Request for Funding

Lessard-Sams Outdoor Heritage Council
Fiscal Year 2016 / ML 2015

Program or Project Title: Accelerated Shallow Lakes and Wetland Enhancement, Phase 7

Funds Requested: $4,005,000

Manager's Name: Ricky Lien
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County Locations: Aitkin, Freeborn, Mahnomen, Marshall, Mille Lacs, Murray, Nobles, Pennington, Pope, Roseau, Steele, Todd, and Wright.

Ecological Planning Regions:

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

Activity Type:

- Restore
- Enhance

Priority Resources Addressed by Activity:

- Wetlands

Abstract:

This proposal will address a backlog of shallow lake and wetland habitat work that will otherwise go unfunded. These projects will address work called for in the Minnesota Prairie Conservation Plan, Long Range Duck Recovery Plan, and Shallow Lakes plan.

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 interspersion 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.

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 overwater 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.

And it goes without saying that Minnesota wetlands, besides being invaluable for waterfowl, also provide other desirable functions and values - habitat for a wide range of species, groundwater recharge, water purification, flood water storage, shoreline protection, and economic benefits.

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 aforementioned 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. Additionally, wetlands continue to be lost or degraded by ongoing ditching and tiling from agriculture and other forces. In our remaining wetland habitat, 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 the shallow lakes and wetlands still on the landscape can be markedly improved by controlling invasive species and rough fish, and installing fish barriers where needed and aggressively managing water levels to meet management objectives. This proposal seeks to implement engineering design of dikes, water control structures, and fish barriers (Design), installing the of design elements (Construction), and intensifying the application of management techniques such as invasive species control, water level manipulation, and wild rice seeding (Intensive Management). Additionally, the proposal seeks to continue the the successful model of regional roving habitat crews to address the growing backlog of wetland habitat management on Wildlife Management Areas.

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.

Ten construction projects on wetland and shallow lake basins have been identified to upgrade or place dikes, water level control structures, and fish barriers. In the case of three of these projects,156 acres of restored wetlands will result. Another two projects will be designed with funding from this proposal. Five projects will be undertaken to manage dense monotypic stands of cattails that are negatively impacting the value of wetlands for wildlife habitat. Three wild rice seeding projects will be accomplished. Roving habitat crews will accomplish wetland habitat work that 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.

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.

How the request addresses MN habitats:

Minnesota has lost almost half of its original presettlement wetlands, with some regions of the state having lost more than 90% of their original wetlands. A statewide review of Species of Greatest Conservation Need (SGCN) found that wetlands are one of the three habitat types (along with prairies and rivers) most used by these

species. This request includes wetland management actions identified to support SGCN: prevention of wetland degradation, wetland restoration, and control of invasives. In the Minnesota County Biological Survey description of the marsh community, special attention is given to two issues faced in Minnesota marshes - stable high water levels that reduce species diversity, often to a point at which a monotypic system evolves, and the "invasion of marshes by the non-native species narrow-leaved cattail" and its hybrids. Both of these issues will be addressed by projects named within this proposal. Nationwide, 43% of threatened or endangered plants and animals live in or depend on wetlands.

Please explain the nature of urgency:

Wetland restoration, along with effective management and maintenance of existing wetlands and shallow lakes is critical to provide habitat for wetland wildlife, plus the other benefits that accrue for healthy wetland ecosystems. These projects implement work identified in numerous conservation plans, including the recently produced Minnesota Prairie Conservation Plan.

Planning

MN State-wide Conservation Plan Priorities:

- H4 Restore and protect shallow lakes
- H5 Restore land, wetlands and wetland-associated watersheds

Plans Addressed:

- Long Range Duck Recovery Plan
- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife

Please describe the science based planning and evaluation model used:

Shallow lakes in Minnesota are monitored and evaluated by area wildlife staff and dedicated shallow lake specialists who both identify shallow lakes needing management action and monitors the lakes post-management to assess effectiveness. The projects in this proposal were proposed by area wildlife and reviewed by regional and program specialists.

LSOHC Prairie Section Priorities:

- 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 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

LSOHC Metro Urban Section Priorities:

- Protect from long-term or permanent endangerment from invasive species

Accelerates or Supplements Current Efforts:

While existing funds such as waterfowl stamp or bonding are used where and when possible to implement wetland and shallow lake restoration, maintenance, and management projects, a backlog of unfunded projects, especially high-cost projects or projects of a unique nature exists. Habitat conservation plans such as the Minnesota Long Range Duck Recover Plan and the Minnesota shallow lake plan, and more recently the Minnesota

Prairie Conservation Plan, identify needed work and call for accelerated and expanded efforts. Programmatic proposals such as this allow for progress towards wetland and shallow lake goals that would otherwise be unattainable.

Non-OHF Money Spent in the Past:

Appropriation Year	Source	Amount

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.

Maintain Project Outcomes:

Year	Source of Funds	Step 1	Step 2	Step 3
Ongoing	a variety of Game and Fish funding	Area wildlife staff and shallow lake specialists will review completed projects and management actiivities to determine level of success and the need for any followup actions.	Standardized shallow lake assessments will be conducted on appropriate shallow lakes to document physical results of projects or management activities.	

Applicable Criteria:

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

Best Management Practice:

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program? - **Yes**

Permanent Protection:

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 (WMA, Public Waters, State Forests, no)**

Accomplishment Timeline

Activity	Approximate Date Completed
Wetland Habitat Roving Crew enhancement work on wetlands	June 2019
Two wetland design projects	June 2018
Five cattail control projects	September 2017
Three wild rice seeding projects	September 2017
Ten design & construct or construct projects	June 2019
One shallow lake drawdown and fish treatment	June 2018

Outcomes

Programs in the northern forest region:

- Improved availability and improved condition of habitats that have experienced substantial decline *Intensive wetland management and habitat infrastructure maintenance will provide the wetland base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

Programs in forest-prairie transition region:

- 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 base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

Programs in metropolitan urbanizing region:

- Protected habitats will hold wetlands and shallow lakes open to public recreation and hunting *Intensive wetland management and habitat infrastructure will provide the wetland base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

Programs in prairie region:

- Protected, restored, and enhanced shallow lakes and wetlands *Intensive wetland management and habitat infrastructure maintenance will provide the wetland base called for in numerous prairie, shallow lake and waterfowl plans. Area wildlife staff and/or shallow lakes staff will monitor completed projects to determine success of implementation and to assess the need for future management and/or maintenance.*

Relationship to Other Funds:

- No Relationships Listed

Budget Spreadsheet

Total Amount of Request: $4,005,000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	$1,090,000	$0		$1,090,000
Contracts	$1,824,000	$0		$1,824,000
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	$360,000	$0		$360,000
Professional Services	$257,000	$0		$257,000
Direct Support Services	$293,000	$0		$293,000
DNR Land Acquisition Costs	$0	$0		$0
Capital Equipment	$0	$0		$0
Other Equipment/Tools	$0	$0		$0
Supplies/Materials	$181,000	$0		$181,000
DNR IDP	$0	$0		$0
Total	$4,005,000	$0	-	$4,005,000

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Wetland roving crew laborers	4.00	3.00	$670,000	$0		$670,000
Wetland roving crew laborers	2.00	4.00	$420,000	$0		$420,000
Total	6.00	7.00	$1,090,000	$0	-	$1,090,000

Amount of Request: $4,005,000
Amount of Leverage: $0
Leverage as a percent of the Request: 0.00%

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	156	0	0	0	156
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	13,086	0	0	0	13,086
Total	13,242	0	0	0	13,242

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	$480,100	$0	$0	$0	$480,100
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	$3,524,900	$0	$0	$0	$3,524,900
Total	$4,005,000	$0	$0	$0	$4,005,000

Table 3. Acres within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	0	0	0	156	0	156
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	540	2,878	0	8,283	1,385	13,086
Total	540	2,878	0	8,439	1,385	13,242

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	$0	$0	$0	$480,100	$0	$480,100
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	$172,100	$1,336,800	$0	$1,524,500	$491,500	$3,524,900
Total	$172,100	$1,336,800	$0	$2,004,600	$491,500	$4,005,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	$3,078	$0	$0	$0
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	$269	$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	$3,078	$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	$319	$464	$0	$184	$355

Target Lake/Stream/River Feet or Miles

0

Parcel List

Section 1 - Restore / Enhance Parcel List

Aitkin

Name	TRDS	Acres	Est Cost	Existing Protection?
Cornish Flowage	05123223	300	$202,000	Yes

Freeborn

Name	TRDS	Acres	Est Cost	Existing Protection?
Carex Slough (Freeborn) Wetland Restoration	10319214	22	$75,000	Yes

Mahnomen

Name	TRDS	Acres	Est Cost	Existing Protection?
Frog Lake Water Control Structure Replacement and Access Development	14642229	209	$282,000	Yes
Waubun Marsh Restoration	14342234	20	$100,000	Yes

Marshall

Name	TRDS	Acres	Est Cost	Existing Protection?
Lost River Pool Cattail Management	15541206	200	$4,500	Yes
Moose River Moist Soils Unit	15840219	26	$379,000	Yes

Mille Lacs

Name	TRDS	Acres	Est Cost	Existing Protection?
Four Brooks WMA Wild Rice Seeding	04027223	40	$4,000	Yes
Mille Lacs WMA Cattail Control	04125229	60	$12,000	Yes
Mille Lacs WMA Wild Rice Seeding	04125229	80	$8,500	Yes
Rum River Small Imp	04026234	245	$75,000	Yes
Rum River State Forest Wild Rice Seeding	04026234	160	$4,000	Yes

Murray

Name	TRDS	Acres	Est Cost	Existing Protection?
Gallinago WMA Water control	10542222	0	$30,000	Yes

Nobles

Name	TRDS	Acres	Est Cost	Existing Protection?
Lone Tree Water Control Structure	10440222	114	$270,000	Yes

Pennington

Name	TRDS	Acres	Est Cost	Existing Protection?
Pembina cattail management	15245218	200	$4,500	Yes

Pope

Name	TRDS	Acres	Est Cost	Existing Protection?
Nora WMA control structure replacement	12640234	75	$75,000	Yes
Simon Lake WMA Siphon & Rotenone	12337234	570	$125,000	Yes

Roseau

Name	TRDS	Acres	Est Cost	Existing Protection?
Pool 2 Dike Riprap	16344212	4,600	$164,000	Yes
Roseau River WMA Pool Cattail Management	16343210	579	$37,000	Yes

Steele

Name	TRDS	Acres	Est Cost	Existing Protection?
Rickert Lake Water Control Structure	10519210	0	$25,000	Yes

Todd

Name	TRDS	Acres	Est Cost	Existing Protection?
Staples WMA Water Control Structure	13333225	702	$326,000	Yes

Wright

Name	TRDS	Acres	Est Cost	Existing Protection?
Woodland WMA Cattail Control	11826201	40	$9,500	Yes

Section 2 - Protect Parcel List

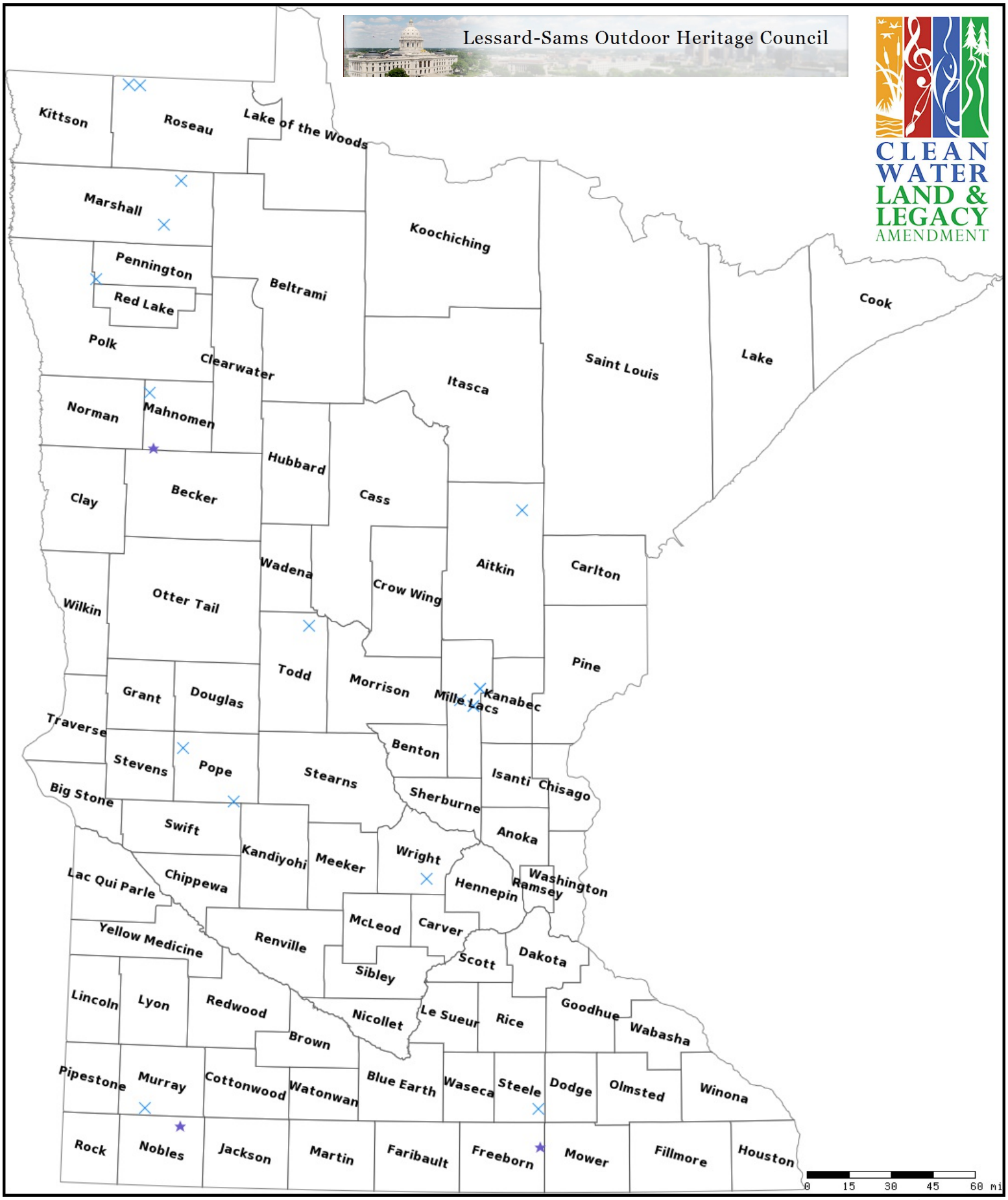
No parcels with an activity type protect.

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.



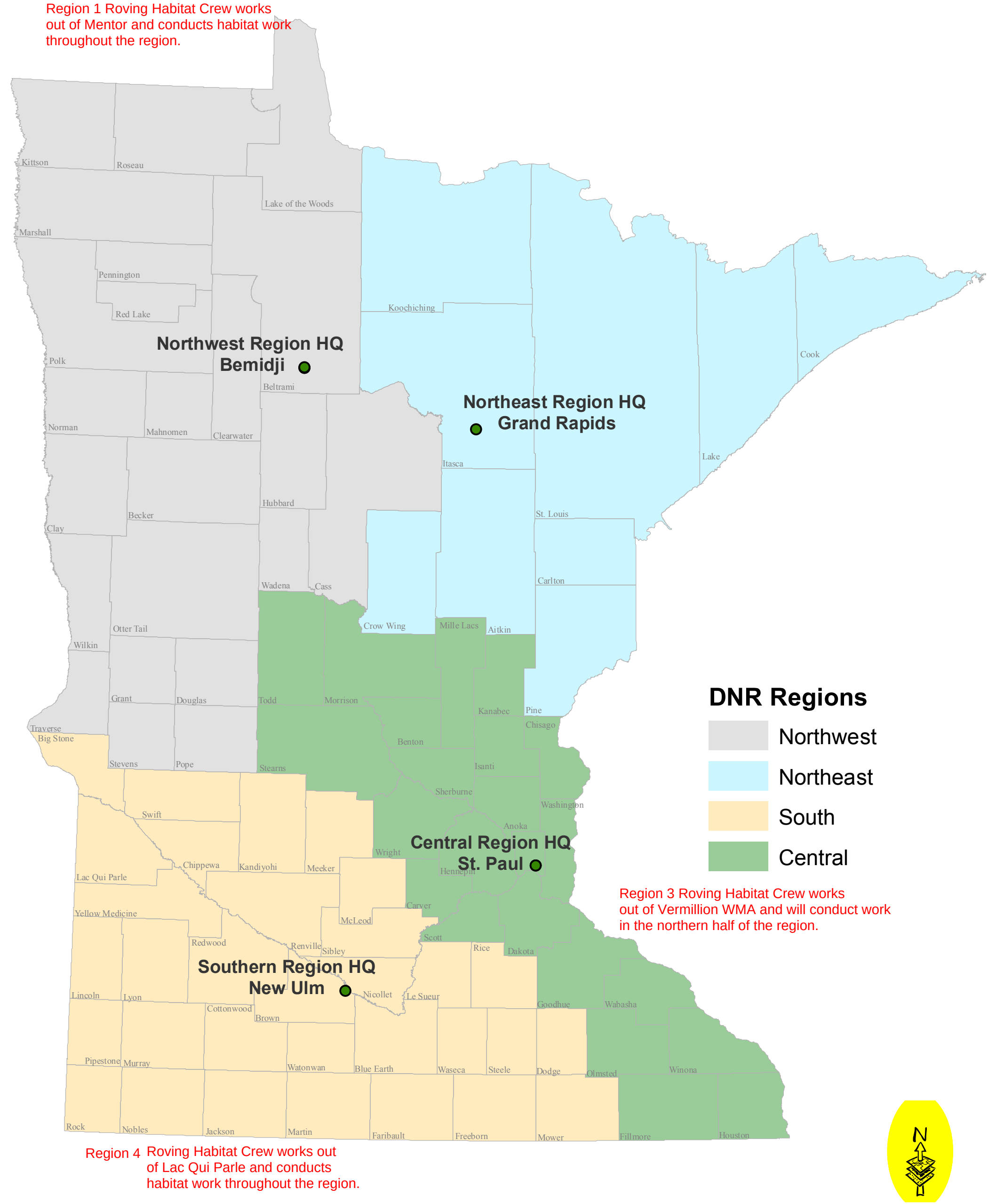
Accelerated Shallow Lakes and Wetland Enhancement, Phase 7

Data Generated From Parcel List

Minnesota Department of Natural Resources

DNR Administrative Regions

Region 1 Roving Habitat Crew works out of Mentor and conducts habitat work throughout the region.



Region 3 Roving Habitat Crew works out of Vermillion WMA and will conduct work in the northern half of the region.

Region 4 Roving Habitat Crew works out of Lac Qui Parle and conducts habitat work throughout the region.

10/15/2009

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Accelerated Shallow Lakes and Wetlands Enhancement - Phase 7