

Notice: This final report is authorized by ss. 281.65 and 281.66, Wis. Stats., and chs. NR 153 and NR 155, Wis. Adm. Code. Personally identifiable information collected will be used for program administration and may be made available to requesters as required under Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Instructions: The grant agreement requires grantees to submit a Final Report 60 days after the end date listed in the grant agreement. This Final Report form must be used in conjunction with the "FINAL REPORT INSTRUCTIONS." The instructions detail how to complete and submit the report to DNR.

1. Grant Type

- Agricultural - Targeted Runoff Management Grant
- Urban - Targeted Runoff Management Grant
- Construction - Urban Nonpoint Source & Storm Water Management Grant
- Planning - Urban Nonpoint Source & Storm Water Management Grant

2. Grantee & Project Information

Project Name Squaw Lake Wetland Restoration Project	Grant Number TRM-56000-01
Governmental Unit Name St. Croix County	Governmental Unit Type (city, village, town, etc.) County
Watershed Name Trout Brook	Watershed Code SC-08
DNR Water Management Unit (River System) Name Unnamed	Water Body Identification Code (WBIC) (if applicable) 2499000

s. 303(d) Waterbody? Yes No

What pollutant(s) were addressed by the project?

phosphorus & sediment

For **each** project site location provide the following: (attach additional sheets if necessary)

Location:		A	B	C	D	E
Minor Civil Division Name		Star Prairie	Star Prairie			
PLSS	Town	T31N	T31N			
	Range	R18W	R18W			
	Section	5	8			
	Quarter	SW	NW			
	Quarter-Quarter	SW	NE			
Latitude		92° 37' 41.6" W	92° 37' 27.6" W			
Longitude		45° 11' 48.1" N	45° 11' 41.8" N			
Property Owner(s)	Name	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service			
	Mailing address	1764 95th St. New Richmond, WI 54017	1764 95th St. New Richmond, WI 54017			
Site address <i>(if different than mailing address)</i>		Cty Rd H	Cty Rd H			

3. Summary of Results

A. Performance Standards and Prohibitions and Other Water Resources Management Priorities

For grants issued in calendar year 2006 or later, complete Tables A and B (following) consistent with the entries on your grant application. For grants issued prior to calendar year 2006, complete Tables A and B, *to the best of your knowledge*, consistent with the entries on your grant application.

Table A. Performance Standards and Prohibitions (per ch. NR 151, Wis. Adm. Code, effective October 1, 2002)

Performance Standard or Prohibition	Units of Measure	Quantity	Measurement Method Used
Sheet, rill and wind erosion	Acres meeting T		
Manure Storage Facilities: New Construction/Alterations	Number of facilities		
	Number of animal units		
Manure Storage Facilities: Closure	Number of facilities		
Manure Storage Facilities: Failing/Leaking Facilities	Number of facilities		
	Number of animal units		
Clean Water Diversions in WQMA	Pollutant load reduction		
	Number of farms with diversions		
	Number animal units		
Nutrient Management on Agricultural Land	Acres planned		
Prohibition: Manure Storage Overflow	Number of facilities		
	Number of animal units		
Prohibition: Unconfined Manure Pile in WQMA	Number of farms		
Prohibition: Direct Runoff From Feedlot/Stored Manure	Pollutant load reduction		
	Number of facilities		
	Number of animal units		
Prohibition: Unlimited Livestock Access	Feet of bank protected		
	Number of farms		
Urban: 20-40% Reduction in Total Suspended Solids (TSS)	Pounds TSS reduced		
	% TSS reduction		

Table B. Other Water Resources Management Priorities

I. Agricultural Areas	Units of Measure	Quantity	Measurement Method Used
Buffers	Feet of bank protected		
	Number of farms		
Streambank	Tons of bank erosion reduced		
	Feet of bank protected		
Other (specify)			
II. Developed Urban Areas	Units of Measure	Quantity	Measurement Method Used
Urban: 20-40% Reduction in TSS	Pounds TSS reduced		
	% TSS reduction		
Infiltration	% Pre-development stay-on volume		
	Cubic feet stay-on volume		
Peak flow discharge	Change in cubic feet per second		
Protective areas	Feet of bank protected		
Fueling & maintenance areas	Oily sheen presence		
Streambank	Tons of bank erosion reduced		
	Feet of bank protected		
Other (specify)			
III. Planning	Units of Measure	Quantity	Measurement Method Used
Quantify how implementation of the planning project decreased storm water impacts on state waters (<i>i.e.</i> , storm water plan, I & E plan, <i>etc.</i>)	Municipalities planned for		
	Acres planned for		
Document/track progress made in implementing the planning product (<i>i.e.</i> , ordinance, utility district evaluation/formation, storm water management plan information & education, <i>etc.</i>)	Municipalities planned for		
	Acres planned for		
Other (specify)			

B. Project Results Narrative

The Squaw Lake Restoration project completed two runoff control structures that restored 39 acres of drained wetlands. In addition 110 acres of uplands have been converted from cropland to permanent native vegetation including grasses and thirty forb species. The runoff control structures will capture the first flush of nutrient laden runoff and allow nutrients and sediment to settle out in the wetlands. The water will be drained each fall to allow maximum capacity in the wetlands in preparation for the nutrient laden spring runoff. The restored wetlands will also provide valuable wildlife habitat for migrating waterfowl and shore birds. (See attached picture, 3)

- **Pre-restoration evaluation**
- **Watershed hydraulic modeling** conducted by DNR and USDA/NRCS engineers from 1998 - 2000 shows that restored wetlands have the capacity to temporarily detain 14% of spring runoff, on a 2.8" snowmelt year.
- **In-lake water quality modeling** and watershed mass balance calculations for phosphorus were conducted by John Panuska, DNR, in 1996 and updated in 2000. Calculations show that the wetland restorations will be able to detain 14% of the annual phosphorus load to Squaw Lake, depending on runoff volumes.
- **Spring runoff flows** have been monitored since 1996, and utilized in calculating runoff volumes and nutrient loads to Squaw Lake.
- **Water quality monitoring** has been conducted since 1986 for Squaw Lake, as part of the Long- Term Trend Monitoring program. In addition, spring runoff samples have been collected since 1996. Monitoring will provide a baseline for comparison to post-installation sampling.

A number of models were used to estimate the P loading budget. WINHUSLE, a Wisconsin developed USLE/hydrologic runoff model, and the phosphorus export coefficients of the Wisconsin Lake Model Spreadsheet (WILMS) were used to estimate P from uplands (croplands and woodlands). BARNY, a Wisconsin adapted version of the ARS feedlot runoff model was used to estimate phosphorus from animal lots. SLAMM was used to estimate P from residential development. Field inventory data was used to estimate P from manure spreading in winter and shorelines.

In 2005 a Lake Planning Grant was applied for to collect spring runoff samples. The purpose of this Grant is to monitor water volumes and phosphorus concentrations in spring runoff over a period of three years. Overall, we would like to determine how effective the wetlands are in attenuating sediment and phosphorus.

Too date there has been two on site events that have showcased the project. First was the project dedication day and second was the conservation showcase site to celebrate the year of conservation 2005. Both events had approximately thirty individuals in attendance. (See attached pictures, 1 and 2)

4. Satisfaction of Notice Requirements (if applicable)

If cost sharing for this project was offered under a formal notice to achieve compliance with performance standards or prohibitions, provide information for each notice in the table below.

Notice Information				Notice Satisfaction Information		
Notice Type	Issue Date	From (Name)	To (Name)	Satisfied?		Date Letter Sent
				Yes	No	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	

5. Summary of Project Challenges

One of the major project challenges was having Ducks unlimited come up with a runoff control structure design that met the needs of all the parties involved, including Ducks Unlimited, U.S. Fish and Wildlife Service, Department of Natural Resources, and St. Croix County.

6. Additional Information about the Project (optional)

7. Planning Product (UNPS&SW - Planning Projects only)

Check here if a printed copy of the planning product (e.g., plans, ordinances, analyses) was sent to your DNR Regional Nonpoint Source Coordinator.

Name of Document

Date(s) effective

Date Submitted to NPS Coordinator

8. Grantee Certification:

Check here to certify that, to the best of your knowledge, the information contained in this report is correct and true.

Type or print Name and Title of Authorized Representative certifying here.

Date

Steve Olson

12-14-2005



2005 Showcase County Board Chairman Presenting



Wetland and Dedication

