Lessard-Sams Outdoor Heritage Council

ML 2022 Request for Funding

General Information

Date: 06/04/2021

Proposal Title: Living Shallow Lake Enhancement & Wetland Restoration Initiative - Phase VIII

Funds Requested: $12,940,000

Manager Information

Manager's Name: Jon Schneider
Title: Director - Minnesota Conservation Programs
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Location Information

County Location(s): Yellow Medicine, Pope, Big Stone, Swift, Lincoln, Lyon, Kandiyohi, Otter Tail, Brown, Murray, Jackson, Meeker, Scott, Carver, Douglas, Grant, Lac qui Parle, Redwood, Sibley, Freeborn, Watonwan, Steele, Stevens, Martin, Nobles, Cottonwood, Becker, Le Sueur and Renville.

Eco regions in which work will take place:

- Forest / Prairie Transition
- Prairie
- Metro / Urban

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Wetlands
- Prairie

Narrative

Abstract

This Phase 8 request for Ducks Unlimited's Living Lakes program will enhance or restore 2,800 acres of wetlands and adjacent prairie grasslands for the U.S. Fish & Wildlife Service and Minnesota DNR on public lands and private lands under permanent USFWS easement. Where required, DU engineers will design water control structures to restore wetland hydrology and allow active management of shallow lake water levels to enhance their ecology for ducks, other wildlife, and people, primarily in Minnesota's Prairie Pothole Region. While DU staff design restoration and enhancement projects, DU hires private contractors to implement enhancement and restoration activities.

Design and Scope of Work

This Phase 8 of Ducks Unlimited's ongoing shallow lake enhancement and prairie wetland restoration conservation program will enhance at least 2,250 acres of shallow lakes and grasslands, and restore 550 acres of wetlands and grasslands, primarily in the Prairie Pothole Region of SW Minnesota. DU partners with the U.S. Fish & Wildlife Service (FWS) and Minnesota DNR to design water control structures with fish barriers to enhance degraded shallow lakes and restore drained wetlands on public land and under easement. Water control structures are used to conduct temporary water level draw-downs to rejuvenate shallow lake ecology and productivity for wildlife. Structures are constructed by private sector firms hired by DU and are managed by FWS or DNR. Adjacent grasslands will be restored/enhanced to buffer wetlands.

Shallow lake enhancement and wetland restoration are top priority actions in all major conservation plans for Minnesota. Our work addresses the habitat goals identified in North American Waterfowl Management Plan, Minnesota's Prairie Conservation Plan, and Minnesota's Duck Recovery Plan which calls for the active management of 1,800 shallow lakes and restoring 64,000 wetlands to Minnesota's landscape. This work is time-sensitive because complex shallow lake enhancement projects take several years to design and implement, and because wetland restorations are critically needed for breeding waterfowl.

Healthy and abundant wetlands are required to sustain breeding and migrating waterfowl. Minnesota has lost approximately 90% of our prairie wetlands and 99% of native prairie grasslands around them. This has had a profound negative impact on breeding ducks and other prairie wetland wildlife here. Our remaining shallow lakes and wetlands are often those that were too deep to drain years ago, and now function as the core of Minnesota's remaining waterfowl habitat complexes. Unfortunately, these remaining wetland basins now receive the excessive nutrient-laden water runoff from an intensively drained and interconnected landscape through which invasive fish such as carp have improved access. As a result, many of our remaining wetlands and shallow lakes are turbid and degraded due to drainage they received and high, stabilized water levels in which nutrients collect and invasive fish proliferate. This results in stagnated aquatic wetland ecology and productivity, and wetland basins with few aquatic plants and invertebrates for birds to eat. This is especially detrimental to diving ducks and other wetland-dependent species that rely exclusively on aquatic plant and invertebrate foods within wetlands and shallow lakes to survive. These factors have caused a significant decline in Minnesota's once diverse waterfowl population, and as a result, in Minnesota's rich waterfowling traditions.

This funding request will support DU staff biologists and engineers who survey, design, and manage construction of shallow lake enhancement and wetland restoration projects to improve public water shallow lakes and restore wetlands and grasslands, primarily in the Prairie Pothole Region of SW Minnesota. Funding will also support ongoing shallow lake technical assistance from DU staff to assess, survey, and design future enhancement and wetland projects for implementation under future OHF appropriations for this program.

How does the proposal address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?

This proposal enhances shallow lakes and restores non-forested prairie wetlands, which are identified as critical habitats for many "Species of Greatest Conservation Need" listed in Minnesota's "Tomorrow's Habitat for the Wild & Rare: An Action Plan for Minnesota Wildlife." Specific species listed in the Action Plan as requiring shallow lakes (page 273) include lesser scaup, northern pintail, common moorhen, least bittern, American bittern, marsh wren, and Virginia rail, along with being "important for many other species". Specific species listed in the Action Plan as requiring emergent marshes (page 267) include least bittern, American bittern, marsh wren, and Virginia rail, and Forster's terns are listed as requiring large deep-water marshes.

In addition to these specific wildlife species listed as SGCN examples in the Action Plan, shallow lakes and prairie wetlands will provide habitat of significant value for other species listed in Appendix B of the Action Plan too. Enhanced shallow lakes will provide habitat of significant value for other SGCN including: western grebe, black tern, northern harrier, trumpeter swan, common loon, bald eagle, Franklin's gull, whimbrel, black-crowned night heron, American white pelican, horned grebe, red-necked grebe, eared grebe, and common tern. Restored prairie wetlands will provide habitat of significant value for other SGCN including:black tern, northern harrier, trumpeter swan, rusty blackbird and black-crowned night heron.

What is the degree of timing/opportunistic urgency and why it is necessary to spend public money for this work as soon as possible?

Most prairie wetlands have been drained and most shallow lakes degraded in southern Minnesota. Functioning wetland basins are the most important habitat variable for breeding ducks, and the most limiting factor for ducks in the prairie region of Minnesota. Similarly, healthy and productive shallow lakes are the limiting habitat type for diving ducks and most other migrating waterfowl species as they pass through Minnesota in fall and spring. To improve wetland conditions for both breeding and migrating waterfowl in Minnesota, it is imperative that we restore wetlands and enhance shallow lakes, especially in the Prairie Pothole Region of SW Minnesota.

Describe how the proposal uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:

Ducks Unlimited uses science-based targeting to evaluate shallow lake and prairie wetland restorations in the Prairie Region, especially small wetland restorations that help improve prairie-wetland complexes for breeding ducks. Models such as the U.S. Fish & Wildlife Service (USFWS) "Thunderstorm Maps" and "Restorable Wetlands Inventory" help determine landscape importance for breeding waterfowl. We consider biological diversity and significance according to the Minnesota DNR County Biological Survey (MCBS). Several project examples include:

Indian Lake is a 377-acre priority shallow lake in Sibley County, identified as having a high level of biological significance, and as having moderate biodiversity significance by the MCBS. Ducks Unlimited has purchased and restored four properties around the lake in an effort to reduce agricultural runoff and improve water quality in Indian Lake, as well as provide increased habitat for waterfowl and other wetland- and grassland-dependent wildlife.

Boon Lake is an 858-acre shallow lake in Renville County, identified as having moderate biological significance, and is located just south of a large cluster of shallow lakes with moderate and high levels of biological significance.

Several federal Waterfowl Production Areas (WPA) in west-central Minnesota are located in landscapes with moderate biodiversity significance in a large complex of fee-title and protected private lands under permanent easement. Key parts of this landscape currently supports 31-40 breeding duck pairs per square mile, with the potential to support 81-100 breeding duck pairs per square mile once wetlands are restored.

Big Stone National Wildlife Refuge Pool 4/4A is 200 acres of wetland habitat in Lac qui Parle County. The refuge is home to several sites of outstanding, high, and moderate levels of biodiversity significance. The landscape is currently able to support 41-50 breeding duck pairs per square mile. These enhanced wetlands will provide additional habitat for birds throughout their annual cycle.

Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?

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

Which two other plans are addressed in this proposal?

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

Describe how your program will advance the indicators identified in the plans selected:

Ducks Unlimited's "Living Lakes" conservation initiative provides wetland engineering expertise to enhance shallow lakes and restore wetlands to directly support the goals of Minnesota DNR's Long-range Duck Recovery Plan and objectives of its Shallow Lakes Program Plan ("Managing Minnesota Shallow Lakes for Waterfowl and Wildlife").

These plans call for maximizing management of all 200 shallow lakes that are designated wildlife management lakes and those within state WMAs and federal WPAs/NWRs along with the approximately 1,553 shallow lakes with a portion of their shorelines under state, federal, or county ownership for high quality waterfowl habitat, and increasing management of the other 201 shallow lakes with public access. Overall, these plans call for the active management of 1,800 shallow lakes and restoring 600,000 acres of wetlands in 64,000 basins in Minnesota.

This work also supports the goals of Minnesota's Prairie Conservation Plan and NAWMP.

Which LSOHC section priorities are addressed in this proposal?

Forest / Prairie Transition

- Protect, enhance, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

Metro / Urban

- Protect habitat corridors, with emphasis on the Minnesota, Mississippi, and St. Croix rivers (bluff to floodplain)

Prairie

- Protect, restore, and enhance shallow lakes

Describe how your program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife as indicated in the LSOHC priorities:

Ducks Unlimited professional engineers and biologists design and install robust steel and concrete water level control structures that provide long-lasting shallow lake enhancement and wetland restoration tools to Minnesota DNR and U.S. Fish & Wildlife Service field managers. These water structures are essential to enhancing shallow lakes and controlling outflows, and must be engineered to a very high level in order to withstand time and environmental pressures while providing wildlife managers with the means to regularly conduct temporary water level draw-downs to enhance their aquatic ecology to ensure optimal ecological condition for ducks. Similarly, smaller wetland restorations often involve complex drainage systems that require professional engineering to survey, design, and restore without negatively affecting upstream and downstream private landowners. Since 1984, Ducks Unlimited has provided professional wetland engineering services to our state and federal wildlife conservation agency partners.

What other fund may contribute to this proposal?

- N/A

Does this proposal include leveraged funding?

Yes

Explain the leverage:

DU strives to use all of our non-federal expense to leverage federal NAWCA grant funds to further our conservation mission. However, NAWCA is highly competitive and complex, and proposal success is uncertain. Nonetheless, DU works closely with Minnesota DNR, and NGO partners to offer recent past state OHF acquisitions as non-federal match to leverage federal NAWCA funds to help fund shallow lake and wetland restoration projects. DU intends to partner with DNR and other NGOs to pursue NAWCA grant funds in the future to help implement projects funded through this appropriation.

Per MS 97A.056, Subd. 24, Please explain whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose.

This funding requested, if approved, will supplement traditional funding for Ducks Unlimited's Living Lakes Initiative, and will not supplant or substitute for traditional funding previously used for this purpose by Ducks Unlimited.

Non-OHF Appropriations

Year	Source	Amount
2009	DU private and federal USFWS and NAWCA grant funds	$1,111,000
2010	DU private and federal USFWS and NAWCA grant funds	$1,205,400
2012	DU private and federal USFWS and NAWCA grant funds	$839,300
2014	DU private and federal USFWS and NAWCA grant funds	$731,000
2017	DU private and federal USFWS and NAWCA grant funds	$400,000 (ongoing)

2018	DU private and federal USFWS and NAWCA grant funds	$400,000 (ongoing)
2020	DU private and federal USFWS and NAWCA grant funds	$400,000 (ongoing)

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

Shallow lake enhancement water control structures and prairie wetland restorations are implemented for state and federal agency conservation partners on land under their state or federal long-term control and management responsibility. Thus, all projects constructed will be sustained and maintained by conservation partners Minnesota DNR and U.S. Fish & Wildlife Service, which are the two primary wildlife habitat management agencies in Minnesota.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2024	DNR Game & Fish Account, OHF for DNR Shallow Lakes Program and DNR Roving Crews	DNR Area Wildlife and Shallow Lakes Program Staff will assess shallow lake and wetland conditions following initial water level draw-downs, and document for management consideration	Every 3-8 years, depending on wetland conditions, water control structures will be used to actively manage and enhance shallow lakes and wetlands via temporary water level draw-down to remove fish, stimulate aquatic plants, and rejuvenate their overall aquatic ecology, which includes stimulating aquatic invertebrate production. Some basins may need pumping via DNR pump purchased by DU via previous 2012 OHF grant.	DNR assess ecological conditions again following subsequent temporary water level draw-downs and refilling management treatments, and communicate results and questions or concerns to DU.

Identify indicator species and associated quantities this habitat will typically support:

Ducks Unlimited proposes to restore 370 acres of wetlands and enhance 2,190 acres of wetlands and shallow lakes to improve their ecological function for waterfowl and many other species of wetland-dependent wildlife. Science-based guidance provided by Minnesota DNR indicates that 370 acres of restored prairie wetlands and 2,190 acres of enhanced wetlands and shallow lakes may be estimated to:

Support approximately 1,036 pairs of mallards based on the biological model of the Upper Mississippi River Great Lakes Joint Venture of the North American Waterfowl Management Plan that indicates one pair of mallards needs 2.47 acres of wetlands with adequate adjacent upland nesting habitat to support population growth; and,

Support at least 17 or more pairs of trumpeter swans assuming one pair for every 150 wetland acres, depending on the size, type, and number of wetland basins restored or enhanced.

In addition, using assumptions of the Upper Mississippi River Great Lakes Joint Venture of the NAWMP that large "aquatic bed" wetlands such as shallow lakes provide ducks with 474,791 kcal/acre of energy-rich foods, and using an energy requirement estimate of 309 kcal/bird/day for an average size duck, DU scientists estimate 2,190 acres of shallow lake and wetland enhancements completed through this program could provide up to 3,073,078 "duck-

use-days" of habitat in a year. This estimated habitat enhancement outcome could therefore accommodate 112,167 ducks for 30 days, or 56,084 ducks for 60 days, during spring and fall migration.

How will the program directly involve, engage, and benefit BIPOC (Black, Indigenous, People of Color) and diverse communities:

Ducks Unlimited conserves wetlands for waterfowl and people alike. Our habitat projects restore natural infrastructure, which helps to alleviate society's climate impacts and provide clean water for BIPOC communities, who are disproportionately impacted by the effects of wetland loss and climate change.

Wetlands recharge groundwater in aquifers that provide clean, dependable water supplies while removing pollutants and reducing downstream flooding. Generational wealth in BIPOC communities is compromised by a lack of natural infrastructure such as wetlands. BIPOC community resiliency is enhanced by the function of wetlands and adjacent grassland habitats that clean water and help absorb impacts from severe weather events.

Restoring wetlands in the Mississippi River watershed benefits BIPOC communities who draw their water from the river such as Minneapolis, St. Paul, and St. Cloud. Minneapolis alone draws 21 billion gallons of water a year from the Mississippi River to produce 57 million gallons of drinking water each day.

Public lands and waters also provide numerous opportunities for fishing, hunting, canoeing, kayaking, birding, and outdoor education for BIPOC communities that may not otherwise have access to natural open spaces. Indigenous communities may benefit from DU wetland enhancements and restorations that create suitable conditions for wild rice to proliferate. Wetlands deliver a return on investment that helps to support the health, resiliency, and well-being of BIPOC communities.

In this program, DU will work with U.S. Fish & Wildlife Service's Minnesota Valley National Wildlife Refuge to enhance Chaska Lake in Carver County and other wetlands near the Twin Cities. The Refuge works to connect the vibrant cultures of the Twin Cities metro with the diversity of wildlife and habitat along the Minnesota River. With more than 46 miles of trails and two visitor centers, the Refuge welcomes visitors to enjoy the variety of outdoor experiences offered. Established in 1976 by motivated residents, the Refuge preserved wildlife resources threatened by commercial and industrial development. Now, the Refuge enhances urban habitat while offering community programs, environmental education, and access to nature on the edge of the city as well as hunting, fishing and hiking in the wilder stretches of the Minnesota River.

Activity Details

Requirements

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?
Yes

Is the restoration and enhancement activity on permanently protected land per 97A.056, Subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15?
Yes

Where does the activity take place?

- WMA
- WPA
- Permanently Protected Conservation Easements
- Public Waters
- Refuge Lands

Land Use

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

Other OHF Appropriation Awards

Have you received OHF dollars in the past through LSOHC?
Yes

Approp Year	Approp Amount Received	Amount Spent to Date	Leverage Reported in AP	Leverage Realized to Date	Acres Affected in AP	Acres Affected to Date	Complete/Final Report Approved?
2021	$6,930,000	-	$670,000	-	2,200	0	No
2018	$3,740,000	$120,000	$140,000	$100,000	1,050	781	No
2017	$4,716,000	$4,032,000	$300,000	$300,000	2,050	2,835	No
2014	$4,910,000	$4,888,300	$110,000	$731,000	4,000	6,011	Yes
2012	$4,490,000	$4,490,000	$460,700	$839,300	1,500	3,086	Yes
2010	$2,417,000	$2,417,000	-	$1,205,400	958	1,226	Yes
2009	$2,528,000	$2,528,000	-	$1,111,100	6,000	6,882	Yes

Timeline

Activity Name	Estimated Completion Date
Recon projects with DNR and FWS partners and begin engineering survey and design of wetland restorations and shallow lake enhancements	June 2023
Complete some small wetland restorations and some larger shallow lake enhancements	June 2025
Complete remaining small wetland projects and larger shallow lake enhancement water control structure installations	June 2027

Budget

Totals

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	$1,080,000	$210,000	DU Private & federal NAWCA	$1,290,000
Contracts	$11,300,000	$400,000	DU Private & federal NAWCA grants	$11,700,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	$500,000	Federal USFWS Migratory Bird Con. Fund	$500,000
Easement Stewardship	-	-	-	-
Travel	$120,000	$30,000	DU Private & federal NAWCA grants	$150,000
Professional Services	$120,000	-	-	$120,000
Direct Support Services	$110,000	-	DU Private & federal NAWCA grants	$110,000
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	$30,000	-	-	$30,000
Other Equipment/Tools	$90,000	$15,000	DU private & federal NAWCA grants	$105,000
Supplies/Materials	$90,000	$15,000	DU Private & federal NAWCA grants	$105,000
DNR IDP	-	-	-	-
Grand Total	**$12,940,000**	**$1,170,000**	**-**	**$14,110,000**

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
Manager - Grant Administration & Program Coordination	0.3	3.0	90000	-	-	$90,000
Professional Engineers, Surveyors, Construction Managers, and Biologists to Design and Implement Projects	3.33	3.0	990000	$210,000	DU Private & federal NAWCA and MBCF	$1,200,000

Capital Equipment

Item	Funding Request	Antic. Leverage	Leverage Source	Total
GPS Survey Equipment	$30,000	-	-	$30,000

Amount of Request: $12,940,000
Amount of Leverage: $1,170,000

Leverage as a percent of the Request: 9.04%
DSS + Personnel: $1,190,000
As a % of the total request: 9.2%
Easement Stewardship: -
As a % of the Easement Acquisition: -

Describe and explain leverage source and confirmation of funds:
DU will seek to leverage OHF grant funds with additional private support from individuals, foundations, and corporations and from federal NAWCA grants by using OHF grant expense as match for federal grants for specific shallow lake and wetland restoration projects proposed in this program, once projects are designed and permitted.

Does this proposal have the ability to be scalable?
Yes

If the project received 70% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
If reduced to 70% of the request, most of our acres/activities and budget would be scaled proportionately.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Because our work involves a team of DU biologists/engineers, including programmatic engineering feasibility work that often spans several years and multiple appropriations, budgets for personnel may not be reduced exactly proportionately but will be reduced as much as possible without jeopardizing staffing and progress to keep future projects viable.

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
If reduced to 50% of the request, most of our acres/activities and budget would be scaled proportionately.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Because our work involves a team of DU biologists/engineers, including programmatic engineering feasibility work that often spans several years and multiple appropriations, budgets for personnel may not be reduced exactly proportionately but will be reduced as much as possible without jeopardizing staffing and progress to keep future projects viable.

Personnel

Has funding for these positions been requested in the past?
Yes

Please explain the overlap of past and future staffing and position levels previously received and how that is coordinated over multiple years?
DU strives to complete one phase of this program before starting the next, to minimize overlap. Currently, we anticipate completing Phase 6 and will be out of funding by 2022. Furthermore, DU assigns a unique project number code to each project, and staff charge time to these site-specific project codes as they work on multiple projects throughout the year. Despite DU staff working on multiple projects and grants throughout the year, charges are only billed to one OHF grant or another, and therefore staff charges throughout the year are incurred on multiple projects funded by multiple grants, and DU staff cost invoicing is both sites-specific and OHF grant-specific.

Contracts

What is included in the contracts line?
Yes, all of the budget request for Contracts is for shallow lake enhancement and wetland restoration work contracted to private sector construction firms specializing in earth moving and water control structure installation involving steel weirs, concrete culverts, etc.

Travel

Does the amount in the travel line include equipment/vehicle rental?
No

Explain the amount in the travel line outside of traditional travel costs of mileage, food, and lodging
None - DU travel costs consist of in-state mileage, food, and lodging only. Travel is primarily mileage and lodging for engineering field staff and biologists during project survey and construction management. DU has not typically invoiced for food or meals in the past, and likely won't do so in the future.

I understand and agree that lodging, meals, and mileage must comply with the current MMB Commissioner Plan:
Yes

Direct Support Services

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program?
Minnesota DNR grants staff previously reviewed and approved DU accounting methodology for Direct Support Services, which are calculated and included in DU staff costs. DU Direct Support Services constitute approximately 8% of DU overall staff costs on average among all billable DU conservation staff categories. DU breaks out and invoices for Direct Support Service expenses approved by DNR for reimbursement separately from Personnel expenses.

Other Equipment/Tools

Give examples of the types of Equipment and Tools that will be purchased?
GPS survey equipment for performing engineering wetland restoration survey work and engineering surveys of shallow lake and large wetland enhancement projects, including survey equipment lease charges instead of actual outright equipment purchases to avoid buying equipment that becomes obsolete due to upgrades and advancements. Other equipment may include laptop and/or tablet computers, printers and other office equipment for biologists or engineers may be needed, along with hand tools and other field equipment as needs arise.

Federal Funds

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

Are the funds confirmed?
Yes

- Cash : $830,000
- In Kind : $310,000

Is Confirmation Document attached?
Yes

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	370	180	0	0	550
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	2,190	60	0	0	2,250
Total	**2,560**	**240**	**0**	**0**	**2,800**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	$3,000,000	$600,000	-	-	$3,600,000
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	$9,000,000	$340,000	-	-	$9,340,000
Total	**$12,000,000**	**$940,000**	**-**	**-**	**$12,940,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	20	150	0	380	0	550
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	160	60	0	2,030	0	2,250
Total	**180**	**210**	**0**	**2,410**	**0**	**2,800**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	$300,000	$1,500,000	-	$1,800,000	-	$3,600,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	$2,000,000	$340,000	-	$7,000,000	-	$9,340,000
Total	**$2,300,000**	**$1,840,000**	**-**	**$8,800,000**	**-**	**$12,940,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	$8,108	$3,333	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	$4,109	$5,666	-	-

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	$15,000	$10,000	-	$4,736	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State	-	-	-	-	-

PILT Liability					
Protect in Easement	-	-	-	-	-
Enhance	$12,500	$5,666	-	$3,448	-

Target Lake/Stream/River Feet or Miles

Outcomes

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 ~ *This program will restore and enhance wetlands and grasslands on federal Waterfowl Production Areas and USFWS Habitat easements, and similar wetlands for MNDNR, each of which will be selected strategically by USFWS and MNDNR to benefit existing wetland complexes and migratory birds for both breeding and migration habitat, and which will be monitored by USFWS and MNDNR.*

Programs in metropolitan urbanizing region:

- Game lakes are significant contributors of waterfowl, due to efforts to protect uplands adjacent to game lakes ~ *DU will enhance and restore shallow lakes and wetlands on the Minnesota River NWR and federal Waterfowl Production Areas perpetually protected, managed, monitored, and evaluated annually by highly-trained U.S. Fish & Wildlife Service wildlife biologists. Service staff will guide the enhancement and restoration work by DU, and will evaluate wetland habitat outcomes annually to guide future management actions.*

Programs in prairie region:

- Enhanced shallow lake productivity ~ *Wetland and shallow lakes restored or enhanced via temporary water level draw-downs by DU-engineered and installed water control structures will be assessed by Minnesota DNR shallow lakes program surveys both before and after draw-downs to document improvements in water clarity, abundance of aquatic plants, and overall improvements in the aquatic ecology of each basin. Minnesota DNR and U.S. Fish & Wildlife Service field staff also conduct periodic counts of waterfowl and other wildlife using these basins in both spring and fall, along with hunters, and thus wildlife and human use is also monitored on a more informative opportunistic basis.*

Parcels

Sign-up Criteria?
No

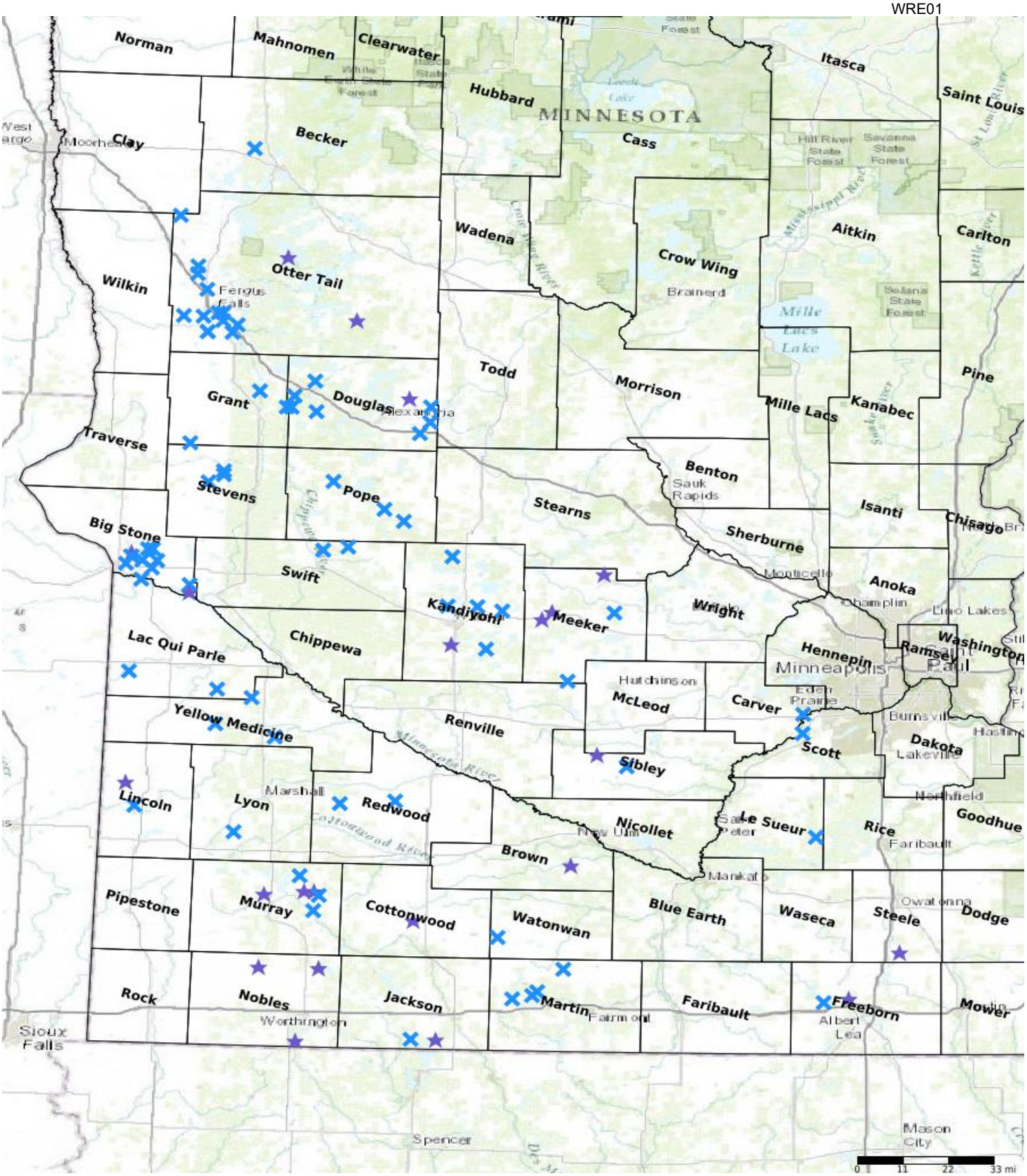
Explain the process used to identify, prioritize, and select the parcels on your list:
Ducks Unlimited prioritizes prairie shallow lake enhancement and wetland restoration and enhancement opportunities that are located in landscapes most heavily used by migrating and breeding waterfowl, and which our DNR and USFWS agency partners have identified and prioritize for optimal waterfowl habitat. Due to the overall shortage of prairie wetlands for breeding ducks, and relatively few shallow lakes in optimal condition for migrating ducks in Minnesota, DU relies on our DNR and USFWS agency partner biologists with land management responsibility to determine shallow lake and wetland project opportunities on public land or under easement. From there, DU prioritizes wetland restorations within landscapes of higher predicted breeding duck use, and prioritizes enhancement of shallow lakes where management success is most probable due to basin depth, landscape and hydrology conditions, and the likelihood that invasive fish can be minimized.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Hamden Slough NWR	Becker	13942202	3	$25,000	Yes
USFWS Easement - Rolfsmeier Upland Enhancement	Big Stone	12044202	40	$25,000	Yes
Prairie WPA	Big Stone	12246236	2	$15,000	Yes
Rothi WPA	Big Stone	12145202	3	$25,000	Yes
Otrey Lake WMA	Big Stone	12245222	116	$175,000	Yes
Twin Lakes WPA	Big Stone	12246225	1	$10,000	Yes
Kufrin WPA	Big Stone	12245221	3	$25,000	Yes
Hillman WPA	Big Stone	12145215	1	$10,000	Yes
Lac qui Parle WMA - Small wetland restorations	Big Stone	12044214	10	$50,000	Yes
Helgenson WPA	Big Stone	12145205	1	$10,000	Yes
Redhead Marsh WPA	Big Stone	12146211	3	$15,000	Yes
Middle MN River WPA - Wetland Restoration	Brown	10931234	20	$150,000	Yes
MN Valley NWR - Chaska Lake Enhancement	Carver	11523208	80	$500,000	Yes
Harder Lake WPA	Cottonwood	10636216	1	$5,000	Yes
Benson WPA	Douglas	12840207	1	$15,000	Yes
Schultz Lake WPA	Douglas	12836226	3	$20,000	Yes
Sellevold WPA	Douglas	12840213	1	$15,000	Yes
Tenhoff WPA	Douglas	12836202	2	$22,000	Yes
Ash WPA	Douglas	12736209	1	$15,000	Yes
Fedje WPA	Douglas	12940229	2	$15,000	Yes
USFWS Habitat Easement - Groth Restoration	Douglas	12936230	66	$150,000	Yes
Halls Lake WPA	Freeborn	10322230	105	$500,000	Yes
Two Island WPA	Freeborn	10322224	4	$20,000	Yes
Bah Lakes WPA	Grant	12940201	4	$40,000	Yes
Historical Society WPA	Grant	12841212	1	$15,000	Yes
Cheney Trust WPA	Grant	12744235	94	$200,000	Yes
Blakesley WPA	Grant	12941219	1	$10,000	Yes
Sangl WMA	Jackson	10136221	25	$150,000	Yes
USFWS Easement - Gazda Wetland Restoration	Jackson	10135220	25	$200,000	Yes
USFWS Easement - Block Wetland Enhancement	Kandiyohi	12034228	14	$150,000	Yes
Yarmon WPA	Kandiyohi	11834223	263	$400,000	Yes
Weber WPA	Kandiyohi	12035228	79	$300,000	Yes
Uncle Matt's WPA	Kandiyohi	12033232	10	$100,000	Yes

Whitefield WMA - Wetland Restorations	Kandiyohi	11835215	13	$50,000	Yes
Timber Lake	Kandiyohi	12235222	202	$200,000	Yes
Big Stone NWR Pool 4/4A	Lac qui Parle	12145232	275	$1,500,000	Yes
Sweetwater WMA	Lac qui Parle	11746236	69	$200,000	Yes
Flinks Slough WMA	Lac qui Parle	11642236	227	$200,000	Yes
Wild Wings WMA	Lac qui Parle	11643223	73	$250,000	Yes
Diamond Lake	Le Sueur	11023223	120	$250,000	Yes
Herschberger WMA - Curtis Lake Enhancement	Lincoln	11145230	176	$500,000	Yes
Legacy WMA	Lincoln	11246226	10	$50,000	Yes
Lyons WMA - Brown Marsh Enhancement	Lyon	11042228	70	$300,000	Yes
Gleam WMA	Martin	10431216	15	$150,000	Yes
Clam Lake	Martin	10332215	72	$200,000	Yes
Rooney Run WMA - Round Lake Enhancement	Martin	10332221	45	$200,000	Yes
Caron WMA	Martin	10333226	37	$550,000	Yes
USFWS Easement - Trebil Wetland Restoration	Meeker	12032236	40	$200,000	Yes
USFWS Easement - Butler Lake Restoration	Meeker	11932210	65	$400,000	Yes
Powers Lake Enhancement	Meeker	12030236	380	$350,000	Yes
Clear Lake WPA	Meeker	12130210	10	$75,000	Yes
Mason WPA - Wetland Restoration	Murray	10741216	15	$150,000	Yes
Buffalo Lake WMA Wetland Restoration	Murray	10739207	10	$50,000	Yes
Slaughter Slough WPA	Murray	10740211	20	$125,000	Yes
Shetek WMA - Robbins Slough Enhancement	Murray	10840222	245	$350,000	Yes
Dovray WPA	Murray	10739217	8	$75,000	Yes
Devils Run WPA	Murray	10639206	28	$200,000	Yes
Bloom WPA	Nobles	10441220	4	$20,000	Yes
Graham Lake WPA	Nobles	10439220	14	$70,000	Yes
Lake Bella WPA	Nobles	10140227	1	$5,000	Yes
Ridgeway WPA	Otter Tail	13244216	15	$50,000	Yes
Nicholson/Tenmile WPA	Otter Tail	13143205	3	$35,000	Yes
Mavis WPA	Otter Tail	13243211	1	$10,000	Yes
Knollwood WPA	Otter Tail	13243223	3	$15,000	Yes
Julsrud WPA	Otter Tail	13644205	2	$20,000	Yes
Hintermeister WPA	Otter Tail	13242229	2	$15,000	Yes
Haugen WPA	Otter Tail	13243218	1	$15,000	Yes
Wiegers WPA	Otter Tail	13343208	20	$55,000	Yes
Townsend WPA	Otter Tail	13243210	2	$20,000	Yes
USFWS Easement -Misegades Restoration	Otter Tail	13238217	27	$200,000	Yes
USFWS Habitat Easement - Stoering Restoration	Otter Tail	13541225	50	$100,000	Yes
Aaberg WPA	Otter Tail	13444212	1	$15,000	Yes
Nicoholson WPA - Shallow Lake Enhancement	Otter Tail	13142206	100	$250,000	Yes
Busko WPA	Otter Tail	13143205	221	$250,000	Yes
Scribner WPA	Otter Tail	13444224	2	$25,000	Yes
USFWS Easement - Sievers Upland Enhancement	Pope	12337201	63	$35,000	Yes
USFWS Easement - BBB Farms Upland Enhancement	Pope	12437220	60	$35,000	Yes
Stewart WPA	Pope	12539215	15	$100,000	Yes
Daubs Lake Enhancement	Redwood	11137211	175	$250,000	Yes
Westline WMA	Redwood	11139213	200	$200,000	Yes
Boon Lake Enhancement	Renville	11731233	858	$500,000	Yes
MN Valley NWR - Louisville Swamp Enhancement	Scott	11423205	75	$500,000	Yes
Indian Lake	Sibley	11329221	377	$600,000	Yes
Ward Lake WMA - Small Wetland Restorations	Sibley	11330204	20	$100,000	Yes
Straight River Marsh WPA	Steele	10520222	50	$500,000	Yes
Smith WPA	Stevens	12543201	1	$15,000	Yes

Freeman WPA	Stevens	12543221	1	$10,000	Yes
Bahr WPA	Stevens	12543212	1	$10,000	Yes
Johnson Lake Enhancement	Swift	12239217	179	$500,000	Yes
Loen WPA - Small Wetlands	Swift	12238207	3	$15,000	Yes
Sulem WMA	Watonwan	10533205	226	$500,000	Yes
USFWS Easement - Coover Wetland Enhancement	Yellow Medicine	11443202	10	$15,000	Yes
Spellman WMA - Miedd Lake	Yellow Medicine	11441223	50	$100,000	Yes



Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other

Parcel Map
Living Shallow Lake Enhancement & Wetland Restoration Initiative - Phase VIII
(Data Generated From Parcel List)

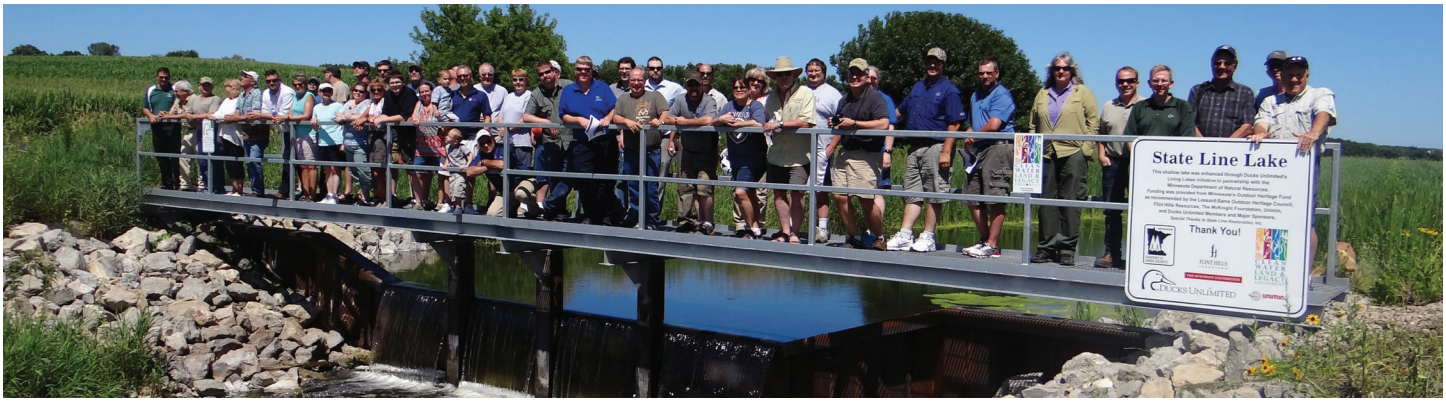
DUCKS UNLIMITED | LIVING LAKES

LIVING SHALLOW LAKE ENHANCEMENT & WETLAND RESTORATION INITIATIVE

PHASE VIII

Proposal Request: $12,940,000

Proposal Abstract: This Phase 8 request for Ducks Unlimited's Living Lakes program will enhance or restore 2,800 acres of wetlands and adjacent prairie grasslands for the U.S. Fish & Wildlife Service and Minnesota DNR on public lands and private lands under permanent USFWS easement. Where required, DU engineers will design water control structures to restore wetland hydrology and allow active management of shallow lake water levels to enhance their ecology for ducks, other wildlife, and people, primarily in Minnesota's Prairie Pothole Region. While DU staff design restoration and enhancement projects, DU hires private contractors to implement enhancement and restoration activities.

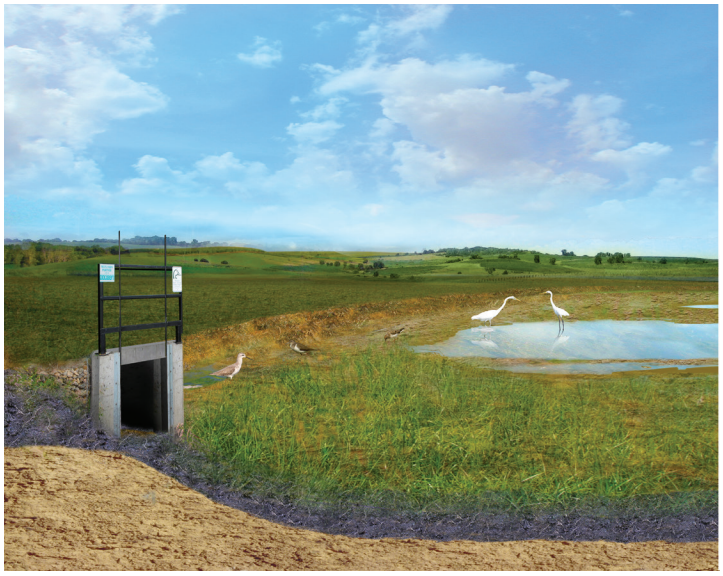


DUCKS UNLIMITED | LIVING LAKES

LIVING LAKES STAGES OF ENHANCEMENT

Stage 1

Pre-enhancement turbid water state typical of many shallow lakes located in the prairie and transition zones of Minnesota and Iowa. Note the lack of rooted aquatic plants resulting from stagnant high water levels, as well as the presence of undesirable fish and lack of upland perennial cover creating both internal and external nutrient loading. This condition is exacerbated by above-average precipitation patterns, increased drainage and connectivity within the watershed. Lakes in this turbid water condition provide poor waterfowl and wildlife habitat and impaired water quality.



Stage 2

Once the physical and legal means are in place, a drawdown is a common management practice used to shift shallow lakes from a turbid water state to a clear water state. Note sediment consolidation and the re-growth of rooted aquatic plants from the natural seed bank. Drawdown also helps control undesirable fish populations. A DU designed and constructed water control structure such as the one illustrated above will allow agency managers to manipulate water levels to enhance water quality and wildlife habitat. Upland restoration also helps improve habitat and sustain water quality improvements.

Stage 3

Post management drawdown clear water state typical of a healthy shallow lake system. Note the restored water levels and water quality, abundance of rooted aquatic plants, invertebrate response, and overall wildlife habitat improvement. When conditions in a managed shallow lake deteriorate over time the water control structure such as the one illustrated above can be managed in accordance with a lake specific comprehensive management plan to help maintain and improve habitat conditions and water quality.

Special Note: A managed drawdown mimics natural water level fluctuation such as temporary drought conditions, which are necessary for a healthy shallow lake much like fire is to native prairie.