

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2015 Accomplishment Plan



Date: October 15, 2014

Program or Project Title: Sand Hill River Fish Passage

Funds Recommended: \$ 990,000

Manager's Name: Daniel Wilkens

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Legislative Citation:

Appropriation Language:

County Locations: Polk

Regions in which work will take place:

- Prairie

Activity types:

- Restore

Priority resources addressed by activity:

- Habitat

Abstract:

This project will restore fish passage from the Red River to 50 miles of quality upstream Lake Sturgeon and Walleye habitats in the Sand Hill River by modifying four structures which currently block access.

Design and scope of work:

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.

Four concrete dams were installed on the Sand Hill River as part of a flood control project conducted by the Army Corps of Engineers in the 1950s. During normal flows, these dams create a vertical drop of approximately five feet. Surveys conducted by DNR Fisheries Biologists have conclusively identified these four dams on Sand Hill River as barriers to fish passage. Eleven species of fish were only found downstream of these dams. Many large river species such as Channel Catfish, Freshwater Drum, Goldeye, and Sauger that were present below the dams were not captured upstream of the dams. Several other species were captured in much lower numbers

upstream of the dams. Five fish species were captured exclusively upstream of the dams.

Initially, six fish passage barriers existed on this stream segment. The Sand Hill River Watershed District (SHRWD), in cooperation with the Minnesota Department of Natural Resources (DNR), developed the SHRWD Fish Passage Master Plan to restore upstream fish migration in the Sand Hill River by modifying these six structures. This project ranks third in the Minnesota DNR 2014 statewide Stream Restoration Priority List. To date, two of the six structures have been modified to allow fish passage but completing the project has been delayed due to lack of funding. Current plans are to modify the four remaining structures to transform the fish passage barriers into riffles with a more gradual slope. This will restore river connectivity to the 50 miles of Sand Hill River located upstream of dams. Reconnecting this substantial spawning and rearing habitat will improve the composition and quality of the fishery both in the Sand Hill River and Red River basin. This is an opportunity to complete the restoration project.

Numerous fish passage restoration projects have been conducted in the Red River basin, with almost immediate positive impacts to fish communities. A fish passage project similar to the one proposed for the Sand Hill River was conducted on the Wild Rice River, another major tributary to the Red River. Fisheries surveys found a low head dam on the Wild Rice River blocked fish passage and impacted populations. Similar to findings on the Sand Hill River, large river fish species such as Channel Catfish, Freshwater Drum, Goldeye, Sauger, Smallmouth Bass, and Walleye were common below but rarely captured above the dam. Within one year of passage restoration at this dam, these large river species were common upstream of the dam, with channel catfish captured 70 river miles above the previous barrier. Restoration of fish passage on the Sand Hill River would likely yield similar results.

The Sand Hill River Watershed District is responsible for administration of this project and has been a strong proponent of this project.

Crops:

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **No**

How does the request address MN habitats that have: historical value to fish and wildlife, wildlife species of greatest conservation need, MN County Biological Survey data, and/or rare, threatened and endangered species inventories:

Historical accounts suggest that Lake Sturgeon were abundant in the Red River basin until the late 1800's. By the mid-1900's Lake Sturgeon had effectively been extirpated from the Red River basin due to over exploitation, construction of dams, and declines in water quality. Reintroduction of Lake Sturgeon in the Red River basin was initiated in the late 1990's and fish appear to be surviving well. Barriers to fish passage are thought to be the most significant obstacle to the restoration of naturally reproducing Lake Sturgeon populations. The restoration of fish movement throughout the system will be a long process. However, with the removal or modification of each dam, more miles of river habitat will be connected. Given the late maturation and longevity of Lake Sturgeon, one objective of restoration efforts is to restore a sexually mature population over the next 20 to 30 years. As fish passage is restored, the maturing sturgeon population will be able to access historic spawning areas and hopefully, reproduce naturally.

What is the nature of urgency and why it is necessary to spend public money for this work as soon as possible:

Two other barriers to fish passage have already been modified to allow fish passage as part of a master plan to reconnect the Sand Hill River. The U.S. Army Corps of Engineers has secured 3:1 matching funds to complete this project in the next few years.

Describe the science based planning and evaluation model used:

Stream surveys by the Minnesota DNR have conclusively identified these four dams as preventing upstream fish movement. Dam modification to allow fish passage has proven successful on many similar projects throughout Minnesota, including several in the Red River basin.

Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this project:

- H3 Improve connectivity and access to recreation
- H6 Protect and restore critical in-water habitat of lakes and streams

Which other plans are addressed in this proposal:

- National Fish Habitat Action Plan
- Red River of the North Fisheries Management Plan

Which LSOHC section priorities are addressed in this proposal:

Prairie:

- Restore or enhance habitat on public lands

Relationship to other funds:

- Clean Water Fund

This proposed project will work in conjunction with a Clean Water Fund grant proposal to install 18 rock riffle grade control structures and 2 larger rock riffles. The goal of the Clean Water Fund project is to help bring the Sand Hill River bed back up to grade and stabilize eroding banks and the down-cutting channel bed, due to the channelization. The Sand Hill River is currently impaired for turbidity, by raising the grade of the Sand Hill River with the rock riffles, the channel will stabilize and reduce the amount of sediment eroding from the channel bed and banks.

How does this proposal accelerate or supplement your current efforts in this area:

The Sand Hill River Watershed District (SHRWD), in cooperation with the Minnesota Department of Natural Resources (MDNR), developed the SHRWD Fish Passage Master Plan to restore upstream fish migration in the Sand Hill River by modifying six structures identified as barriers to fish passage. To date, two of the six structures have been modified but the overall project was put on hold due to lack of funding. Current plans are to place rock rapids downstream of the remaining four structures to transform the fish passage barriers into riffles with a more gradual slope and restore river connectivity. Neither the SHRWD or MDNR have funding available to complete the goals of the Fish Passage Master Plan. This is an opportunity to complete the restoration project.

Describe the source and amount of non-OHF money spent for this work in the past:

Appropriation Year	Source	Amount
NA	Minnesota DNR	500,000

How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

The Sand Hill River Watershed District will be responsible for all maintenance of this project. The Watershed District is authorized by law to complete long-term maintenance of this project (Minnesota Statutes 103D). This project is designed to mimic natural, stable stream channels. Numerous similar projects have been conducted in the Red River basin and have required little or no maintenance and work well for improving fish passage.

Explain the things you will do in the future to maintain project outcomes:

Year	Source of Funds	Step 1	Step 2	Step 3
2017	Minnesota DNR Fisheries	Conduct fisheries survey one year after project completion to assess immediate changes to fish community.		
2022	Minnesota DNR Fisheries	Conduct fisheries survey six years after project completion to assess intermediate term changes to fish community.		
2027	Minnesota DNR Fisheries	Conduct fisheries survey 11 years after project completion to assess long term changes to fish community.		

Activity Details:

If funded, this proposal will meet all applicable criteria set forth in MS 97A.056 - **Yes**

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program - **Not Listed**

Is the activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes**
(Public Waters, no)

Accomplishment Timeline:

Activity	Approximate Date Completed
Award Construction Contract	07/31/2015
Complete Construction of Modified Dams	11/30/2017

Date of Final Report Submission: 11/30/2017

Federal Funding:

Do you anticipate federal funds as a match for this program - **Yes**

Are the funds confirmed - **Yes**

[Documentation](#)

What are the types of funds?

Cash Match - \$2970000

Outcomes:

Programs in prairie region:

- Protected, restored, and enhanced habitat for migratory and unique Minnesota species *This project will restore fish passage to 50 miles of spawning, nursery, and resident fish habitat that is currently inaccessible. Fisheries surveys will be conducted after the project is completed to document fish community changes.*

Budget Spreadsheet

Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount

We will continue to seek funding from other sources that could be used to receive USACE match. We will also work with USACE to evaluate opportunities to reduce the overall cost of the project.

Total Amount of Request: \$ 990000

Budget and Cash Leverage

BudgetName	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$0	\$0		\$0
Contracts	\$990,000	\$2,970,000	USACE	\$3,960,000
Fee Acquisition w/ PILT	\$0	\$0		\$0
Fee Acquisition w/o PILT	\$0	\$0		\$0
Easement Acquisition	\$0	\$0		\$0
Easement Stewardship	\$0	\$0		\$0
Travel	\$0	\$0		\$0
Professional Services	\$0	\$0		\$0
Direct Support Services	\$0	\$0		\$0
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$0	\$0		\$0
Supplies/Materials	\$0	\$0		\$0
DNR IDP	\$0	\$0		\$0
Total	\$990,000	\$2,970,000		\$3,960,000

Amount of Request: \$990,000
Amount of Leverage: \$2,970,000
Leverage as a percent of the Request: 300.00%

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	600	600
Protect in Fee with State PILT Liability	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0
Protect in Easement	0	0	0	0	0
Enhance	0	0	0	0	0
Total	0	0	0	600	600

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$990,000	\$990,000
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$990,000	\$990,000

Table 3. Acres within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	0	0	0	600	0	600
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	0	0	0	0	0	0
Total	0	0	0	600	0	600

Table 4. Total Requested Funding within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	\$0	\$0	\$0	\$990,000	\$0	\$990,000
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$990,000	\$0	\$990,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$0	\$0	\$0	\$1650
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	\$0	\$0	\$0	\$1650	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0

Target Lake/Stream/River Feet or Miles

50

Parcel List

For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.

Section 1 - Restore / Enhance Parcel List

Polk

Name	T RDS	Acres	Est Cost	Existing Protection?
Barrier #1	14746222	0	\$366,700	No
Barrier #2	14746224	0	\$308,400	No
Barrier #3	14745219	0	\$491,700	No
Barrier #4	14745230	0	\$500,000	No

Section 2 - Protect Parcel List

No parcels with an activity type protect.

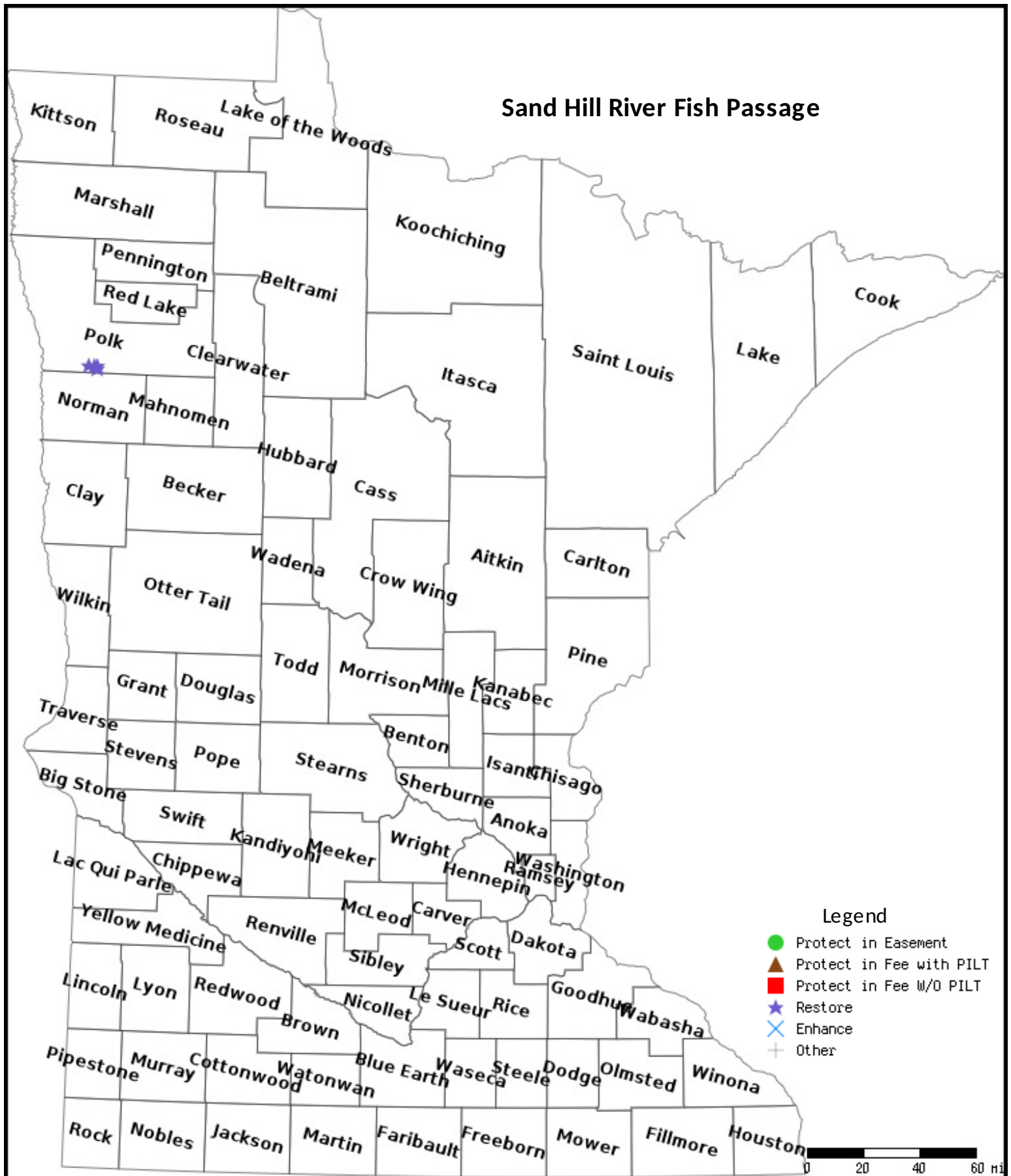
Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map



Data Generated From Parcel List