. The number of projects selected for follow up site visits would be determined by annual capacity of the restoration evaluation program.



## **Appendix I: Project Site Evaluation**



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

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**PROJECT BACKGROUND**

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Project Name: Native Grass Cost Share and Incentives For Runoff Reduction (Whipps Property)  
Date of Review: 9 August 2012

Project Location: County Scott Township/Range/Section: Township 114 N Range 23 W Section 32

Project Manager / Affiliated organization, Contact: Paul Nelson/Natural Resources Program Manager/Scott WMO

Fund: OHF  CWF  PTF  Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Convert 15.9 acres of cropland to native grasses ; reduce runoff. Create habitat.

Quantifiable objectives of the restoration: Establish permanent vegetative cover which will result in reductions in sediment and phosphorus runoff (expect reduction in 14.31 tons sediment/yr, 14.31 lbs total phosphorus/yr, and 4.7 acre feet /yr of runoff. (10 year practice)

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
File stored at SWCD office with conservation plan, seeding plan, operations and management plan, and communications record.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

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**PROJECT ASSESSMENT**

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Site Assessment Attendees - Reviewers: Carol Strojny, Dan Shaw, Greg Larson, BWSR; Wade Johnson, MN DNR -  
Project managers: Ryan Holzer - Property owners: Mr. Whipps

5. Site description (by reviewer): Multiple fields, total of 15.9 acres (10 acres converted from row crop and 5.9 acres converted from hay); seeded in 2011. Adjacent to ravine areas of Sand Creek watershed. Rural landscape of woodland, annual crop, pasture, and residential areas.

Soils: Loamy soils

Topography: Gently rolling; property adjacent to ravines and waterways

**Clean Water Fund - Scott WMO Native Grass: Whipps site page 2**

Hydrology: Over 90% of area reviewed was upland; county average precipitation (reported) for May and June wetter than normal, July was dry.

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Dominant species varied by field parcel. For fields converted from row cropping, observed adequate native cover (60-75% native grasses, mostly cool season; 5-15% native forbs) and spacing (native stems every 2-3 ft). Non-native and weed cover (estimated 10%) included ragweed, prickly lettuce, dandelions, clovers, and alfalfa. Invasive plant cover was low overall (<2% bull thistle, Canada thistle, perennial sow thistle, wild parsnip - single stem observed). Where seed was installed into fields that were previously hayed, a lower percent cover of natives was observed (5-15%). High cover of annual weeds, clovers, and pasture grasses (including reed canarygrass, quackgrass, and brome) were observed in these fields. Implementation and management are still in progress. Surrounding conditions (adjacent land use / veg.): Residential, agriculture (annual crop, pasture), woodland, waterways.

6. Survey methods used (include deliverable format, # of pgs.): Visual assessment by meandered transects through fields.
7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Plan includes techniques to establish clean seed bed and to establish a diverse, permanent cover of grasses and forbs.
8. List indicators of project outcomes at this project stage: Percent cover and spacing of native species; success of control of weedy and invasive vegetation; vegetative cover.
9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Vegetation establishment is sufficient to adequately meet goals of sediment and phosphorus reductions.
10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain. Continue efforts to establish native perennial cover in the fields that were previously hayed.
11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain. SWCD staff are working closely with the landowner to ensure proper management of the project.
13. Are follow-up assessments needed? Yes  No  Explain. The vegetative community typically shifts towards a higher dominance of native warm season grasses towards the 3<sup>rd</sup> or 4<sup>th</sup> growing season. We reviewed parcels in their 1<sup>st</sup> full growing season (seeded in 2011). Therefore a follow-up assessment during a later phase in establishment would be beneficial to determine success.
14. Additional comments on the restoration project. There was no evidence of soil erosion, and the majority of areas are progressing as planned (as expected for the first few growing seasons). Landowner should continue monitoring the site for wild parsnip, removing plants as they are found.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes

Confidence of outcome determination

1. Low
2. Medium
3. High

**Clean Water Fund - Scott WMO Native Grass: Whipps site page 3**

- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Provide an explanation of the reason(s) for the determination. A medium confidence level is selected because the project is overall on target for success. Because the project is in the early stages of establishment, predicting which way establishment will proceed is difficult. The high interest levels, involvement and dedication of landowners as well as commitment by the district staff improve the likelihood of achieving successful establishment.

Because perennial cover is becoming well established on this site, the project should meet proposed outcomes for runoff reductions as calculated by the district.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Carol Strojny

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Clean Water Fund - Scott WMO Native Grass: Sitcha site page 1



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



PROJECT EVALUATION FORM

**PROJECT BACKGROUND**

Project Name: Native Grass Cost Share and Incentives For Runoff Reduction (Sitcha Property)  
Date of Review: 9 August 2012

Project Location: County Scott Township/Range/Section: Township 113N Range 22W Section 31

Project Manager / Affiliated organization, Contact: Paul Nelson/Natural Resources Program Manager/Scott Co.

Fund: OHF  CWF  PTF  Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Convert 2 acres of cropland to native grasses ; reduce runoff. Create habitat.

Quantifiable objectives of the restoration: Establish permanent vegetative cover which will result in reductions in sediment and phosphorus runoff (expect reduction of 7.4 tons sediment/yr, 7.4 lbs total phosphorus/yr, and 0.93 acre feet /yr of runoff. (10 year practice)

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
File stored at SWCD office with conservation plan, seeding plan, operations and management plan, and communications record.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how? Some additional species planted from what was originally planned.

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

**PROJECT ASSESSMENT**

Site Assessment Attendees - Reviewers: Carol Strojny, Dan Shaw, Greg Larson, BWSR; Wade Johnson, MN DNR -  
Project managers: Ryan Holzer - Property owners: Sticha, not present.

5. Site description (by reviewer): Single 2 acre field, formerly in soybeans, adjacent to a woodland, steep slope leading to ditched wetland adjacent to waterway. Row crop field upslope. Seeded in 2010 and 2011.  
Soils: Loamy soils  
Topography: Gently rolling; property adjacent to ravines and waterways  
Hydrology: 100% of area reviewed was upland; county average precipitation (reported) for May and June wetter than normal, July was dry.

Clean Water Fund - Scott WMO Native Grass: Sitcha site page 2

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Observed adequate native spacing (native stems every 2-3 ft). Cool season native grasses (wild ryes) had about about 30% cover. Planted forb cover was about 15% (common plants: purple coneflower, black-eyed susan, coneflower, coryopsis, goldenrods, asters). Agricultural weeds had 40-60% cover (ragweeds, horseweed, white clover, dandelion, fleabane, burdock, foxtail - the latter with 15% cover). Invasive plant cover was low overall (<1% Canada thistle).

Surrounding conditions (adjacent land use / veg.): Residential, agriculture (annual crop, pasture), woodland, waterways.

6. Survey methods used (include deliverable format, # of pgs.): Visual assessment by meandered transects through fields.

7. Is the plan based on current science (best management practices, standards, and guidelines)?  
Yes  No  Describe for yes or no. Plan includes techniques to establish clean seed bed and to establish permanent cover of native grasses and forbs.

8. List indicators of project outcomes at this project stage: Percent cover and spacing of native species; success of control of weedy and invasive vegetation; vegetative cover.

9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Native species were establishing at a sufficient density (every 2-3 feet) to accomplish goals of sediment and phosphorus reductions.

10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
If yes, explain.

11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
If yes, explain. Some species in seed mix are not meeting native vegetative guidance regarding source material (e.g. non-native seed sourced from California and Oregon).

12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
If no, explain.

13. Are follow-up assessments needed? Yes  No  Explain. The vegetative community typically shifts towards a higher dominance of native warm season grasses towards the 3<sup>rd</sup> or 4<sup>th</sup> growing season. This site was seeded in 2010 and 2011. Therefore a follow-up assessment during a later phase in establishment would be beneficial to determine success.

14. Additional comments on the restoration project. There was no evidence of soil erosion, and the majority of areas are progressing as planned (as expected for the first few growing seasons).

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

**Clean Water Fund - Scott WMO Native Grass: Sitcha site page 3**

Provide an explanation of the reason(s) for the determination. A medium confidence level is selected because the project is overall on target for success. Because the project is in the early stages of establishment, predicting which way establishment will proceed is difficult. The high interest levels, involvement and dedication of landowners as well as commitment by the district staff improve the likelihood of achieving successful establishment. Because perennial cover is becoming well established on this site, the project should meet proposed outcomes for runoff reductions as calculated by the district.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Carol Strojny

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Clean Water Fund - Scott WMO Native Grass: Erickson site page 1



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



PROJECT EVALUATION FORM

**PROJECT BACKGROUND**

Project Name: Native Grass Cost Share and Incentives For Runoff Reduction, Erickson  
Date of Review: 9 August 2012

Project Location: County Scott Township/Range/Section: Township 113N Range 22W Section 36

Project Manager / Affiliated organization, Contact: Paul Nelson/Natural Resources Program Manager/Scott WMO

Fund: OHF  CWF  PTF  Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Convert 6.9 acres of cropland to native grasses ; reduce runoff. Create habitat.

Quantifiable objectives of the restoration Establish permanent vegetative cover which will result in reductions in sediment and phosphorus runoff (expect reduction in 29.67 tons sediment/yr, 29.67 lbs total phosphorus/yr, and 3.22 acre feet /yr of runoff. (10 year practice)

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
File stored at SWCD office with conservation plan, seeding plan, operations and management plan, and communications record.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

**PROJECT ASSESSMENT**

Site Assessment Attendees - Reviewers: BWSR: Carol Strojny, Dan Shaw, Greg Larson; MN DNR: Wade Johnson -  
Project managers: Ryan Holzer - Property owners: Erickson, not present

5. Site description (by reviewer): Two fields, formerly in row-crops, adjacent to a woodland and row crop field. Woodland buffers ravines and waterway. Seeded in 2011.

Soils: Loamy soils

Topography: Gently rolling; property adjacent to ravines and waterways

Hydrology: Over 95% of area reviewed was upland; county average precipitation (reported) for May and June wetter than normal, July was dry.



**Clean Water Fund - Scott WMO Native Grass: Erickson site page 2**

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Approximately 60-70% cover in native vegetation (native cool season grasses 40%, native forbs 15%, warm season grasses 5-10% cover). Observed adequate native spacing (native stems every 2-3 ft). Non-aggressive agricultural weeds had about 30% cover (ragweeds, horseweed, curly dock, wooly cupgrass, alfalfa, fleabane). Invasive plant cover was low overall (<1% bull thistle and hoary allysum). A small low spot in the field had reed canarygrass cover. Implementation and management are still in progress.  
 Surrounding conditions (adjacent land use / veg.): Residential, agriculture (annual crop, pasture), woodland, waterways.

6. Survey methods used (include deliverable format, # of pgs.): Visual assessment by meandered transects through fields.
7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Plan includes techniques to establish clean seed bed and to establish a diverse, permanent cover of grasses and forbs.
8. List indicators of project outcomes at this project stage: Percent cover and spacing of native species; success of control of weedy and invasive vegetation; vegetative cover.
9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Native vegetation is establishing at a density (every 2-3 feet) to adequately meet goals of sediment and phosphorus reductions.
10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain.
11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain.
13. Are follow-up assessments needed? Yes  No  Explain. The vegetative community typically shifts towards a higher dominance of native warm season grasses towards the 3<sup>rd</sup> or 4<sup>th</sup> growing season. This site was seeded in 2011. Therefore a follow-up assessment during a later phase in establishment would be beneficial to determine success.
14. Additional comments on the restoration project. There was no evidence of soil erosion, and the site is progressing as planned (as expected for the first few growing seasons).

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

1. Low
2. Medium
3. High

Provide an explanation of the reason(s) for the determination. A high confidence level is selected because the project is on target for success. During our assessment, we observed 9 of the 11 forbs planted and all six of the

### Clean Water Fund - Scott WMO Native Grass: Erickson site page 3

native grasses seeded. The high interest levels, involvement and dedication of landowners as well as commitment by the district staff improve the likelihood of achieving successful establishment.

Because perennial cover is already well-established on this site, the project should meet proposed outcomes for runoff reductions as calculated by the district.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Carol Strojny

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## Clean Water Fund - Nine Mile Creek



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



### PROJECT EVALUATION FORM

#### PROJECT BACKGROUND

Project Name: Nine Mile Creek

Date of Review: 8-15-12

Project Location: County: Hennepin Township/Range/Section: 117/22/25

Project Manager / Affiliated organization, Contact: Kevin Bigalke

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 11

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration: Address channel instability and sedimentation to address aquatic life impairment.

Quantifiable objectives of the restoration: Bedload and turbidity measurements to monitor reductions in sediment, invertebrate and fish IBI scores to track improvements in biotic community.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Engineering plans for project construction, Clean Water Fund project description provided by Nine Mile Creek Watershed District and Barr Engineering (project designer).

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No

If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No

If yes, how?

#### PROJECT ASSESSMENT

5. Site description (by reviewer): Urban setting. Road right-of-way along a significant reach of project area, with city park or open space in all other areas. Road and bike/walking path created constraints on project footprint. Lower portion of project flows through type2 wetland (degraded by dominant reed canary and hybrid cattail). Pre-project stream channel was almost straight (likely due to past channelization) and was actively eroding into road right-of-way. Channel had previously been diverted to flow through a pond near the downstream end of the project. This lead to rapid filling of the pond with sediment, reducing its effectiveness at treating stormwater runoff from contributing areas.

Soils: Houghton, a poorly drained muck that is high in organic content.

Topography: Low-gradient area, especially in downstream reach of the project.

## Clean Water Fund - Nine Mile Creek

Hydrology: Stream flow is flashy due to prevalence of impervious surfaces in watershed, and lack of rate and volume controls for stormwater runoff. Riparian vegetation in upstream reach through park land will experience periodic inundation, interspersed with mesic conditions during dry periods. Soils in downstream reach in type 2 wetland will be consistently saturated, with periodic inundation.

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Riparian area in upstream area is a mixture of reed canary grass, giant ragweed, and willow. Planted vegetation is in early phase of establishment, so it is not expected that those species will be evident. Willow and dogwood stakes are sprouting in places, but survival appears to be 50% or less. Weed control maintenance was being performed during our site visit. Downstream new channel reach flows through reed canary/hybrid cattail meadow.

Surrounding conditions (adjacent land use / veg.): Upstream reach is parkland with mowed turf grass. Downstream reach is reed canary/hybrid cattail meadow.

6. Survey methods used (include deliverable format, # of pgs.): Project plans were reviewed prior to site visit. Site visit included a walk of the project reach, visual assessment of project stability (banks, channel bed), and observation of riparian vegetation community.

7. Is the plan based on current science (best management practices, standards, and guidelines)?

Yes  No  Describe for yes or no. Channel design utilized HEC-RAS and XP-SWIM modeling of flows. New channel was designed to accommodate bankfull discharge, with higher flows dispersed across the flood plain. No explicit modeling of sediment transport. At a minimum, channel design should consider the competency of the channel to transport sediment to reduce the potential for channel aggradation or degradation. The site may have limited sediment inputs due to urban infrastructure, which could affect project success. Stabilizing banks to reduce erosion in a sediment-starved system may lead to channel degradation. This risk is reduced by the presence of grade control structures (cross-vanes) that will prevent or limit downcutting.

8. List indicators of project outcomes at this project stage: Due to the early establishment/incomplete status of the project, no quantitative measures of project success on achieving ultimate goals for sediment reduction and aquatic life improvements. Channel cross sections and profile of project areas currently receiving flow appear to be functioning as design, increasing channel stability and improving habitat. Vegetation establishment is ongoing and success is yet to be determined. Weed control maintenance is being done to aid in establishment of plantings.

9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Project design is appropriate to accommodate the flow and sediment that must be transported through the project reach based on modeling. Construction phasing to allow for vegetation establishment in new channel reaches, and toe protection in areas where flow was maintained throughout the project, will increase initial stability of the channel. The more appropriate channel dimensions, pattern, and profile created, as well as improved riparian vegetation, should increase channel stability, and improve habitat for aquatic life.

There are some limitations of the project that may prevent full achievement of project goals. Aquatic life impairments are likely not caused solely by local habitat degradation. Instead, watershed-scale impacts from untreated stormwater runoff from an urbanized area created a flashy hydrograph that is not desirable for sensitive aquatic biota. In addition, urban runoff can have elevated levels of pollutants that impair aquatic life. This project will not address those stressors on the aquatic community. Instead, continued work will be needed to improve stormwater management in the watershed through retrofits and redevelopment opportunities that will reduce runoff volumes and pollutant levels, and control the rate of stormwater runoff.

Establishment of permanent native vegetation will be challenging at this location. There is an established seed bank of invasive plants, and abundant source populations of those species upstream. Only through continued maintenance of invasives will the riparian community likely sustain predominantly native species. It is possible that more resilient species such as willow sp. and dogwood sp. will be able to be self-sustaining.

10. Are corrections or modifications needed to meet proposed outcomes? Yes  No

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**Clean Water Fund - Nine Mile Creek**

If yes, explain. As mentioned above, I do not feel that changes are needed to the channel modifications that comprise this project. However, to meet improvements in the aquatic life of Nine Mile Creek, continued work will be needed to address watershed impacts on stream flow and pollutant levels. This work will be difficult given the fully-developed status of the watershed.

11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
If yes, explain.

12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
If no, explain. Long-term management of riparian vegetation for shrub species such as willow and dogwood will likely have the best chance of long term success in meeting goals for improved bank stability. Control of invasive species such as reed canary grass will be needed annually until a shift away from a grassland habitat type occurs.

13. Are follow-up assessments needed? Yes  No  If yes, explain. New channel sections have not been connected to flow at the time of the assessment. Permanent vegetation has not become established in any of the project reaches. Evaluation in 3 years time should allow for a better assessment of project success, especially if turbidity and bedload measurements are taken or if biological monitoring information is available.

14. Additional comments on the restoration project. This is a challenging location to do a project that can show measurable improvements in biotic community, given the legacy of urban land use in the watershed.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

Provide an explanation of the reason(s) for the determination: Given the constraints of the project location, the design is adequate to create a channel with improved stability and aquatic habitat. The lack of sediment transport assessment leaves greater uncertainty about outcomes, but grade control will limit any potential channel degradation. Reductions in sediment input are likely. However, improvements in the biotic community are uncertain. Because physical habitat is only one aspect that shapes biotic community, improvements may be limited by other factors such as water quality or hydrology that are being affected by watershed land use. Continued work will be necessary to increase treatment of stormwater, and to reduce the rate and volume of stormwater runoff. Invasive species may limit the ability for native riparian plants to become established.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Brian Nerbonne, Stream Habitat Consultant, DNR Fisheries

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## Clean Water Fund – Knife River Stabilization



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



### PROJECT EVALUATION FORM

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#### PROJECT BACKGROUND

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Project Name: Knife River Stabilization Project

Date of Review: 8/24/2012

Project Location: County Lake Township/Range/Section

Project Manager / Affiliated organization, Contact: Kate Kubiak, South St. Louis County SWCD

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Address eroding banks at the site / stop contribution of sediment to river

Quantifiable objectives of the restoration reduction / elimination of in bank erosion at the site

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Review process included a plan-view from the design package

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how? the finished product seem to concur with the plan-view design provided

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

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#### PROJECT ASSESSMENT

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Site Assessment Attendees - Reviewers: Kelly McQuiston (MN DNR-Fish), Jason Butcher (Superior National Forest), Wade Johnson (MN DNR-EWR) - Project managers: Kate Kubiak - Property owners: none

5. Site description (by reviewer): Jason Butcher-

Soils: mixed till with clay

Topography: Alluvial valley

Hydrology: North Shore stream, snowmelt dominated, slightly above base flow conditions at time of site visit; after a 500yr flood event in mid-summer '12

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Floodplain species- alder/ash/spruce in riparian areas; Aspen/birch/balsam/spruce in uplands; high, outside bank was vegetated with grasses with very little woody vegetation.

Surrounding conditions (adjacent land use / veg.): high, outside bank was vegetated with grasses with very little woody vegetation; inside bank alder dominated.

**Clean Water Fund – Knife River Stabilization**

- 6. Survey methods used (include deliverable format, # of pgs.): Visual observation
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
Yes  No  Describe for yes or no. Use of a bankful bench at toe of the high bank; stabilized with alder clumps root wads and plantings.
- 8. List indicators of project outcomes at this project stage: Project was under extreme flood conditions shortly after completion and remains intact. some erosion from nearby upstream and downstream banks has occurred in untreated areas; it is possible that this may have been minimized by extending the project and tying it into natural floodplain upstream and downstream; however it is also possible that the large flood event had a substantial effect on adjacent untreated areas.
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
If yes, explain.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
If no, explain.
- 13. Are follow-up assessments needed? Yes  No  Explain.
- 14. Additional comments on the restoration project.

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**PROJECT EVALUATION**

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- The project will:
- |                                      |                                     |           |                                     |
|--------------------------------------|-------------------------------------|-----------|-------------------------------------|
| a. Likely not meet proposed outcomes | <input type="checkbox"/>            | 1. Low    | <input type="checkbox"/>            |
| b. Minimally meet proposed outcomes  | <input type="checkbox"/>            | 2. Medium | <input type="checkbox"/>            |
| c. Meet proposed outcomes            | <input checked="" type="checkbox"/> | 3. High   | <input checked="" type="checkbox"/> |
| d. Likely exceed proposed outcomes   | <input type="checkbox"/>            |           |                                     |
| e. Greatly exceed proposed outcomes  | <input type="checkbox"/>            |           |                                     |

Provide an explanation of the reason(s) for the determination. This project appears to have been built according to design and appears intact after a major flood event. Using natural material and design will allow the stream to adjust overtime while maintaining the integrity of the bank.

Site Assessment Lead(s) Conducting Site Review (Signature Required):



Jason T. Butcher, Superior National Forest



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

**PROJECT BACKGROUND**

Project Name: Tangen/Stalker Lake(installed 2012)

Date of Review: 09/13/12

Project Location: County Ottertail Township/Range/Section

Project Manager / Affiliated organization, Contact: Brad Mergens, West Ottertail SWCD

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 11

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration This shoreland buffer is part of a watershed-wide effort to improve water quality in the Pomme De Terre watershed. The primary aim of the buffer is to correct and protect the near shore area from eroding.

Quantifiable objectives of the restoration The watershed efforts aim to reduce sediment into the Pomme De Terre River by 13,000 tons per year and phosphorus by 13,000 tons per year.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Complete plans, records and so forth are available at the West Ottertail SWCD Office in Fergus Falls.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

**PROJECT ASSESSMENT**

Site Assessment Attendees - Reviewers: Greg Larson MN BWSR and Wade Johnson MN DNR - Project managers: Brad Mergens - Property owners: N/A

5. Site description (by reviewer): GLarson  
Soils: Non-hydric loamy calcareous glacial till  
Topography: Steep, with 12-18% slope on lands which abut the project site  
Hydrology: Stalker Lake is adjacent; the buffer is predominantly rain fed; water level in the lake is uncontrolled.  
Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): A high quality multi-specie mixed grass/forb native buffer planting was established. However, drought and sunlight on a few planting zones have compromised establishment and allowed establishment of invasive species (esp Crabgrass and Foxtail)



**Clean Water Fund – Pomme de Terre Watershed: Tangen page 2**

Surrounding conditions (adjacent land use / veg.): A mowed bluegrass lawn is adjacent to the site. The lawn appears to be rain-fed with minimal chemical weed control.

- 6. Survey methods used (include deliverable format, # of pgs.): Meander survey
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Site preparation for invasives control included 2 x herbicide applications in the upland areas. Plant species are native forbs and perennials suited to the site conditions with number of species within the recommended range of BWSR Native Vegetation Establishment and Enhancement Guidelines.
- 8. List indicators of project outcomes at this project stage: Growth stage and minimal invasives on most planting zones, and evidence of proper maintenance--despite the drought.
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Property owner will need to be diligent to control aggressive invasives
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain. Replanting and/or invasive specie control may be needed on a few zones (e.g. Oriental Bittersweet along the shoreline) and biolog survival from ice-jacking is yet to be determined.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain. N/A
- 13. Are follow-up assessments needed? Yes  No  Explain. Replanting and/or invasive specie control may be needed and biologs should be checked next spring to determine if they survived the lake ice.
- 14. Additional comments on the restoration project. Post-project conditions are better than pre-project conditions. Mr. Mergens (W Ottertail SWCD) addressed the challenges of maintaining projects upon change of land ownership. Apparently the BWSR-provided financial agreement between the SWCD and landowner is deficient in this regard. The SWCD and Ottertail County Planning and Zoning have an agreement that facilitates the installation of shoreland best management practices in shoreland areas.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

Provide an explanation of the reason(s) for the determination. Long-term ownership appears more likely to provide maintenance. The location of the buffer is less compromised by the dock and launching of watercraft. Below bank protection needs have been identified and it is likely that if biologs fail, the landowner and SWCD will take necessary steps to replace them.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Greg Larson

Clean Water Fund – Pomme de Terre Watershed: Lillemon page 1



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



PROJECT EVALUATION FORM

**PROJECT BACKGROUND**

Project Name: Lillemon/Eagle Lake(installed 2012)

Date of Review: 09/13/12

Project Location: County Ottertail Township/Range/Section

Project Manager / Affiliated organization, Contact: Brad Mergens, West Ottertail SWCD

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 11

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration This shoreland buffer is part of a watershed-wide effort to improve water quality in the Pomme De Terre watershed. The primary aim of the buffer is to correct and protect the near shore area from erosion.

Quantifiable objectives of the restoration The watershed efforts aim to reduce sediment into the Pomme De Terre River by 13,000 tons per year and phosphorus by 13,000 tons per year.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Complete plans, records and so forth are available at the West Ottertail SWCD Office in Fergus Falls.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

**PROJECT ASSESSMENT**

Site Assessment Attendees - Reviewers: Greg Larson and Wade Johnson - Project managers: Brad Mergens -  
Property owners: N/A

5. Site description (by reviewer): GLarson  
Soils: Non-hydric loamy calcareous glacial till  
Topography: Flat, with 0-2 % slope on lands which abut the project site  
Hydrology: Eagle Lake is adjacent; the buffer is predominantly rain fed; water level in the lake is uncontrolled.  
Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): A high quality multi-specie grass/forb native buffer planting with minimal invasive species.  
Surrounding conditions (adjacent land use / veg.): A mowed bluegrass lawn is adjacent to the site. The lawn appears to be rain-fed with minimal chemical weed control.

Clean Water Fund – Pomme de Terre Watershed: Lillemon page 2

6. Survey methods used (include deliverable format, # of pgs.): Meander survey

7. Is the plan based on current science (best management practices, standards, and guidelines)?

Yes  No  Describe for yes or no. Site preparation for invasives control included 2 x herbicide applications in the upland areas. Plant species are perennial native forbs and grasses suited to the site conditions. Plant species and number of species planted follow the recommended guidelines of BWSR Native Vegetation Establishment and Enhancement Guidelines.

8. List indicators of project outcomes at this project stage: Growth stage and minimal invasives, and evidence of proper maintenance to this date--despite the drought.

9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.

10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
If yes, explain. However, biolog survival from ice-jacking is yet to be determined.

11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
If yes, explain.

12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
If no, explain. N/A

13. Are follow-up assessments needed? Yes  No  Explain. Nothing out- of -the ordinary is needed, but it should be noted if the biologs survive ice-jacking.

14. Additional comments on the restoration project. Post-project conditions are better than pre-project conditions. Mr. Mergens addressed the challenges of maintaining projects upon change of land ownership. Apparently th BWSR-provided financial agreement between the SWCD and landowner is deficient in this regard. The SWCD and Ottertail County Planning and Zoning have an agreement that facilitates the installation of shoreland best management practices in shoreland areas.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

Provide an explanation of the reason(s) for the determination. Long-term ownership appears more likely to provide maintenance. The location of the buffer is less compromised by the dock and launching of watercraft. Below bank protection needs have been identified and it is likely that if biologs fail, the landowner and SWCD will take necessary steps to replace them.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Greg Larson

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2



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

**PROJECT BACKGROUND**

Project Name: Pomme De Terre (completed 2011)

Date of Review: 09/13/12

Project Location: County Grant Township/Range/Section NE1/4 NE1/4 T130N-R42W S36

Project Manager / Affiliated organization, Contact: Joe Montoyne, Grant SWCD

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 11

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration This shoreland buffer is part of a watershed-wide effort to improve water quality in the Pomme De Terre watershed. The primary aim of the buffer is to correct and protect the near shore area from eroding.

Quantifiable objectives of the restoration The watershed efforts aim to reduce sediment into the Pomme De Terre River by 13,000 tons per year and phosphorus by 13,000 tons per year.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Complete plans, records are available at the Grant SWCD Office in Elbow Lake.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No

If yes, how? New landowner has (negatively) modified the plan by removing a section of vegetation near the dock to facilitate the launching of watercraft. Potential erosion from wave action has been increased.

**PROJECT ASSESSMENT**

Site Assessment Attendees - Reviewers: Greg Larson MN BWSR and Wade Johnson MN DNR - Project managers: Joe Montoyne - Property owners:

5. Site description (by reviewer): GLarson

Soils: Non-hydric sandy outwash

Topography: Flat, with 0-2 % slope on lands which abut the project site

Hydrology: Pomme De Terre Lake is adjacent; the buffer is predominantly rain fed; water level in the lake is controlled, but fluctuations nevertheless occur.

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): A (garden-like) high quality multi-specie grass/forb native buffer planting with minimal invasive species. Planting stock for forbs were established, large plants.

Clean Water Fund – Pomme de Terre Watershed: Pomme de Terre Lake page 2

Surrounding conditions (adjacent land use / veg.): A mowed bluegrass lawn is adjacent to the site. The lawn appears to be rain-fed with minimal chemical weed control. Landscape edging separates the buffer from the lawn.

6. Survey methods used (include deliverable format, # of pgs.): Meander survey

7. Is the plan based on current science (best management practices, standards, and guidelines)? Yes  No  Describe for yes or no. Site preparation for invasives control included herbicide applications in the upland areas. Plant species are perennial native forbs and grasses suited to the site conditions. Plant species and number of species planted follow the recommended guidelines of BWSR Native Vegetation Establishment and Enhancement Guidelines.

8. List indicators of project outcomes at this project stage: Growth stage and maturity of vegetation and evidence of landowner alteration of buffer.

9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Contrary to the advice of the SWCD, the new owner apparently is not interested in maintaining the buffer to acceptable standards.

10. Are corrections or modifications needed to meet proposed outcomes? Yes  No  If yes, explain. The "strip" between the two plantings should be addressed, especially the bank on the lakeshore should be replaced and the landscape edging should be removed. The buffer currently looks more like a garden than a native buffer.

11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No  If yes, explain. This project was not intended as habitat, and has been further comprised by landowner woody vegetation removal actions.

12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No  If no, explain. As mentioned, the new landowner may not maintain the project.

13. Are follow-up assessments needed? Yes  No  Explain. Outreach should continue with the new landowner and it should be noted if below bank protection efforts will withstand fluctuating lake levels and ice-jacking.

14. Additional comments on the restoration project. Post-project conditions are apparently better than pre-project conditions. Mr. Montoyne addressed the challenges of maintaining projects upon change of land ownership. Apparently the BWSR-provided financial agreement between the SWCD and landowner is deficient in this regard.

**PROJECT EVALUATION**

The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

Provide an explanation of the reason(s) for the determination. Future maintenance issues by the current landowner cloud the long term efficacy.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Greg Larson

**Outdoor Heritage Fund, CPL Grant - The Nature Conservancy, Critical Forest Habitat in Northeast MN**



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

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**PROJECT BACKGROUND**

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Project Name: Restoration of Critical Forest Habitat in Northeast MN      Date of Review: 8/24/2012

Project Location: County Lake / St. Louis / Cook      Township/Range/Section Various

Project Manager / Affiliated organization, Contact: Doug Thompson, The Nature Conservancy

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration This project is aimed at improving upland forest habitat and increasing productivity and diversity of forest products through restoration of commercially and ecologically important long lived conifer species and reforestation of under-stocked stands on state and county forestlands in northeast Minnesota.

Quantifiable objectives of the restoration Increased diversity of tree species composition and stand stocking levels silviculturally appropriate to each site. Specifically an increased presence of viable long lived conifer species free of browse pressure and likely to recruit into the overstory.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
The project is guided by the goals in the MN Forest Resources Council's Northeast and North Central Landscape Plans, DNR Subsection Forest Resource Management Plans, and County forest management plans. Individual site prescription worksheets are available from the local land managers.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

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**PROJECT ASSESSMENT**

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Site Assessment Attendees - Reviewers: Jeff Busse, Wade Johnson - Project managers: Chris Dunham - Property owners:

5. Site description (by reviewer): This project is a result of multi-agency collaborative planning in the Manitou and Sand Lake Seven Beavers Landscapes, and occurs on (9) different sites across northeast Minnesota. Project sites are primarily upland northern mesic mixed forest communities (MHn45 and FDn43) at various successional growth stages and condition. Site assessments were conducted on 3 project areas representative of the overall restoration efforts.

## Outdoor Heritage Fund, CPL Grant - The Nature Conservancy, Critical Forest Habitat in Northeast MN

### Project area work timeline:

#### *Caribou Falls Wayside Site:*

- 2008 - planted 2000 white spruce, 1000 white pine, 1000 white cedar
- 2009 - build 100 single tree exclosures around white pine and white cedar
- 2010 - brush saw release around crop trees, remove fences- grub and grass mat seedlings
- 2010 - build 100 single tree exclosures around white pine and white cedar
- 2012 - budcap

#### *DNR land adjacent to Wolf Ridge:*

- 2008 - planted by DNR Forestry unknown quantity mix of white spruce, white pine, white cedar
- 2008 - tree tubes installed on 7 acres of white pine and white cedar
- 2010 - build 350 single tree exclosures around white pine and white cedar
- 2011 - budcap un-tubed trees and straightened tubes
- 2012 - budcap trees grown out of tubes

#### *Hut Two Rd Finland:*

- 2008 - planted 500 white spruce, 1000 white pine, 500 white cedar
- 2009 - sprayed with plantskydd deer repellent
- 2010 - budcapped
- 2010 - brush saw released
- 2011 - budcapped
- 2012 - budcapped

Soils: In general sites are situated on a scoured bedrock terrain with a shallow non-calcareous sandy-loam, loamy, or fine-sandy drift often gravelly and occasionally stony.

Topography: Moderately rolling landscape, with occasional steep rugged terrain

Hydrology: Droughty well drained upland forest community matrix interspersed with surface seeps and low vernal pool and streams throughout.

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): In general project sites consist of marginal forest stands of early-successional species (birch/aspen/balsam) in a transitional growth stage marked by significant mortality of low vigor, over-mature canopy trees. The dominant trees in many of these site are declining due to a variety of factors including: age, ice storm, snow-loading, and wind damage. These sites are mostly poorly stocked (15 to 60 sq ft BA), with heavy grass/shrub growth preventing adequate levels of natural regeneration of desirable tree species.

Some of the project sites (Manitou Patch, Big Lake Patch, Caribou Falls Wayside, Little Marais WMA, and Hut Two Rd Finland sites) have been managed in the recent past, harvesting portions of the overstory using either a shelterwood or seed-tree with reserves treatment approach.

Surrounding conditions (adjacent land use / veg.): Project sites are generally surrounded by large intact tracts of forestland, including: Clair Nelson Memorial Forest (Lake County), Finland State Forest (DNR Forestry), Crosby-Manitou State Park (DNR Parks), Superior National Forest, The Upper Manitou preserve (The Nature Conservancy), and numerous private holdings.

6. Survey methods used (include deliverable format, # of pgs.): Ocular assessment of sites to assess the health/condition of crop trees, browse protection devices, and competing vegetation.

7. Is the plan based on current science (best management practices, standards, and guidelines)?

Yes  No  Describe for yes or no. Forest management prescriptions were developed collaboratively between forestry, ecological, and wildlife experts participating in the Manitou and Sand Lake Seven Beavers Collaboratives using an Ecological Classification System to design treatments which resemble the natural succession of northern mixed mesic forests. Site prep and timber harvests adhered closely to best management practices described in the Minnesota Site-level Forest Management Guidelines, and planted/seeded tree species selection are appropriate to

**Outdoor Heritage Fund, CPL Grant - The Nature Conservancy, Critical Forest Habitat in Northeast MN**

each site according to the MN DNR's Tree Suitability Index developed by the Ecological Classification Program. All sites were checked against the State Natural Heritage Database for any rare/threatened features prior to any work being done, and those sites listed as heritage features present were further ground surveyed to ensure project work did not threaten the integrity of those species.

8. List indicators of project outcomes at this project stage: Establishment of an adequate stocking of desirable long lived conifer species, reasonably free of browse pressure and competition for growing space. Sites have been established on a trajectory to be mature forests with diverse overstory species composition within 50 years.

*Caribou Falls Wayside* - excellent survival with fenced white pine, good survival with fenced cedar but less than pine, excellent survival with unfenced white spruce. 2012 budcap sweep revealed very poor survival of white pine and cedar outside of fences.

*DNR land adjacent to Wolf Ridge* - excellent white pine survival in tubes and in fences, good survival of cedar but less than pine.

*Hut Two Rd Finland* - excellent survival of white pine, cedar poor survival (should have used tree tubes), can get away with budcapping here as deer density much less than down on shore.

9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain. Project design is appropriate to restoring a significant long term conifer component back into these systems that will provide improved wildlife habitat, water quality, and forest productivity. Ongoing regular maintenance of browse protection tubes/fencing will be necessary for at least several more years until trees are above deer/moose browse lines and free-to-grow from competition. Some pruning/thinning stand improvement activities may also be necessary to ensure the best recruitment into the overstory, and will require periodic monitoring of site conditions to determine optimal treatment schedule.

10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
If yes, explain.

11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
If yes, explain.

12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
If no, explain.

13. Are follow-up assessments needed? Yes  No  Explain. Conifer restoration on these sites has been very successful. The seedling trees are well established, and on track to providing the future habitat benefits this project set out to accomplish.

14. Additional comments on the restoration project.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High



**Outdoor Heritage Fund, CPL Grant - The Nature Conservancy, Critical Forest Habitat in Northeast MN**

Provide an explanation of the reason(s) for the determination. A high level of confidence comes from the well established commitment of the multi-landowner land management collaboratives working to restore, maintain and enhance the broader landscapes of these project sites. The Manitou Landscape and Sand Lake Seven Beavers Collaboratives' support of these projects provides extra oversight and continuity that will help ensure continued monitoring and maintenance of these sites in the future, significantly improving the likelihood of the project's success.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Jeff Busse

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**Outdoor Heritage Fund, CPL Grant – MN Waterfowl Association, Lake Maria WMA Wetland Restoration**



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

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**PROJECT BACKGROUND**

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Project Name: Lake Maria WMA Wetland Restoration

Date of Review: 8/9/12

Project Location: County Murray Township/Range/Section 108/41W/7

Project Manager / Affiliated organization, Contact: Brad Nylin, MWA; Wendy Kruger DNR FAW Slayton

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Restore a historic wetland area from row crop production to a wetland basin to improve migratory bird habitat.

Quantifiable objectives of the restoration Rewater a 20-30 acre wetland basin

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Area Wildlife Office, Slayton

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

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**PROJECT ASSESSMENT**

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Site Assessment Attendees - Reviewers: Greg Larson, BWSR; Wade Johnson, DNR - Project managers: Brad Nylin, MWA; John Beech, Assistant Slayton Area Wildlife Manager - Property owners: DNR Area Wildlife staff

5. Site description (by reviewer):

Soils: Loamy glacial till

Topography: Gently rolling 6-12 % slopes dominate immediate landscape

Hydrology: Hydric soils with a near-surface water table dominate lower-lying landscape positions. Before they were drained, wetlands in the immediate area were primarily wet meadows in swales grading to shallow marshes in lower-lying areas. The major input to the water budget of the restored wetland is overland flow, with seasonal contributions from tile lines that have been daylighted upgradient of the restored wetland.

Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): A prairie restoration on the majority of the immediate landscape, all with minimal invasives.

**Outdoor Heritage Fund, CPL Grant – MN Waterfowl Association, Lake Maria WMA Wetland Restoration**

Surrounding conditions (adjacent land use / veg.): Restored native prairie on DNR holdings

- 6. Survey methods used (include deliverable format, # of pgs.): Meander survey
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Berm construction and hydric soil re-watering is consistent with accepted wetland habitat restoration practices
- 8. List indicators of project outcomes at this project stage: Earth work and water control infrastructure has been completed. Vegetative components have been implemented and appear to be on track for successful establishment. Dry weather has set-back vegetative establishment.
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain. Long term maintenance is the responsibility of the MN DNR Slayton Wildlife Office. Water control structures will be monitored to ensure function
- 13. Are follow-up assessments needed? Yes  No  Explain.
- 14. Additional comments on the restoration project. This project is a great example of a multiple function-added restoration--as opposed to a restoration with a more limited functional gain. The wetland restoration complements an existing high quality prairie restoration, and adds both terrestrial and aquatic habitat value to the immediate area. Water quality enhancement is provided to lakes and wetlands downgradient. In addition, a township road is protected from previously disruptive high flows.

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**PROJECT EVALUATION**

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- |                                      |                                     |                                     |                                     |
|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| The project will:                    |                                     | Confidence of outcome determination |                                     |
| a. Likely not meet proposed outcomes | <input type="checkbox"/>            | 1. Low                              | <input type="checkbox"/>            |
| b. Minimally meet proposed outcomes  | <input type="checkbox"/>            | 2. Medium                           | <input type="checkbox"/>            |
| c. Meet proposed outcomes            | <input checked="" type="checkbox"/> | 3. High                             | <input checked="" type="checkbox"/> |
| d. Likely exceed proposed outcomes   | <input type="checkbox"/>            |                                     |                                     |
| e. Greatly exceed proposed outcomes  | <input type="checkbox"/>            |                                     |                                     |

Provide an explanation of the reason(s) for the determination. Comparing the provided documentation with observations from a site visit, the project appears to be on a trajectory to meet the objectives stated in the project narrative 1. This project fits the landscape of and incorporates existing habitat types, hence maximizing benefits for dollars spent; 2. The project site prior to construction had minimal invasives, thus minimizing long-term vegetative maintenance; 3. The wetland restoration was modest and restored the wetland to a pre-drained hydrologic regime. This will also maximize success of the restoration and minimize long-term maintenance.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Greg Larson

## Outdoor Heritage Fund – DNR Accelerated Prairie Grassland Management, Tatley WMA



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



### PROJECT EVALUATION FORM

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#### PROJECT BACKGROUND

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Project Name: Tatley WMA Prairie Restoration

Date of Review: 9.5.12

Project Location: County Yellow Medicine Township/Range/Section T114N; R46W; NE 31, NW 32

Project Manager / Affiliated organization, Contact: Bill Schuna, MN DNR Division of Wildlife

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration Restore 70 acres of prairie to former crop ground areas at Tatley WMA

Quantifiable objectives of the restoration Establishment of 70 acres of native grasses and forbs to increase available habitat for game and nongame birds.

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
File records of initial site preparation, seed schedule, seeding and grow-in maintenance are kept by wildlife staff

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how?

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#### PROJECT ASSESSMENT

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Site Assessment Attendees - Reviewers: Wade Johnson, MN DNR; Paul Bockenstedt, Stantec - Project managers:  
Bill Schuna, AAWM; Jesse Roberts, F&W - Property owners:

5. Site description (by reviewer): Tatley WMA occurs on gently rolling landscape on the Prairie Coteau. Prairie restoration areas (total of 8) occur on former crop areas  
Soils: range from clay loam to sandy loam, with the USDA NRCS Soil Survey indicating that some soils are eroded  
Topography: Gently rolling uplands  
Hydrology: UModerate to well-drained.  
Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Current vegetation is primarily composed of prairie grasses and forbs. Relatively small amounts of invasive, nonnative weeds are present including Canada thistle, plumeless thistle, absinthe sage, leafy spurge and others (estimated at <1% total cover). Tree seedlings are infrequent, originating as a result of seed rain from nearby windbreaks

1

**Outdoor Heritage Fund – DNR Accelerated Prairie Grassland Management, Tatley WMA**

Surrounding conditions (adjacent land use / veg.): Surrounding land is primarily WMA and consists of a mix of crops (and food plots), other prairie restoration areas, seasonal/emergent wetlands, tree plantings and homestead windbreaks.

- 6. Survey methods used (include deliverable format, # of pgs.): Meander survey
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Site preparation, seeding protocols and maintenance plans are all consistent with accepted best practices for grassland reconstruction.
- 8. List indicators of project outcomes at this project stage: Acres of prairie grasses and forbs established (average/total percent cover; low total cover by invasive, nonnative plants)
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain.
- 13. Are follow-up assessments needed? Yes  No  Explain. Prairie restoration areas appear to be developing well. With customary ongoing management (spot spray, spot mow, prescribed burning and similar) these prairie planting areas should develop as expected, or better.
- 14. Additional comments on the restoration project. Some small areas may require supplemental seeding due to poor initial development on droughty/eroded soils. Overall, this prairie restoration has developed very well.

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**PROJECT EVALUATION**

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|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| The project will:                    |                                     | Confidence of outcome determination |                                     |
| a. Likely not meet proposed outcomes | <input type="checkbox"/>            | 1. Low                              | <input type="checkbox"/>            |
| b. Minimally meet proposed outcomes  | <input type="checkbox"/>            | 2. Medium                           | <input type="checkbox"/>            |
| c. Meet proposed outcomes            | <input type="checkbox"/>            | 3. High                             | <input checked="" type="checkbox"/> |
| d. Likely exceed proposed outcomes   | <input checked="" type="checkbox"/> |                                     |                                     |
| e. Greatly exceed proposed outcomes  | <input type="checkbox"/>            |                                     |                                     |

Provide an explanation of the reason(s) for the determination. The prairie seeding has developed well and includes a good diversity of plants with minimal invasive, nonnative plant cover and only small areas with modest development. With customary maintenance conducted by MN DNR (i.e. spot spray, spot mow, prescribed burning and similar).

Site Assessment Lead(s) Conducting Site Review (Signature Required): Paul Bockenstedt, Stantec

**Parks and Trails Fund – MN DNR, Glendalough State Park Old Field to Prairie / Savanna Restoration**



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

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**PROJECT BACKGROUND**

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Project Name:

Old Field to Prairie/Savanna Restoration Glendalough State Park

Date of Review: 9.5.12

Project Location: County Otter Tail Township/Range/Section T133N, R40W, S1/2, SE 1/4 Sec. 14

Project Manager / Affiliated organization, Contact: Cindy Luethe, MN DNR PAT Regional Resource Specialist

Fund: OHF  CWF  PTF

Project Start Date (Fiscal Year): 2010

Predominant Habitat Type: Prairie/Savanna/Grassland  Wetland  Forest  Aquatic

1. Goal(s) of the restoration restore old field and overgrown oak woodland to prairie and oak savanna, respectively

Quantifiable objectives of the restoration Approximately 11 acres of oak savanna and prairie restored to native prairie and savanna plant species

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
Cindy Luethe, MN DNR Regional Resource Specialist has records of dates, tools, and techniques.

2. Is habitat restoration a primary or secondary objective of the project? Primary  Secondary

3. What is the status of the project? Treatment / establishment phase  Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes  No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes  No   
If yes, how? Not applicable

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**PROJECT ASSESSMENT**

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Site Assessment Attendees - Reviewers: Wade Johnson, MN DNR; Paul Bockenstedt, Stantec; - Project managers: Cindy Luethe, MN DNR PAT Regional Resource Specialist by phone - Property owners: Louie Peterson, MN DNR

5. Site description (by reviewer): Paul Bockenstedt, Stantec  
Soils: sandy loam to sand-gravel  
Topography: gently rolling with a few slopes that exceed 3:1.  
Hydrology: well-drained upland soils  
Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): Premanagement vegetation consisted of scattered to patch canopy of open-grown bur oaks with moderate density subcanopy and brush layer and herbaceous layer primarily composed of nonnative, cool season pasture grasses. Current

**Parks and Trails Fund – MN DNR, Glendalough State Park Old Field to Prairie / Savanna Restoration**

composition is scattered to patchy canopy of open-grown bur oaks with open understory (brush and trees cleared). Herbaceous vegetation consists of a mix of native grasses and native forbs with very small amounts of weedy species including Canada thistle, plumeless thistle, butter-n-eggs and absinth sage.

Surrounding conditions (adjacent land use / veg.): Surrounding land is State Park with the dominant cover being restored prairie, several depressional wetlands, additional oak woodland, and several lakes within one half mile.

- 6. Survey methods used (include deliverable format, # of pgs.): Meander survey
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Site preparation, seeding and grow-in maintenance activities are customary and methods used as standard practice in ecological restoration
- 8. List indicators of project outcomes at this project stage: percent cover of native herbaceous plants (grasses and forbs), percent cover of non-oak trees and shrubs, level of invasive nonnative plants.
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain.
- 13. Are follow-up assessments needed? Yes  No  Explain. Project appears to be on a trajectory to meet or exceed desired outcomes by the end of the funding period.
- 14. Additional comments on the restoration project. The project is meeting the intended goals and objectives of restoring oak savanna through control of invasive, nonnative vegetation and reintroduction of native savanna and prairie species characteristic for this geographic area and specific location. Testing bulk harvest native seed at an accredited seed lab can help determine an appropriate seeding rate.

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**PROJECT EVALUATION**

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The project will:

- a. Likely not meet proposed outcomes
- b. Minimally meet proposed outcomes
- c. Meet proposed outcomes
- d. Likely exceed proposed outcomes
- e. Greatly exceed proposed outcomes

Confidence of outcome determination

- 1. Low
- 2. Medium
- 3. High

Provide an explanation of the reason(s) for the determination. Invasive woody control was clearly successful, site preparation (prescribed burn/spray) and seeding have resulted in a significant increase in desirable native plant cover in the project area.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Paul Bockenstedt

**Parks and Trails Fund – MN DNR, Glacial Lakes State Park Prairie Restorations**



RESTORATION EVALUATION PROGRAM for LEGACY PROJECTS  
Minnesota Board of Water and Soil Resources  
Minnesota Department of Natural Resources



**PROJECT EVALUATION FORM**

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**PROJECT BACKGROUND**

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Project Name: Glacial Lakes State Park Prairie Restorations (STS & Trucker East Units)      Date of Review: 9/5/12

Project Location: County Pope    Township/Range/Section T124N; R39W; NE S 23, NW S 30

Project Manager / Affiliated organization, Contact: Cindy Lueth, MN DNR Parks & Trails

Fund: OHF     CWF     PTF

Project Start Date (Fiscal Year): 20 10

Predominant Habitat Type:    Prairie/Savanna/Grassland     Wetland     Forest     Aquatic

1. Goal(s) of the restoration STS Prairie - Restore prairie through woody invasives removal and seeding of local ecotype prairie seed. Trucker East Prairie - enrich existing grassland through treatment of invasive, nonnative cool season grasses with herbicide and conduct supplemental native prairie species overseeding

Quantifiable objectives of the restoration Improved quality of 88 acres of prairie habitat - Trucker East (74 acres) and STS (14 acres).

What plans / record of project decisions / prescription worksheets are available? Where are they located?  
DNR PAT Regional Resource Specialist has compiled a written summary of project background, methods, and outcomes.

2. Is habitat restoration a primary or secondary objective of the project? Primary     Secondary

3. What is the status of the project? Treatment / establishment phase     Post-establishment phase

4. Has the plan or project implementation been modified from the original plan? Yes     No   
If yes, why and how?

Have alterations in plan or implementation changed the proposed outcomes? Yes     No   
If yes, how?

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**PROJECT ASSESSMENT**

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Site Assessment Attendees - Reviewers: Wade Johnson, MN DNR; Paul Bockenstedt, Stantec - Project managers: Cindy Lueth, MN DNR PAT Regional Resource Specialist (by phone) - Property owners: Louie Peterson, MN DNR PAT Technician

5. Site description (by reviewer): Paul Bockenstedt, Stantec  
Soils: silt loam to gravelly-sandy loam  
Topography: moderate to steeply rolling  
Hydrology: well-drained to excessively well drained  
Vegetation (structure, dominant species % cover, invasive species (MN DNR) % cover, other): STS Prairie - Trucker East Prairie - dominated by herbaceous plants including native grasses and forbs. Common native



**Parks and Trails Fund – MN DNR, Glacial Lakes State Park Prairie Restorations**

grasses include big bluestem, little bluestem, Indian grass, switchgrass, and several others in remnant areas. Frequently observed forbs include maximillian sunflower, bergamot, yellow coneflower, . Surrounding conditions (adjacent land use / veg.): Adjacent areas are primarily State Park and managed for prairie/savanna/oak woodland. The east side of Trucker East Prairie borders private land that is in permanent grassland. The south side of Trucker East Prairie borders a USFWS Waterfowl Production Area that has had recent extensive restoration (tree clearing, prescribed burn) work done on it.

- 6. Survey methods used (include deliverable format, # of pgs.): meander survey for both STS Prairie and Trucker East Prairie areas
- 7. Is the plan based on current science (best management practices, standards, and guidelines)?  
 Yes  No  Describe for yes or no. Site preparation, seeding and grow-in maintenance activities are customary and methods used as standard practice in ecological restoration
- 8. List indicators of project outcomes at this project stage: acres of trees removed, reduction in % cover of nonnative, cool season grasses, acres of native prairie seeding
- 9. Does the project plan / implementation of the project plan reasonably allow for achieving proposed project outcome(s)? Yes  No  Explain.
- 10. Are corrections or modifications needed to meet proposed outcomes? Yes  No   
 If yes, explain.
- 11. Has anything been done or planned that would detract from existing or potential habitat? Yes  No   
 If yes, explain.
- 12. Are proposed future steps, including long-term management, practical and reasonable? Yes  No   
 If no, explain.
- 13. Are follow-up assessments needed? Yes  No  Explain. It is unlikely that additional assessments would be beneficial. Project objectives have been substantially achieved and PAT staff will continue maintenance work that will build on efforts made during the initial restoration phase of this project.
- 14. Additional comments on the restoration project.

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**PROJECT EVALUATION**

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- |                                      |                                     |                                     |                                     |
|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| The project will:                    |                                     | Confidence of outcome determination |                                     |
| a. Likely not meet proposed outcomes | <input type="checkbox"/>            | 1. Low                              | <input type="checkbox"/>            |
| b. Minimally meet proposed outcomes  | <input type="checkbox"/>            | 2. Medium                           | <input checked="" type="checkbox"/> |
| c. Meet proposed outcomes            | <input checked="" type="checkbox"/> | 3. High                             | <input type="checkbox"/>            |
| d. Likely exceed proposed outcomes   | <input type="checkbox"/>            |                                     |                                     |
| e. Greatly exceed proposed outcomes  | <input type="checkbox"/>            |                                     |                                     |

Provide an explanation of the reason(s) for the determination. Restoration methods and integration of activities were appropriate for the site. Weather (drought in 2012) appears to have delayed development at STS Prairie. Despite this, as customary grow-in maintenance continues and with periods of normal precipitation, the site should progress in development. Trucker East prairie appears to have effectively increased native plant cover through treatment of nonnative cool season grasses and overseeding.

Site Assessment Lead(s) Conducting Site Review (Signature Required): Paul Bockenstedt (Stantec Inc)

## **Appendix II: Outdoor Heritage Fund Restoration and Management Plans**

As required by M.L 2009, [Chapter 172](#), Article 1, Section 2. Subd. 10. (3)

**CPL Grant Program Ecological Restoration and Management Plan**

**RESTORATION PROJECTS ONLY**

<b>Contract #:</b>	<b>B40857</b>
<b>Organization Name:</b>	<b>The Nature Conservancy</b>
<b>Name of Project:</b>	<b>Restoration of Critical Forest Habitat in Northeast MN</b>
<b>FY of Grant Awarded:</b>	<b>FY2010</b>
<b>Contact Name:</b>	<b>Doug Thompson</b>
<b>Contact Phone:</b>	<b>218-727-6119</b>

Please choose the correct response to the below statements as it relates to your above project.

- 1) To the extent possible, only vegetation or seed of ecotypes native to Minnesota, and preferably of the local ecotype, using a high diversity of species originating from as close to the restoration site as possible have been or will be used in this project, protecting existing native prairies from genetic contamination.  
 Yes       No, explain
  
- 2) MCC was given consideration to and timely written contact was made with the Minnesota Conservation Corps for consideration of possible use of their services to contract for restoration and enhancement services.  
 Yes       No, explain
  
- 3) This project is on land permanently protected by conservation easement or public ownership.  
 Yes       No, explain
  
- 4) Is this project consistent with the highest quality conservation and ecological goals for this site?  
 Yes       No, explain
  
- 5) Is the best available science being used to achieve the best restoration?  
 Yes       No, explain
  
- 6) Has consideration been given to soil, geology, topography and other relevant factors that would provide the best chance of long term success of this restoration?  
 Yes       No, explain

Restoration Implementation Timetable:

Activity	Timeline	Describe specific work activities
Establish Vegetation	May 2010	planting of tree seedlings
Maintenance	Oct 2010	browse protection placed on seedlings
Maintenance	Oct 2010	release of seedlings from competing vegetation
Establish Vegetation	May 2011	planting of tree seedlings
Maintenance	Oct 2011	browse protection placed on seedlings
Maintenance	Oct 2011	release of seedlings from competing vegetation
Establish Vegetation	May 2012	planting of tree seedlings+ maintenance (release and browse protection)
	Oct 2012	

**Outdoor Heritage Fund, CPL Grant - The Nature Conservancy, Critical Forest Habitat in Northeast MN**

**CPL Grant Program Ecological Restoration and Management Plan**

**RESTORATION PROJECTS ONLY**

Identify Long Term Maintenance and Management Needs, Source(s) of Funding:

Need	Timeframe	Financial source
additional release from competing veg	2015-2017	To be determined--funds to be raised in the future from private and/or public sources
additional browse protection	2013-2022	To be determined--funds to be raised in the future from private and/or public sources
monitoring	2011-2022	To be determined--funds to be raised in the future from private and/or public sources

I certify that the information provided above is accurate and that I am authorized by the above organization to submit this report. If this information should change at any time during the grant period, I will notify CPL grant staff immediately.  
 Name: Doug Thompson  
 Title: NE MN Program Director, The Nature Conservancy

**Please submit this form within 30 days of work beginning on the above project or with the first request for payment. You may email this form or print and mail to CPL grant staff.**

[LSCPLGrants.DNR@state.mn.us](mailto:LSCPLGrants.DNR@state.mn.us) or

CPL Grant Program Staff  
 500 Lafayette Road  
 Box #20  
 St. Paul MN, 55155-4020

**CPL Grant Program Ecological Restoration and Management Plan**

**ENHANCEMENT PROJECTS ONLY**

<b>Contract #:</b>	<b>B41911</b>
<b>Organization Name:</b>	<b>Minnesota Waterfowl Association, Inc.</b>
<b>Name of Project:</b>	<b>Minnesota Waterfowl Association/MWA Lake Maria WMA Restoration</b>
<b>FY of Grant Awarded:</b>	<b>FY2010</b>
<b>Contact Name:</b>	<b>Bradley Nylin</b>
<b>Contact Phone:</b>	<b>(952) 767-0320</b>

Please choose the correct response to the below statements as it relates to your above project.

- 1) To the extent possible, only vegetation or seed of ecotypes native to Minnesota, and preferably of the local ecotype, using a high diversity of species originating from as close to the restoration site as possible have been or will be used in this project, protecting existing native prairies from genetic contamination.  
 Yes       No, explain
  
- 2) MCC was given consideration to and timely written contact was made with the Minnesota Conservation Corps for consideration of possible use of their services to contract for restoration and enhancement services.  
 Yes       No, explain
  
- 3) This project is on land permanently protected by conservation easement or public ownership.  
 Yes       No, explain

I certify that the information provided above is accurate and that I am authorized by the above organization to submit this report. If this information should change at any time during the grant period, I will notify CPL grant staff immediately.  
Name: Bradley Nylin  
Title: Executive Director

**Please submit this form within 30 days of work beginning on the above project or with the first request for payment. You may email this form or print and mail to CPL grant staff.**

[LSCPLGrants.DNR@state.mn.us](mailto:LSCPLGrants.DNR@state.mn.us) or

**CPL Grant Program Staff  
500 Lafayette Road  
Box #20  
St. Paul MN, 55155-4020**

## Outdoor Heritage Fund – DNR Accelerated Prairie Grassland Management, Tatley WMA

FY10 OHF Appropriation Ecological and Restoration Plan for Tatley WMA  
 Grantee Name **Minnesota Department of Natural Resources** Date **5/12/10**

County **Yellow Medicine** Township **114N** Range **46W** Parts of Sections **31 & 32** Seller **None**

Acreage **70**

Please complete the following and submit this form to [Michelle.Grosz@state.mn.us](mailto:Michelle.Grosz@state.mn.us). If your organization is transferring the land to the DNR, instead submit your Initial Development Plan, being certain you have used the updated form that contains the following information. For all restorations and for where land is not being transferred to the DNR, use the form below.

Designed to meet L-SOHC Project and Acquisition Requirements in 2009 ML CH 172		
To the extent possible, only vegetation or seed or ecotypes native to Minnesota, and preferably of the local ecotype, using a high diversity of species originating from as close to the restoration site as possible were used in this project, protecting existing native prairies from genetic contamination.		
Yes <input checked="" type="checkbox"/>	No Please Explain	N/A
For all new lands acquired, this document will meet the requirements for an <b>Ecological Restoration and Management Plan</b> by identifying: 1, 2, 3, 4 and 5 below:		
1) To the degree practicable, this plan is consistent with the highest quality conservation and ecological goals for the site: YES <input checked="" type="checkbox"/> , NO <input type="checkbox"/> .		
2) Consideration was given to soil, geology, topography, and other relevant factors that would provide the best chance for long-term success of the restoration projects: YES <input checked="" type="checkbox"/> , NO <input type="checkbox"/> .		
3) The plan shall include the proposed timetable for implementing the restoration, including, but not limited to, site preparation, establishment of diverse plant species, maintenance, and additional enhancement to establish the restoration.		

1

Implementation Timetable			
Activity	Timeline (month/year)	Describe specific work activities	
Spray Roundup	6/2011 or sooner	Spray roundup to reduce broadleaf competition	
Purchase Grasses/Forbs	1/2011	Purchase grasses and forbs	
Drill Grass/Forbs	6/2011 or sooner	Plant grasses and forbs	
4) The plan shall identify long-term maintenance and management needs of the restoration and how the maintenance, management, and enhancement will be financed; including (for new acquisitions) identification of sufficient funding for implementation.			
<b>Long-term Needs</b>			
Need	Timeframe (yrs to yrs)	Funding needed	Funding source
Noxious weed control	2 5	\$4,000.00	
Burning	3	\$3,000.00	
5) The plan uses the best available science to achieve the best restoration: YES <input checked="" type="checkbox"/> , NO <input type="checkbox"/> .			
If No please indicate reason			
Attach maps, species lists and additional pages as needed. Include any other comments here too.			
LSOHC funds will not be used for alfalfa/green break/food plot establishment or maintenance.			

This is a restoration on DNR land: Approved: Area Mgr **Bill Schuna AAWM** Asst. Reg. Mgr. **Paul Hansen, ARM, 5-24-10**  
 WL Dev. Consultant \_\_\_\_\_

This is a restoration or land acquisition that does not involve DNR Land Approved \_\_\_\_\_  
**NGO signature must be from individual with land restoration skills and background.** Title \_\_\_\_\_

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