



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2017 LCCMR Work Plan

Date of Submission: 14 September 2016

Date of Next Status Update Report: 31 October 2017

Date of Work Plan Approval: 06/07/2017

Project Completion Date: 30 June 2020

Does this submission include an amendment request? NO

PROJECT TITLE: Maximize Value of Water Impoundments to Wildlife

Project Manager: Kristin Hall

Organization: Audubon Minnesota

Mailing Address: 1 Water Street West, Suite 200

City/State/Zip Code: Saint Paul, MN 55107

Telephone Number: (651)739-9332, ext 116

Email Address: khall@audubon.org

Web Address: mn.audubon.org

Location: Agassiz Valley Impoundment located in Marshall and Polk Counties T154, R46 & R47

(Latitude 48.1751417, Longitude -96.6440833)

Total ENRTF Project Budget:

ENRTF Appropriation: \$195,000

Amount Spent: \$0

Balance: \$195,000

Legal Citation: M.L. 2017, Chp. 96, Sec. 2, Subd. 06f

Appropriation Language:

\$195,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the National Audubon Society, Minnesota office, to control invasive hybrid cattails in water impoundments to improve habitat quality for migrating and breeding birds. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: Maximize the value of floodwater impoundments for wildlife.

II. PROJECT STATEMENT:

In 2012-2013 Audubon Minnesota conducted migratory and breeding bird surveys on five Middle-Snake-Tamarac Rivers Watershed District (Watershed District) impoundments in order to better assess their value to wildlife (*Prairie Pothole Joint Venture Flex Fund - Red River Valley Avian Conservation Final Report, Audubon MN 2014*). Survey results reveal that floodwater impoundments function as artificial wetlands and shallow ponds for a suite of migrating and breeding birds. However, invasive hybrid cattail (*Typha x glauca*) and exotic narrow-leaved cattail (*Typha angustifolia*; hereafter, hybrid cattail) was a major issue noted while conducting these surveys. Its presence and typical rapid expansion poses an immediate threat by reducing the habitat quality of these impoundments. We recognize that floodwater control was the primary function of these sites when they were constructed and will remain so in the future. However, the management capabilities at these sites also show that there is potential to provide essential functions for migratory and breeding birds, and other wetland-dependent wildlife.

Based on observations at the Agassiz Valley Impoundment in particular, the extent of open water habitat has decreased substantially in the four years since we first conducted bird surveys, due primarily to the expansion of hybrid cattail. Previous research has shown that wetlands with an approximate 50:50 ratio of open water and emergent vegetation attract the highest diversity of wetland birds and promote optimal recruitment for population growth. Conversely, wetlands that are dominated by a monoculture of cattail have low wildlife value and are typically only utilized by a small number of bird species. The reduction and subsequent management of hybrid cattail within these impoundments is essential not only to maintain the necessary water storage capacity within these impoundments, but also to provide improved habitat to birds and other wildlife. We propose an invasive hybrid cattail removal project using a combination of site-appropriate best management practices at the Agassiz Valley Impoundment. This cattail removal project is complimentary to the *Cattail Management for Wetland Wildlife and Bioenergy Potential* grant that was awarded by LCCMR in 2014, which is under the supervision of Dr. Dan Svedarsky. Both projects highlight the issue of wetland habitat degradation due to the rapid expansion of invasive hybrid cattail, which is widely recognized as one of the most critical and challenging management issues wetland managers are currently facing throughout the Upper Midwest. Results from this project will inform the maintenance, management, and design of existing and future impoundments throughout the region to maximize their value to wildlife. Additionally, cattail management in these impoundments will ultimately promote their longevity, water storage capacity, and water quality.

For this project we will:

- Conduct 3 avian monitoring surveys of spring migratory and breeding bird species at the Agassiz Valley Impoundment before, during, and after invasive hybrid cattail removal/control management activities.
- Remove up to 500 acres of hybrid cattail from the Agassiz Valley Impoundment owned and operated by the Watershed District (gated water storage area is 6,840 acre-feet; un-gated is 10,670 acre-feet.)
- Use this experience at the Agassiz Valley Impoundment to guide us in developing wildlife enhancement elements that can be integrated into the floodwater management plans of existing and future impoundments throughout the region.

III. OVERALL PROJECT STATUS UPDATES:

Project Status as of 31 October 2017:

Project Status as of 30 April 2018:

Project Status as of 31 October 2018:

Project Status as of 30 April 2019:

Project Status as of 31 October 2019:

Project Status as of 30 April 2020:

Overall Project Outcomes and Results: 15 August 2020

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Invasive Hybrid Cattail Reduction in Agassiz Valley Impoundment

Description: Conduct hybrid cattail removal at Agassiz Valley Impoundment to allow for increased flood control capabilities, enhance bird and wildlife habitat, and promote water quality. Our projected treatment regime is as follows:

- Fall 2017: Initial treatment with an aerial herbicide application using a wetland-approved glyphosate-based or imazapyr-based herbicide. Late summer and early fall is an ideal time frame for treatment, as it aligns with the phenological time frame in which cattail is sending nutrient reserves into its root mass and therefore promotes an optimal “kill”.
- Approximately two weeks to one month after the chemical application, we will conduct either a mechanical removal, mowing, or haying of the treated area in order to reduce and/or remove residual dead standing cattail and effectively ‘push’ the impoundment’s habitat toward the desired 50:50 ratio of open water to emergent vegetation.
- Spring/Summer 2018: Conduct targeted water level management in coordination with Watershed District staff objectives, to ensure little to no cattail germination from seed banks within the previously treated area. At a minimum, we will aim to maintain water levels $\geq 6''$ during the period of cattail germination (June- August).
- Fall 2018: Follow-up management treatments to include spot herbicide application, mowing, or haying will be applied as necessary, based on an ocular vegetation assessment of the site.

Our treatment schedule does not allow for the initial avian survey to take place under the LCCMR grant window, as migratory and breeding birds surveys are typically conducted in May and June. Audubon Minnesota will provide project leverage funding (approximately \$12,250) to insure that the initial “pre-treatment” surveys are conducted in order to begin the hybrid cattail control treatment within the early phases of the grant cycle (estimated award date: 1 July 2017). Please see Activity 2 for the avian surveys description.

Summary Budget Information for Activity 1:

ENRTF Budget: \$116,000
Amount Spent: \$ 0
Balance: \$116,000

Outcome	Completion Date
1. Conduct pre-treatment monitoring of migratory and breeding bird use at the impoundment (1st survey season funding from Audubon and/or assistance from partner agencies).	May-June 2017
2. Prepare a Management Plan in cooperation with Watershed District staff for hybrid cattail control and water-level management at the impoundment, outlining project process, timeline, roles, and responsibilities.	Summer 2017
3. Remove up to 500 acres of invasive hybrid cattail using a combination of herbicide, flooding, mowing, mechanical removal, and haying (USFWS, Watershed District, and contracted entities).	Fall 2017-Fall 2018

Project Status as of 31 October 2017:

Project Status as of 30 April 2018:

Project Status as of 31 October 2018:

Project Status as of 30 April 2019:

Project Status as of 31 October 2019:

Project Status as of 30 April 2020:

Final Report Summary:

ACTIVITY 2: Avian and vegetation monitoring of impoundment pre- and post-treatment activities

Description: Conduct pre- and post-treatment avian response monitoring of the cattail removal project. These surveys will collect both avian and aquatic vegetation data. Information gathered throughout the monitoring process will be used to better advise the design and subsequent management of future floodwater impoundments.

Survey Methodology

- A subset of survey locations will use the standard method for sampling birds which is an unlimited-radius, 10-minute point count protocol. All birds seen or heard from a specific point are recorded during a 10-minute period by a qualified observer.
- We will also use the Standardized North American Marsh Bird Monitoring Protocol (Conway 2011) which includes a 5-minute passive listening period followed by 6 minutes of call playback species specific monitoring to detect secretive marshbirds (e.g., bitterns, rails).
- A standard form with map will be used to record data. This form requires the observer to estimate where each bird was first encountered and when each bird was first encountered (during the census period). These details facilitate comparisons with other studies.
- Birds flying over and not actively using the count area should be recorded separately as “flyovers.”
- Whenever possible, sex and age (adult vs. juvenile) of each bird should be recorded. In particular, juvenile birds (e.g., recent fledglings) should be distinguished from adults in order to estimate the number of breeding pairs in the area.
- Time of day, weather conditions, and exact locality in lat/long or UTM coordinates should be recorded for each count locality.
- Avian surveys will take place each year from 1 May – 30 June with the goal of conducting three surveys per season (early May, late may- early June and late June) in order to document both spring migrants early in the season and breeding birds as the season progresses.
- Associated vegetative/habitat information will be recorded at each avian survey location annually.
- Specific vegetation plots will also be designated throughout the project area for pre and post treatment monitoring using Daubenmire style plots which consist of systematically placing a 20- x 50-cm quadrat frame along permanently located transects. This method captures the following vegetation attributes: species identification, canopy cover, frequency, composition by canopy cover.

Summary Budget Information for Activity 2:

ENRTF Budget: \$40,000
Amount Spent: \$ 0
Balance: \$40,000

Outcome	Completion Date
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1. Conduct a second season of avian surveys – overlap with the ongoing treatment process	Summer 2018
2. Conduct a third and final season of surveys – post treatment surveys	Summer 2019
3. Perform survey analysis and write up comparative results	Fall 2019

Project Status as of 31 October 2017:

Project Status as of 30 April 2018:

Project Status as of 31 October 2018:

Project Status as of 30 April 2019:

Project Status as of 31 October 2019:

Project Status as of 30 April 2020:

Final Report Summary:

ACTIVITY 3: Develop and integrate wildlife management recommendations into Middle-Snake-Tamarac Rivers Watershed District impoundment operational plans

Description: Develop wildlife management recommendations in coordination with the Watershed District and input from state and federal wildlife agencies for existing impoundments. Using lessons learned in the Agassiz Valley Impoundment project, we will work with Watershed District staff to make adjustments, as needed, to the water-level management in their other impoundments. This will allow them to provide a flood control function, while also benefiting migratory and breeding bird species, as well as other wildlife. Recommendations would also include working with the watershed district to enhance habitat conditions adjacent to the impoundments for grassland nesting birds (e.g., blue-winged teal, marbled godwit), which utilize the wetland impoundments for part of their life cycle.

Summary Budget Information for Activity 3:

ENRTF Budget: \$39,000
Amount Spent: \$ 0
Balance: \$39,000

Outcome	Completion Date
1. Assess wildlife potential value and needs at the four remaining impoundments	Fall 2019
2. Draft wildlife management recommendations with the input of agencies and area experts	Spring 2020
3. Work with Watershed District staff on the review, approval and integration of these recommendations into their overall operational structure.	Spring/ Summer 2020

Project Status as of 31 October 2017:

Project Status as of 30 April 2018:

Project Status as of 31 October 2018:

Project Status as of 30 April 2019:

Project Status as of 31 October 2019:

Project Status as of 30 April 2020:

Final Report Summary:

V. DISSEMINATION:

Description: Over the course of the project we will photo-document the treatment site and host updates on our webpage: mn.audubon.org. The project will be written about in Audubon Minnesota’s monthly on-line newsletter and featured periodically in our quarterly newsletter. We will work collaboratively on communications with the Watershed District for their website content and outreach documents as well. Most importantly, the information gained from this project, along with the corresponding avian surveys, will be applied to existing and future impoundment operational guidelines.

Project Status as of 31 October 2017:

Project Status as of 30 April 2018:

Project Status as of 31 October 2018:

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Final Report Summary:

VI. PROJECT BUDGET SUMMARY:

A. Preliminary ENRTF Budget Overview:

***This section represents an overview of the preliminary budget at the start of the project. It will be reconciled with actual expenditures at the time of the final report.**

Budget Category	\$ Amount	Overview Explanation
Personnel:	\$ 104,500	Kristin Hall - Project Manager \$22,000 (75% salary, 25% benefits; 10% FTE for each year of 3 years), Alex Wardwell - Field supervisor \$57,000 (75% salary, 25% benefits; 30% FTE for each year of 3 years), Sue Swanson - administrative support \$7,500 (75% salary, 25% benefits; 5% FTE for each year of 3 years) and field survey staff \$18,000 (Salary and 12% benefits; 12 weeks for 2 of the 3 years; 28% FTE).
Professional/Technical/Service Contracts:	\$ 78,000	Cattail Removal Contract - remove up to 500 acres of hybrid cattail using a combination of, herbicide, flooding, mowing, and haying (estimate \$155/acre)
Travel Expenses in MN:	\$ 12,500	Surveyor travel and lodging for 2 years of avian surveys. Staff travel to project site for 3 yr. duration of project
TOTAL ENRTF BUDGET: \$ 195,000		

Explanation of Use of Classified Staff: N/A

Explanation of Capital Expenditures Greater Than \$5,000: N/A

Total Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation: 1.91

Total Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: N/A

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state			
Middle-Snake-Tamarac Rivers Watershed District	\$ 54,000	\$	Providing impoundment management expertise, conducting specified water level management and various other maintenance needs related to the project.
Audubon MN	\$ 12,250		To conduct first year of avian surveys, pre-cattail treatment - to take place prior to grant award period.
State			
	\$	\$	
TOTAL OTHER FUNDS:	\$ 66,250	\$	

VII. PROJECT STRATEGY:

A. Project Partners:

Audubon Minnesota, United States Fish and Wildlife Service, Middle-Snake-Tamarac Rivers Watershed District, University of Minnesota- Crookston, Minnesota Department of Natural Resources

Partners receiving ENRTF funding

- Kristin Hall - Conservation Manager, Alex Wardwell - Habitat Restoration Specialist and Sue Swanson Financial Administrator - **Audubon Minnesota**- Project lead providing overall project management and implementation.
- **Contracted Entity** - conduct cattail reduction treatments including aerial chemical application, mowing, haying, vegetation reduction and removal (receiving funds approximately \$78,000).

Partners NOT receiving ENRTF funding

- Gregg Knutsen - Manager, and Laurie Fairchild - Private Lands Biologist, Glacial Ridge and Rydell National Wildlife Refuges , **United States Fish and Wildlife Service** - providing area expertise and assistance in planning (in-kind).
- Brent Silvis - Administrator, and Danny Omdahl - Assistant Administrator, **Middle-Snake-Tamarac Rivers Watershed District** - providing area expertise and assistance in the planning and site coordination (providing \$54,000). Will assist in implementation of this project.
- Dan Svedarsky - Director, Center for Sustainability, **University of Minnesota Crookston** - providing area expertise (in-kind)
- Jeff Lewis - Executive Director and Aaron Ostlund - Project Coord., **Red River Basin Commission** - providing area expertise (in-kind)
- Christine Herwig - Regional Non-game Specialist, **Minnesota Department of Natural Resources** - providing wildlife plan review and comment upon completion of draft (in-kind)

B. Project Impact and Long-term Strategy:

C. Funding History:

Funding Source and Use of Funds	Funding Timeframe	\$ Amount
Joint Ventures Flex Fund Grant "Red River Valley Avian Conservation. Impoundment Avian Monitoring Project" (\$20,000 Joint Ventures; \$23,500 Audubon Funding as Match)	2012-2014 (complete)	\$ 43,500
ENRTF Appropriation 2015: Creating a Statewide Wetland Bird Survey - original budget amount received \$146,520	2015-2018	\$146,520

VIII. REPORTING REQUIREMENTS:

- **The project is for 3 years; to begin on July 1, 2017, and end on June 30, 2020.**
- **Periodic project status update reports will be submitted April 30 and October 31 of each year.**
- **A final report and associated products will be submitted between June 30 and August 15, 2020.**

IX. VISUAL COMPONENT or MAP(S):

X. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS:

A. Parcel List:

B. Acquisition/Restoration Information:

Fee Title Acquisition DOES NOT APPLY

Conservation Easement Acquisition DOES NOT APPLY

Restoration

- 1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.** The Agassiz Valley Impoundment is public land managed by the Middle-Snake-Tamarac Rivers Watershed District.
- 2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.** All planning, management and implementation aspects of the project will be tracked and managed by Audubon Minnesota's Conservation Manager, Kristin Hall. Documentation and paperwork for our contracted entities will be tracked by Audubon Minnesota's Financial Officer. This project is one aspect in our larger efforts to implement habitat restoration benefiting birds and other wildlife within the Tallgrass Aspen Parklands region and will be included in our reports/updates to the Statewide Prairie Conservation Plan working group as well.
- 3. Describe how restoration efforts will utilize and follow the Board of Water and Soil Resources (BWSR) "Native Vegetation Establishment and Enhancement Guidelines" in order to ensure ecological integrity and pollinator enhancement.** This project involves removing and controlling the re-growth of non-native/hybrid cattail by maintaining areas of open water; therefore, the project does not include plantings at this time. However, most impoundments include areas of associated upland. As we are working with the watershed district, BWSR recommendations for plantings and pollinator habitats should be easily incorporated into their operational guidelines if they are not included already.
- 4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.** Floodwater impoundments are equipped with water control structures that will facilitate the on-going maintenance needs of cattail control. Once the initial infestation is

reduced through this project's management efforts, alterations in flood regime that are scheduled to correspond with controlling cattail will be incorporated into the impoundments' operational plans. Intermittent cutting and flooding of areas with invasive cattail can become part of the routine maintenance within the impoundment and should not create an added expense to already existing management costs of the impoundments.

5. **Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.** Audubon MN has contracted with the Conservation Corps of Minnesota in the past and will consider their services, if applicable, for this project as well.

6. **Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or elsewhere.** As part of the project we will be conducting pre and post monitoring of the site. Audubon Minnesota will also seek future funding/assistance via a federal Joint Ventures monitoring grant or through the North American Wetlands Conservation Act small grants program to conduct monitoring at 5- and 10-year intervals after project completion. In addition, Audubon Minnesota is currently coordinating and implementing the Minnesota Statewide Secretive Marshbird Survey (M.L. 2015, Chp. 76, Sec. 2, Subd. 03f) and will establish survey sites associated with this treatment area in order to ensure future monitoring takes place and an assessment of the project treatment area is documented. Another important aspect of this project is the creation of a working partnership with the Watershed District. Through this partnership, it is our intention to assist with improving the wildlife value and use of additional existing and future impoundments throughout the region.

**Environment and Natural Resources Trust Fund
M.L. 2017 Project Budget**



Project Title: Maximize Value of Water Impoundments to Wildlife

Legal Citation: M.L. 2017, Chp. 96, Sec. 2, Subd. 06f

Project Manager: Kristin Hall

Organization: Audubon Minnesota

M.L. 2017 ENRTF Appropriation: \$195,000

Project Length and Completion Date: 3 years, June 30, 2020

Date of Report: April 30, 2018

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Activity 1 Balance	Activity 2 Budget	Amount Spent	Activity 2 Balance	Activity 3 Budget	Amount Spent	Activity 3 Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	<i>Invasive Cattail Removal</i>			<i>Avian and Vegetation Monitoring</i>			<i>Integrate Wildlife Mgt. into Impoundment Plans</i>				
Personnel (Wages and Benefits)	\$29,500	\$0	\$29,500	\$45,500	\$0	\$45,500	\$29,500	\$0	\$29,500	\$104,500	\$104,500
<i>Kristin Hall - Project Manager \$22,000 (75% salary, 25% benefits; 10% FTE for each year of 3 years)</i>											
<i>Alex Wardwell - Field supervisor \$57,000 (75% salary, 25% benefits; 30% FTE for each year of 3 years)</i>											
<i>Sue Swanson - administrative support \$7,500 (75% salary, 25% benefits; 5% FTE for each year of 3 years)</i>											
<i>Field survey staff \$18,000 (Salary and 12% benefits; 12 weeks for 2 of the 3 years; 28% FTE)</i>											
Professional/Technical/Service Contracts	\$78,000	\$0	\$78,000	\$0	\$0	\$0	\$0	\$0	\$0	\$78,000	\$78,000
<i>Cattail Removal Contract - remove up to 500 acres of hybrid cattail using a combination of herbicide, flooding, mowing, and haying (estimate \$155/acre)</i>											
Travel expenses in Minnesota	\$1,500	\$0	\$1,500	\$10,000	\$0	\$10,000	\$1,000	\$0	\$1,000	\$12,500	\$12,500
<i>Surveyor travel and lodging for 2 years of avian surveys. Staff travel to project site for 3 yr. duration of project</i>											
Other											
<i>Describe the expense—one row per type/category. Add rows as needed. Be specific.</i>											
COLUMN TOTAL	\$109,000		\$109,000	\$55,500		\$55,500	\$30,500		\$30,500	\$195,000	\$195,000