



Lessard-Sams Outdoor Heritage Council

Sand Hill River Fish Passage Restoration and Habitat Enhancement -- Phase II Laws of Minnesota 2016 Final Report

General Information

Date: 08/03/2025

Project Title: Sand Hill River Fish Passage Restoration and Habitat Enhancement -- Phase II

Funds Recommended: \$828,000

Legislative Citation: ML 2016, Ch. 172, Art. 1, Sec. 2, Subd. 5(h)

Appropriation Language: \$828,000 the second year is to the commissioner of natural resources for an agreement with the Sand Hill River Watershed District, in cooperation with the Department of Natural Resources and Army Corps of Engineers, to restore and enhance fish passage and habitat in the Sand Hill River watershed. A list of proposed restorations must be provided as part of the required accomplishment plan.

Manager Information

Manager's Name: April Swenby

Title: Administrator

Organization: Sand Hill River Watershed District

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Location Information

County Location(s): Polk.

Eco regions in which work will take place:

Prairie

Forest / Prairie Transition

Activity types:

Restore

Enhance

Priority resources addressed by activity:

Habitat

Narrative

Summary of Accomplishments

Phase 2 of this project restored fish passage to Kittleson Creek and Sand Hill Lake and enhanced stream habitat in a degraded segment of the Sand Hill River.

Process & Methods

Many native fish species migrate from the Red River to tributary streams, such as Sand Hill River, to access quality spawning habitats. This is especially true for Lake Sturgeon, a native species recently re-introduced into the Red River Basin, which make very long migrations to reproduce in riffles and rapids found in high gradient areas. Barriers to fish passage, such as dams, prevent fish from making this seasonal spawning run. The MN Department of Natural Resources in collaboration with federal and local partners has systematically removed and modified more than a dozen fish barriers in the Red River Basin over the past 15 years. Restoring connections from the Red River to these critical habitats helps to re-establish and maintain healthy, robust native fish communities with greater resiliency to invasion by exotic species.

Construction for the original fish passage restoration portion of this grant has been completed and costs were well below estimates. All benefits achieved through fish passage were allocated to the Phase 1 (ML2015) portion of the project. The US Army Corps of Engineers administered the fish passage project. Since the original fish passage project was completed using only ML2015 funds, that leverage source was removed from this Accomplishment Plan.

Fish passage restored at three additional sites in the Sand Hill River watershed with the unspent funds. The first barrier is the road crossing on Kittleson Creek, a tributary to the Sand Hill River. This culvert is nearly perched and velocities exceed the swimming limits for most species at normal flows. This restoration replaced the culvert with a structure more appropriately sized for the creek and at a lower elevation to accommodate fish passage. The second barrier is a dam on Sand Hill Lake. The dam was removed and replaced with rock arch rapids to allow fish passage upstream into Sand Hill Lake. Both of these crossings are upstream of the dams that were modified for fish passage in 2017. Restoration of fish passage at these two sites expanded the number of restored acres and river miles in the watershed. The third site, removed a bridge and concrete wing walls and abutments over the Sand Hill River, replacing it with a rock riffle for grade control and fish passage.

A second component of this project enhanced stream habitat within a channelized segment of the Sand Hill River downstream of the four drop structures. The river channel in this reach was unstable and has down cut significantly, creating a simplified habitat lacking in diverse substrate and depth. Habitat was enhanced by constructing rock riffles in the channel to reduce velocities, increase pool/riffle habitat and provide more diverse substrate. The enhanced habitat is used by many fish species for spawning, juvenile, and year round deep cover.

How did the program address habitats of significant value for wildlife species of greatest conservation need, threatened or endangered species, and/or list targeted species?

Stream assessments conducted by the Minnesota DNR have conclusively identified these structures as barriers to fish migration. Dam modification to allow fish passage has proven successful on many similar projects throughout Minnesota, including several in the Red River basin. The structures are no longer barriers to fish passage.

How did the program use science-based targeting that leveraged or expanded corridors and complexes, reduced fragmentation, or protected areas in the MN County Biological Survey.

Stream assessments conducted by the Minnesota DNR have conclusively identified these structures as barriers to fish migration. Dam modification to allow fish passage has proven successful on many similar projects throughout Minnesota, including several in the Red River basin.

Explain Partners, Supporters, & Opposition

Many planning partners made this possible - Ebridge, MnDNR, SWCD's, BWSR Clean Water

Exceptional challenges, expectations, failures, opportunities, or unique aspects of program

COVID. Opportunities included multiple funding partners and costs were under budget.

What other dedicated funds may collaborate with or contribute to this program?

Clean Water Fund

How were the funds used to advance the program?

Used as a partnering funding source and as a result additional project were built to enhance the missions of the project.

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

The Watershed District will coordinate with the MnDNR to evaluate maintenance responsibilities. The township would be responsible for maintaining the road crossing at Kittleson Creek. Minnesota DNR will be responsible for maintaining the modified dam on Sand Hill Lake.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
Annual	Administrative	Visual Inspections by WD and MnDNR	-	-
As needed	MnDNR	Monitor Fish Species	-	-
Every 5 years	MPCA	Water Quality Monitoring	-	-

Budget

Grand Totals Across All Partnerships

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	-	-	-	-	-	-	-	-
Contracts	\$799,900	\$531,200	\$531,200	\$1,665,400	-	-	\$2,465,300	\$531,200
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	-	-	-	-	-	-	-	-
Professional Services	\$28,100	\$296,800	\$296,800	\$2,800	-	-	\$30,900	\$296,800
Direct Support Services	-	-	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$828,000	\$828,000	\$828,000	\$1,668,200	-	-	\$2,496,200	\$828,000

Partner: Sand Hill River Watershed District

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	-	-	-	-	-	-	-	-
Contracts	\$253,200	-	\$531,200	\$25,300	-	-	\$278,500	\$531,200
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	-	-	-	-	-	-	-	-
Professional Services	\$28,100	-	\$296,800	\$2,800	-	-	\$30,900	\$296,800
Direct Support Services	-	-	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$281,300	-	\$828,000	\$28,100	-	-	\$309,400	\$828,000

Totals

Item	Requested	AP Amount	Spent	Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	-	-	-	-	-	-	-	-
Contracts	\$546,700	-	-	\$1,640,100	-	-	\$2,186,800	-
Fee Acquisition w/ PILT	-	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-	-
Travel	-	-	-	-	-	-	-	-
Professional Services	-	-	-	-	-	-	-	-
Direct Support Services	-	-	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-	-	-
Grand Total	\$546,700	-	-	\$1,640,100	-	-	\$2,186,800	-

Explain any budget challenges or successes:

Project costs came in way under budget, allowing for additional projects to meet additional goals. Due to much lower than anticipated construction costs, funding with the Phase 2 appropriation was not needed to complete the fish passage project to modify four dams on the Sand Hill River. Therefore, the entire project cost, leverage, and acres benefited were included in the Phase 1 appropriation.

Total Revenue: \$0

Revenue Spent: \$0

Revenue Balance: \$0

Of the money disclosed above, what are the appropriate uses of the money:

E. This is not applicable as there was no revenue generated.

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Acres (AP)	Total Acres (Final)
Restore	0	0	0	0	0	0	564	119	564	119
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	42	68	42	68
Total	0	0	0	0	0	0	606	187	606	187

Total Requested Funding by Resource Type (Table 2)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Funding (AP)	Total Funding (Final)
Restore	-	-	-	-	-	-	\$546,700	\$89,700	\$546,700	\$89,700
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	\$281,300	\$738,300	\$281,300	\$738,300
Total	-	-	-	-	-	-	\$828,000	\$828,000	\$828,000	\$828,000

Acres within each Ecological Section (Table 3)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	0	0	0	119	0	0	564	0	0	0	564	119
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	42	68	0	0	42	68
Total	0	0	0	119	0	0	606	68	0	0	606	187

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/ Urban (AP)	Metro/ Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	-	-	-	\$89,700	-	-	\$546,700	-	-	-	\$546,700	\$89,700
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	\$281,300	\$738,300	-	-	\$281,300	\$738,300
Total	-	-	-	\$89,700	-	-	\$828,000	\$738,300	-	-	\$828,000	\$828,000

Target Lake/Stream/River Feet or Miles

15.6

Explain the success/shortage of acre goals

Due to the dam modification project with the Army Corp of Engineer's coming in way under budget, the acres in this appropriation are less than what was presented in the original accomplishment plan. However, when combining ML15 and ML 16, acreage goals were exceeded. The reported acres deficit with the Phase 2 final report can also be attributed to the cost savings with the original dams modification project. Benefited acres were much higher in the Phase 1 appropriation than what was originally anticipated. Combining the two appropriations, both restored and enhanced acres exceeded what was identified in the AP's.

Outcomes

Programs in prairie region:

Protected, restored, and enhanced habitat for migratory and unique Minnesota species ~ *This project restored fish passage for spawning, nursery, and resident fish habitat that was inaccessible. Additionally, stream habitat was enhanced in a channelized segment of the Sand Hill River. Fisheries surveys are conducted to document fish community changes.*

Parcels

Sign-up Criteria?

No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
In channel riffles	Polk	14747224	3	\$20,000	Yes	-
In channel riffles	Polk	14745221	3	\$20,000	Yes	-
In channel riffles	Polk	14746219	3	\$20,000	Yes	-
In channel riffles	Polk	14746226	3	\$20,000	Yes	-
In channel riffles	Polk	14748209	3	\$20,000	Yes	-
In channel riffles	Polk	14748223	3	\$20,000	Yes	-
In channel riffles	Polk	14748224	3	\$20,300	Yes	-
In channel riffles	Polk	14746220	3	\$20,000	Yes	-
In channel riffles	Polk	14748215	3	\$20,000	Yes	-
In channel riffles	Polk	14747222	3	\$20,000	Yes	-
In channel riffles	Polk	14747221	3	\$20,000	Yes	-
In channel riffles	Polk	14747220	3	\$20,000	Yes	-
In channel riffles	Polk	14747223	3	\$20,000	Yes	-
In channel riffles	Polk	14747219	3	\$20,000	Yes	-
In channel riffles	Polk	14745229	3	\$20,000	Yes	-
In channel riffles	Polk	14745228	3	\$20,000	Yes	-
In channel riffles	Polk	14745230	3	\$20,000	Yes	-
In channel riffles	Polk	14746222	3	\$20,000	Yes	-
In channel riffles	Polk	14746221	3	\$20,000	Yes	-
In channel riffles	Polk	14746225	3	\$20,000	Yes	-
Kittleson Creek Road Crossing	Polk	14745221	5	\$200,000	Yes	-
Poissant Bridge Enhancement	Polk	14744228	3	\$300,000	Yes	-
Sand Hill Lake Dam	Polk	14740228	119	\$225,000	Yes	-

Parcel Map

