ADAPTIVE MANAGEMENT IMPLEMENTATION PLAN

Section 1. Contacts

1. Date submitted **April 24, 2008**	2. Region **3**	3. Regional Biologist **Pat Heglund**
4. Refuge Supervisor **Greg Brown**	5. Refuge/Station Name **Minnesota Private Lands Office**	6. Station Project Leader **Sheldon Myerchin** Signature:
7. Contact person **Lori Stevenson**	8. Contact phone number **320-253-4682**	9. Brief title **Excavate Sediment in Wetlands**

10. Biological Monitoring Team Contacts

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Section 2. Synopsis of adaptive management workshop

11. Date & location of workshop: **January 29-31, 2008, Rydell NWR, Erskine, MN.**

12. Workshop Participants, including Refuge staff. **List is attached with the workshop notes.**

13. Brief problem description.

Historically, wetlands and prairies on the landscape have provided important breeding and rearing habitat for waterfowl and other wildlife. Due to wetland drainage and intensive farming practices,more than 90% of the historical wetlands have been lost in the prairie and transition regions of the Midwest. While many National Wildlife Refuges, Waterfowl Production Areas (WPA) and state wildlife management areas were established to protect these wetlands, the vast majority remain in private ownership. The U.S. Fish and Wildlife Service's (Service) Partners for Fish and Wildlife (PFW) Program works with landowners to restore drained wetlands on private land and many wetlands are also being restored on Service lands (WPAs) and easements. Typical wetland restoration projects include plugging drainage ditches and tile lines or constructing berms to restore degraded or drained wetland basins.

The purpose of this proposal and workshop is to gather information about excavating sediment from the wetland in conjunction with restoring a drained wetland basin through typical restoration techniques. A limited number of efforts have been made on Service lands and private lands to implement sediment removal as a restoration technique. Current science seems to indicate that sediment negatively impacts the functioning of wetlands (Gleason et al. 2003); however, the science does not currently provide details on implementing or even on the results of sediment removal. This restoration technique is expensive and intensive, and therefore ensuring the science behind it is critical.

Problem Statement: Many wetlands do not function in their natural state due to anthropogenic influences (drainage, filling, agricultural practices, etc) resulting in a significant loss of wildlife habitat. There is a need to determine if and when sediment removal is an appropriate tool to use to restore drained or partially drained wetland basins (temporary, seasonal and semi-permanent wetlands).

14. Objectives.

Goal (Fundamental Objective): Provide healthy, functioning wetlands across the landscape for waterfowl and migratory bird breeding habitat.

Means Objectives:

1. Restore appropriate hydrology for the wetland type
2. Restore hydrophytic vegetation
3. Restore invertebrates

15. Management alternatives & expected response of the resource. Who makes decisions about what management actions to implement? When & how often are these decisions made?

A planning team examined options and came up with two management alternatives:

1. **business as usual (restore hydrology of wetland as you typically would), OR**
2. **business as usual + excavate sediment from the wetland.**

But to get to this point, each wetland site would have to go through a pre-screening or pre-assessment process to determine if it is even eligible for restoration. The planning team has not completed the wetland restoration pre-assessment protocol to-date. Please see the attached meeting notes for the planning team's list of ideas for wetland restoration pre-assessment protocol to be collected at each wetland restoration site (page 5).

Each field station is responsible for choosing a management action, prior to each wetland restoration. Hundreds of wetlands are restored each year among all the participating field stations.

16. Competing models & key uncertainties.

There will be two potential competing models that address the key uncertainties:

1. **excavating sediment improves the outcome of the restoration vs.**
2. **excavating sediment has nothing to do with the quality of the restoration or it might reduce the quality.**

17. Decision support & modeling tools.

Eric Lonsdorf, consultant, has met with the planning team and has provided a thorough overview of what can be expected in the form of a spreadsheet end-product. When the wetland restoration pre-assessment protocols and monitoring metrics protocols are completed, a better determination of the utilities values and model weights for the spreadsheet can be made, by the end of the summer-2008.

18. Monitoring metrics.

Plans are to monitor the following metrics for temporary, seasonal and semi-permanent wetlands:

1. **% Cover (mudflat,open water,herbaceous)**
2. **% Invasives**
3. **% Full**
4. **Species Richness/index/indicator species**
5. **Water chemistry**

For purposes of this study, it is proposed that temporary, seasonal, and semi-permanent wetlands would be found in one state: hydrology altered (presence of ditches or tile drains). Thus, there are 3 initial states for a wetland restoration: one each for temporary, seasonal and semi-permanent wetlands.

Each of these wetland states, with hydrology altered, would need a definition of success for each metric.

19. Time step for updating models.

Discussion focused on a 2-3 year period.

19. Briefly, how will this project improve management at your station & elsewhere?

This project has brought staff together from several field stations with various forms of a goal in mind and has required formalization of a common goal with objectives. Through this process monitoring data will be obtained to determine if stated objectives have been met. The information learned from the monitoring data will inform staff if sediment removal is an appropriate technique to use in conjunction with typical wetland restoration practices.

Section 3. Implementation Plan

21. Monitoring Partners/Planning Team (all Refuge stations and others who will be implementing the plan).

Partner	**Agency**	**E-mail / phone number / notes**
Lori Stevenson	MNPLO	Lori_Stevenson@fws.gov, 320-253-4682, co-leader
Sara Vacek	Morris WMD	Sara_Vacek@fws.gov, 320-589-4973, co-leader
Stacy Salvevold	Morris WMD	Stacy_Salvevold@fws.gov, 320-589-4973
Dave Bennett	Glacial Ridge NWR	Dave_Bennett@fws.gov, 218-687-2229
Becky Eckstein	Glacial Ridge NWR	Rebecca_Eckstein@fws.gov, 218-687-2229
Cami Dixon	Devils Lake WMD	Cami_Dixon@fws.gov, 701-662-8611
John Braastad	Agassiz NWR	John_Braastad@fws.gov, 218-689-7987

22. Timeline for implementation. Estimate when assistance will be needed from modeler, database expert, BMT, or Regional Biologist.

Approx. Date	**Task**	**Responsible Person**
done	Finalize management alternatives	Planning Team
March 2008	Draft decision support spreadsheet	Eric Lonsdorf
Summer 2008	Test monitoring protocols	Planning Team
Fall 2008	Finalize monitoring protocols	Planning Team
Fall/winter 2008	Create monitoring database	Todd Sutherland
Fall/winter 2008	Finalize decision support spreadsheet	Eric Lonsdorf
Spring 2009	Begin AM Project	Planning Team

23. Budget.

Total request from Regional Office: **$15,000**

Station(s) proposed to receive the funds (if multiple stations indicate the budget breakdown by station).

If grants or other funding sources are being used for the project, indicate the sources & amounts (add a column).

This funding will be used to hire a private contractor to document and write the wetland restoration pre-assessment protocols and monitoring metrics protocols, as briefly outlined in Sections 15 & 18, and in more detail in the attached meeting notes. Development of data forms for each set of protocol would also be necessary. With this funding, this contractor will also be working on the Temporary and Seasonal Wetland Management Project. Please see that implementation plan for those details.

Item (Examples)	**Hours**	**Station $$**	**Regional Office $$**	**Total $$**
Staffing				
Refuge Biologist	160	7,200.00		7,200.00
Seasonal employee (GS?)				
Contractor			15,000.00	15,000.00
Operations				
Travel		600.00		600.00
Equipment/supplies		200.00		200.00
Total	160	8,000.00	15,000.00	23,000.00

Section 4. Attachments

24. Please attach the summary or minutes from the workshop. Also attach any proposals for contracts or other requests. **Please see attached notes from the workshop, and briefing document with references cited.**

Section 5. Instructions

25. After your adaptive management workshop, the workshop recorder will summarize the minutes of the workshop and distribute to all interested persons (participants, partners, managers). The planning team will meet to finalize any items not completed during the workshop. These include refining the descriptions of the alternative management actions and defining the monitoring metrics and how they will be interpreted. The planning team or representatives will meet with the modeler to work out details of drafting a decision support tool (spreadsheet). The planning team also needs to estimate when they need help creating a project database to hold the monitoring data. If the services of a contractor are needed (specialized expertise or reviews), solicit needed contracts.

The planning team will draft this Implementation Plan & discuss the plan with the Project Leaders (PL) at each station proposing to implement. The Team Leader will finalize the Implementation Plan and forward to the Regional Biologist (RB), with cc to the PL. The PL will e-mail the RB to indicate their concurrence with the Plan. (Alternatively, send a hard copy with PL signature to the RB; the RB still needs the digital file.) The Regional Office will determine whether or not additional funds are available to support implementation of the project. A revised plan with updated budget should be submitted on or before 1 March each year that the project is operational if Regional Office funding is desired. Projects should be designed to be feasible with or without this funding.