

# Request for Funding

## Lessard-Sams Outdoor Heritage Council Fiscal Year 2015 / ML 2014

**Program or Project Title:** Accelerated Shallow Lakes and Wetland Enhancement Phase 6

**Funds Requested:** \$2,250,000

**Manager's Name:** Ricky Lien

**Title:** Wetland Habitat Team Supervisor

**Organization:** MN DNR Div. of Fish and Wildlife

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**County Locations:** Aitkin, Benton, Big Stone, Isanti, Kittson, Lincoln, Mille Lacs, Swift, and Todd.

### Ecological Planning Regions:

- Northern Forest
- Forest / Prairie Transition
- Prairie
- Metro / Urban

### Activity Type:

- Enhance

### Priority Resources Addressed by Activity:

- Wetlands
- Prairie

## Abstract:

Many of Minnesota's wetlands have been lost and the remainder degraded. Recent tiling and ditching have accelerated this situation. Through this proposal, shallow lakes and wetlands will be designed, constructed, and intensively managed to benefit wetland wildlife and Minnesota residents.

## Design and Scope of Work:

Approximately 30 species of waterfowl are regular migrants through Minnesota. More than a dozen breed and nest in Minnesota. While each of these species has its own particular habitat needs the common bond is a dependence on wetland habitat for survival. Meeting the needs of these waterfowl requires a complex of wetland sizes and types ranging from temporary and seasonal wetlands to large permanent shallow lakes.

Minnesota's breeding waterfowl go through five life stages in our state: Breeding, Nesting, Brood Rearing, Molting, and Migration. Each life stage has its own characteristic habitat needs. For example, for most species, especially dabbling ducks, the number of breeding pairs in the spring is driven by the number of small wetlands. The small size helps reduce disturbance by other ducks and the abundant wetland invertebrates they provide are critical to providing the fat, protein, and calcium needed by hens as they prepare for egg laying.

Nesting dabbling duck hens and some diver species require adequate upland cover for actual nesting but are

dependent on nearby wetlands for continuing nutrition throughout the egg laying and incubation period. High quality shallow lakes and wetlands fill this need. Seasonal wetlands are particularly critical for dabbling ducks. Over water nesting species depend on wetlands and shallow lakes with a good interspersed of emergent vegetation for nesting sites and nesting material.

Food is critical for the survival of growing ducklings and molting hens. Seasonal wetlands fill this critical role during wet years while semi-permanent wetlands and shallow lakes increase in importance as the summer progresses. Regardless of the wetland type, poor plant and invertebrate quality due to invasive fish and nutrient loading can negate the expected benefits.

Food and protection from disturbance are the critical elements needed to attract and hold waterfowl during fall migration. Wetland quality and depth are critical drivers of wetland based food resources. Large basins provide more inherent protection from disturbance although wetland and shallow lake based refuges are very important.

An estimated 90% of Minnesota's prairie wetlands have been lost, more than 50% of our statewide wetland resource. Throughout the state, remaining shallow lakes and wetlands provide the critical habitat for each life stage of waterfowl and other wetland wildlife. Unfortunately these benefits are too often compromised by degraded habitat quality due to excessive runoff and invasive plants and fish.

High quality shallow lakes and wetlands have clear water and abundant rooted aquatic vegetation. Emergent aquatic plants such as rushes and wild rice provide protective cover from weather and predators as well as over-water nesting habitat. Submergent aquatic plants provide food in the form of seeds and tubers and critical habitat for aquatic invertebrates. Very shallow seasonal wetlands can be critical sources of invertebrates and nutritious plant seeds during spring, early summer and fall, particularly for dabbling ducks.

The quality of shallow lakes and wetlands providing wildlife habitat has declined markedly due to landscape changes, increased runoff carrying sediment and nutrients, and invasive plant and fish species. Only about one prairie wetland in five exhibits good quality vegetation while just under a third provide good habitat for invertebrates. While wetlands in the forest-prairie transition fare better with a little fewer than half providing good habitat for invertebrates they actually do a bit worse for aquatic plants due to invasive species.

The habitat quality of these shallow lakes and wetlands can be markedly improved by installing fish barriers where needed and aggressively managing water levels to meet management objectives. This proposal applies scientific assessment to diagnose specific habitat problems and recommend treatments (Pre-design), engineering design of dikes, water control structures, and fish barriers (Design), installing the design elements (Construction), and intensifying the application of management techniques (Management).

The shallow lakes and wetlands identified in this proposal for enhancement were proposed and ranked by DNR Area Wildlife Supervisors through their respective Regional Wildlife Managers. The proposals were reviewed by the Wetland Wildlife Program Consultant and the Wildlife Operations Manager prior to inclusion in this proposal.

Four construction projects on wetland and shallow lake basins have been identified to upgrade dikes, water level control structures, and fish barriers. Another ten projects will be designed, with two of these projects planned to move onto construction. Intensive management will be applied to a minimum of 500 acres annually for four years. This management will include, but not be limited to, managing water levels, maintaining fish barriers, inducing winterkill of fish, controlling invasive plants and fish, and encouraging native plant assemblages. Additionally, invasive cattails and phragmites will be managed on select properties in Minnesota DNR Regions 1 and 3. Management will be accomplished by herbicide treatment and will seek to control these aquatic invasive plants that can completely overcome wetland systems and severely reduce their value as wildlife habitat.

Program managers may add, delete, and substitute projects on the approved 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.

This proposal reflects the strategies of the 2006 DNR Duck Recovery Plan and 2010 Shallow Lake Plan. These plans underwent substantial review by nearly all the major wetland wildlife conservation groups in Minnesota. Stakeholders have been supportive of the strategies outlined in the plans, although some have expressed frustration with the long timeline.

## Planning

## **MN State-wide Conservation Plan Priorities:**

- H4 Restore and protect shallow lakes
- H7 Keep water on the landscape

## **Plans Addressed:**

- A Vision for Wildlife and Its Use -- Goals and Outcomes 2006-2012
- Ducks Unlimited Living Lakes Initiative
- Long Range Duck Recovery Plan
- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife
- Minnesota DNR Strategic Conservation Agenda
- Minnesota Prairie Conservation Plan
- National Audubon Society Top 20 Common Birds in Decline
- North American Waterbird Conservation Plan
- North American Waterfowl Management Plan
- Northern Plains Prairie Potholes Regional Shorebird Conservation Plan
- Outdoor Heritage Fund: A 25 Year Framework
- Partners in Flight Conservation Plans for States and Physiographic Regions
- State Comprehensive Outdoor Recreation Plan
- Tomorrow's Habitat for the Wild and Rare
- U.S. Prairie Pothole Joint Venture Plan
- Upper Mississippi River and Great Lakes Region Projects Joint Ventures Plan

## **LSOHC Statewide Priorities:**

- Address Minnesota landscapes that have historical value to fish and wildlife, wildlife species of greatest conservation need, Minnesota County Biological Survey data, and rare, threatened and endangered species inventories in land and water decisions, as well as long-term or permanent solutions to aquatic invasive species
- Are ongoing, successful, transparent and accountable programs addressing actions and targets of one or more of the ecological sections
- Ensures activities for "protecting, restoring and enhancing" are coordinated among agencies, non profits and others while doing this important work; provides the most cost-effective use of financial resources; and where possible takes into consideration the value of local outreach, education, and community engagement to sustain project outcomes
- Produce multiple enduring conservation benefits
- Restore or enhance habitat on permanently protected land
- Use a science-based strategic planning and evaluation model to guide protection, restoration and enhancement, similar to the United States Fish and Wildlife Service's Strategic Habitat Conservation model

## **LSOHC Prairie Section Priorities:**

- Protect, enhance, or restore existing wetland/upland complexes, or convert agricultural lands to new wetland/upland habitat complexes
- Restore or enhance habitat on public lands
- Protect, restore, and enhance shallow lakes
- Protect, enhance, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

## **LSOHC Forest Prairie Transition Section Priorities:**

- Protect, enhance, and restore wild rice wetlands, shallow lakes, wetland/grassland complexes, aspen parklands, and shoreland that provide critical habitat for game and nongame wildlife
- Protect, enhance, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

## **LSOHC Northern Forest Section Priorities:**

- Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas
- Restore and enhance habitat on existing protected properties, with preference to habitat for rare,

endangered, or threatened species identified by the Minnesota County Biological Survey

### **LSOHC Metro Urban Section Priorities:**

- Protect, enhance, and restore riparian and littoral habitats on lakes to benefit game and nongame fish species

### **Relationship to Other Constitutional Funds:**

- No Relationships Listed

Interest in Minnesota's wetland and shallow lake habitats has resulted in numerous initiatives with a variety of funding sources, including the Environmental and Natural Resource Trust Fund and Clean Water Fund. The work from this proposal will complement the goals of other funds, though project selection is based on wildlife benefits.

### **Accelerates or Supplements Current Efforts:**

The "Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife" plan calls for the management and protection of 1,800 shallow lakes across the state for the benefit of waterfowl and wildlife. This work is needed, long overdue, and expensive. Only by obtaining funds from a variety of sources will the plan's goal be met within the plan timeframe. This proposed project supplements substantial expenditures and support by Game and Fish, Heritage Enhancement, Duck Stamp and Wild Rice funds to move Minnesota towards that goal.

### **Sustainability and Maintenance:**

The management of enhanced wetlands and shallow lakes once construction is completed will fall on existing staff of the Department of Natural Resources. These staff are funded through license fees and legislative appropriations. Periodic enhancements such as invasive species removal, supplemental vegetation planting, or water control structure installation, maintenance, or replacement, will be accomplished through annual funding requests to a variety of funding sources including, but not limited to, the Game and Fish Fund, bonding, gifts, the Environmental and Natural Resources Trust Fund, the Outdoor Heritage Fund, and federal sources such as North American Wetlands Conservation Act grants.

### **Permanent Protection:**

*Is the activity on permanently protected land and/or public waters per MS 103G.005, Subd. 15? - **Yes (WMA, Private Land)***

### **Accomplishment Timeline**

<b>Activity</b>	<b>Approximate Date Completed</b>
Complete engineering design/specs for 10 new wetland and shallow lake enhancement projects	June 2017
Complete construction of 5 new wetland and shallow lake enhancement projects	June 2018
Complete construction (Ducks Unlimited) of 1 new fish barrier to enhance a shallow lake	June 2018
Complete herbicide treatments to manage invasive cattail and phragmites from wetlands and shallow lakes	June 2017
Complete intensive management management of 500 acres of wetland and shallow lake basins annually	June 2018

## Outcomes

### Programs in the northern forest region:

- Healthy populations of endangered, threatened, and special concern species as well as more common species *Management of habitat and maintenance of infrastructure should show demonstrable increase of quality habitat needed by wetland wildlife species.*
- Improved availability and improved condition of habitats that have experienced substantial decline *Improved habitat conditions that result from intensive management and improved wetland infrastructure results in more diverse wildlife and in greater numbers.*

### Programs in forest-prairie transition region:

- Protected, restored, and enhanced nesting and migratory habitat for waterfowl, upland birds, and species of greatest conservation need *Wetland habitat work should offset continued lost and degraded wetlands in this region and should benefit hunters and provide wetland functions and values. Shallow lake specialists and other wildlife staff conduct pre and post-management monitoring of shallow lake management to assess benefits.*
- Wetland and upland complexes will consist of native prairies, restored prairies, quality grasslands, and restored shallow lakes and wetlands *Intensive wetland management and habitat infrastructure maintenance will provide the wetland based called for in numerous prairie, shallow lake and waterfowl plans.*
- Increased waterfowl and upland bird migratory and breeding success *Hunters should benefit from increased habitat quality, giving them both more high-value areas to hunt and providing more waterfowl.*

### Programs in metropolitan urbanizing region:

- A network of natural land and riparian habitats will connect corridors for wildlife and species in greatest conservation need
- Protected habitats will hold wetlands and shallow lakes open to public recreation and hunting *Hunters should benefit from increased habitat quality, giving them both more high-value areas to hunt and providing more waterfowl. Wetland functions and values will accrue to all MN residents. Shallow lake specialists and other wildlife staff conduct pre and post-management monitoring of shallow lake management to assess benefits.*

### Programs in prairie region:

- Improved condition of habitat on public lands *Intensive wetland management and habitat infrastructure maintenance will provide the prairie-wetland based called for in numerous prairie, shallow lake and waterfowl plans.*
- Increased wildlife productivity *Intensive management and ongoing improvement and maintenance of wetland infrastructure provides for needed wetland wildlife habitat. Hunter and wildlife-viewer satisfaction should benefit.*
- Remnant native prairies are part of large complexes of restored prairies, grasslands, and large and small wetlands *Intensive wetland management and habitat infrastructure maintenance will provide the prairie-wetland based called for in numerous prairie, shallow lake and waterfowl plans.*
- Improve aquatic vegetation *Shallow lake specialists and other wildlife staff conduct pre and post-management monitoring of shallow lake management to assess benefits. Aquatic vegetation sampling is part of this assessment.*
- Enhanced shallow lake productivity *Shallow lake specialists and other wildlife staff conduct pre and post-management monitoring of shallow lake management to assess benefits.*
- Protected, restored, and enhanced habitat for migratory and unique Minnesota species *Intensive wetland management and habitat infrastructure maintenance will provide the prairie-wetland based called for in numerous prairie, shallow lake and waterfowl plans.*

# Budget Spreadsheet

**Total Amount of Request: \$2,250,000**

## Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$400,000	\$10,000		\$410,000
Contracts	\$1,303,300	\$0		\$1,303,300
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	\$145,000	\$0		\$145,000
Professional Services	\$195,700	\$0		\$195,700
Direct Support Services	\$156,000	\$0		\$156,000
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$40,000	\$0		\$40,000
Supplies/Materials	\$10,000	\$0		\$10,000
DNR IDP	\$0	\$0		\$0
Total	\$2,250,000	\$10,000	-	\$2,260,000

## Budget and Cash Leverage by Partnership

<b>Budget Name</b>	<b>Partnership</b>	<b>LSOHC Request</b>	<b>Anticipated Leverage</b>	<b>Leverage Source</b>	<b>Total</b>
Personnel	Ducks Unlimited	\$25,000	\$10,000		\$35,000
Contracts	Ducks Unlimited	\$315,000	\$0		\$315,000
Fee Acquisition w/ PILT	Ducks Unlimited	\$0	\$0		\$0
Fee Acquisition w/o PILT	Ducks Unlimited	\$0	\$0		\$0
Easement Acquisition	Ducks Unlimited	\$0	\$0		\$0
Easement Stewardship	Ducks Unlimited	\$0	\$0		\$0
Travel	Ducks Unlimited	\$5,000	\$0		\$5,000
Professional Services	Ducks Unlimited	\$10,000	\$0		\$10,000
Direct Support Services	Ducks Unlimited	\$0	\$0		\$0
DNR Land Acquisition Costs	Ducks Unlimited	\$0	\$0		\$0
Capital Equipment	Ducks Unlimited	\$0	\$0		\$0
Other Equipment/Tools	Ducks Unlimited	\$0	\$0		\$0
Supplies/Materials	Ducks Unlimited	\$0	\$0		\$0
DNR IDP	Ducks Unlimited	\$0	\$0		\$0
<b>Total</b>	-	\$355,000	\$10,000	-	\$365,000

<b>Budget Name</b>	<b>Partnership</b>	<b>LSOHC Request</b>	<b>Anticipated Leverage</b>	<b>Leverage Source</b>	<b>Total</b>
Personnel	MN DNR	\$375,000	\$0		\$375,000
Contracts	MN DNR	\$988,300	\$0		\$988,300
Fee Acquisition w/ PILT	MN DNR	\$0	\$0		\$0
Fee Acquisition w/o PILT	MN DNR	\$0	\$0		\$0
Easement Acquisition	MN DNR	\$0	\$0		\$0
Easement Stewardship	MN DNR	\$0	\$0		\$0
Travel	MN DNR	\$140,000	\$0		\$140,000
Professional Services	MN DNR	\$185,700	\$0		\$185,700
Direct Support Services	MN DNR	\$156,000	\$0		\$156,000
DNR Land Acquisition Costs	MN DNR	\$0	\$0		\$0
Capital Equipment	MN DNR	\$0	\$0		\$0
Other Equipment/Tools	MN DNR	\$40,000	\$0		\$40,000
Supplies/Materials	MN DNR	\$10,000	\$0		\$10,000
DNR IDP	MN DNR	\$0	\$0		\$0
<b>Total</b>	-	\$1,895,000	\$0	-	\$1,895,000





# Output Tables

**Table 1. Acres by Resource Type**

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	0	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	11,546	0	0	0	11,546
Total	11,546	0	0	0	11,546

**Table 2. Total Requested Funding by Resource Type**

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$0	\$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	\$2,250,000	\$0	\$0	\$0	\$2,250,000
Total	\$2,250,000	\$0	\$0	\$0	\$2,250,000

**Table 3. Acres within each Ecological Section**

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	0	0	0	0	0	0
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	1,000	4,740	0	2,601	3,205	11,546
Total	1,000	4,740	0	2,601	3,205	11,546

**Table 4. Total Requested Funding within each Ecological Section**

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	\$0	\$0	\$0	\$0	\$0	\$0
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	\$324,200	\$698,300	\$0	\$634,500	\$593,000	\$2,250,000
Total	\$324,200	\$698,300	\$0	\$634,500	\$593,000	\$2,250,000

**Table 5. Target Lake/Stream/River Miles**

0 miles

## Parcel List

### Section 1 - Restore / Enhance Parcel List

Aitkin

Name	TRDS	Acres	Est Cost	Existing Protection?
Cornish Flowage - WCS	05123223	300	\$230,000	N/A

Benton

Name	TRDS	Acres	Est Cost	Existing Protection?
Graham WMA - Dike	03830202	142	\$175,000	N/A

Big Stone

Name	TRDS	Acres	Est Cost	Existing Protection?
Stony Run Velocity Tube Fish Barrier	12246236	2,200	\$355,000	N/A

Isanti

Name	TRDS	Acres	Est Cost	Existing Protection?
South Stanchfield Lake	03625204	0	\$15,000	N/A

Kittson

Name	TRDS	Acres	Est Cost	Existing Protection?
Joe River WCS Replacement	16449234	47	\$100,300	N/A

Lincoln

Name	TRDS	Acres	Est Cost	Existing Protection?
Tyler WMA WCS	10944209	300	\$100,000	N/A

Mille Lacs

Name	TRDS	Acres	Est Cost	Existing Protection?
Mille Lacs WMA WCS (3)		2,799	\$250,000	N/A

Swift

Name	TRDS	Acres	Est Cost	Existing Protection?
Danvers WCS	12140204	0	\$20,000	N/A

Todd

<b>Name</b>	<b>TRDS</b>	<b>Acres</b>	<b>Est Cost</b>	<b>Existing Protection?</b>
Aurzada Wetland Restoration	12735208	0	\$15,000	N/A
Lawrence Lake	13332219	0	\$15,000	N/A
Quistorff WMA Wetland Enhancement	12735204	0	\$15,000	N/A
Ruff-Nik WMA Paycer Pool	13132225	0	\$15,000	N/A
Spohn WMA Wetland Restoration	12735204	0	\$15,000	N/A
Staples Dike Rehab Phase 2	13333225	0	\$15,000	N/A

## **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.