2001-2003
Minnesota Wetland Report

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This report was prepared by David Weirens with the assistance of numerous BWSR staff. This is the fifth report prepared by BWSR on the status of implementation of state laws and programs relating to wetlands, including information on the quantity, quality, acreage, types, and public value of wetlands in the state. Material contained in this report can be made available in alternative format upon request. This report contains data from 2001, 2002, and 2003.

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CHAPTER I: EXECUTIVE SUMMARY

Policy

Minnesota is blessed with an abundance of wetlands. However, their values and benefits have not always been recognized. Past state and federal encouragement of wetland draining and filling speak to the evolving recognition of the importance of wetlands. Over the past two decades, federal, state, and local activities have increasingly been effective in regulating impacts and restoring previously impacted wetlands. A significant new chapter in wetland management began in Minnesota with passage of the Wetland Conservation Act, also known as WCA, in 1991.

The key provision of the WCA is the enactment of the state policy to achieve a “no net loss” and “to increase the quantity and quality and biological diversity” of wetlands in the state. This policy, in M.S. 103A.201, and reads as follows:

(1) achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands;

(2) increase the quantity, quality, and biological diversity of Minnesota's wetlands by restoring or enhancing diminished or drained wetlands;

(3) avoid direct or indirect impacts from activities that destroy or diminish the quantity, quality, and biological diversity of wetlands; and

(4) replace wetland values where avoidance of activity is not feasible and prudent.

No Net Loss Accounting

While this policy statement has been woven throughout the fabric of the WCA, questions continually arise over how to measure “no net loss.” Should this be done by only considering gains and losses via regulatory programs, or should this be measured by considering gains and losses by both regulatory and conservation programs? Should only wetland areas be included, or should this measure combine wetland and adjacent buffering upland areas and other wetland functions and values?

This report includes information on both regulatory and nonregulatory programs, and wetland impacts and increases through restoring wetlands and associated uplands. From a practical perspective, the consideration of "no net loss" must include gains and losses from all sources to gain a true measure of the overall status of wetlands in this state. Similarly, wetland and upland both need to be considered since a wetland with no or little adjacent upland will, in many circumstances, become degraded over a short period of time with impaired function and reduced public values.

WCA Activity

As part of the full implementation of WCA in 1994, the Minnesota Board of Water and Soil Resources (BWSR) has tracked WCA's effects on wetland gains and losses in the state, as well as the effects of other state, federal, and local programs. Every two years BWSR compiles wetland data collected from WCA and other programs to monitor wetland status and identify new trends.

Data reported by LGUs, collected from 2001, 2002, and 2003, support an ongoing trend of WCA serving as a deterrent to projects impacting wetlands. For these three years, more than 30 percent of initial landowner inquiries about draining or filling wetlands resulted in project revision to avoid wetlands. Informally, reports indicate that potential drain/fill projects are avoided even before a landowner walks in the door. The awareness of WCA regulations is causing landowners to consider avoiding existing wetlands even before they finish planning a project. This continues to be one of WCA's most important successes.

Although the number of acres drained or filled each year for WCA-regulated projects varies between about 250 and 400 acres, required mitigation replaces the impacts with more acres than have been lost. WCA replacement is required via approved plans when wetland draining or filling is unavoidable. Replacement is performed on-site or off-site; otherwise, credits may be purchased from the State Wetland Bank.

Analysis of reported WCA data shows a net loss of 1,367 (average of 456/year) acres over 2001-2003, when counting acres impacted through reported exemptions, regulated impacts, and required mitigation.

WCA currently includes nine separate categories of activities that are exempt from regulation. While these exemptions may be necessary to maintain the broadest public support for the Act, they also make it difficult to track net wetland gains and losses. This is because exempt activities are legal and the local governments are not required to approve or track exemptions. Therefore, the data on wetlands lost due to exempt activities are incomplete. Undiscovered violations also contribute to the fact that overall wetland loss cannot be quantified through programmatic accounting.

The data presented in this report represent statewide estimates of wetland gains and losses among a wide variety of regulatory and non-regulatory programs. Due to gaps in data and data management issues among the programs, it is more appropriate to use data to gauge wetland status on a statewide basis, as in Tables 1 and 2.

Tables 1 and 2 provide a summary of estimated wetland gains and losses and overall accounting of the WCA from 2001-2003. Appendix I includes more detail than what is shown in Table 1.

Table 1

SUMMARY OF WETLAND ACTIVITY 2001-2003					
	Agency	**Program**	**Acres Gained**	**Acres Lost**	**Program Totals**
REGULATORY	BWSR	Wetland Conservation Act	1,930[1,5]	986[2]	944
		Local Road-WCA/Section 404	681	468	213
	DNR	Public Waters Permit	1.4	0.7	0.7
	DNR	Parks, Trails, & Waterways	141	26	115
	Mn/DOT	WCA/Section 404	352	195	157
	USACOE[3]	Clean Water Act-Sect. 404	2,322	2,137	185
	USDA[4]				
NON-REGULATORY	BWSR	Reinvest in Minn./Conservation Reserve Enhancement Program I	49,956[5]		49,956
	DNR	Wildlife Management Areas	741		741
	USFWS	Partners for Fish and Wildlife	19,809[5,6]		19,809
		Waterfowl Production Areas/Refuges	16,773[5]		16,773
	USDA – FSA	Conservation Reserve Program	64,137[5,6]		64,137
	USDA – NRCS	Wetlands Reserve Program	19,094[5,6]		19,094
		Reinvest in Minn./Wetlands Reserve Program	2,983[5]		2,983

[1] Includes the net balance in the banking system from 2001-2003 of 464 acres
[2] Does not include exemption data reported by LGUs; 1,708 acres from 2001-2003
[3] Does not include exempt activities or projects over which the US ACOE does not have jurisdiction
[4] The USDA has a regulatory program, however data is not available for this program. Also, the National Resources Inventory, conducted by the USDA Natural Resources Conservation Service reports a net gain of wetlands, nationally, during the period 1997-2002.
[5] Data includes wetlands and associated upland habitat
[6]Acres are in limited-term contracts

Table 2

REPORTED WETLANDS AVOIDED, MITIGATED, RESTORED, & IMPACTED FROM WCA REGULATION 2001-2003				
WCA Activity	**2001**	**2002**	**2003**	**Totals**
Number of Landowner Contacts to LGUs	17,086	18,507	17,561	53,145
Avoided/Minimized (in acres)	3,943	3,052	3,150	10,145
Impacted (in acres)	(273)	(330)	(383)	(986)
Replacement (in acres)	535	347	584*	1,466[1]
Exempt (in acres)	(610)	(619)	(479)	(1,708)
Impact + Exempt	(883)	(949)	(862)	(2,694)
Impact + Exempt – Replacement = Net Loss	(348)	(602)	(417)	(1,367)

Source: BWSR

[1]Does not include a net balance of 464 acres of wetlands in the wetland bank during 2001-2003
*Total includes 139 acres of upland public value credits

Wetland Banking

The Minnesota State Wetland Bank maintains accounts for private credit transactions. Because banked credits are developed prior to an impact, the banking program results in a net gain of wetlands. In addition to quantity, BWSR works with other state agencies and local entities to improve the quality of the wetland bank: upland areas buffer the banked wetlands from contiguous activity on the land; native, non-invasive plantings help to ensure a stable plant community that can support local wildlife; a renewed emphasis on restrictions and covenants ensures that wetland banks are properly protected and managed. During the reporting period, the wetland bank had a net balance of 464 acres of credits available for purchase by private and public entities.

Wetland Reporting

Tracking WCA and other local government natural resource program numbers, in the past, was largely conducted via the Local Government Annual Reporting System (LARS). Implemented widely in 1998, LARS streamlined statewide data collection, although reporting of local efforts in some categories was subjective and incomplete. These inefficiencies led BWSR to develop a new reporting system called eLINK, first used by local governments in 2003. eLINK is expected to improve the quality of data reported by local governments.

Road Replacement Program

The Road Replacement Program has been popular with local road authorities whose wetland replacement burden for repair or upgrading of existing roads was shifted to BWSR by legislative WCA amendments in 1996. Environmental interests also support the program as it results in higher quality wetland replacement. This program provides replacement for wetland impacts related to safety improvements, not for new roads or projects solely for added capacity. The program requires about $2.35 million per year to meet replacement needs. Although the economies of scale and other efficiencies are clear, continued funding has been uncertain because it requires annual renewal.

Wetland replacement for the roads program required about 1,632 acres of wetland replacement for 1,228 acres of impacts for mid-1996 through the end of 2004.

Regulatory Simplification

BWSR, along with other state and federal agencies, continue efforts to streamline and enhance compliance with wetland regulations. In particular, BWSR, working with the U.S. Army Corps of Engineers, Department of Natural Resources, Minnesota Pollution Control Agency, and other state and federal agencies, is developing a set of guidelines to identify the wetland mitigation methods and procedures that meet the requirements of all agencies involved in wetland regulation in Minnesota.

Nonregulatory Programs

Programs that regulate wetland impacts are only one part in developing a complete picture of wetlands activity in Minnesota. Programs that restore and/or protect wetlands have a considerably greater impact on wetland gains and losses than either the WCA or Section 404 Program. Conservation programs managed by BWSR, DNR, USFWS, NRCS, and FSA cumulatively show a gain of more than 150,000 acres of wetland and associated upland from 2001-2003. Furthermore, these programs have restored more than 478,000 acres since their inception, which are almost all within the past 15 years.

Wetland Quality

The state wetland policy includes quality and biological diversity, even though most of the focus has been on wetland quantity. Assessing the quality of wetlands is challenging and currently no clear statewide assessment approach exists for wetland quality or condition. The BWSR, DNR, and PCA are cooperating on the Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy that proposes to develop a strategy for ongoing monitoring and assessment of the statewide status and trends in wetland quality and quality. This project has recently been funded through the DNR budget as well as an EPA grant.

Wetlands are difficult to track by their very nature of being a transitional landscape feature. The wetter a wetland, the less likely for impacts to occur unnoticed. Conversely, type 1 and 2 wetlands are more ephemeral in nature and have greater conversion pressure upon them. For this reason, programs influencing land use like the Federal Farm Bill and local real estate values often are the biggest factors on whether conversion occurs.

CHAPTER II: INTRODUCTION

Wetlands are a landscape feature influenced by a multitude of programs administered by numerous agencies. Wetlands as a transitional landscape feature can be difficult to identify and tougher yet to measure. The quantity and quality of wetlands are influenced by restoration, regulation, and voluntary incentives. Regulatory programs deter impacts (and associated mitigation) and serve to protect wetlands. On the other hand, voluntary restoration and protection programs are expected to have the greatest future impact on wetlands in terms of gains.

Wetland Conservation Act

In 1991, reacting to public concern about Minnesota's disappearing wetlands, the Minnesota Legislature approved (and then Governor Arne Carlson later signed) the Wetland Conservation Act. Considered one of the most comprehensive wetland laws in the country, it recognizes a number of important wetland benefits:

- Water quality benefits, including filtering pollutants out of surface water and groundwater, using nutrients that would otherwise pollute public waters, trapping sediments, protecting shoreline, and recharging groundwater supplies;
- Floodwater and storm water retention benefits, including reducing the potential for flooding in the watershed;
- Public recreation and education benefits, including hunting and fishing areas, wildlife viewing areas, and nature areas;
- Commercial benefits, including wild rice and cranberry growing areas, and aquaculture areas;
- Fish and wildlife benefits;
- Low-flow augmentation benefits during times of drought; and
- Other public uses.

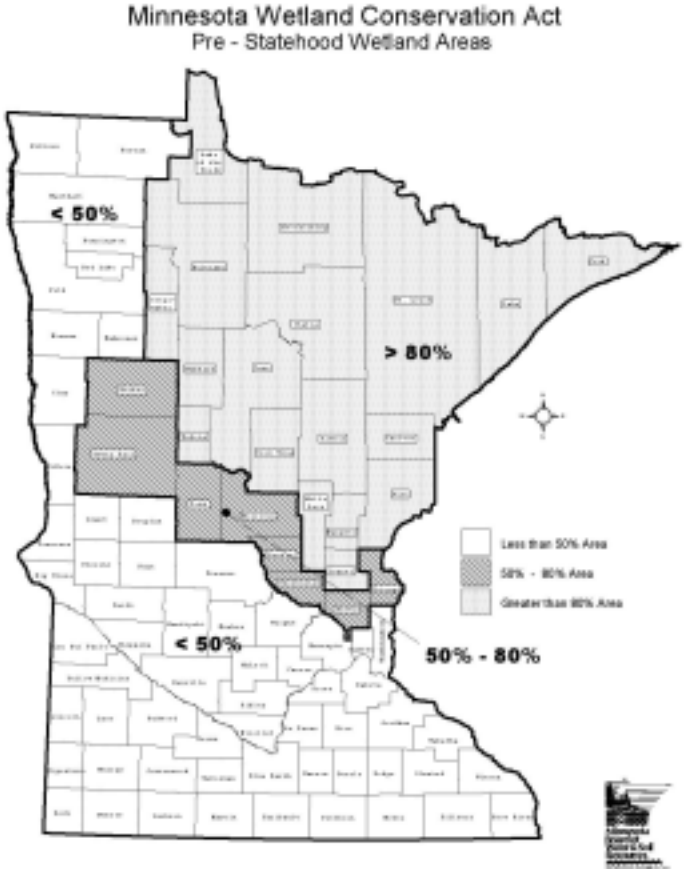
To retain these benefits and comply with the legislation's goal of no-net-loss in the quality, quantity, and biological diversity of wetlands, the Wetland Conservation Act requires anyone proposing to drain or fill a wetland to first try to avoid disturbing the wetland; second, to try to minimize any impact on the wetland; and, finally, to replace any lost wetland acres, functions, and values. (This process is called *sequencing* in the law.) Certain wetland activities are exempt from WCA, allowing projects with minimal impact or projects located on land where certain pre-established land uses are present to proceed without regulation.

The state does not issue permits under WCA. More than 350 local government units (LGUs) — cities, counties, watershed management organizations, soil and water conservation districts, and townships

— implement WCA locally. The Minnesota Board of Water and Soil Resources administers WCA statewide, and the Department of Natural Resources (DNR) enforces it.

The Wetland Conservation Act took effect with an interim program in 1992 and started operating under formally adopted rules in January 1994. The Legislature approved several significant changes to WCA in 1996 and again amended the law in 2002. With experience and improved data collection pointing the way, legislators, state and federal agency personnel, local governments, and a wide range of interest groups worked to fine-tune the delicate balance between resource protection and land development options.

The law recognizes differences in Minnesota's geography by dividing the state into three regions: an area that has more than 80 percent of its original wetlands remaining, which tends to be northern and northeastern Minnesota; an area with between 50 percent and 80 percent of its original wetlands remaining, which tends to be central Minnesota; and an area with less than 50 percent of its original wetlands remaining, which tends to be southern and northwestern Minnesota (see figure 1). Wetlands are considered "original" if present at the time of statehood in 1858.



Each of these geographic areas is treated somewhat differently in the law. In addition, in some instances the law treats the Twin Cities metropolitan area and greater Minnesota differently, due to their vastly different development climates.

This report contains Wetland Conservation Act information reported by local governments as well as state and federal agencies for calendar years 2001, 2002, and 2003. Some data from previous years are included to show trends.

Other Regulatory Programs

WCA is only one of several regulatory programs affecting wetlands in Minnesota. These other programs include the Department of Natural Resources Public Waters Work Permit Program, the Minnesota Pollution Control Agency Water Quality Standards (Minnesota Rule 7050), State Disposal System, National Pollutant Disposal Elimination System permits, and Clean Water Act 401 Certification, and the U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 Program. The vast majority of wetland impacts regulated by WCA are also regulated by the Corps under the 404 program, and vice versa. Also, while the WCA and Public Waters Work Program regulate different wetlands, the DNR can waive projects that propose impacts to DNR regulated wetlands to the local governmental unit for regulation under WCA.

Conservation Programs

Numerous nonregulatory conservation programs are operated by state and federal agencies. Several federal and state conservation programs restore and/or protect wetlands through long-term contracts, permanent or long-term easements, or acquisition. They are also often collaborative in that a project at one site may include several agencies working in concert to accomplish common goals. Federal agencies that manage wetland related programs principally include the Natural Resources Conservation Service, Farm Services Agency, and Fish and Wildlife Service. The DNR and BWSR are the two state agencies that actively manage wetland conservation programs.

Data

All of the state and federal agencies have provided data on their activities as they relate to wetland regulation, protection, and restoration. BWSR has included data provided by the local governments that are responsible for implementing the WCA. Efforts have been made to get as complete information as possible, while also minimizing double counting of data. Also, most of the data included in this report pertain to quantity, with more limited data regarding quality.

Double counting is often raised as a data management concern among the various programs. This is due to the collaborative nature of many wetland programs that leads to the potential for more than one agency to count a single restoration. While every agency involved in wetland management activities is operating under their own authority and managing the data they generate accordingly, a greater effort needs to be made to coordinate the generation and management of data.

These data issues require evaluating the information contained in this report from a large-scale perspective rather than the small scale. In other words, data in this report can be used to identify and evaluate overall trends, but the actual figures reported on wetland gains and losses should be used with caution.

CHAPTER III: THE WETLAND CONSERVATION ACT IN 2001-2003

Part A: Overview of 2001, 2002, and 2003 Data

Data reported by LGUs indicate that WCA continues to protect Minnesota wetlands. Local authorities, during the period 2001-2003, reported an annual average of nearly 17,800 WCA-related contacts with landowners, of which more than 30 percent were ultimately resolved with no disturbance to a wetland. These projects, as originally proposed, would have drained or filled an estimated 8,842 acres of wetlands.

After avoidance, minimizing the draining and filling of wetlands is one key to the success of Minnesota's no-net-loss goal. LGU reporting indicates that from 2001-2003, most projects (more than 50 percent) impacting wetlands were small, affecting less than 0.2 acres of wetlands. Furthermore, even as the number of projects has been increasing, the number of projects with large impacts (greater than 3 acres) has not increased (see table 3 below). Minimizing these larger projects will keep wetlands as intact as possible. While the effects of small wetland projects are not as noticeable, their cumulative impact can be significant. Small impacts on larger wetlands disturb the soil and open windows to invasion by exotic and invasive plants. Even when their acreage is replaced, total destruction of small wetlands leaves remaining wetland areas more isolated.

Table 3

NUMBER OF WCA IMPACTS BY SIZE						
	0-0.2 ac.	0.21-0.5 ac.	0.51-1.0 ac.	1.1-3.0 ac.	>3.0 ac.	Annual Totals
2001	1,632 (60.7%)	501 (18.6%)	270 (10.0%)	140 (5.2%)	145 (5.4%)	2,688
2002	1,573 (58.2%)	555 (20.5%)	259 (9.4%)	170 (6.3%)	144 (5.3%)	2,701
2003	1,450 (51.7%)	744 (26.5%)	257 (9.2%)	212 (7.6%)	142 (5.1%)	2,805
Totals	4,655 (57.2%)	1,800 (22.0%)	786 (9.6%)	522 (6.4%)	431 (5.3%)	8,194

Exemptions

The WCA includes a number of activities that are exempt from regulation under the law. While being exempt, these activities usually result in the loss of wetlands. Those include:

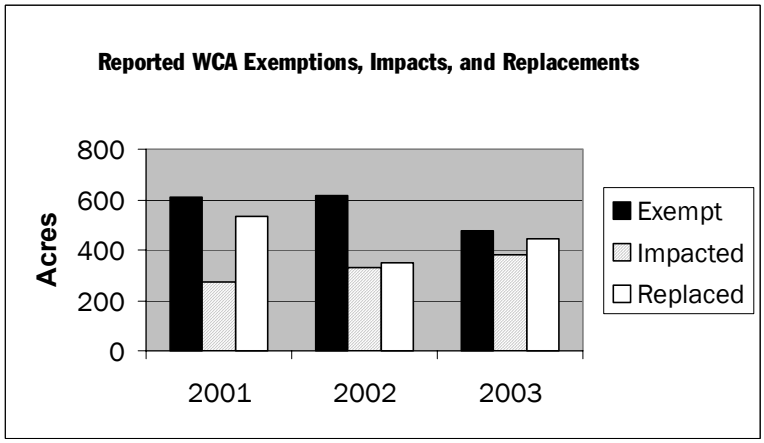
- Agricultural activities (8 total) Note: To maintain an exemption, the landowner must maintain the land in agricultural use. Those activities include:
    1. Agriculture on land cropped prior to passage of WCA (2 exemptions).
    2. Aquaculture.
    3. Wild rice production.
    4. Noxious weed control.
    5. Agriculture with USDA approvals (2 exemptions).

6. Agriculture on type 1 wetlands and type 2 and 6 wetlands less than 2 acres.

- Drainage activities (2 total) Note: Except for 3., exemptions are limited to repair and maintenance activities. Any wetland may be drained or filled:
    1. Except for types 3, 4 or 5 older than 25 years, on public drainage systems.
    2. Except those less than 25 years old on a private drainage system.
    3. If part of a drainage improvement project approved prior to passage of WCA.
- U.S. Army Corps of Engineers approvals.
- Wetlands restored under conservation purposes.
- Activities involving wetlands that exist solely due to unintended actions such as blockage of culverts or beaver dam construction.
- Certain activities associated with utilities and public works; impacts limited to ½ acre.
- Forest road activities; best management practices are required.
- Certain development activities approved prior to the passage of the WCA.
- Certain "de minimis" (minimal) drain and fill impacts are allowed depending on wetland types and location within the state. The size of allowable impacts range from 400 square feet to 10,000 square feet.
- Certain wildlife habitat creation activities.

Additional detail on the exemptions included in WCA can be found at BWSR's website.

Figure 2



The exempt activities certified by LGUs have been tracked in BWSR's eLINK database since 2003. Prior to that, the LARS database was used to manage data reported by local governments. Exemptions certified during the period 2001-2003 amounted to just more than 1,700 acres. However, many WCA-exempt losses are not recorded because they require no approval by local authorities. Only when a landowner requests one will a local government issue a formal exemption certificate. The data reported by LGUs indicate that exempt wetland impacts exceed the acreage gain from the 2 to 1 replacement that is required for most other impacts.

Wetland Replacement

WCA directs that avoidance and minimization should come first in the sequence of addressing projects affecting wetlands; however, some projects do have unavoidable wetland impacts. These require

wetland replacement via approved replacement plans. Project sponsors provided an average of more than 440 acres of replacement wetlands each year from 2001-2003 (see figure 2). This count of project-specific replacement does not include acres replaced by the state on its projects (see Chapter 4) and on behalf of local government public road authorities (see Chapter 3, part B).

Wetland restoration and creation is an evolving science with complex constraints unique to each site. Theories about developing plant and animal communities that can survive in changing climatic conditions are still being explored and success is, in many cases, uncertain for several years.[1] In some cases, purchasing replacement credits at an established bank site with a wide buffer zone may be preferable to squeezing a new wetland into a developing area.

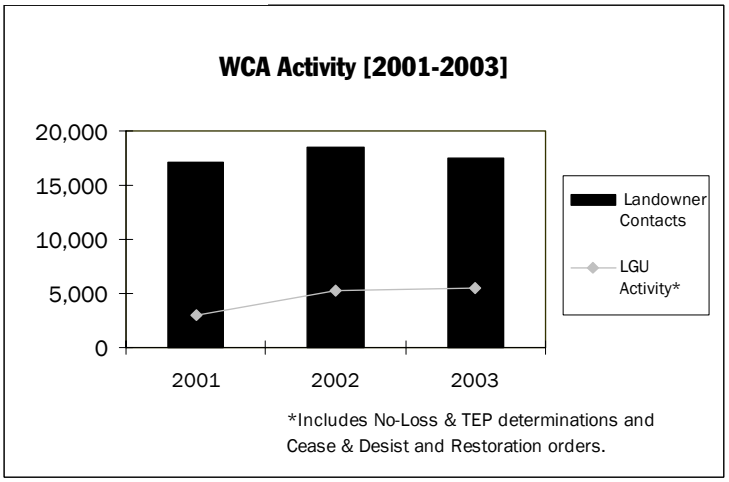
LGU Activity/Workload

Whether replaced on-site or via banking, the continued enforcement of WCA leaves local authorities with more replacement sites to track every year. Monitoring of replacement sites is not tracked in the eLINK database.

Measuring the efforts of local government to implement the WCA is a difficult task. This is because many activities required by the law are not measured, such as monitoring of replacement and bank sites, time spent on conservation projects that may get cancelled, the amount of effort required to work with project proposers to avoid and minimize impacts, review of wetland delineation reports, and bank plan proposals that may or may not end up with deposit of credits in the state Wetland Bank. With this said, local governments do report information that provides a measure of WCA workload.

Local government WCA workload and activity increased from 2001 to 2003 (see figure 3). Landowner contacts (i.e., phone calls or visits from landowners considering projects impacting wetlands), the number of no loss determinations, technical evaluation panel decisions, and cease and desist orders issued increased, as did the number of completed, WCA-related restoration projects.

Figure 3



[1] *Progress in wetland restoration ecology,* JB Zedler. 2000. Trends in Ecology & Evolution. 15(10): 402-407.

Just counting the work is, in itself, work and for some counties this task is more onerous than others. As part of its continuing effort to serve the needs of local government, BWSR implemented eLINK, which provides an improved means for LGUs to account for WCA activities.

Part B: Local Road Wetland Replacement Program

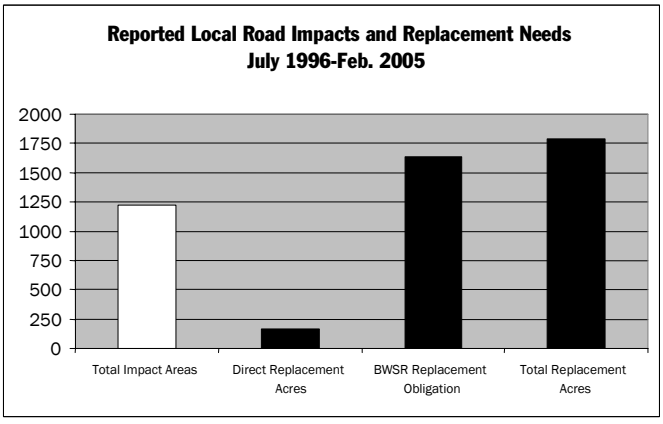
Background

As part of the 1996 legislative amendments to WCA, the state of Minnesota, through BWSR, assumed the responsibility from local governments for replacing wetlands lost through repair and rehabilitation of existing roads throughout the state. This obligation applies when the road project is necessary to meet state and federal design or safety standards, not new roads or to increase road capacity. Replacement in most areas of the state must take place at a 2 to 1 ratio (two wetland acres replaced for every one lost); in the counties with more than 80 percent of their original wetlands remaining, the replacement ratio is 1 to 1. Replacement as close as possible to the geographic location of the impact as well as the wetland type are priorities in the Road Replacement Program.

Benefits of the Local Road Wetland Replacement Program are as follows:

1. Regulatory simplification and efficient and improved wetland mitigation are achieved by eliminating the need for each local road authority to maintain its own staff expertise and budget to mitigate impacts to wetlands from road projects.
2. Fragmented impacts from road projects are consolidated in targeted areas to provide habitat, water quality, and other wetland functions away from traffic and highway runoff areas.
3. Water management goals such as improving water quality, flood control, greenway preservation, and wildlife corridor enhancement can be better addressed collectively.
4. Site selection, ranking of project proposals and setting program strategies consistent with overall state and federal wetland goals are achieved through an interagency committee process.

Figure 4



Amendments to WCA in 2002 modified the requirement on how wetland impacts in the seven-county metropolitan area are to be replaced. Under this change, wetland impacts in the metro area may be replaced, beyond the 1 to 1 minimum, in any watershed that is tributary to the seven-county area. Much of the

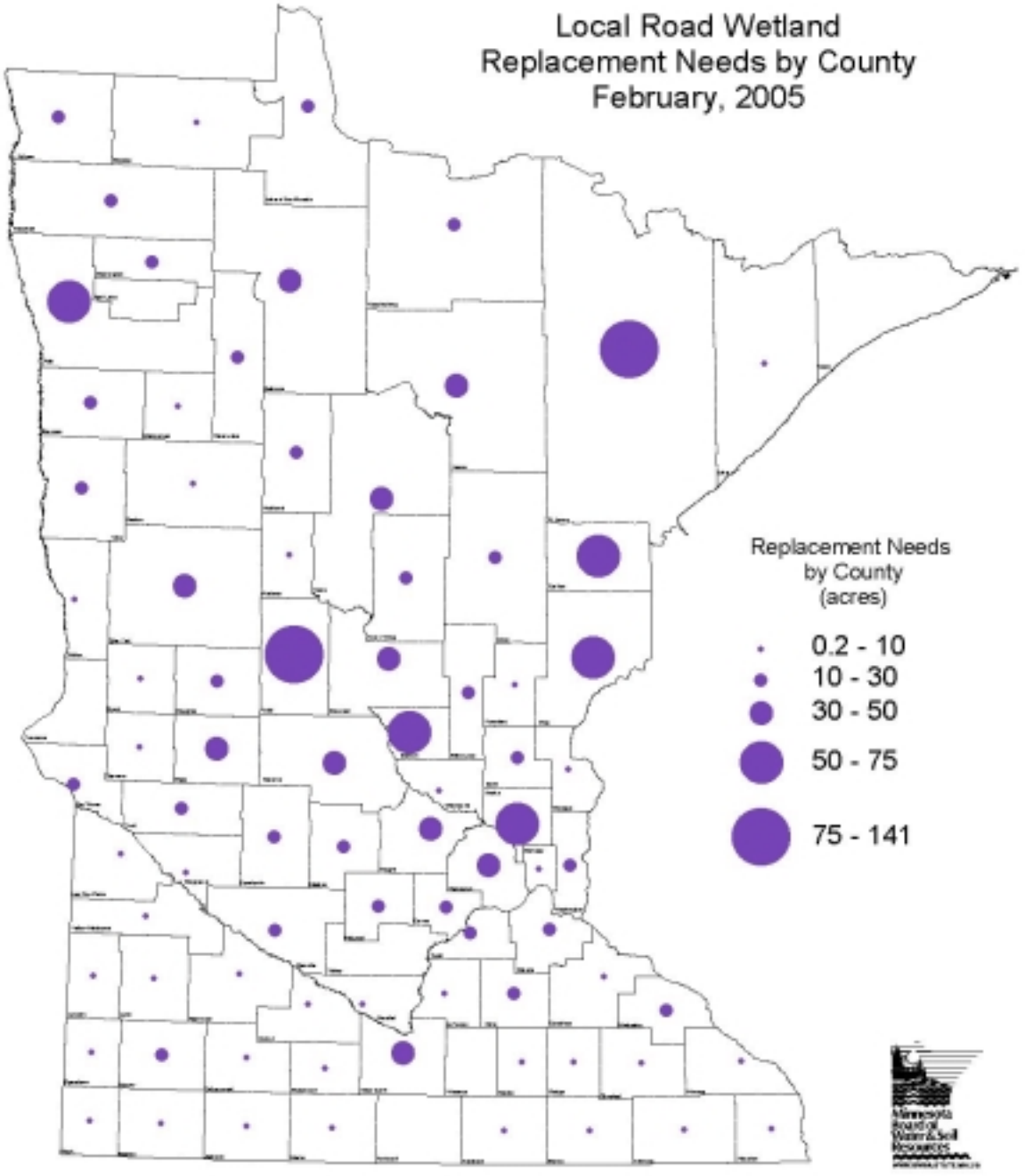
impetus for the change was the greater cost of providing mitigation in the metro area. BWSR wetland replacement costs are three times higher in the metro area compared to the rest of the state.

Local Road Wetland Impacts

The WCA provision that required the state to replace local road project impacts was approved mid-way through 1996. From then through February 2005, local road authorities have reported a total of 1,032 individual road projects that impacted a total of 1,228 acres of wetland. This level of impact requires BWSR to develop 1,632 acres of replacement wetland credits using the current 2 to 1 ratio in the less than 80 percent counties and the 1 to 1 ratio in greater than 80 percent counties. With the credits expected to be certified for deposit in 2005, the program will be in full compliance with WCA and the United States Corps of Engineers requirement to replace wetland impacts prior to or "in advance of" the impact. In 2005, BWSR, in consultation with the DNR and the U.S. Army Corps of Engineers, will map out a strategy to allocate these credits to the projects where actual debits have not yet taken place and to set regional and watershed goals for future projects established under this program.

Appendix D is a summary by county of the reported impacts, the amount of replacement developed by road authorities by county, the amount of replacement the BWSR is obligated to replace, and the total replacement for public road impacts. For the reporting period 2001-2003 there were 452 projects, 468 impacted wetland acres, 25 acres of replacement provided by the road authorities, and 656 acres of replacement wetland developed by BWSR pursuant to the statutory requirement. Figure 5 is a map showing the relative distribution of the reported impacts. Not surprisingly, the counties with much of their wetland base remaining and those near developing urban areas like the seven county metro area, Duluth, and St. Cloud have reported the most impacts.

Figure 5


Local Road Wetland
Replacement Needs by County
February, 2005
Replacement Needs
by County
(acres)
0.2 - 10
10 - 30
30 - 50
50 - 75
75 - 141

Local Road Wetland Replacement

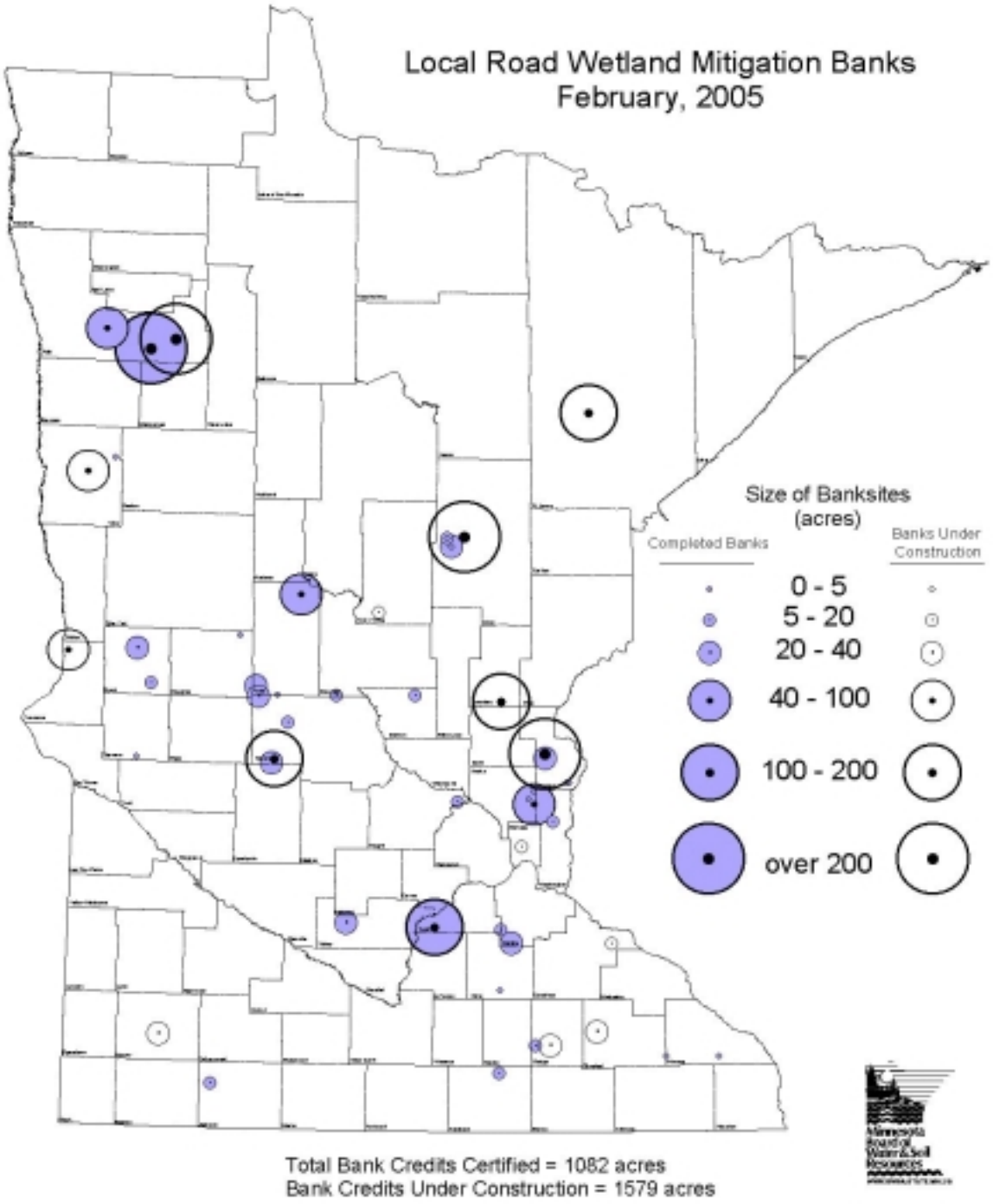
Since the program's inception, 1,082 acres of wetland credit have been established and certified at 39 individual sites around the state. At the end of 2004, BWSR began debiting from these accounts to replace wetland losses that public road authorities first started reporting to BSWR in 1996. To date, 522 acres have been debited from the system.

Fourteen additional bank sites are under various stages of development and are waiting for certification by WCA Technical Evaluation Panels. These projects represent approximately 1,579 acres of additional credits for deposit and subsequent debit against losses reported to BWSR by local road authorities. It is anticipated that approximately 1,000 of these credits will be certified for deposit during 2005. Table 4 summarizes the status of these pending projects. Figure 6 is a map showing the distribution of the existing public road mitigation projects and the projects that are under construction.

Table 4

PROJECTS UNDER CONSTRUCTION WAITING FOR CREDIT CERTIFICATION					
Project Name	**County**	**New Wetland Credit**	**Public Value Credit**	**Total Credits**	**Completion Date**
French Lake WMA	Aitkin	300.00	20.00	320.00	2005
Janet Johnson WMA	Chisago	200.00	40.00	240.00	2006
Brantner Project	Clay	66.30	2.70	69.00	2004
Clayton Eisel Project	Crow W.	6.50	2.20	8.70	2005
Vivian Johnson	Dodge	15.00	15.00	30.00	2005
Jaeger Restoration	Goodhue	8.70	6.50	15.20	2005
Jim Nelson Project	Kanabec	53.10	78.20	131.30	2004
Bader -Lake Elsie	Murray	30.00	9.00	39.00	2005
Rochester Project	Olmsted	24.00	2.00	26.00	2004
Vesledahl Phase 2 and 3	Polk	200.00	200.00	400.00	2004
Woodview Marsh	Ramsey	2.00	6.00	8.00	2004
U of M Bog Restoration	St. Louis	101.00	0.00	101.00	2004
Halverson Restoration	Stearns	63.00	63.00	126.00	2004
Beyer Restoration	Traverse	41.40	23.50	64.90	2005
Totals		**1,111.00**	**468.10**	**1,579.10**	

Figure 6


Local Road Wetland Mitigation Banks
February, 2005
Size of Banksites
(acres)
Completed Banks
Banks Under Construction
0 - 5
5 - 20
20 - 40
40 - 100
100 - 200
over 200
Total Bank Credits Certified = 1082 acres
Bank Credits Under Construction = 1579 acres

BWSR is focusing on meeting replacement needs for the program regionally and on the basis of type, rather than on a watershed or county basis. Eventually, BWSR, working with data and stakeholders, intends to focus the program so that wetland losses and replacements are judged and balanced on a statewide, rather than regional basis. This would allow for more effective and efficient replacement based on actual wetland type and function.

Comparing the map of local road credits required to the BWSR replacement sites, it is apparent that replacements for impacts are needed in the far north central, southwest, and in the St. Cloud to Twin Cities corridor.

BWSR has pursued road impact replacement using various strategies. One strategy is to form partnerships with state and local agencies to develop joint replacement sites. Another strategy involves obtaining easements from private landowners who have restored wetlands and submitted qualifying projects. The third strategy is to purchase credits from existing entrepreneurial wetland bank accounts.

To date, the Legislature has appropriated $17.526 million for this program.

Minnesota Statutes Section 103G.222 was amended in 2000 to provide a revised and streamlined reporting process to ensure proper coordination with all regulatory authorities. Consequently, a revised combined project application form was created for local road authorities to use to implement this program. It is entitled "Minnesota Local/State/Federal Application Forms for Water/Wetland Projects - Public Transportation and Linear Utility Projects" (also referred to as Public Road Combined Project Application Form) and can be accessed from the Board of Water and Soil Resources website. The rule and law from may also be reviewed on the BWSR website (Minnesota Rule Chapter 8420.0540, Subp. 5 and Minn. Stat. 103G.222).

Part C: Comprehensive Wetland Management Planning

In 1996, changes to the Wetland Conservation Act allowed local units of government to develop a Comprehensive Wetland Protection and Management Plan as an alternative to parts of the WCA rules. These local plans allow increased flexibility for some parts of the rule provided the plan results in no net loss of wetland quantity, quality, and biological diversity over the life of the plan. The plans are implemented by ordinance as part of the local government unit's official controls. After the BWSR board approval and adoption by the local government unit into ordinance, wetland decisions are made according to the plan and ordinance. The period covered by an approved plan cannot be more than 10 years; however, a procedure for updating plans is provided in statute.

Most plans require:

- maps of wetlands identified under the National Wetlands Inventory, where available;
- a summary of plans for wetlands with controlled outlets, such as plans for water-level draw downs;
- a description of the United States Corps of Engineers, Section 404 permit requirements affecting county waters;
- and the implications of wetlands for present and future water uses with special consideration for water quality, flood attenuation, wildlife, and recreation, and an assessment of those implications.

Recognizing the importance of planning in resource protection, BWSR encourages local efforts through funding, support, and, if the plan is approved, greater flexibility in WCA regulation. Funding from BWSR has been provided through a competitive Challenge Grant process.

The benefits of wetland planning accrue to wetland rich areas that desire regulatory flexibility and other areas for coordination and identification of future impacts and opportunities. BWSR has been working with the Army Corps of Engineers to achieve federal acceptance of these plans. In addition, BWSR has worked with the MPCA in order to achieve plan compliance with wetland requirements in the Water Quality Standards in Minnesota Rule 7050. The real benefits of wetland planning can only be realized if all regulatory authorities recognize these locally generated plans.

Thirty local government units have developed Comprehensive Wetland Protection and Management Plans. Appendix E provides more details on this program.

Part D: Wetland Banking

The Minnesota Wetland Banking Program, initiated in 1994, continues to provide an effective and relatively convenient avenue for wetland replacement. Under the program, landowners draining or filling wetlands have the option to purchase wetland "credits" resulting from previously restored or created wetlands, rather than finding and restoring wetland acres on their own. Generally speaking, high quality mitigation is achieved when it occurs in larger restorations rather than smaller creations.

From 1994 through 2004, approximately 4,432 acres have been deposited. Wetland restorations from approximately 45 counties have been enrolled in the program (see Appendix F-1). Deposits to the wetland bank are fundamental to its success; withdrawals are crucial to encouraging landowners to make those deposits. Deposits have increased during the past four years to a high of more than 60 applications received in 2003, with the number of approved sites averaging 30 since 2002. During

2001 and 2002 withdrawals increased significantly before coming down to historical levels in 2003 and 2004.

From 2001-2003, non-state deposits into the wetland bank totaled 1,053 acres. During the same period, 590 acres were withdrawn to mitigate impacts. Bank replacements for impacts average a ratio of about 1.5 to 1; this average includes projects in the greater than 80 percent area replaced at a 1 to 1 ratio. Since the bank program started, the average size of credit purchased is 1.047 acres. Over the past year, the largest purchase was 6.0 acres and the smallest was .0015 acres.

Figure 7

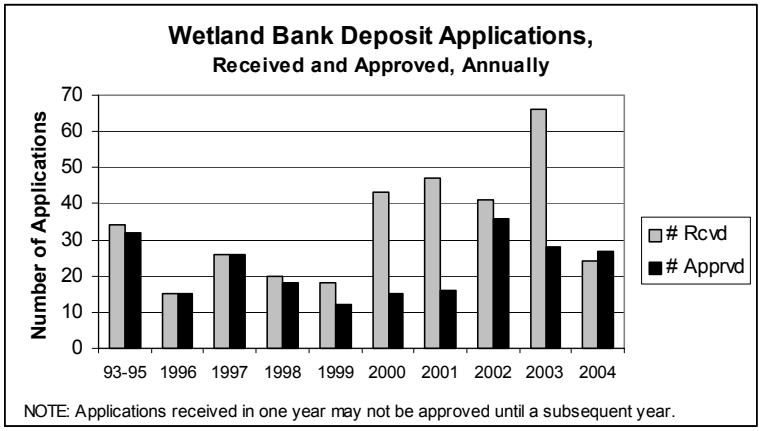
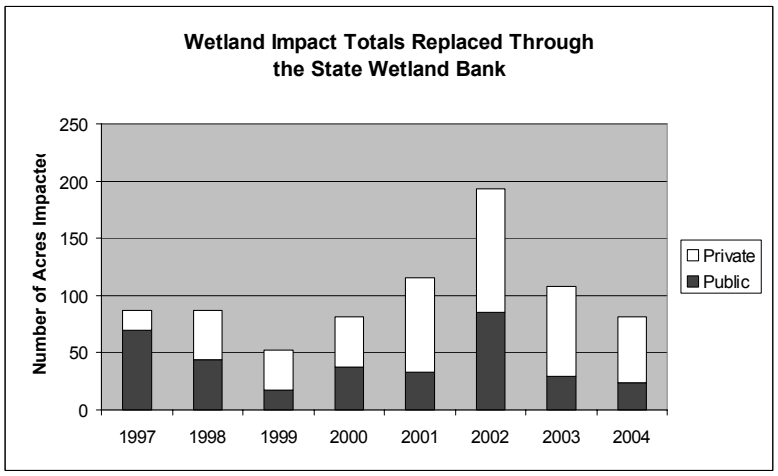


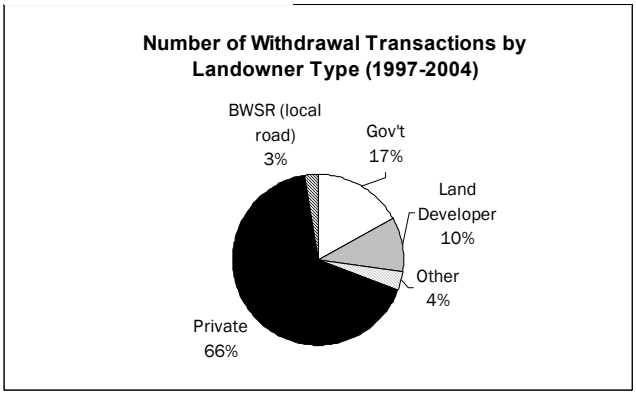
Figure 8



Private landowners are the primary users of the wetland bank, with two-thirds of purchases being made by a private entity (see figure 8). BWSR has purchased 496 acres for the local road program.

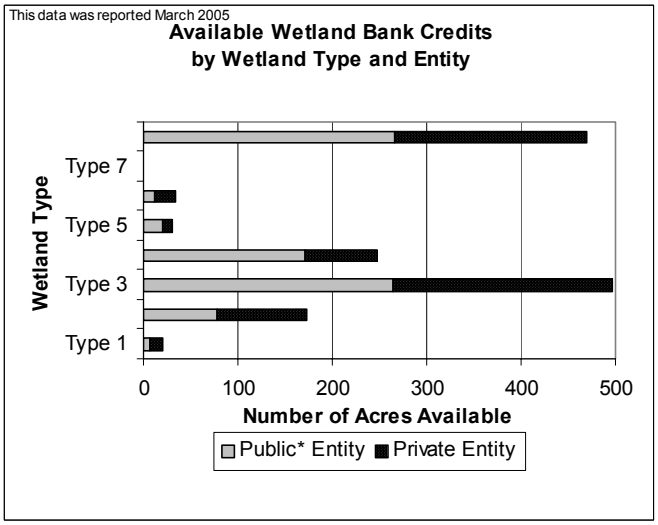
One of the challenges faced by the Wetland Bank is encouraging entrepreneurs to restore wetlands for deposit in the bank. The siting requirements for the replacement of wetland impacts generally requires replacement as close to the impacted wetland as possible (within the county or minor watershed), otherwise higher

Figure 9



replacement ratios apply. This rule has been established to reduce the local environmental impact of wetland destruction, which makes it important to have replacement bank sites located throughout the state. This rule has always been less restrictive in the northern region because of the large number of pre-statehood wetlands remaining there.

Figure 10



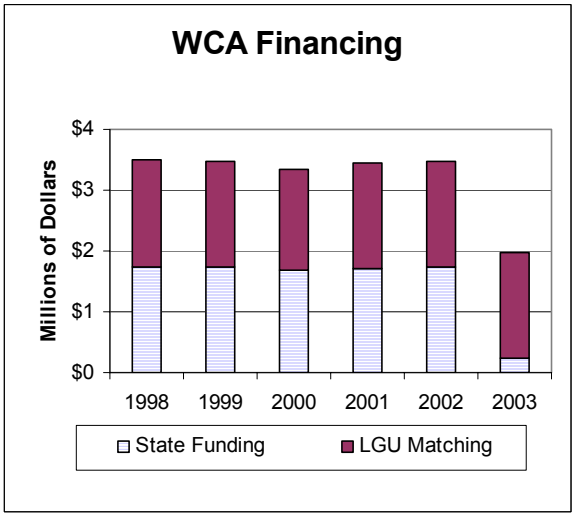
* Includes local government & highway authorities and BWSR, but not Mn/DOT. Not all private account holders make their credits available for sale to the public.

In addition to monitoring the geographic distribution of sites, it is also crucial to encourage a diversity of wetland types. Statewide, shallow marsh and deep marsh (types 3 and 4 wetlands) make up most of the restored acres deposited. Seasonally flooded basins (type 1) and wooded swamps (type 7) comprise the smallest portions of the banked wetland portfolio (see figure 10).

Upland buffer areas are important elements of a functioning wetland complex and make up a portion of the banked acres. Areas restored as upland buffer may only be applied to the portion of the replacement ratio above the 1 to 1 minimum.

The cost of wetland credits continues to vary greatly, depending upon location, land value, size, and the cost of the restoration construction. Wetland banking credits range in cost from about $1,824 to $43,560 per acre. The collected data indicate an average cost of about $11,507 per credit.

Figure 11



Part E: State and Local WCA Financing

WCA operates under a decentralized system. A small state general support system aids a much larger network of local staff to achieve both state and local goals in a cost-effective manner. A variety of local units of government—cities, townships, counties, soil and water conservation

districts, and watershed management organizations—administer WCA locally. More than 300 local governments with their staff work to administer the regulations of WCA. Local matching funds complemented 2001 and 2002 annual state funding of $1.72 million (allocated to counties as part of the Natural Resources Block Grant). Together, state and local funds provided the program with more than $3.44 million at the local level.

State funding to support local administration of WCA was reduced in 2003 to $238,569 due to an unallotment of state funds in response to a $4.2 billion state budget shortfall. To reduce the impacts of this reduction, the grant allocation cycle was moved up and state funding was increased to $2.172 million in each year of the 2004-05 biennium. This level of funding will be continued into the future.

Another factor in the financing equation to support the local delivery of WCA is the spending that occurs by local governments in addition to the match required for the state funds. Reporting to BWSR only includes limited data from cities and townships. However, the level of effort to adequately implement WCA requires the expenditure of funds by counties, cities, and townships that is not reflected in the required local match to state funds.

This funding, combined with BWSR support in training and serving on local technical evaluation panels, allows local governments to implement the program in a cost-effective manner. In many cases, WCA was incorporated or directly linked to existing planning and zoning or local water planning programs through the development of Comprehensive Wetland Protection and Management Plans.

In addition to annual LGU training sessions, BWSR provides ongoing local technical support through four wetland specialists and 14 board conservationists spread over seven regional and one metro office. Board conservationists assist local authorities in implementing WCA, applying for annual grants, and other resource conservation activities. Also, BWSR offers annual field training in wetland delineation.

As part of the BWSR support for local government implementation of WCA, it reviews local programs, and where performance issues are identified, a more formal audit. During the reporting period, 21 local government programs were reviewed and nine audited.

Part F: WCA Enforcement

Local government authorities implement WCA regulations with BWSR oversight, but both rely on Department of Natural Resources conservation officers and other peace officers to enforce WCA rules. Minnesota is the only state that allows a licensed peace officer to stop questionable work in a wetland, if necessary, without first securing a court or administrative order. Part of local communities,

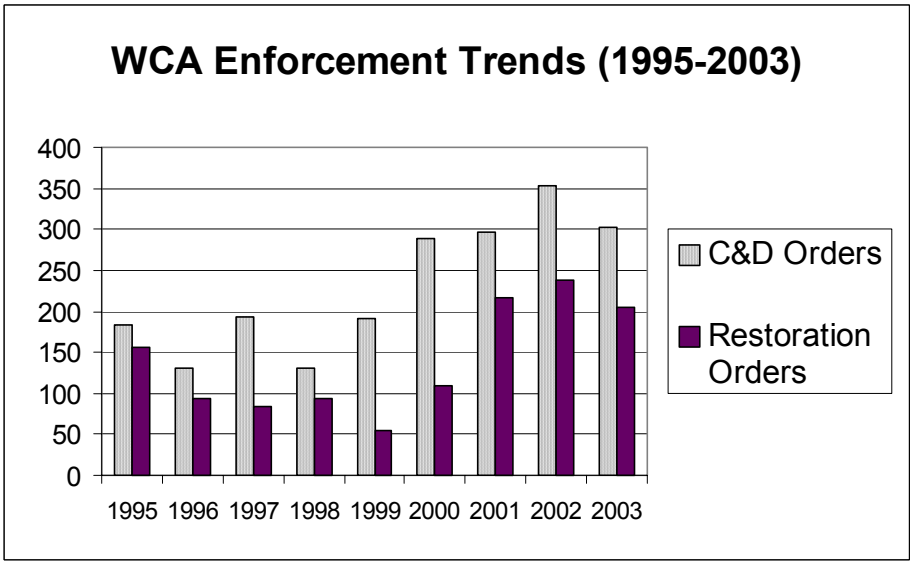
conservation officers link enforcement in the field to the day-to-day administrative work of LGUs. Their involvement lends an established relationship with the court system, increases attention to violations, and often results in expeditious resolution of violations through administrative processes. Like much resource protection work, their most successful efforts go uncounted because they resolve problems proactively.

DNR currently has six wetland enforcement officers across the state, coordinating the activities of field officers, local governments, soil and water conservation districts, BWSR, and the courts to ensure compliance with conservation laws. These wetland enforcement officers are conservation officers dedicated to enforcing Minnesota's wetland and water laws.

BWSR has tracked enforcement activities by querying LGUs for a number of years. From 2001 through 2003, an annual average of 314 cease and desist orders were issued by DNR and local government enforcement personnel. During that same time period, an average of 218 wetland restoration orders annually were issued. The DNR Enforcement Division established a wetland enforcement action tracking system in 2003 that allows the wetland enforcement officers to track the progress of each individual wetland enforcement action initiated by a field conservation officer.

Annual summaries for each year are shown in figure 12 below:

Figure 12



Court Delivers Strong Verdict in WCA Case

On April 21, 2003, the Hon. Galen J. Vaa, the presiding judge in the *State of Minnesota v. Arnold Vernon Ruther*, handed down a strong sentence in a Wetland Conservation Act violation case. Ruther

had been found guilty in a jury trial on March 6, 2003, on six counts of violating a restoration order and six counts of violating a cease and desist order related to filling 14.2 acres of wetlands in Otter Tail County. This case was a critical one in Minnesota because the Army Corps of Engineers had determined they had no jurisdiction because the impacted wetlands were isolated (i.e., not connected to navigable waters).

In handing down the sentence, Judge Vaa cited Ruther's two previous convictions for WCA violations and stated that the purpose of the sentence was fourfold:

1. To serve as punishment for violating the law,
2. To serve as an example for others,
3. To restore and pay damages of the violation, and
4. To maintain public safety by ensuring that intentional violation of the law does not go unpunished.

The sentence included a) serving 365 days in jail (180 days was served, with 185 days stayed), b) paying a fine of $6,000 ($500 for each count) plus $480 for fees and c) Ruther was ordered to pay restitution of $123,310 to the court within 30 days and d) probation.

The court victory was the culmination of several years of investigation by Otter Tail County staff, BWSR wetland specialists, DNR conservation officers, and the East Otter Tail SWCD. The restitution money has been the focus of an agreement between the BWSR and Pheasants Forever intended for wetland restoration in Otter Tail County. Several potential wetland mitigation sites have been screened and a suitable 160-acre parcel has been identified for purchase and restoration. The plans are to restore wetlands on the site in 2005 and plant native vegetation before putting the parcel into public ownership.

Part G: WCA Appeals

The act has an administrative appeals provision (MN Statute 103G.2242) allowing applicants and certain other parties to appeal local government decisions regarding replacement plans, public road project notices, banking plans, exemptions, no-loss, and wetland boundary or type to be appealed to the BWSR. As part of the rules amendments approved in 2002, landowners were granted the additional ability to appeal replacement and restoration orders.

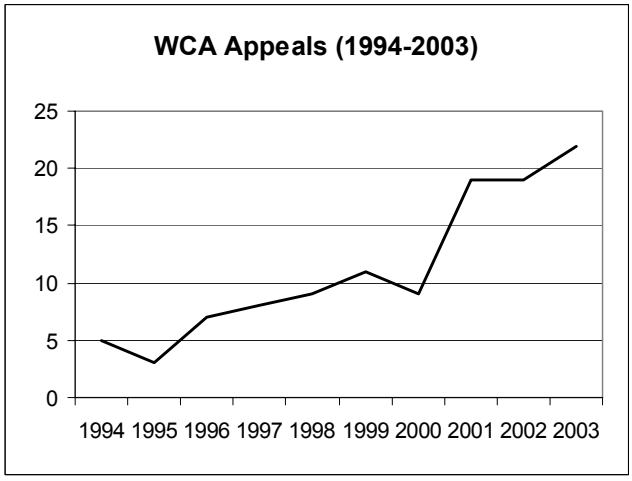
In 2001 and 2002, 19 appeals were filed; in 2003, 22 appeals were filed (see table 5). Most appeals involve replacement plans and exemptions. Eight appeals of restoration orders were filed in the first year this option was available to landowners (2003); preliminary data from 2004 indicate this has increased to 16. The number of appeals of restoration orders is significant for a new class of appeal.

The increased workload resulting from restoration appeals will need to be watched in the coming years. However, even without restoration appeals, the incidence of appealing LGU decisions is increasing.

Table 5

WCA ACTIONS APPEALED TO BWSR				
WCA Actions	**2001**	**2002**	**2003**	**Total**
Replacement Plan	5	11	6	22
Exemption	11	4	2	17
No Loss	1	2	1	4
Exemption/No Loss	0	0	4	4
Restoration Order	0	0	8	8
Cease and Desist	0	1	0	1
Boundary/Delineation	0	1	1	2
Wetland Bank Credit	1	0	0	1
Watershed District Permit	1	0	0	1
Total	**19**	**19**	**22**	**60**

Figure 13



The number of hours spent on appeals administration by BWSR staff and BWSR Dispute Resolution Committee members was 700 in 2001, 750 in 2002, and 850 in 2003. This includes 150 hours in 2001, 160 hours in 2002, and 180 hours in 2003 from the Attorney General's Office. This effort has been increasing as the number of appeals has also increased. For instance, in 2000 the number of hours spent on appeals administration by staff and the BWSR Wetland Committee was 550 and 100 hours for the Attorney General's Office.

Table 6

RESULTS OF WCA APPEALS TO BWSR							
WCA Appeals	**1997**	**1998***	**1999**	**2000**	**2001**	**2002**	**2003**
Denied/ not accepted	3	2	4	5	4	8	7
Dismissed/ settled	2	3	3	2	9	4	8
Remanded	2	0	2	1	6	6	4
Affirmed	1	1	0	0	0	0	3
Reversed	0	1	1	0	0	0	0
Pending / abeyance	0	2	1	1	2	1	0
Total	**8**	**9**	**11**	**9**	**19**	**19**	**22**

* In 1998, two BWSR decisions were subsequently appealed to the Court of Appeals.
BWSR prevailed in one case and the other was settled and dismissed.

Individuals wishing to appeal the decision of the LGU must pay a $200 fee to BWSR. The purpose of the fee is not to cover BWSR's costs to manage the appeals, but to deter frivolous appeals.

CHAPTER IV: OTHER STATE AND FEDERAL REGULATORY PROGRAMS

Part A: Department of Natural Resources

Public Waters Work Permit Program

Through the Public Waters Work Permit Program, the Department of Natural Resources regulates alteration of the course, current, or cross-section of types 3, 4, and 5 wetlands that are included on the Public Waters Inventory completed in the early 1980s. In general, public waters are all water basins and watercourses that meet the criteria set forth in Minnesota Statutes Section 103G.005, subd. 15. Public waters wetlands include all types 3, 4, and 5 wetlands that are 10 acres or more in size in unincorporated areas or 2½ acres or more in size in incorporated areas.

Projects that impact public waters or public waters wetlands may be permitted under a general permit or by an individual permit. General permits are "pre-issued" permits issued on a statewide or county level. If work proposed in public waters or public waters wetlands meets the requirements of a specific general permit, an individual permit is not required. Currently there are five categories of general permits, as follows:

- Emergency repair of public flood damages;
- Multiple purposes;
- Bridge and culvert projects;
- Dry hydrants; and
- Bank/shore protection or restoration.

Figure 14

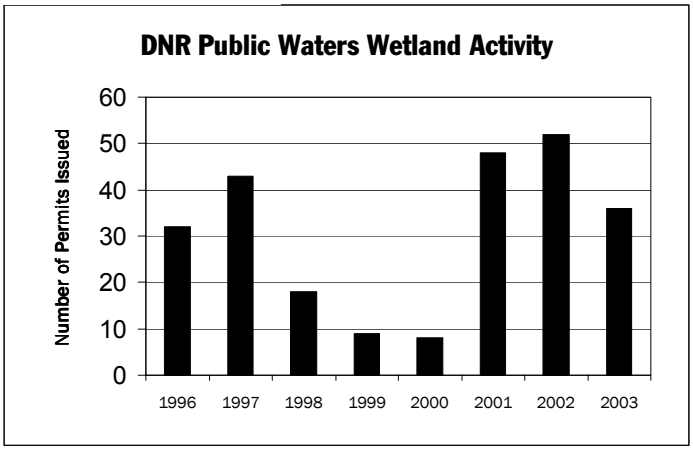
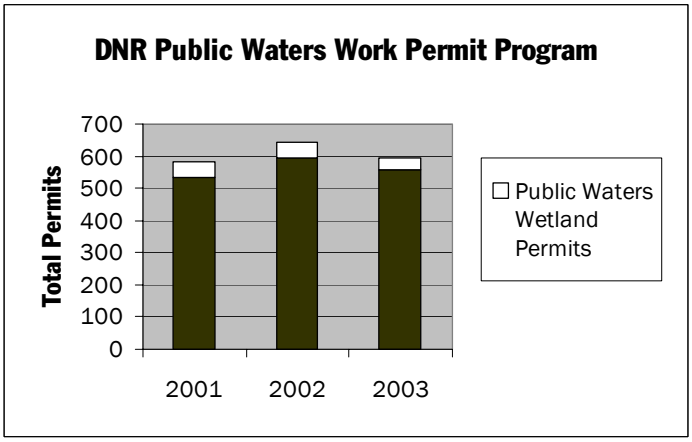


Figure 15



Individual permits are required if the proposed work does not meet the requirements of a specific general permit.

The Public/Protected Waters Work Permit Program in 2001 issued 48 permits for projects impacting public waters wetlands. In 2002, 52 permits were issued, and in 2003, 36 permits

were issued. In 2003, one project was reported authorizing impacts to 0.69 acres that required 1.38 acres of replacement. Historically, almost half of the DNR authorizations are for bridge and culvert projects, and an additional quarter of the projects are for shore protection or stabilization. The remaining projects encompass a wide variety of access, development and other public infrastructure projects. Under the Public Waters Work Permit Program, impacts to public waters wetland are prohibited for private developments.

Under rules adopted by the DNR in 2002, projects regulated under the Public Waters Work Permit Program may be waived to the WCA LGU. The DNR estimates that 50 projects annually are waived to an LGU.

The DNR is developing an internet-based water permit database with a proposed implementation date of July 2005. The database will improve the ability of the DNR to manage the Public Waters Permit Program and more effectively manage program data.

Mining Impacts (Regulated by DNR Division of Lands and Minerals)

Because mining projects occur over long time periods, wetland impacts are not typically tracked by year. Since full implementation of the Wetland Conservation Act (in 1994), mining projects regulated by the Division of Lands and Minerals have impacted 1,133 acres of wetlands. As mitigation for these impacts, 1,161 acres of wetland have been restored or created. An additional 426 acres of wetlands have been restored or created in anticipation of future mining impacts, currently projected to affect nearly 1,300 additional wetland acres.

Wetland impacts due to metallic mining are anticipated to be fairly significant in the next five to 10 years. As interest in mining in northeast Minnesota grows, so does the potential for wetland impacts. Current estimates from the DNR indicate that between 2,500 and 3,000 acres of wetlands will be impacted due to mining projects in the next 10 years.

Other DNR Wetland Activities

The DNR is required to replace wetland impacts resulting from its capital improvement projects. The DNR Division of Parks impacted 0.48 acres of wetland during the reporting period, restored 97.7 acres and enhanced 5.5 acres. The DNR Division of Trails and Waterways reported impacts to 25.1 acres, which was offset by 43.5 acres of wetland replacement.

Part B: Minnesota Pollution Control Agency

Minnesota Pollution Control Agency water quality standards applicable to wetland protection are contained in Minnesota Rule 7050. Water quality standards are applicable to all waters/wetlands of

the state and require sequencing and mitigation. These requirements apply to the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit program that is a delegated federal permit administered by the MPCA and includes the General Construction Storm Water (CSW) NPDES permits.

If a project involves altering a wetland by draining, filling, excavation, or inundating and that impact is not addressed (mitigated) by either the U.S. Army Corps of Engineers Section 404 program, DNR Public Waters Work Permit Program, or WCA permits or other determinations, then the project proposer must demonstrate compliance with Minnesota Rule 7050.

In the past, 7050 requirements were often applied through the Section 401 Water Quality Certification process. The 401 Water Quality Certification program is an element of the Federal Clean Water Act and has been delegated to the MPCA. Under this program, the MPCA reviewed all federal permits, including Clean Water Act Section 404 permit applications, for compliance with state water quality standards primarily contained in Minnesota Rule 7050. The MPCA can approve, deny, or waive 401 certifications. If denied, the federal permit, usually the Corps of Engineers Section 404 permit, cannot be issued. The MPCA is not currently implementing the Section 401 program on a regular basis; nearly all certifications are being waived. However, this should not be viewed as a waiver from the requirements of 7050. Projects affecting wetlands as described above must still comply with state water quality standards.

Part C: St. Paul District U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers has responsibility for implementing Section 404 of the federal Clean Water Act, which regulates the filling of wetlands. Corps permits fall into the following four categories:

Individual Permit

Individual permits authorize proposed projects that have potentially greater individual and cumulative impacts that can't be authorized by existing general permits or letters of permission. The process of public and interagency coordination is extensive and the time required to get the final permit can exceed 120 days.

Letters of Permission

Letters of permission (LOP) are a type of individual permit that go through an abbreviated permit process. A written application is required and a written LOP is necessary before the proposed work can be done. The process includes varying levels of interagency and public coordination depending on the

nature of the project. LOPs typically cover projects with total water and wetland impacts of 2 acres or less (5-acre limit for improvement of existing roads).

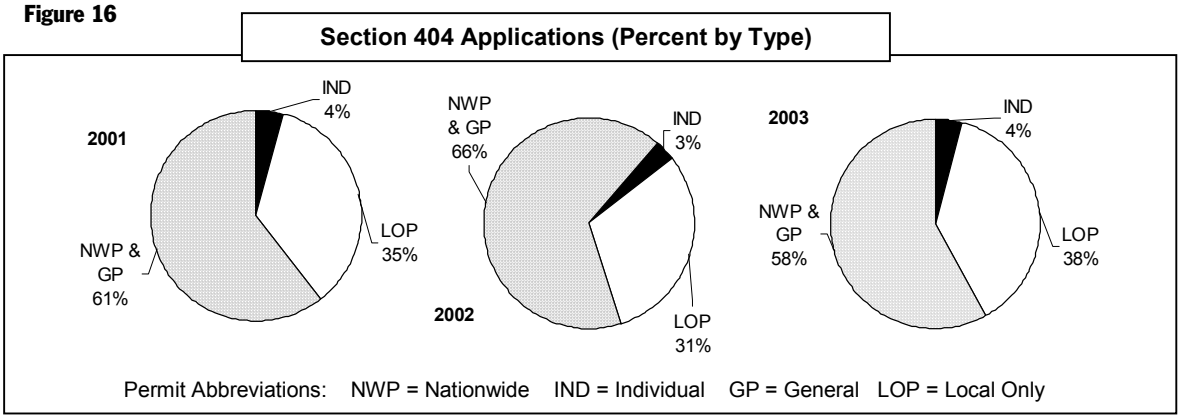
General Permit

General permits (GP) are issued at the national or regional level for classes of activities that are similar in nature and that have minimal individual and cumulative impact.

Nationwide Permits

Nationwide permits (NWPs) are issued periodically by the Corps headquarters for a list of specific activities with minor impacts. In Minnesota, the Corps uses NWPs only for impacts in Section 10 (navigable) waters. The St. Paul district has issued a non-reporting regional GP in Minnesota that authorizes most impacts of less than 400 square feet, and up to 1/3 acre for hazardous spill cleanup, bank protection road maintenance, and utility maintenance without application to or written permission from the Corps. Additionally, GP-1, a programmatic general permit, authorizes work already permitted by DNR in order to avoid duplication of the state's permit program.

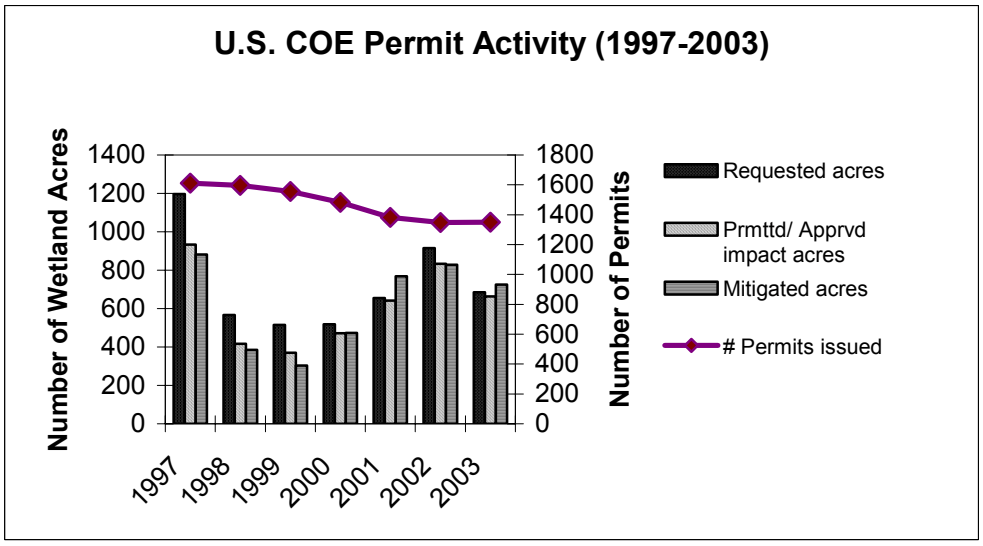
Figure 16



In 2001, the Corps took action on a total of 1,382 permits, including 59 individual permits, 485 LOPs, 801 GPs, and 37 NWPs. In 2002, the total was 1,348 permits, including 44 individual permits, 412 LOPs, 854 GPs, and 38 NWPs. In 2003, the total number of permits was 1,350, including 58 individual permits, 508 LOPs, 740 GPs, and 44 NWPs.

In two of the past three years wetland acres restored or created to mitigate impacts approved by Corps permitted projects have exceeded impacted acres. More significantly, the data, taken as a whole, reflects a net wetland gain as a result of Corps regulated projects over the period of 2001-2003 (see figure 17 below). However, the available information does not include wetlands impacted by projects the Corps does not regulate due to their being exempt or outside of the Corps' authority.

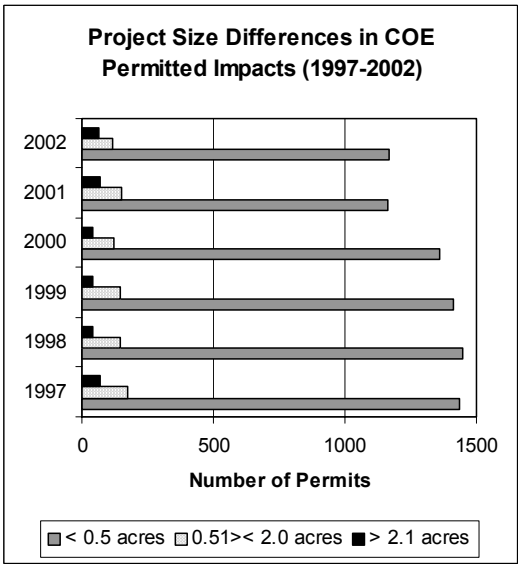
Figure 17



Most permitted projects are small, less than 0.5 acres (see figure 18). This experience is similar to that of WCA reported impacts and indicates success in the sequencing process to avoid and minimize wetland impacts before mitigating them.

A definitive study examining the frequency of regulatory duplication between the Section 404 Program and the WCA has not been conducted. The amount of duplication is significant in that a large majority of projects regulated under WCA are also regulated under 404, and vice versa. In recognition of this duplication, efforts have been underway almost since the passage of the WCA to reduce the differences between these programs and to institute procedures to reduce the burden on applicants. These efforts continue to this day, as BWSR, the Corps, and other agencies are developing Wetland Mitigation Guidelines that will reduce programmatic differences and chart a road map to bring the programs into further alignment in the future.

Figure 18



Part D: Minnesota Department of Transportation

Mn/DOT is required to mitigate any wetland losses or impacts that occur in conjunction with state highway projects under both the WCA and Section 404 of the Clean Water Act. The agency reported impacts to 31.35 acres with the replacement of 56.79 wetland acres in 2001. In 2002, Mn/DOT replaced impacts to 56.44 acres with 89.17 acres. In 2003, Mn/DOT projects impacted 107.34 acres that were replaced by 205.8

acres. From 1992 to 2000, MnDOT has impacted 609.13 wetland acres and replaced them with 992.76 acres. This includes repair on existing roads as well as new roads or capacity improvements.

To mitigate losses, Mn/DOT purchases some credits from private accounts in the State Wetland Bank; the majority of replacement, however, comes from on-site mitigation projects and other restoration sites established by Mn/DOT itself. From 2001-2003, Mn/DOT has used 35.59 acres of privately developed wetland bank credits to mitigate impacts.

CHAPTER V: STATE AND FEDERAL WETLAND CONSERVATION PROGRAMS

Part A: Board of Water and Soil Resources

The main state-funded program for wetland-related conservation and restoration is the Reinvest in Minnesota (RIM) Reserve Program. The RIM program has several components, including two federal partnerships, which are described below. All serve to protect water quality and reduce soil erosion. The other state program, Permanent Wetland Preserves, protects existing wetlands.

BWSR provides administrative support and oversight to soil and water conservation districts (SWCDs), which implement the various programs at the local level. Recently the Conservation Reserve Enhancement Program (CREP I) was completed that resulted in over 50,000 acres of wetland and associated upland being restored and protected in the Minnesota River Watershed. New federal program partnerships (CREP II and the Wetland Reserve Enhancement Program) will create new restoration opportunities beginning in 2005.

Reinvest in Minnesota (RIM) Reserve Programs

"Regular" RIM

The original component of the RIM Reserve Program pays landowners to restore drained wetlands and adjacent uplands to their native condition. Eligible land includes cropland subject to high erosion, riparian agricultural land, pastured hillsides, and sensitive groundwater areas. In conjunction with the wetland restoration, the state acquires a perpetual conservation easement on the land. Since the start of the Minnesota River Conservation Reserve Enhancement Program (CREP I) in 1998, all state funding has been appropriated for RIM/CREP and not RIM as a separate program.

Conservation Reserve Enhancement Program (CREP)

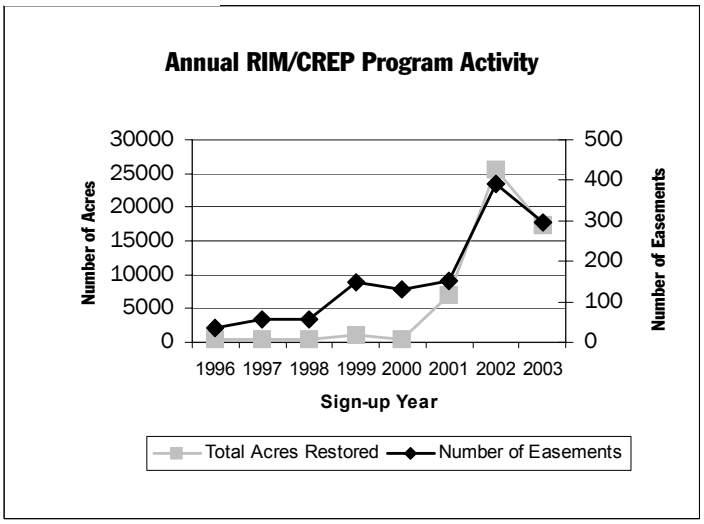
CREP pays landowners to take environmentally sensitive cropland out of production. It is a federal-state partnership where each state's unique agreement with USDA reflects the state's environmental priorities. Minnesota's CREP combines the federal CRP, administered by the U.S. Department of Agriculture Farm Services Agency, with the state's RIM program.

Minnesota's first CREP agreement focused on improving water quality and enhancing wildlife habitat in the Minnesota River Basin, which includes all or parts of 37 counties. It combined 15-year CRP contracts with mostly permanent RIM easements. The CREP payments supplemented regular CRP payments to encourage farmers to restore wetland and upland habitat and add buffer strips along the Minnesota River main stem and tributaries.

The Minnesota Legislature appropriated $81 million in state funds that matched $164 million in federal funds to fully finance the CREP I program. This federal/state partnership resulted in 2,445 easements and 100,465 acres.

More than one-half of the final acres were wetland and adjacent habitat restorations.

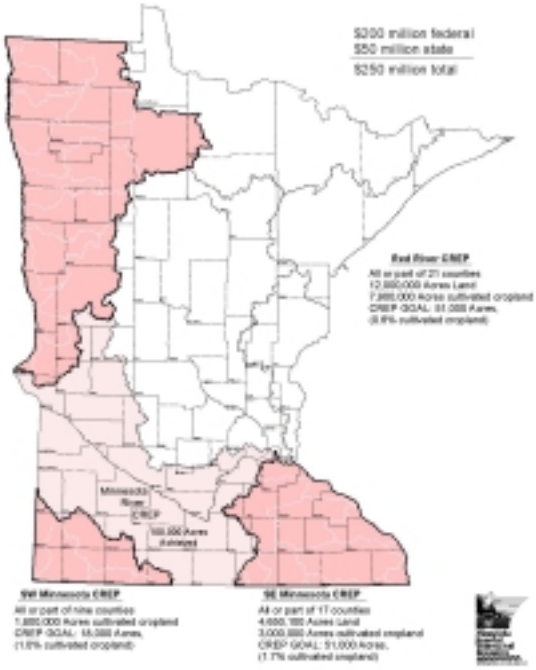
Figure 19



CREP enrollments are counted along with "Regular" RIM enrollments. Together, from 2001 to 2003, they have secured 838 easements on 49,956 acres of environmentally sensitive cropland across the state. The wetland component of the program enrolled 2,612 acres of wetland in 2001. This number increased significantly in 2002 to 10,173 wetland acres, and further increased in the year leading up to the conclusion of CREP in 2003 to 16,493 acres. The average wetland size for BWSR enrolled easements is 13 acres.

Figure 20

CREP II



CREP II will set aside 120,000 acres in the Red River watershed in the northwest, the lower Mississippi River watershed in the southeast, and the Missouri River and Des Moines River watersheds in the southwest (see figure 20). Of this amount, 24,000 acres will be wetland restorations protected by perpetual easements. To fully fund this proposal will require the state to provide $50.1 million to match $200 million in federal funds. The 2005 Legislature appropriated $23 million as a first installment in this initiative.

RIM/Wetlands Reserve Program

The RIM/WRP program combines RIM with the federal Wetlands Reserve Program administered by the U.S. Department of Agriculture Natural Resources Conservation Service. RIM/WRP aims to restore wetlands and place them first in a 30-year WRP easement, followed by a perpetual RIM Reserve easement. Unlike wetland banking, where landowners take entrepreneurial initiative to restore wetlands with their own funds and then recoup the money by selling credits after the project is complete, this program supplies restoration planning expertise and funding up front as well as additional easement payments. The RIM/WRP Program, has restored 6,686 acres of wetland and upland through 188 easements since 1996. The total over the three years of 2001-2003 are 1,467 acres of wetlands restored, 1,516 acres of upland on 45 easements.

Permanent Wetland Preserves (PWP) Program

This program, established as part of the Wetland Conservation Act, protects existing (not drained) wetlands through easement acquisition. Like RIM Reserve, it is administered by BWSR and implemented by SWCDs at the local level.

Since the program began in 1992, it has acquired 294 easements, perpetually protecting 11,459 acres of at-risk existing wetlands and surrounding upland at a cost of $7,386,869 (average cost = $645/acre). Activity in this program has declined since 1996, from 15 easements and 700 acres of easements to 5 easements and under 300 acres in 1999. No state funds have been allocated to this program since 1999.

Part B: Department of Natural Resources

Wildlife Management Areas (DNR Division of Fish and Wildlife)

The DNR actively acquires land to add to existing state wildlife management areas. During the years 2001-2003 the DNR acquired almost 13,000 acres and restored a total of 741 acres of wetland over that time (see table 7).

Table 7

DNR WETLAND RESTORATION ACTIVITY IN WMAs				
	2001	2002	2003	Total
No. Parcels Acquired	46	30	32	108
Acres Acquired	6,713	3,119	3,081	12,913
No. Wetlands Restored	24	33	13	70
Acres Wetlands Restored	314	158	269	741
Avg. Restoration Size (acres)	13.0	4.8	20.7	10.6

Part C: U.S. Fish and Wildlife Service, Department of the Interior

The United States Fish and Wildlife Service (USFWS) administers several programs aimed at restoring wetlands on private and public lands. USFWS places high priority on projects that will benefit migratory waterfowl and strives to restore sites to a condition as close as possible to their former status (e.g., restoring a partially drained wetland to its pre-drainage condition).

A significant program operated by the USFWS is the Partners for Fish and Wildlife Program. The Partners for Fish and Wildlife program is a voluntary program that helps private landowners restore wetlands and other important fish and wildlife habitat on their lands. Under this program, the USFWS enters into agreements with landowners for 10 years.

Due to a change in their database, the USFWS has a limited ability to provide details of data in 2001. In 2001, USFWS restored, enhanced or maintained 1,981 wetland acres on 370 sites. In 2002, the USFWS restored 6,058.3 acres of wetland and 903 acres of upland. In 2003, approximately 5,328 wetland acres and 5,337 acres of upland were restored.

Table 8

U.S. FISH AND WILDLIFE SERVICE	Maintenance		Enhancement		Restoration/Establishment	
Partners in Fish & Wildlife Program	Acres	Sites	Acres	Sites	Acres	Sites
2001 - Wetland	19	2	253.5	12	539.4	81
2002 - Wetland	144	16	358.9	22	6,058.3	903
2002 - Upland	11	1	503	5	2,540.4	75
2003 - Wetland	227	12	456.2	30	5,332.93	729
2003 - Upland	0	0	0	0	5,337.6	44

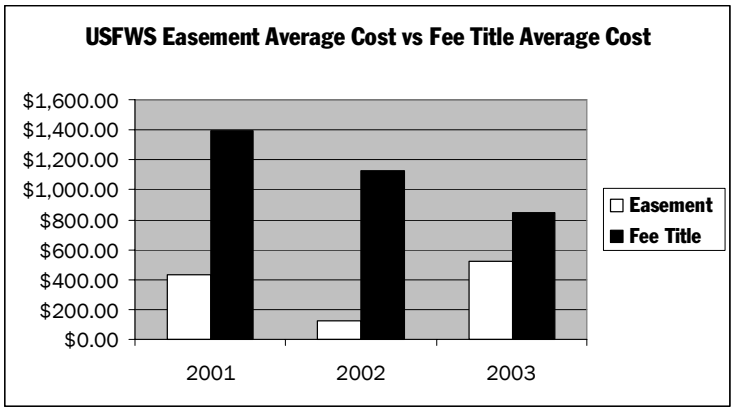
The USFWS is also active in acquiring, either through purchase or easement, additional land for national wildlife refuges through its Waterfowl Production Area (WPA) Program. Activity has fluctuated during the report period, from 5,998 total acres in 2001, to 7,644 total acres in 2002, to 3,131.23 total acres in 2003 (see table 9).

Table 9

U.S. FISH AND WILDLIFE SERVICE	Easements		Fee Title/Exchange	
Year	Wetland Acres	Total Acres	Wetland Acres	Total Acres
2001	552.00	3,054.97	409.08	2,943.03
2002	788.64	5,144.94	659.82	2,499.12
2003	102.55	877.34	488.10	2,253.89
Totals	1,443.19	9,077.25	1557.00	7,696.04

Spending by the USFWS on these programs has been decreasing. Spending in 2001 was $4,101,475; in 2002, it was $2,735,232; and in 2003, $2,362,107. The cost of purchasing an easement is less expensive than outright purchase, although the costs of each have fluctuated during the period 2001-2003 (see figure 21).

Figure 21



Part D: United States Department of Agriculture, Farm Service Agency

USDA Farm Service Agency's (FSA) Conservation Reserve Program (CRP) is a voluntary program available to agricultural producers to help them safeguard environmentally sensitive land. Producers enrolled in CRP plant long-term, resource-conserving cover to improve the quality of water, control soil erosion, and enhance wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance. Contract duration is between 10 and 15 years.

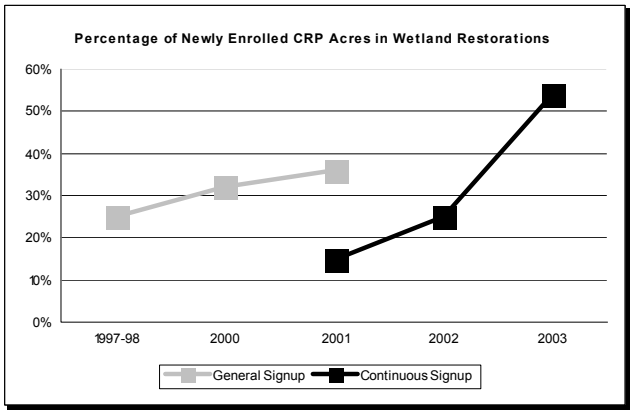
The Food Security Act of 1985, as amended, authorized CRP. The program is also governed by regulations published in 7 CFR, part 1410. The program is implemented by FSA on behalf of USDA's Commodity Credit Corporation.

CRP provides more then 30 conservation practice options, of which five relate to wetlands. The main CRP practices resulting in the restoration of wetlands and upland on enrolled land are as follows:

CP23: Restoration of wetlands in floodplain, includes wetland and associated buffer generally at a ratio of 4 upland acres to 1 wetland acre
CP27: Farmable Wetland Pilot (wetland)
CP28: Farmable Wetland Pilot (upland)

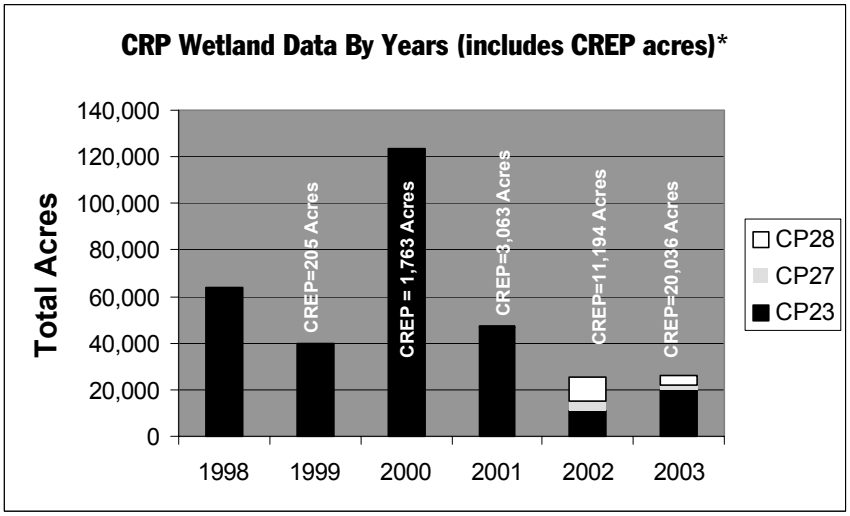
Recent trends have shown an increase in the percentage of enrolled CRP acres in wetlands (see figure 22).

Figure 22



Minnesota Department of Agriculture, based on USDA Farm Service Agency data

Figure 23



*Note: To avoid potential double counting of wetland restorations, the CREP acres must be subtracted from the CRP yearly totals.

Part E: United States Department of Agriculture Natural Resources Conservation Service (NRCS)

In Minnesota, NRCS has restored wetlands and enrolled existing wetlands in temporary and permanent easements through the Wetlands Reserve Program (WRP) since 1992. As of 2003, WRP has recorded 278 easements with 38,373 acres. During the three years included in this report the totals are: 7,958 acres of wetland, 11,136 acres of upland, and 133 easements. Most of these are restored wetlands.

A new federal-state partnership was announced by Governor Pawlenty on Oct. 25, 2004, when Minnesota became the second state to participate in the USDA's Wetlands Reserve Enhancement Program (WREP). Minnesota's WREP plan is a three-year, $16.2 million plan. Under the plan, the USDA will provide $3.8 million in federal fiscal year 2005, and a total of $15 million over three years. The state will provide $1.2 million toward the effort, allocated over three years. Under this partnership, Minnesota will develop a long-range wetland restoration strategic plan in coordination with USDA.

The targeted restoration funds will focus on approximately 7,250 acres throughout Minnesota. The regions and acreage include:

- 3,000 acres in the five Presidentially Declared Flood Disaster Counties of Dodge, Faribault, Freeborn, Mower, and Steele counties in southern Minnesota;
- 1,750 acres along the Red River of the North main stem;
- 1,500 acres in the Buffalo-Red River Watershed in northwestern Minnesota; and,
- 1,000 acres in the Grand Marais Creek Subwatershed in northwestern Minnesota.

CHAPTER VI: SWANCC ANALYSIS

Preliminary assessment of geographic scope of federal wetland regulatory changes in Minnesota based on Jan. 10, 2003, post-SWANCC guidance and Jan. 15, 2003, ANPRM

Originally published by the Minnesota Board of Water and Soil Resources, March 27, 2003

On Jan. 9, 2001, the U.S. Supreme Court issued a decision *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineer*s, *531 U.S. 159 (2001)* (SWANCC) that limits the scope of the United States Army Corps of Engineers (Corps) Clean Water Act (CWA) regulatory permitting program (Section 404 of the CWA) as applied to "isolated" waters. In the aftermath of the SWANCC decision, the Corps was forced to continue making regulatory decisions for individual projects without program-wide policy on the issues raised by SWANCC to guide them. On Jan. 10, 2003, the Corps and the Environmental Protection Agency (EPA) issued guidance for the regulation of isolated wetlands and also summarized pre- and post-SWANCC court decisions on a number of ancillary regulatory issues raised by the SWANCC decision. The Jan. 10, 2003, post-SWANCC guidance was made public as part of an Advanced Notice of Preliminary Rule-Making (ANPRM) on Jan. 15, 2003, *(FR 6*8(10) 1991-1998), which also solicited comments on changes to federal jurisdiction that extended beyond just revisiting the issue of isolated wetlands as required by the SWANCC decision.

In SWANCC, the Court invalidated use of the "Migratory Bird Rule" as the sole basis for asserting Clean Water Act jurisdiction over non-navigable, isolated, and intrastate waters/wetlands. Left unclear was whether other tests could be applied to assert jurisdiction over these waters/wetlands. The Corps and EPA continue to evaluate other tests in view of the decision, with project-by-project decisions to regulate isolated waters undergoing lengthy review. The courts SWANCC decision did affirm that navigable waters and their tributaries, plus wetlands adjacent to either, are regulated under the Clean Water Act.

Working definitions and use of terms like "isolated," "navigable," "adjacent," and "tributary" have been implemented by the Corps as they have made post-SWANCC regulatory decisions – these post-SWANCC regulatory decisions have now undergone a cycle of test cases in the courts, which has been summarized in the ANPRM. The working definitions and recent guidance on regulating isolated wetlands are steps in a rule-making process that the federal government expects to lead to new regulations. Judging from the large volume of comments already received by the federal government on the preliminary phase of this process (in excess of 40,000), it is unlikely that a final federal rule is close at hand.

Currently, many non-navigable and intrastate waters/wetlands are still within Clean Water Act jurisdiction because they are adjacent to navigable waters (e.g., regulated under Section 10 of the

Rivers and Harbors Act), or a tributary to navigable waters. However, the extent of adjacent connectivity was not addressed by the court, nor was the nature of the connection (geographic or hydrologic). We are not aware of court challenges to federal jurisdiction that specifically address adjacent connectivity. The EPA and Corps' Advanced Notice of Preliminary Rule Making in the Jan. 15, 2003, Federal Register also raised the issue of whether all tributaries to navigable waters should be regulated by the CWA. The Jan. 10, 2003, guidance notes that there have been no successful challenges to federal regulation of tributary waters, whether intermittent, ephemeral, or perennial in flow.

By decreasing the number of water and wetland areas subject to federal regulation, the post-SWANCC guidance also narrows the areas and activities subject to Clean Water Act Section 401 water quality programs, which require state certification for federally permitted activities. The post-SWANCC guidance also partially narrows the areas and activities subject to State Coastal Zone Management consistency review and it partially limits the areas and activities addressed by State 404 "assumption" programs and by State Programmatic Permits. Other state-administered programs may also be limited in geographic scope – the ANPRM raised this issue and solicited comments on whether the scope of other parts of the CWA should be limited in the same way that Section 404 jurisdiction is limited by the SWANCC decision. The SWANCC decision affirmed the "primary responsibilities and rights of the States" over land and waters and shifted more of the economic burden for regulating wetlands to states and local governments. According to some states, this Supreme Court decision removed nearly 80 percent of their wetlands from EPA's and the Corps' jurisdiction.

The Wetland Conservation Act (WCA), DNR Public Waters (PW) Program, and MPCA Water Quality Standards in concept provide a "seamless coverage" for regulation of all wetlands in Minnesota, except for those on federal or tribally owned land. However, there are some gaps exposed by SWANCC in that some activities exempt from state regulations[1] were protected only by federal regulation and are now without any regulatory controls for non-navigable, intrastate, or isolated wetlands. These exposures are not yet quantified, but the reality is that fewer wetlands will be regulated by the USACOE in the prairie pothole/agricultural area of the state (where there are also fewer wetlands remaining on the landscape) and less change will occur in the wetland abundant areas of the state (northeast quadrant) since many of those wetlands are not isolated and many are on government-owned land.

In addition to soliciting comments on the issue of jurisdiction over isolated wetlands, the ANPRM requests comments on the possibility of reducing CWA jurisdiction over surface watercourses to some subset of waters currently regulated, e.g., regulating only perennial watercourses. Restricting CWA jurisdiction to a subset of tributaries to navigable waters, such as deregulation of intermittent and ephemeral watercourses, could mean significant change in the scope of federal regulation under the

CWA in the drier areas of the great plains and western U.S. where annual precipitation is relatively low and surface drainage areas required to support perennial flows are quite large.

This study is a preliminary assessment of changes in Minnesota federal jurisdiction resulting from the Jan. 10, 2003, guidance on isolated wetlands and also an assessment of the additional losses of federal jurisdiction that could occur if the extent of CWA jurisdiction over tributary watercourses was also reduced.

Methodology

In order to evaluate the potential impact of the SWANCC decision, the Minnesota Board of Water and Soil Resources used a combination of techniques recommended by the Association of State Wetland Managers, Ducks Unlimited, and Indiana's Department of Environmental Management. Our goal was to summarize the acreage of National Wetlands Inventory (NWI) mapped wetlands that might be considered "adjacent" to "navigable" watercourses by the Corps using varying buffer distances from streams or other navigable waters.

Our analysis was conducted using a stratified random sample of 31 USGS 7.5 minute quadrangles throughout the state. Because of the wide geologic and geographic variation within Minnesota, these sample quads were selected proportionally from seven distinct ecoregions. A 12.2-meter error buffer was used on the DNR 24K stream layer to reflect the uncertainty of horizontal positional accuracy in this dataset. The error buffered stream network was then used to select all touching NWI polygons in the quad. Using this initial selection, an iterative process of 12.2-meter error buffering of selected wetlands was undertaken until no more additional wetland polygons could be selected. We considered this final selection of wetlands to be directly connected to the stream network.

The combination of watercourse selection and directly connected wetland polygons was used as the starting point for estimating adjacent wetlands. The buffer widths chosen for analysis were 25 meters, 50 meters, and 100 meters. Wetland polygons within the various buffers were assumed to be regulated under Section 404 for the various scenarios, while areas outside the buffer were assumed to be isolated and therefore not regulated under Section 404 of the CWA. Two separate analyses were made to assess potential changes in jurisdiction based on stream water regime, with the buffer widths described above around 1) all streams mapped (perennial and intermittent), and 2) only streams mapped as perennial.

The wetland layer used in this analysis was National Wetland Inventory (NWI). The stream layer was digitized by the Minnesota Department of Natural resources (MDNR) and based on streams mapped by the United States Geological Survey on 7.5'-minute topographic quadrangle maps. Thirty-one quadrangles throughout the state were sampled, with sample size based on staff time available to do

the analysis. The total area of the state sampled within the 31 quads was approximately 1,030,022 acres (1,609 square miles).

Results

Table 10 contains the results of the GIS analysis by ecoregion, buffer width, and watercourse hydrology. Table 11 shows the estimated percent of wetlands mapped that would no longer be under federal regulatory control under: a) the current regulatory (best-case) scenario where both intermittent and perennial are typically regulated under the CWA and there is a broad interpretation of what wetlands are regulated as adjacent; and b) a worst-case scenario where the federal government would regulate as tributaries only the streams and ditches with perennial flows and any wetlands regulated as adjacent would have to be directly-connected to the stream. Figures 24, 25, 26, and 27 show estimated percentage of wetlands in each ecoregion that would remain under CWA jurisdiction under current post-SWANCC guidance, based on a) current regulatory scenario where both intermittent and perennial are typically regulated under the CWA, and b) a revised scenario of regulating only perennial streams tributaries. A discussion of the results by ecoregion follows.

In the **driftless area ecoregion** of southeastern Minnesota (n=2), most wetlands are closely associated with perennial streams, rivers or ditches. Only 4.5 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. We estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 94.3 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 95.2 percent with 25-meter buffers, 96.8 percent with 50-meter buffers, and 97.1 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams, 93.0 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 93.7 percent with 25-meter buffers, 95.3 percent with 50-meter buffers, and 95.6 percent with 100-meter buffer widths.

The **Red River valley ecoregion** of northwestern Minnesota (n=3) is extremely flat, and historically had a large number of depressional and floodplain wetlands. Many of those wetlands have been drained by extensive drainage and levee systems. 10.1 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the Red River Valley ecoregion, we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 54.0 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 59.4 percent with 25-meter buffers, 65.5 percent with 50-meter buffers, and 68.2 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams, 39.6 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 42.6 percent with 25-meter buffers, 43.0 percent with 50-meter buffers, and 43.7 percent with 100-meter buffer widths.

The **northern glaciated plains ecoregion** of southwestern Minnesota (n=5) is has an area of prairie couteau pothole wetlands in the north and a southern area dominated by streams with few wetlands. A number of the wetlands in the ecoregion have been drained. Only 3.0 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the northern glaciated plains ecoregion we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 52.6 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 54.7 percent with 25-meter buffers, 58.8 percent with 50-meer buffers, and 60.7 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams, 8.0 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 10.0 percent with 25-meter buffers, 10.2 percent with 50-meter buffers, and 10.2 percent with 100-meter buffer widths.

The **northern Minnesota peatlands ecoregion** of north central Minnesota (n=3) is a region of extensive organic soil wetlands, of which only portions have been drained 78.7 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the northern Minnesota peatlands ecoregion, we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 96.7 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 96.9 percent with 25-meter buffers, 98.1 percent with 50-meter buffers, and 98.5 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams, 96.4 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 96.5 percent with 25-meter buffers, 98.0 percent with 50-meter buffers, and 98.4 percent with 100-meter buffer widths.

The **north central hardwood forest ecoregion** of central Minnesota (n=5) is an area of undulating topography known for its lakes, depressional wetlands, and rivers. There has been substantial drainage in some parts of this region. 20.1 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the north central hardwood forest ecoregion, we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 56.4 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and

directly-connected wetlands, 58.3 percent with 25-meter buffers, 62.0 percent with 50-meter buffers, and 68.1 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams, 37.0 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 37.8 percent with 25-meter buffers, 40.6 percent with 50-meter buffers, and 44.2 percent with 100-meter buffer widths.

The **western cornbelt plains ecoregion** of southern Minnesota (n=5) is a region of flat to undulating topography that historically had a large number of depressional wetlands. Many of those wetlands have been drained. Only 3.4 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the western cornbelt plains ecoregion we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 48.7 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 50.0 percent with 25-meter buffers, 51.6 percent with 50-meter buffers, and 53.7 percent with 100-meter buffers. We estimate that if assuming 404 jurisdiction over **only perennial** streams, 28.0 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 28.7 percent with 25-meter buffers, 30.1 percent with 50-meter buffers, and 31.5 percent with 100-meter buffer widths.

The **northern lakes and forests ecoregion** of northeast and north central Minnesota (n=8) is known for its lakes, rivers, and depressional wetlands. The wetlands in this region have not been extensively drained. Approximately 38.6 percent of the area sampled in this ecoregion was mapped as wetland by the NWI. In the northern lakes and forests ecoregion we estimate that if assuming 404 jurisdiction over **intermittent and perennial** streams and ditches, 87.2 percent of the wetlands sampled would be regulated as adjacent using buffer widths of 0 meters beyond watercourses and directly-connected wetlands, 88.4 percent with a 25-meter buffer, 89.7 percent with 50-meter buffers, and 92.3 percent with 100-meter buffers.

We estimate that if assuming 404 jurisdiction over **only perennial** streams 85.4 percent of the wetlands sampled would be regulated under the CWA using buffer widths of 0 meters to estimate adjacency, 87.7 percent with a 25-meter buffer, 88.9 percent with 50-meter buffers, and 91.4 percent with 100-meter buffer widths.

Of the entire group of 31 USGS/NWI quads sampled, we found that 22.7 percent of the area sampled was mapped as wetland by NWI. Of the wetland area sampled in the study we estimated that the percent of that NWI-mapped wetland area regulated by the COE under the latest SWANCC guidance (adjacent to **perennial and intermittent streams and ditche**s) would be 82.8 percent with a 0-meter

buffer, 83.9 percent with a 25-meter buffer, 85.8 percent with a 50-meter buffer, and 88.2 percent with a 100-meter buffer. When we assumed that the CWA would regulate wetlands adjacent to **perennial watercourses only**, we estimated that the percent of NWI-mapped wetland area regulated by the COE would be 77.0 percent with a 0-meter buffer, 78.3 percent with a 25-meter buffer, 79.8 percent with a 50-meter buffer, and 81.6 percent with a 100-meter buffer.

Discussion

Implications of eliminating 404 jurisdiction over isolated wetlands – Our estimates of statewide decrease in federal jurisdiction in Minnesota due to post-SWANCC guidance on isolated wetlands range from 11.4 percent to 17.8 percent of NWI-mapped wetland acres, depending on the buffer widths used to estimate which wetlands should be assumed to be adjacent perennial and intermittent watercourses. The areas with the greatest historic wetland losses appear to be most likely to be regulated only by state law based on the current federal guidance on the regulation of isolated wetlands.

Prior to the SWANNC ruling, it was assumed that federal regulatory and incentive programs would protect wetlands in the agricultural regions of Minnesota. On the basis of the data presented above for the full range of jurisdictional scenarios (from 0-meter, 25-meter, 50-meter, and 100-meter buffers), it appears that there will be substantial decreases in federal regulatory protection of wetlands in the agricultural regions of Minnesota that include the Red River Valley ecoregion (31.8 percent best-case reduction, Table 11), Northern glaciated plains (39.3 percent best-case reduction, Table 11), western cornbelt plains ecoregion (46.3 best-case reduction, Table 11), and portions of the north central hardwood forest ecoregion (31.9 percent best-case reduction, Table 11). The agricultural areas of these ecoregions would have the protections afforded wetlands by federal farm program. In areas of the north central hardwood forest ecoregion **not** enrolled in federal agricultural programs, areas isolated from watercourses regulated by the CWA could have no federal protection. With the changes to CWA jurisdiction that will result from the Jan. 10, 2003, guidance from the Corps and EPA, it appears likely that at least some of the smaller, drier wetlands (type 1 and type 2) in the agricultural regions of Minnesota would be protected solely by incentive programs implemented by the current federal farm bill.

Implications of deregulating intermittent streams – The ANPRM also requests comments on the idea of restricting jurisdiction under the CWA to streams that are "navigable in fact." Our analysis eliminated intermittent streams from consideration as jurisdictional as a quick way to assess the wetland regulatory importance of this proposal. We estimate that the additional reduction in federal jurisdiction (beyond reduction due to SWANCC) that would result from deregulation of intermittent streams would range from 5.6 percent to 6.6 percent of NWI-mapped wetlands on a statewide basis, depending on the buffer width chosen to estimate adjacent connectivity. However, the effects of

deregulating intermittent streams would vary more widely among ecoregions, ranging from 0.3 percent of NWI-mapped wetlands deregulated in the northern Minnesota peatlands ecoregion to 43.0 percent additional deregulation in the northern glaciated plains.

Implications of deregulating both isolated wetlands and intermittent watercourses –
The implications of not regulating most isolated wetlands and additionally not regulating wetlands unless adjacent to waters judged to be navigable in fact are significant. On a statewide basis in Minnesota, we estimate that roughly 20 percent of the wetlands regulated under the CWA before the SWANCC ruling would no longer be regulated under the CWA if the CWA no longer applied to waterways mapped as intermittent on 7.5' USGS topographic quadrangles. The variation in estimated scope of deregulation ranges from 1.5 percent loss of federal jurisdiction in the northern Minnesota peatlands ecoregion to 92 percent loss of federal jurisdiction in the northern glaciated plains ecoregion (Table 11). Among ecoregions, potential for decrease in federal regulatory jurisdiction is greatest in the ecoregions with the greatest historical wetland losses, including potential losses ranging from 72 percent in the western cornbelt plains and 63 percent in the north central hardwood forest, to 92 percent in the northern glaciated plains. The U.S. Fish and Wildlife Service (USFWS) (Tiner, Bergquist, DeAlessio, & Starr. 2002) analysis showed that a range of 34 percent to 35 percent (Scenario 3 for Big Lake and Lake Alexander study areas) of NWI-mapped wetlands in their sample from Minnesota's north central hardwoods ecoregion appeared to be geographically isolated - the comparable estimate from our analysis of 5 quads in the same ecoregion was that 42 percent of NWI-mapped wetlands appeared to be geographically isolated (using 25-meter buffer around streams). For a South Dakota portion of the northern glaciated plains ecoregion (Clark study area), the USFWS estimated that as many as 98 percent of NWI-mapped wetlands were isolated, while the comparable estimate from our analysis of five quads showed that 45 percent of NWI-mapped wetlands were geographically isolated.

The earlier study by USFWS did not specifically attempt to simulate regulatory decision-making, while this study did specifically attempt to assess the scope of potential changes in federal jurisdiction on the regulatory wetland landscape as represented by the National Wetland Inventory maps for the quads sampled. This difference in GIS decision-making protocols accounts for some of the variation between the results reported here and those in the USFWS study, along with the natural variation among the various study sites selected. The important point in comparing the current results with DU and USFWS results is that there is clearly potential for a marked decrease in the area of wetland under federal regulation in several ecoregions in Minnesota. It is also important to note that the ecoregions where the greatest deregulation appears likely in Minnesota are also ecoregions that extend into adjacent states like Iowa, South Dakota, and North Dakota. In general all three studies that assessed some portion of the prairie pothole region have concluded that a significant portion of wetlands mapped in that region may be geographically isolated. Although the USFWS and DU studies

were completed before the issue of deregulating some tributaries to navigable waters was raised, it appears from our analysis and knowledge of this glaciated pothole region, that deregulating intermittent streams would exclude an additional and significant proportion of mapped wetland from federal regulation.

REFERENCES

Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of "Waters of the United States". *Federal Register, v. 68* (10). Jan. 15, 2003. Pp.1991- 1998.

National Wetlands Newsletter, March-April 2001, Volume 23 (2), p. 10.

Petrie, M., Rochon, J-P., Tori, G., Pederson, R., Moorman, T. 2001. *The SWANCC Decision: Implications for Wetlands and Waterfowl.* Ducks Unlimited. Final Report, September 2001.

Tiner, R.W., H. C. Bergquist, G. P. DeAlessio, and M. J. Starr. 2002. Geographically Isolated Wetlands: A Preliminary Assessment of their Characteristics and Status in Selected Areas of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Northeast Region, Hadley, MA.

[1] These WCA exemptions include: agricultural activities when the owner is participating in the federal farm program, agricultural activities on types 1, 2, and 6 wetlands, permanent forest roads, activities in incidental wetlands, certain activities for utilities and public works, grandfathered approved development, or certain *de minimus* activities.

Table 10. Percent of wetlands mapped by NWI that would be regulated by section 404 based on current post-SWANCC guidance. Estimates were developed using different buffer widths to approximate distances from mapped watercourses that might include wetlands as "adjacent". In addition, two different scenarios for are included for each buffer width to estimate additional decreases in federal jurisdiction intermittent streams or other upper parts of water courses were not regulated. Areas within the buffer assumed to be regulated and areas outside the buffer assumed to be isolated and therefore not regulated under Section 404 of the CWA.

	No. of NWI/USGS quads sampled	% of quads sampled mapped as wetland	0-meter buffer		25-meter buffer		50-meter buffer		100-meter buffer	
			Perennial and intermittent	*Perennial only*	*Perennial and intermittent*	*Perennial only*	*Perennial and intermittent*	*Perennial only*	*Perennial and intermittent*	*Perennial only*
Minnesota Ecoregions										
Driftless Area	2	4.5	94.3	93	95.2	93.7	96.8	95.3	97.1	95.6
Red River Valley	3	10.1	54	39.6	59.4	42.6	65.5	43	68.2	43.7
Northern Glaciated Plains	5	3	52.6	8	54.7	10	58.8	10.2	60.7	10.2
Northern Minnesota Peatlands	3	78.7	96.7	96.4	96.9	96.5	98.1	98	98.5	98.4
North Central Hardwood Forest	5	20.1	56.4	37	58.3	37.8	62.0	40.6	68.1	44.2
Western Cornbelt Plains	5	3.4	48.7	28	50	28.7	51.6	30.1	53.7	31.5
Northern Lakes and Forest	8	38.6	87.2	85.4	88.4	87.7	89.7	88.9	92.3	91.4
Total for Minnesota	**31**	**22.7**	**82.8**	**77**	**83.9**	**78.3**	**85.8**	**79.8**	**88.2**	**81.6**

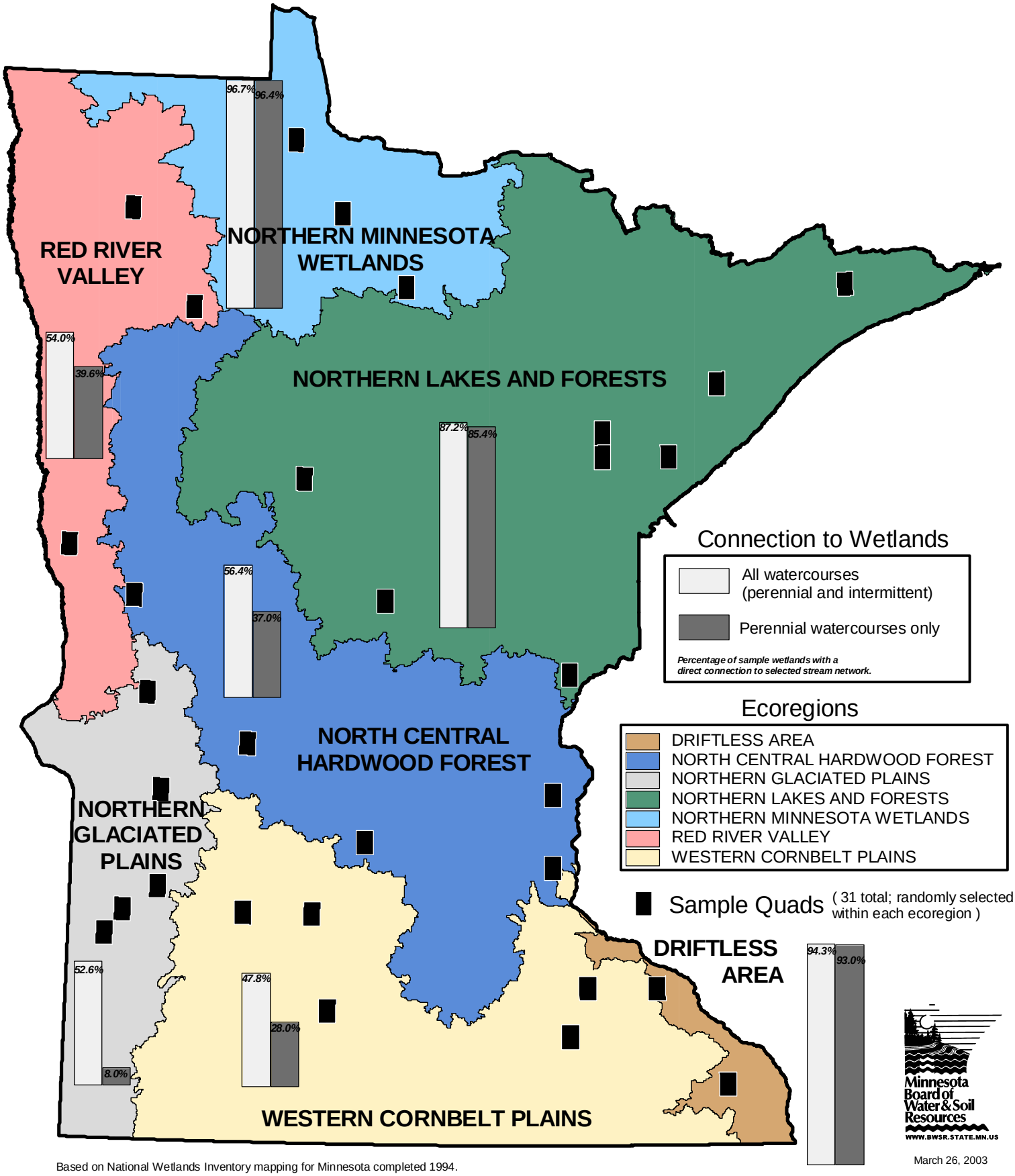
Table 11. Predicted loss of federal regulatory protection due to post-SWANCC guidance, and possible changes in CWA authority over tributaries to navigable waters. Numbers are percent of wetland acres mapped that would not be regulated. Best case scenario assumes continued federal regulation of both perennial and intermittent tributaries with a broad geographic scope of adjacent connectivity to navigable waters (100-meter buffer around directly-connected waters). Worst case scenario assumes federal jurisdiction is limited to perennial tributaries only, and that only directly-connected wetlands are adjacent and thereby regulated.

	BEST-CASE	WORST-CASE
	Broad post-SWANCC jurisdiction - wetlands inside broad geographic buffers around either perennial or intermittent streams are federally regulated.	Narrowest post-SWANCC jurisdiction - only wetlands directly-connected to perennial tributaries are federally regulated.
Minnesota Ecoregions		
Driftless Area	-2.9%	-7.0%
Red River Valley	-31.8%	-60.4%
Northern Glaciated Plains	-39.3%	-92.0%
Northern Minnesota Peatlands	-1.5%	-3.6%
North Central Hardwood Forest	-31.9%	-63.0%
Western Cornbelt Plains	-46.3%	-72.0%
Northern Lakes and Forest	-7.7%	-14.6%
Total for Minnesota	**-11.8%**	**-23.0%**

Figure 24.

Preliminary assessment of the percentage of Minnesota wetland area retaining federal jurisdiction after SWANCC decision

to estimate direct connectivity to selected watercourses



Based on National Wetlands Inventory mapping for Minnesota completed 1994.

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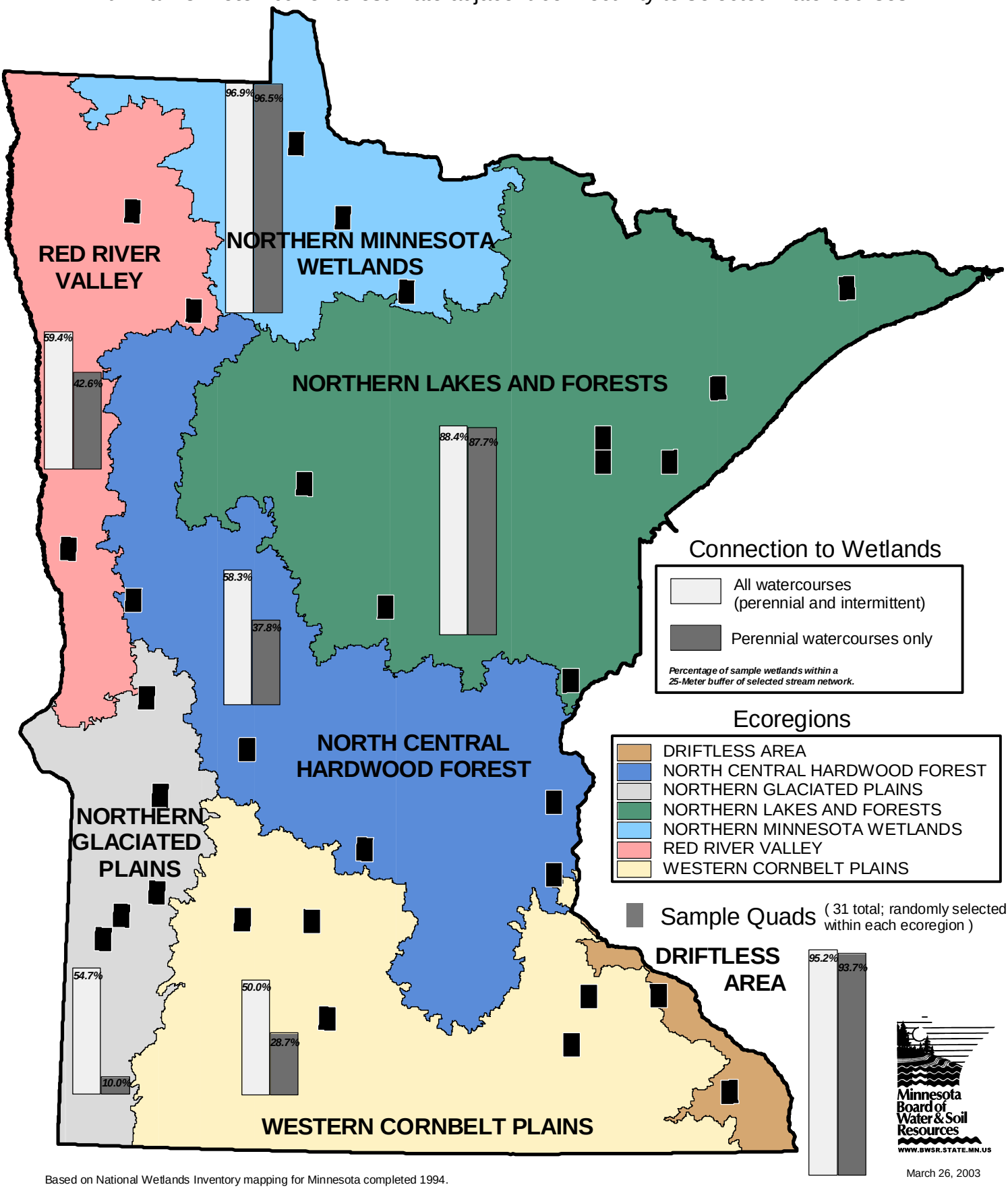
Figure 25.

Preliminary assessment of the percentage of Minnesota wetland area retaining federal jurisdiction after SWANCC decision

within a **25-Meter** buffer to estimate adjacent connectivity to selected watercourses



Based on National Wetlands Inventory mapping for Minnesota completed 1994.

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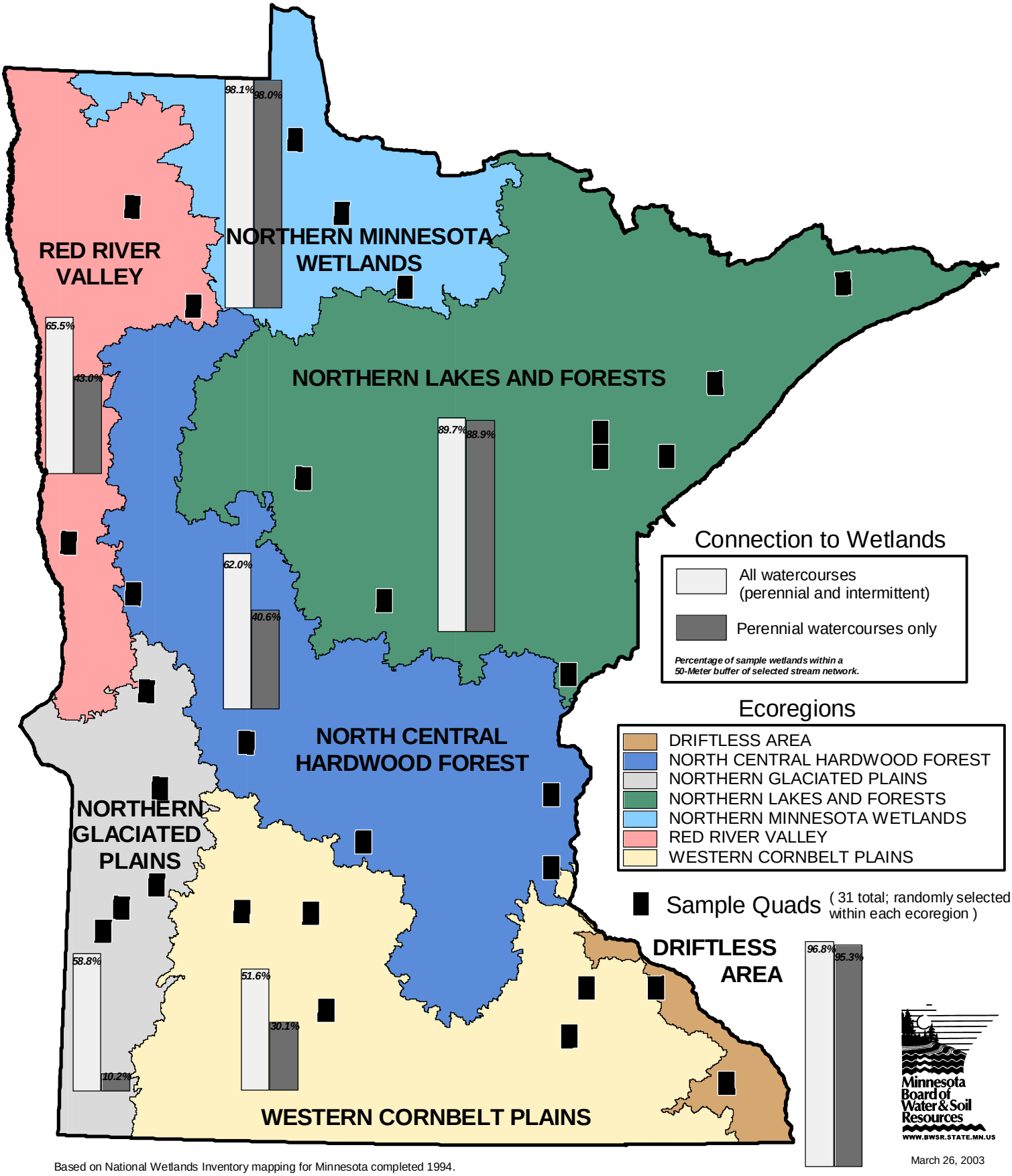
Figure 26.

Preliminary assessment of the percentage of Minnesota wetland area retaining federal jurisdiction after SWANCC decision

within a **50-Meter** buffer to estimate adjacent connectivity to selected watercourses



Based on National Wetlands Inventory mapping for Minnesota completed 1994.

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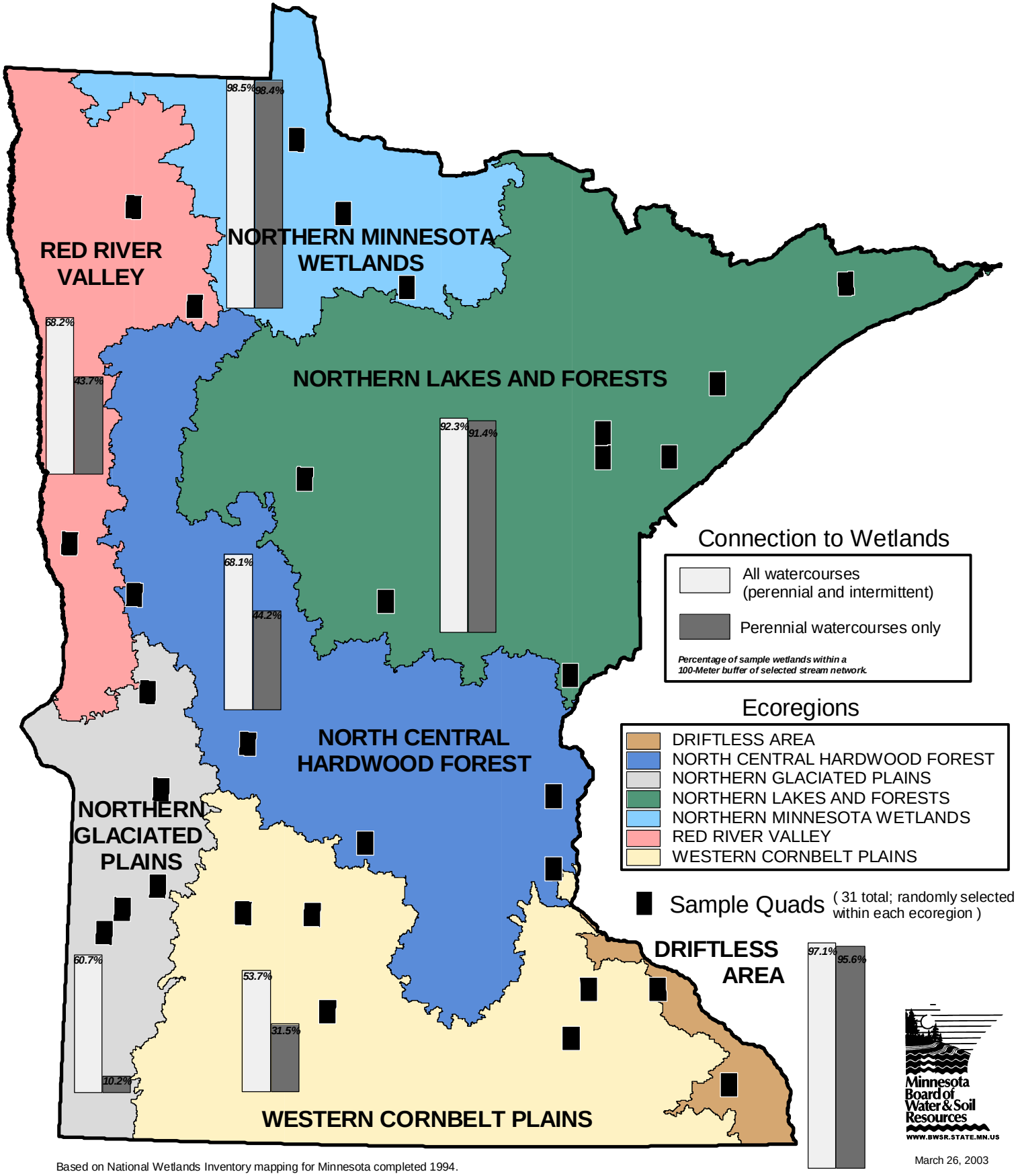
Figure 27.

Preliminary assessment of the percentage of Minnesota wetland area retaining federal jurisdiction after SWANCC decision

within a **100-Meter** buffer to estimate adjacent connectivity to selected watercourses



Based on National Wetlands Inventory mapping for Minnesota completed 1994.

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CHAPTER VII: EMERGING ISSUES AND INITIATIVES

Part A: Minnesota Wetland Mitigation Guidelines and Interagency Mitigation MOU

The Interagency Wetland Group (IWG) has been working over the past year to develop a set of wetland mitigation guidelines aimed at reconciling the sometimes conflicting or inconsistent requirements of the various state and federal wetland regulatory programs.[1] To the extent possible, the objective is to develop a uniform set of mitigation provisions that meets all regulatory program requirements.

Most of the discussion centers on the mitigation provisions of the WCA and the Clean Water Act Section 404 program, including such aspects as mitigation ratios, the location of mitigation relative to the impact, and the types of activities eligible to receive mitigation credit. The task of reconciling these programs is complicated by several factors:

- WCA mitigation provisions reflect a Minnesota perspective, honed through years of often contentious legislation and rulemaking, while the Section 404 program reflects national priorities and experience;
- WCA mitigation provisions are largely embodied in statute and rule, which are not easily revised. To date, Section 404 mitigation requirements have been largely based on formal and informal agency policy. This provides the St. Paul District some flexibility in local application, but they are not free to deviate too substantially from national directives. Very recently, the Corps of Engineers and the U.S. EPA announced that they intend to promulgate formal Section 404 mitigation regulations, which could make it more difficult to align the respective programs.

The agencies have made considerable progress toward identifying a set of commonly accepted mitigation provisions, at least in concept. Among the conceptually agreed-upon items:

- Mitigation ratios that are generally consistent and that recognize the variable wetland distribution in the state;
- Details regarding the use of wetland preservation as a mitigation option in rare circumstances;
- A wetland classification system based primarily on wetland plant communities for use in evaluating “in-kind” vs. “out-of-kind” replacement;
- Limitations on the use of primary cell storm water ponds as wetland mitigation

[1] Primarily – Federal Clean Water Act Section 404 (U.S. Army Corps of Engineers, St. Paul District); Minnesota Wetland Conservation Act (Minnesota Board of Water and Soil Resources); Public Waters Permit Program (Minnesota Department of Natural Resources) and Water Quality Certification and Stormwater Permits (Minnesota Pollution Control Agency).

- Use of the BWSR local road replacement program for mitigation of wetland impacts due to local transportation projects.

Remaining areas of disagreement include:

- Consideration of county boundaries in the analysis of wetland replacement relative to the impact, i.e., the Corps proposes to recognize only watershed boundaries, while the WCA recognizes both county and watershed boundaries.
- Wetland bank service areas proposed by the Corps are inconsistent with WCA provisions for the location of wetland replacement
- How much credit is allowed for establishing or maintaining upland buffers around replacement wetlands

Discussion of these issues is continuing through the IWG, along with direct negotiations between BWSR and the St. Paul District. Eventually, the agencies will open the draft mitigation guidelines for public comment, most likely through the Corps' public notice process. Fully implementing the conceptual agreements made so far will require changes in the way that both programs are currently implemented. Statute and rule amendments to the WCA would be required, which would entail additional opportunities for public input.

The final mitigation guidelines will describe the common mitigation requirements between the various regulatory programs and identify where differences remain. The goal is to identify for permit applicants the "bottom line" mitigation requirements that, if followed, will help ensure that mitigation proposals are approved in a timely manner by all of the applicable regulatory agencies.[2] The final guidelines would be made available to the public in a published and on-line document. Implementation of the guidelines by the agencies would be formalized in a Memorandum of Understanding similar to the MOU on Regulatory Simplification and Banking signed by all of the agencies in 1994. While the MOU cannot obligate the agencies to administer their programs in a manner that conflicts with their respective statutes, rules and regulations, it can serve as a vehicle to facilitate interagency cooperation in reviewing permit applications, leading to more efficient use of agency staff, more timely processing for permit applicants, and greater effectiveness in achieving program goals for wetland protection.

[2] It's important to note that the Mitigation Guidelines pertain only to the compensatory mitigation requirement of the various regulations, which is the last step of the mitigation sequence of avoid, minimize and replace. The Guidelines only come into play *after* the regulators have determined that an activity can be authorized and issuance of a permit is likely if appropriate compensatory mitigation will occur.

B. Wetland Quality

As noted previously in this report, state wetland policy calls for achieving no net loss and an increase in the quantity, quality, and biological diversity of the state's wetlands. As steady progress is made toward stemming the loss and perhaps even increasing wetland acreage, the issue of wetland quality is gaining increased attention. A number of wetland benefits, particularly fish and wildlife habitat and recreational opportunities, are dependent on maintaining diverse, high quality wetland ecosystems. Following are several emerging issues related to wetland quality.

Upland buffers. Numerous studies have demonstrated the importance of establishing and maintaining undisturbed areas of native vegetation surrounding wetlands. These buffer areas filter out sediment and pollutants that otherwise degrade the wetlands and are also critical for many wetland wildlife species, including waterfowl, reptiles, and amphibians. State and federal wetland regulatory programs and incentive-based conservation programs recognize the importance of upland buffers. The Minnesota Wetland Conservation Act and the Federal Clean Water Act Section 404 Program both allow upland buffers established around mitigation wetlands to count toward a project's overall mitigation requirement. Conservation programs such as the Conservation Reserve Program, the Wetland Reserve Program, and others have all been very successful in establishing upland habitats associated with wetlands (see Table 1). These efforts are critical, particularly in the Prairie Pothole Region of the state, where wetland-grassland complexes are essential for successful waterfowl production. The Minnesota Department of Natural Resources, Minnesota Board of Water and Soil Resources, and the Minnesota Department of Agriculture are currently working with federal agencies and non-governmental conservation organizations on a "Working Lands Initiative" to promote interagency cooperation toward more and better-targeted wetland/grassland restorations in the Prairie Pothole Region.

Invasive/Non-native Plant Species. Some wetland managers consider the invasion of wetlands by invasive/non-native plant species to be the greatest threat to maintaining wetland quality and biological diversity. Species such as reed canary grass (*Phalaris arundinacea*), hybrid cattail (*Typha x glauca*), purple loosestrife (*Lythrum salicaria*), garlic mustard (*Alliaria petiolata*), and buckthorns (*Rhamnus cathartica* and *R. frangula*) can displace nearly all native species in a wetland, forming monocultures with low habitat value and diversity. Most of these species spread readily and are extremely difficult to control. Lots of time and money are spent on controlling invasive species in restored wetlands with little guarantee of long-term success. Biological control using insects has been demonstrated to be effective against purple loosestrife, and the Minnesota Department of Natural Resources, Ecological Services Division is currently working on developing biological controls for

buckthorn and garlic mustard. Reed canary grass and hybrid cattail, however, remain as serious threats, with no imminent solutions.

Fish in Wetlands. Some wetlands provide habitat for fish, year-round for some species and as spawning/nursery habitat for others. In Minnesota, thousands of wetlands are used commercially for raising fish, mostly white suckers for baitfish and walleye for stocking. Naturally occurring populations of fathead minnows are harvested as baitfish from many more wetlands. The growing use of wetlands for raising fish and the manipulation of wetlands to sustain introduced and naturally occurring fish populations has raised questions about the impacts on other wetland-dependent species, particularly waterfowl. Studies have demonstrated that fathead minnows compete for the same invertebrate food sources as waterfowl and can change the trophic status of wetlands from a clear-water, rooted plant-based system, to a turbid, algae-dominated system. While fathead minnows and other fish naturally occur in many wetlands, they frequently suffer winterkill under natural conditions, keeping their populations in check. There is concern that fish populations in Minnesota wetlands are unnaturally high due to introduction of white suckers and walleye, the artificial aeration used to maintain these introduced populations, and the increased connectivity of wetlands due to ditching and tiling that allows fish to access formerly fishless basins. The DNR is conducting research on these issues and is starting a task force to develop ecological criteria to be considered when licensing wetlands for raising and harvesting fish.

Hydrologic Modification and Sedimentation. Wetland quality can be adversely affected by artificial modification of the hydrologic regime (depth, duration, and timing of inundation) and by an influx of sediment. The natural hydrologic regime of many wetlands in Minnesota has been modified by partial drainage (ditching and tiling) and by receiving too much water through tile and stormwater outlets. Such changes can alter the wetland plant community and degrade habitat value. In some cases, unnaturally high water level fluctuations can destroy nests of over-water nesting bird species. Sediment eroded from surrounding uplands or delivered to wetlands via stormwater conduits can also have significant adverse effects. A recent study of prairie pothole wetlands showed that 0.5 cm of sediment caused a 91.7 percent reduction in seedling emergence and a 99.7 percent reduction in emergence of invertebrates. Local governments, resource agencies, regulators, and land managers are beginning to put greater emphasis on maintaining natural wetland hydrologic regimes and protecting high quality wetlands from sedimentation.

Part C: Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy

Minnesota's no-net-loss policy for wetlands has been an effective rallying point for wetland protection and conservation. However, after more than a decade of a comprehensive wetland regulatory program in Minnesota, we are still unable to fully and accurately ascertain whether the wetland no-net-loss

directive has in fact been met, much less whether the state is making significant strides toward increasing the quantity, quality, and biological diversity of Minnesota's wetlands by restoring or enhancing diminished or drained wetlands in accordance with Minnesota Statutes 103A.201

In 2003, the Board of Water and Soil Resources, Department of Natural Resources, and the Minnesota Pollution Control Agency requested funding from the U.S. Environmental Protection Agency to develop a comprehensive strategy that if implemented would provide an ongoing assessment of the status and trends in the quantity and quality of Minnesota's wetlands.

The EPA funded the proposal, and work to develop the comprehensive strategy began in November 2004. Staffing for the Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy (CWAMMS) has been provided by the MPCA and the DNR. Strategy direction and recommendations have been provided by an interagency steering committee comprised of technical staff from the BWSR, DNR, MPCA, the Minnesota Department of Agriculture, and the U.S. Fish and Wildlife Service. Additional technical input is being provided by a diverse group of experts in wetlands, remote sensing, and other appropriate fields. Managers from the aforementioned agencies provide general oversight of the development effort. The strategy is scheduled to be completed by the end of 2005.

Goal of the Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy

- Overall goal: Develop a broadly understood, open, scientifically sound strategy for ongoing monitoring and assessment of the statewide status and trends in wetland quantity and quality.

Objectives

1. Estimate with a high degree (90 percent) of confidence the status, changes, and trends in Minnesota wetlands quantity and quality by National Wetland Inventory wetland class. The status, changes, and trends of wetlands will be assessed within four geographic regions, which are approximated by the province level of the Ecological Classification System (ECS). These four regions are the: Prairie Parkland, Eastern Broadleaf Forest, the Laurentian Mixed Forest, and the Paleozoic Plateau. An additional "demographic" sampling strata is proposed to be urbanizing and developing urban areas of the state where it is anticipated the greatest wetland changes may be occurring.

2. Relate changes or trends in wetland quantity and quality to specific influences or causes of wetland resource change.

3. Provide reports of status and trends in wetland quantity and quality within a different geographic region every two years and a cumulative statewide report at least every 10 years. The reports will provide a sound basis for future state wetland policy and management decisions.

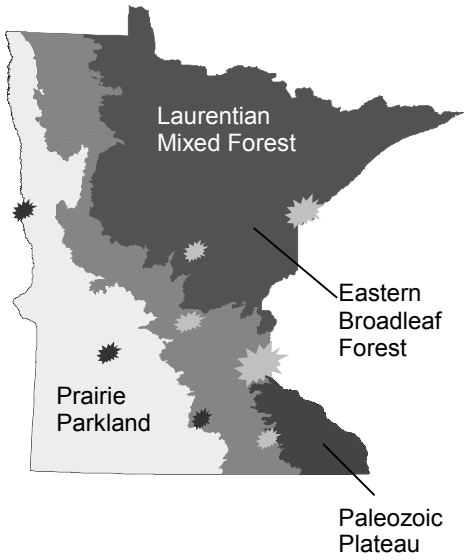
4. Contribute to the long-term understanding of Minnesota's wetland: health (functions), distribution, structure, and processes.

5. Integrate the monitoring and assessment of Minnesota's wetland resource with wetland regulatory and non-regulatory programs to provide measures of program effectiveness and outcomes.

Wetland Quantity

Addressing the question of no net loss of wetlands is far more complex than simply counting acres proposed to be filled/drained and replaced under regulatory programs and acres being restored under various conservation-based and voluntary wetland restoration programs. Many factors should be considered. Wet and dry cycles have a significant influence on wetland extent. Success of mitigation and wetland restoration projects is highly variable. Changes to project impacts occurring following plan reviews, temporary projects, and unreported activities can all affect the wetland accounting system. Declining budgets limit the ability of local government and state agencies to conduct on-site reviews to actively track actual gains and losses. Wetland quality evaluations have barely evolved past methods development.

Figure 28 Proposed geographic and demographic strata for random sample survey



The strategy for assessing status and trends in the quantity of wetlands is expected to comprise three distinct components:

1. A random sample survey using methods developed by the U.S. Fish and Wildlife Service for their national wetland status and trends program. In this approach all wetlands occurring within several hundred randomly selected 4 mi^2 plots would be located and mapped using color infrared photographs. Sampling would be stratified

within four geographic regions of Minnesota and include a demographic sampling strata of major urbanizing areas (see figure 28).

2. Updating Minnesota's National Wetland Inventory (NWI): the first generation NWI is based on remote imagery that is roughly 25 years old. Statewide NWI updates should be undertaken on a regular basis, ideally every 10 years. New methodologies for updating the NWI using modern remote sensing technologies are under development and being tested in several pilot project areas.
3. Developing and employing an internet-based, geographically-referenced database for tracking wetland permits and restoration activities. Tracking wetland regulatory actions will be enhanced by incorporating an electronic permitting function into the system. Tracking wetland activities in terms of their geographic location, as well as the amount and type of wetland involved and the responsible parties, will enable projects and activities to be tracked more accurately and will assist in evaluating the effectiveness of the various programs.

Wetland Quality

Compared to wetland quantity, far less is known about wetland quality trends in Minnesota, other than a general understanding that there are many anthropogenic stressors that are adversely affecting the quality of wetlands. Assessing the quality of wetlands is challenging and currently no clear statewide assessment approach exists for wetland quality or condition.

The Environmental Protection Agency recommends states develop wetland quality assessment techniques at three scales or intensity levels. Level I methods employ landscape scale monitoring and assessment methods using remote sensing techniques and geographic information systems. Level II monitoring methods assess wetland quality using field-based rapid assessment methods, often utilizing professional judgment and observation. Level III assessment methods encompass intensive field sampling approaches, which require data processing beyond field observations. The CWAMMS steering committee is following this recommendation and proposing an integrated three level approach to assessing wetland quality.

For landscape scale, level I assessments, two primary approaches are being considered and tested. The first would use statewide land-use data. A mathematical constant, calculated for each discrete land-use factor based on the amount of energy required to develop and maintain that factor, would be multiplied against the extent of each land-use factor associated with wetlands targeted for assessment. This GIS intensive approach has been effectively used in Florida to assess the quality of surface waters. A second landscape level assessment approach undergoing consideration and being tested would use multi-spectral remote sensing imagery to estimate wetland plant community richness and/or diversity and correlate this with field-based measures. The initial development phase

for this work is underway in cooperation with the University of Minnesota Remote Sensing Laboratory using high resolution hyperspectral airborne imagery. Following the development phase, it is hoped that implementation can be done using cost effective satellite imagery. Large-scale image processing requirements may be the challenging issue to overcome, however this approach would benefit greatly from an updated statewide NWI update.

For Level II rapid wetland assessment methods the Minnesota (wetland) Routine Assessment Method (MnRAM) shows great potential. Many local governments and the consulting community are using the MnRAM to make functional assessments of wetlands for regulatory and non-regulatory applications. Large-scale wetland assessments using the MnRAM could readily be used as part of a targeted or random survey sample design.

Level III assessment methods provide potentially the most accurate assessment of wetland quality. Because of the time required to sample individual wetlands, the strategy needs to include an appropriate design to utilize best the available level III resources. A two-phased random sample survey is the mostly likely design. In this approach, individual wetlands identified within randomly selected primary sample units (plots referenced above associated with assessing changes in wetland quantity) would be randomly selected for field assessments. Field assessment methods could be the Index of Biological Integrity (IBI) for depressional wetlands developed by the MPCA, the Minnesota Routine (wetland) Assessment Method (MnRAM), or the Floristic Quality Assessment which is being developed by the MPCA.

Several pilot projects are underway to test these different approaches. It is not yet known how these indicators can best be integrated with one another, but a lot has been learned so far and additional insights are expected to be gained before the CWAMMS is finalized.

It is expected that regional reports of wetland quantity and quality will be released every two years with complete integrated statewide reports on wetland quantity and quality available every 10 years. Data and analysis resulting from implementation of the monitoring strategy will provide improved evaluations of the effectiveness of wetland protection and conservation programs within the state. Long-term trend data will be important in understanding the affect on water quality, wildlife habitat conditions, and many other wetland related concerns facing the state's conservation and environmental communities.

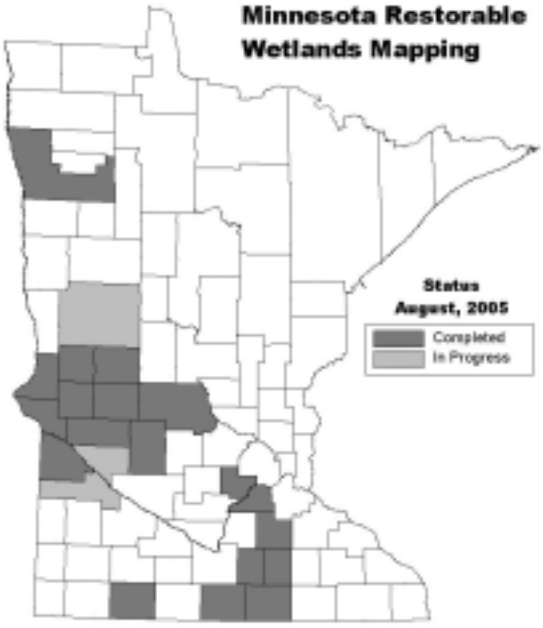
The DNR's budget, starting in fiscal year 2006, contains an agency appropriation for $250,000 per year for implementing the monitoring and assessment strategy. In addition, the U.S. EPA has awarded

Minnesota a three-year, $900,000 grant to begin implementation of the strategy. Initial implementation is scheduled to begin during 2006.

Part D: Restorable Wetlands Initiative

In October 2000, a Restorable Wetlands Working Group formed to begin mapping all of the restorable wetlands in the glaciated tallgrass Prairie Pothole Region of Minnesota and Iowa. Today, fewer than 10 percent of the original wetlands — once of unparalleled importance to continental waterbird populations — are left in existence. Fortunately, wetlands once drained for agriculture may be restored to many of their historic functions. Restoration of multiple wetland functions is of utmost effectiveness when focused at priority restoration landscapes, therefore data on the historic distribution of wetlands is an integral part of developing strategic regional habitat restoration plans.

Figure 29



Opportunistic wetland restorations often fail to attain our expectations for wetland function. Nevertheless, between $70 million to $100 million are spent annually in Minnesota for wetland restoration. A strategic plan for wetland restoration can make these expenditures more effective; however, a strategic wetland restoration plan requires a priori information on the distribution and extent of restorable wetlands. The collective goal of the Restorable Wetlands Working Group is the eventual development of a set of multi-agency decision support tools that collectively comprise a comprehensive environmental management plan for wetlands — all based on the same base data layers and developed in joint consultation. An effort is underway to delineate restorable wetlands in all intensively farmed areas of Minnesota and Iowa.

A pilot project determined the best technique to map drained wetlands in agricultural landscapes was photo interpretation. This pilot project evaluated the accuracy of three potential delineation techniques: digital hydric soils databases, digital elevation models, and manual stereoscopic photo interpretation on high-altitude color infrared aerial photographs. The project covered nearly 4,000 square miles of different landforms and wetland characteristics. After mapping was completed, some

1,500 drained wetlands were observed in the field to assess the accuracy of each technique. Only photo interpretation provided reliable results.

One area that fell into the pilot study was the Okabena quadrangle in east-central Jackson County in Minnesota. Okabena vividly illustrates the potential of humans to alter the natural landscape. While Okabena historically encompassed more than 8,940 acres of depressional wetland — 27 percent of the total area of Okabena — after nearly 100 years of agricultural drainage only 1,280 acres of those original wetlands remain, representing an 86 percent reduction. When empirical models used to estimate duck pairs on individual wetlands are applied to the change from historic to current wetland habitat within Okabena, they estimate a 92 percent reduction in the habitat potential for common dabbling duck species.

The Okabena quadrangle's wetland density once exceeded that of most of the remaining U.S. Prairie Pothole Region. Without strong incentives for wetland conservation and effective methods to delineate high-priority landscapes for restoration, the Okabena quadrangle foretells one possible future for much of the mixed-grass Prairie Pothole Region farther west.

The Restorable Wetlands Working Group includes: Minnesota Board of Water and Soil Resources; Ducks Unlimited, Inc.; Red River Basin Institute; Minnesota Pollution Control Agency; Pheasants Forever; U.S. Fish and Wildlife Service; Minnesota Department of Transportation; The Nature Conservancy; Greenway on the Red; The North American Waterfowl Management Plan; Prairie Pothole Joint Venture: Upper Mississippi River and Great Lakes Region Joint Venture; Natural Resources Conservation Service; Minnesota Department of Natural Resources; and U.S. Army Corp of Engineers.

CHAPTER VIII: APPENDIX

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Appendix B — Minnesota Counties and 81 Major Watersheds (map and index)

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Appendix F-2 — Wetland Banking in Minnesota (fact sheet)

Appendix G — RIM Reserve (fact sheet)

Appendix H-1 — Wetland Data from Anderson and Craig (list)

Appendix H-2 — Wetland Comparison, with percent wet, deep, upland, and total area (list)

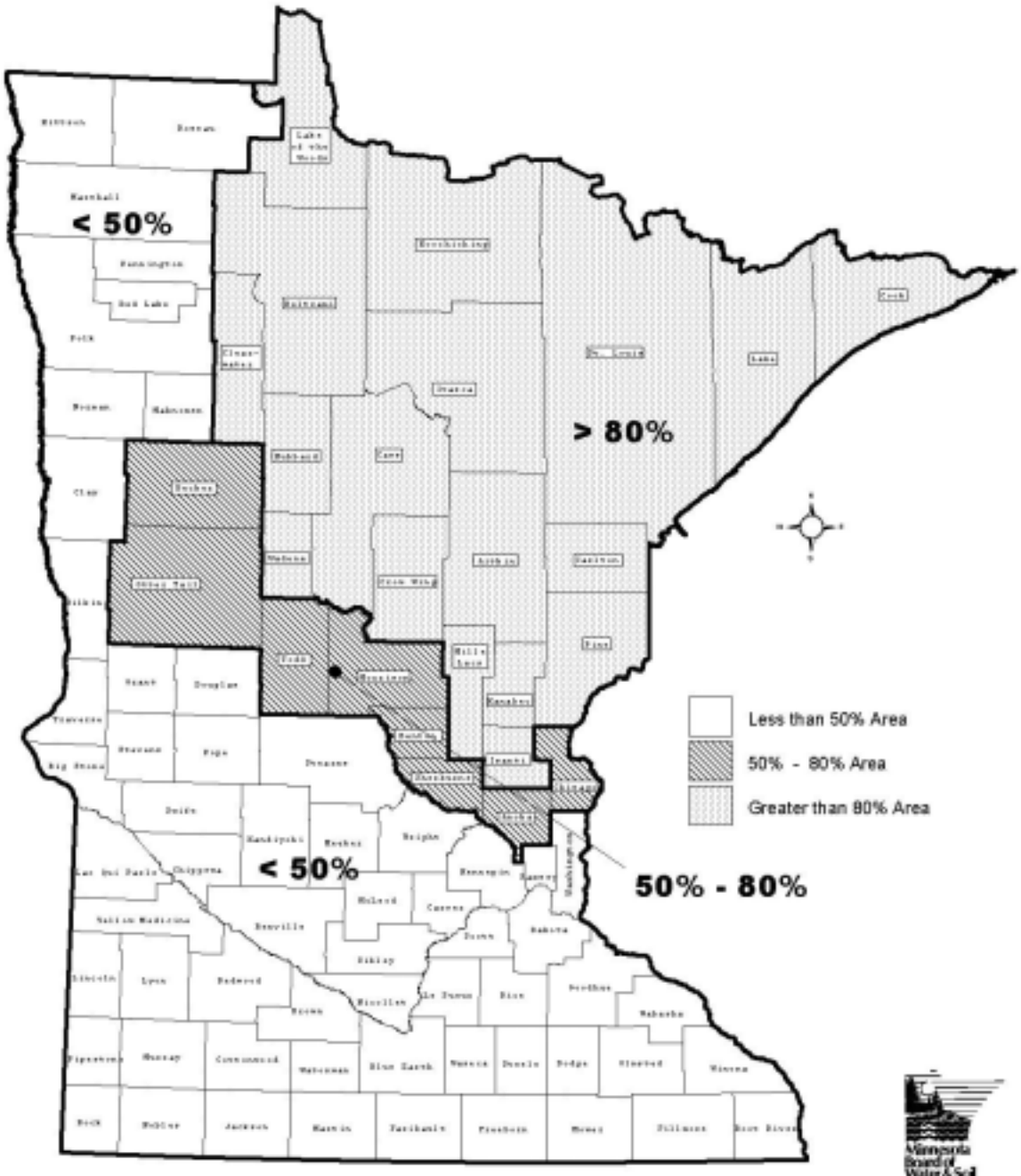
Appendix H-3 — Wetland Comparison, including Circular 39, by County (list)

Appendix I — Summary of Minnesota Wetland Activity 2001-2003

Appendix J — Wetland Restorations on Private Farmland

Appendix K — Wetland-related Web Sites

Minnesota Wetland Conservation Act
Pre - Statehood Wetland Areas



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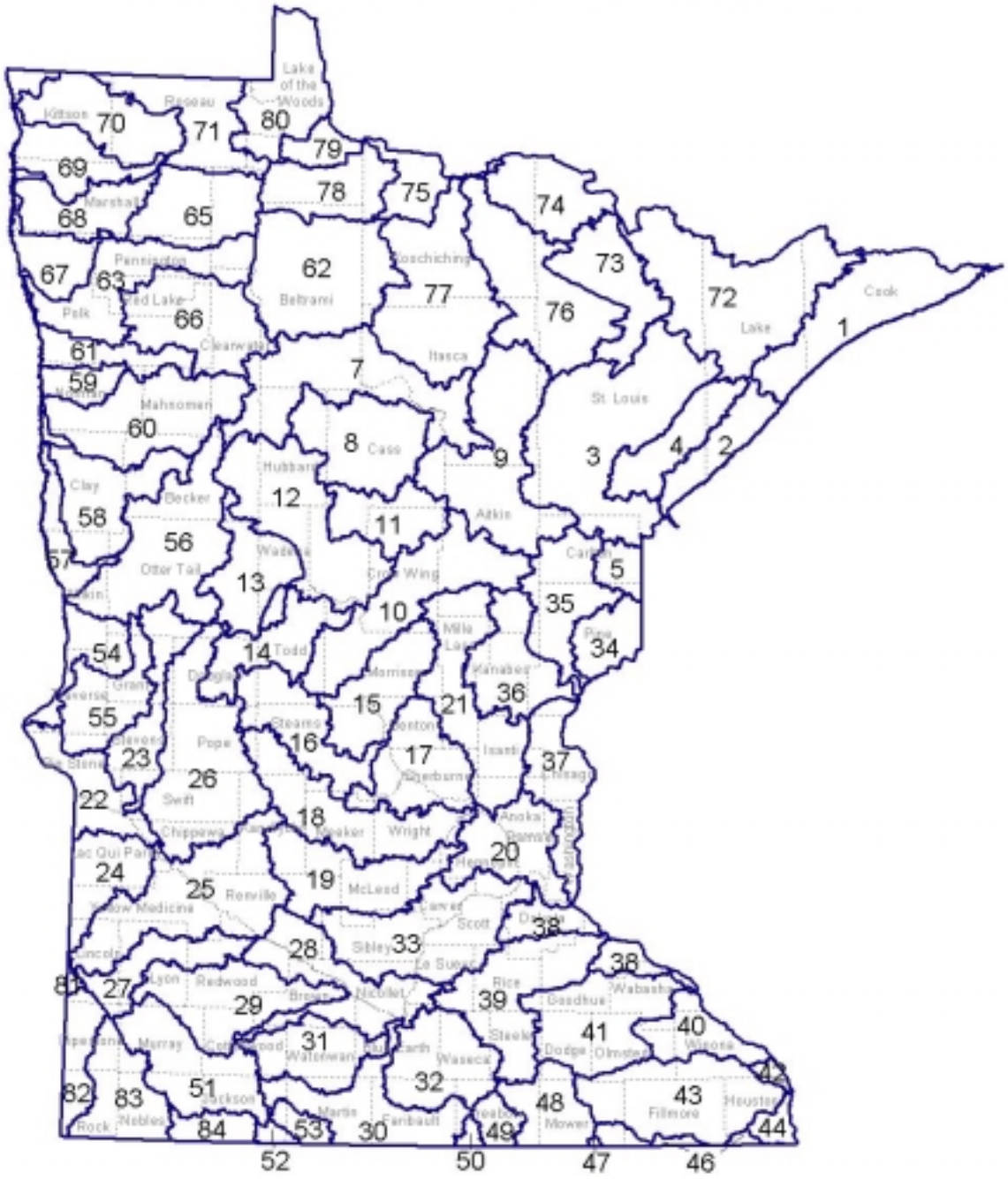
Minnesota Counties and Watersheds



County Names and Index

Major Watersheds – Numbers

WCA Data Reported by Local Government Units: 2001, 2002, 2003

Appendix C

			# of Contacts that resulted in wetlands being:			Sum of Wetland Acres:										# C&D Orders issued				
Reporting Year	County	Landowner Contacts	Avoided	Minimized	# of Contacts resulting in A/M	Acres Avoid	Acres Minimized	Total acres replaced	Acres drain/fill	% Replaced**	1:1 County?	Exempt Applctns Approved^	# Acres Exempt^^	# No Loss Determinations	# TEP Req'd	by DNR	by LGU	# Restoration orders	Primary Wetland Type Impacted	# WCA Projects
2001	Aitkin	230	219	11	230	100	4.00	2.85	2.85	100%	Y	2	1.30	1	14	9		8	6	8
2002	Aitkin	1220	1085	56	1141	206	10.00	0.94	0.94	100%	Y	1	0.46	0	14		9	7	6	5
2003	Aitkin	945	400	195	595	350	8	3.00	2	150%	Y	14	1.6	0	25	10	10	10	3	17
2001	Anoka	762	520	90	610	269.5	38.33	34.68	23.93	145%	N	19	1.14	0	10	23		10	2	163
2002	Anoka	817	339	215	554	95.4	72.59	43.21	21.49	201%	N	28	3.08	1	17	15		3		34
2003	Anoka	793	749	6	755	13	12.41	75.75	30.51	248%	N	22	1.94	2	19	4	0	3	3	191
2001	Becker	173	40	15	55	13	1.66	0.52	0.26	200%	N	15	1.40	12	2	3		2	3	15
2002	Becker	165	12	26	38	9.1	15.00	1.42	0.71	200%	N	18	0.62	18	7	8		2	3	26
2003	Becker	185	34	27	61	16.6	17	2.31	1.11	208%	N	16	2.5	4	12	4	0	0	4	27
2001	Beltrami	550	200	110	310	20	17.00	1.31	1.44	91%	Y	28	0.31	2	22	16		12	2	74
2002	Beltrami	550	180	120	300	22	20.00	36.70	36.70	100%	Y	35	0.30	5	25		4	7	2	77
2003	Beltrami	550	200	150	350	31	16	4.47	3.15	142%	Y	25	0.12	1	20	6	0	1	3	86
2001	Benton	72	4	4	8	0.55	0.08	9.60	4.80	200%	N	23	6.23	1	11	4		0	2	32
2002	Benton	64	13	0	13	0.23	0.00	7.07	7.20	98%	N	16	4.41	2	22	7	0	5	6	22
2003	Benton	403	4	1	5	2.95	0.02	0.60	2.56	23%	N	19	2.26	1	7	2	0	1	3	156
2001	Big Stone	20	1	0	1	0.5	0.00		0.00		N			3	2	0		0	2	1
2002	Big Stone	17	5	0	5	1.6	0.00		0.00		N			1	1				3	0
2003	Big Stone	13	7	2	9	1.65	0.25		0		N	1	0.01	0	0	1	0	0	5	6
2001	Blue Earth	77	22	32	54	5	10.00	13.05	4.77	274%	N	11	9.35	1	13	0		9	1	33
2002	Blue Earth	1	1		1	0.4					N									1
2003	Blue Earth	72	28	23	51	2.36	5.75	10.67	5.14	208%	N	9	1.96	1	26	0	0	1	1	29
2001	Brown	9	2	0	2	1	0.00		0.00		N	1	0.00	3					3	1
2002	Brown	9	2		2	1					N	1	0.00	3					3	1
2003	Brown				0						N									
2001	Carlton	100	85	15	100	2	2.00	8.85	8.13	109%	Y	13	1.14	0	5	5		2	6	20
2002	Carlton	100	50	22	72	5	2.00	10.57	9.94	106%	Y	15	1.73	1	8	13		12	7	29
2003	Carlton	0	80	25	105	10	5	0.09	8.6	1%	Y	13	2.11	0	2	12	0	11	7	22
2001	Carver	397	342	59	401	234	15.87	17.23	13.79	125%	N	9	1.64	6	24	4	0	4	3	38
2002	Carver	357	245	49	294	53.7	13.67	25.25	15.10	167%	N	13	5.85	13	18	3		2	2	63
2003	Carver	378	236	68	304	73.5	14.5	3.00	1.5	200%	N	9	2.8	15	10	5	0	2	3	118
2001	Cass	213	172	11	183	35	3.20	0.95	2.75	35%	Y	25	1.80	1	6	5	0	5	6	31
2002	Cass	213	172	11	183	35	3.20	0.95	0.36	264%	Y	25	1.80	1	6		5	5	6	213
2003	Cass	271	174	29	203	21.3	14		3.4	0%	Y	13	2.33	0	4	6	0	3	4	28
2001	Chippewa	8	5	1	6	2.6	0.04		0.00		N	1	0.04	0	1	0		0	3	3
2002	Chippewa	8	5	2	7	2	0.20	4.00	3.80	105%	N	1	2.00		2			1	3	3
2003	Chippewa	59	5	0	5	10	0		0		N	0	0	0	0	1	0	1	4	1
2001	Chisago	105	28	5	33	242.1	6.70	15.67	3.12	502%	N	18	2.43	15	9	12		11	2	86
2002	Chisago	125	35	7	42	305.06	4.24	10.29	5.10	202%	N	16	1.27	13	12		4	3	2	124
2003	Chisago	669	10	9	19	7.53	2.5	26.92	9.9	272%	N	23	3.04	35	8	6	0	6	3	52
2001	Clay	49	6	5	11	16.5	0.50	0.70	0.32	219%	N	2	0.05		9	0		1	3	14
2002	Clay	67	13	5	18	42.6	0.97	1.68	0.57	295%	N		0.95		12				3	5
2003	Clay	78	5	2	7	0.75	0.1	0.22	0.16	138%	N	4	0.26	2	3	1	0	0	4	12
2001	Clearwater	86	1	1	2		23.55	11.50	11.50	100%	Y	26	2.45	11	3	13		1	2	20
2002	Clearwater	87	11	6	17	2.23	0.54	0.60	0.60	100%	Y	14	5.04	4	13			3	6	11
2003	Clearwater	68	18	16	34	8	3.92	6.96	6.96	100%	Y	15	6.96	6	8	0	0	1	3	17
2001	Cook	7	3	2	5	3	2.00		0.13	0%	Y	1	0.80	0	0	0		0	5	4
2002	Cook	18	6	9	15		4.00				Y	3	0.50		2	3	1		6	9
2003	Cook	33	8	11	19	15	1		0		Y	1	0.2	0	2	2	1	2	7	12
2001	Cottonwood	5	1	0	1	0.9	0.00		0.00		N	0	0.00	0	0	1		0	1	0
2002	Cottonwood	7	1		1	0.8					N								1	0
2003	Cottonwood	8	5	0	5	2	0	1.30	0.97	134%	N	0	0	0	3	0	0	0	4	3
2001	Crow Wing	819	796	6	802	27	0.51	0.56	1.05	53%	Y	13	0.54	3	16	3	0	1	6	19
2002	Crow Wing	1210	1187	6	1193	27	0.51	1.05	1.05	100%	Y	10	0.54	3	16		3	1	6	16
2003	Crow Wing	1033	1012	8	1020	11.5	19.93	10.30	10.17	101%	Y	10	0.91	4	16	2	3	6	4	16
2001	Dakota	200	50	50	100	10	10.00	10.64	5.32	200%	n	17	0.75	5	10	5		2	2	30
2002	Dakota	200	25	25	50	5	5.00	23.00	13.10	176%	N	12	1.50	3	10	3	0	3	2	25
2003	Dakota	90	10	20	30	2	5	19.00	18.42	103%	N	23	9.3	6	13	1	0	0	3	37
2001	Dodge	11	5	0	5	1	0.00		0.00		3	0	0.00	0	4	0		0	2	2
2002	Dodge	18	2		2	1			0.00		N	1	0.02	1	4	3	0	0	2	2
2003	Dodge	25	3	1	4	22	0.49	0.96	1.48	65%	N	1	0.04	4	18	4	0	4	3	5

2001	Douglas	284	207	38	245	37.2	23.20	4.56	2.06	221%	N	0	0.68	137	7	2		2	2	52
2002	Douglas	328	306	22	328	44.7	17.30	0.12	0.06	200%	N	0	0.43	209	6			2	2	90
2003	Douglas	362	344	18	362	26.3	9.6	3.90	1.9	205%	N	0	1.2	186	11	0	0	1	3	333
2001	Faribault	25	0	0	0	0	0.00		0.00		N	0	0.00	4						0
2002	Faribault	25			0						N			4						0
2003	Faribault	15	0	3	3	0	1.5		0		N	2	15	1	0	0	0	0	1	3
2001	Fillmore	24	6	1	7	17			0.00		N	8	33.00	1	1	1		0	2	7
2002	Fillmore	31	16	2	18	14	1.00		0.00		N	4	7.00	1	1	0	0	0	2	31
2003	Fillmore/Root Rive	31	7	2	9	7	0.1	0.00	0		N	8	5.2	3	3	3	2	3	3	14
2001	Freeborn	12	7	11	18	3	1.20		0.00		N	3	0.50	2	3	0		0	4	6
2002	Freeborn	14	11	3	14	2	1.60		0.00		N	2	0.50	0	2	2	0	0	2	1
2003	Freeborn	21	6	6	12	32	26	0.00	0		N	2	5	1	3	1	0	1	3	3
2001	Goodhue	130	65	25	90	80	8.50	8.50	3.00	283%	N	25	3.00	40	15	3		2	2	70
2002	Goodhue	227	18	6	24	25.5					N	9	1.10	18	10	1	0	1	2	47
2003	Goodhue	169	21	5	26	17.4	2.5	0.68	1.39	49%	N	11	0.34	20	14	4	4	4	3	13
2001	Grant	25	25	0	25	100	0.00		0.00		N	0	0.00	0	10	0		1	3	5
2002	Grant	19	10	1	11	2.6	0.01				N		0.01		6	1		1	3	5
2003	Grant	181	173	1	174	50	5	4.00	2	200%	N	0	0	0	3	0	0	1	1	2
2001	Hennepin	220	45	34	79	10	8.00	22.01	7.42	297%	N	14	2.30	6	14	7	0	6	2	92
2002	Hennepin	185	45	25	70	15	9.00	2.00	2.00	100%	N	5	6.20	3	17	0	7	3	2	80
2003	Hennepin	1568	133	54	187	32.96	9.25	10.02	8.47	118%	N	34	23.89	29	33	4	7	8	3	56
2001	Houston	25	6	3	9	2	1.00	0.02	0.01	200%	N	4	1.00	2	4	0		1	1	6
2002	Houston	25	0	1	1	0	1.00		0.00		N	5	3.30	0	4	0	0	1	2	5
2003	Houston				0						N									
2001	Hubbard	122	12	2	14	22	0.80	0.69	0.69	100%	Y	26	1.76	8	75	10		10	2	33
2002	Hubbard	100	16	7	23	4.41	0.51	0.21	0.12	175%	Y	26	2.02	5	14	15	0	14	2	30
2003	Hubbard	114	16	4	20	0.32	3.5	1.34	1.27	106%	Y	24	1.08	12	6	7	0	7	7	28
2001	Isanti	48	5	2	7	2	0.75	0.91	0.75	121%	Y	13	5.38	2	0	0		0	1	15
2002	Isanti	56	7	2	9	4		4.00	2.00	200%	Y	30	28.00	2					1	30
2001	Itasca				0						Y									0
2002	Itasca	78	10	21	31	24.89	1.78	2.26	2.26	100%	Y	22	5.58	12	11		5	5	7	78
2003	Itasca	203	34	44	78	7.8	7.4	7.88	7.13	111%	Y	74	6.8	11	2	11	7	14	8	90
2001	Jackson^	40	3	0	3	15	0.00		0.00		N	1	0.00	0	3	0	0	0	2	0
2002	Jackson	45	6		6	2.5					N			2	2				2	0
2003	Jackson	20	20	0	20	16.1	0		0		N	0	0	2	2	0	0	0		0
2001	Kanabec	21	3	1	4	10	3.00		0.00		Y	18	14.00	4	1	1		0	2	18
2002	Kanabec	36	1	1	2	0.75	3.50				Y	18	10.00	4	1	1			2	18
2001	Kandiyohi	169	80	24	104	220	15.00	8.40	1.00	840%	N	5	12.00	30	5	4	0	7	2	92
2002	Kandiyohi	169	48	19	67	177	9.00	1.00	4.00	25%	N	27	21.00	29	4	12	5	12	2	86
2003	Kandiyohi				0						N									
2001	Kittson	2	1		1	2.5					N	2	0.40	0	1	0		0	2	3
2002	Kittson	6	5	0	5	5	0.00		0.00		N	1	0.00	0						0
2003	Kittson	3	0	0	0	0	0		0		N	0	0	0	1	0	0	0	7	3
2001	Koochiching	275	50	25	75	4	5.00	9.00	9.00	100%	Y	17	3.00	4	1	0		0	6	32
2002	Koochiching	178	22	28	50	16	7.00	3.00	3.00	100%	Y	14	3.50		3	1	1	1	6	58
2003	Koochiching	144	25	11	36	9	3	14.66	14.66	100%	Y	2	0.4	2	2	0	0	1	7	144
2001	Lac Qui Parle	419	0	0	0	0	0.00	1.25	0.50	250%	N	1	2.00	0	1	0		0	1	419
2002	Lac Qui Parle	261	8	0	8	72.4	0.00				N				1				2	0
2001	Lake	32	11	21	32	0.5	0.20	0.17	0.16	106%	Y	5	1.70	0	3	2		1	6	6
2002	Lake	45	12	7	19	4.5	2.20	3.30	3.30	100%	Y	5	5.00	6	2		2		6	9
2003	Lake	38	9	5	14	3	1.5	2.20	2.2	100%	Y	4	2.2	1	2	0	0	0	7	5
2001	Lake o.t. Woods	45	10	5	15	4	1.00	0.34	0.57	60%	Y	3	0.36	1	1	3		8	6	5
2002	Lake o.t. Woods	449	21	11	32	112.8	23.90	0.30	0.17	176%	Y	1	0.05	0	4	4	0	5	7	2
2003	Lake o.t. Woods	80	16	7	23	36	1.2	0.94	0.75	125%	Y	6	0.83	0	2	2	0	0	8	7
2001	Le Sueur	125	3	1	4	13.8	0.50		0.55	0%	N	2	0.55	4	4	0	0	0	3	14
2002	Le Sueur	103	6	1	7	12.2	2.00				N			1	1	1	1	1	3	7
2003	Le Sueur	62	7	0	7	6.77	0		0		N	11	7.32	0	1	1	0	1	4	18
2001	Lincoln	318	30	0	30	58	0.00		0.00		N	1	0.10	1	2	5		3	3	9
2002	Lincoln	425	28		28	75		0.70	0.30	233%	N	1	0.01		2	1		1	2	5
2003	Lincoln	270	60	0	60	135	0		0		N	2	3.4	1	3	1	0	1	3	60
2001	Lyon	106	9	1	10	5	1.00	57.50	7.00	821%	N	12	0.00	5	9	0		1	2	8
2002	Lyon	110	10	2	12	25	3.00	1.50	0.50	300%	N	35		10	10				2	3
2003	Lyon	179	21	1	22	30	2	10.10	4.9	206%	N	0	0	13	6	0	0	1	1	5
2001	Mahnomen	5	2	0	2	3	0.00		0.00		N	0	0.00	0	3	0		0	3	2
2002	Mahnomen	10	4		4	1.25					N			1	2	0	0	0	2	1
2003	Mahnomen	8	0	0	0	0	0		0		N	0	0	0	2	3	0	1	4	2

2001	Marshall	293	22	0	22	19.8	0.00		0.00		N	0	0.00	0	1	3	0	2	7	5
2002	Marshall	175	6	2	8	4	0.44	0.00	0.00		N	2	0.35	1	7	2	0	0	2	10
2003	Marshall	249	26	0	26	36	0		0		N	1	0.5	0	2	2	0	1	3	4
2001	Martin	32	25	2	27	10	0.50		0.00		N	1	0.10	0	3	1		0	3	1
2002	Martin	9	3	1	4	8.4	1.00	0.84	0.14	600%	N	0	0.00	1	3	0	0	0	1	1
2003	Martin	0	0	0	0	0	0	0.00	0		N	0	0	0	0	0	0	0		0
2001	McLeod	147	12	10	22	6.3	2.50	0.80	0.40	200%	N	11	2.50	8	20	2		2	2	101
2002	McLeod	117	19	12	31	3.5	3.10	4.62	2.25	205%	N	7	2.00	6	17	0	0	0	2	22
2003	McLeod	131	20	25	45	8	4	0.86	0.42	205%	N	22	3.5	4	15	1	0	1	3	100
2001	Meeker	47	37	5	42	3.5	0.50		0.00		N	6	0.37	0	1	8		5	3	6
2002	Meeker	43	39	1	40	7.8	0.10	1.90	0.40	475%	N	2	0.40	0	5	6	0	1	3	2
2003	Meeker	35	26	5	31	6	4	2.50	1.5	167%	N	8	1.5	6	7	3	0	4	4	11
2001	Mille Lacs	205	70	56	126	35	20.00	1.00	0.50	200%	Y	27	15.00	3	11	10		7	2	29
2002	Mille Lacs	220	107	42	149	22	8.00	1.20	2.00	60%	Y	11	2.75	2	6	10		2	2	13
2003	Mille Lacs	223	10	21	31	3.1	5.2	0.40	6.4	6%	Y	25	3.8	4	9	4	0	3	3	29
2001	Morrision	185	34	50	84	27.87	12.30	0.93	1.86	50%	N	112	16.00	55	2	11		11	2	91
2002	Morrision	290	34	50	84	27.87	12.30	0.93	1.86	50%	N	112	16.00	55	2		11	11	2	91
2003	Morrison	195	42	5	47	130.02	3.4	22.24	24.3	92%	N	142	12.1	4	12	12	0	12	4	181
2001	Mower	1808	1200	8	1208	800	0.00		0.00		N	7	1.70	2		1	0	0	2	20
2002	Mower	397	8	3	11	0	1.07	16.58	7.10	234%	N	10	0.80	9	9	2		2	2	52
2003	Mower	225	11	4	15	20	2	5.00	2	250%	N	8	16	9	4	3	0	1	3	25
2001	Murray	13	2	0	2	6	0.00		0.00		N	1	2.00	1	2	1	0	1	2	19
2002	Murray	9			0						N	1	0.20		1				2	9
2003	Murray	12	1	0	1	1	0		0		N	0	0	0	0	0	0	0	3	0
2001	Nicollet	15	2	0	2	0.5	0.00		0.00		N	1	3.00	2	1	0		0	2	4
2002	Nicollet	28	5	1	6	24.5	1.70		0.00	#DIV/0!	N	1	5.20	1	3	1	0	1	2	9
2003	Nicollet	0	0	0	0	0	0		0		N	0	0	0	0	0	0	0		0
2001	Nobles	282	10	0	10	200	0.00		0.00		N	1	0.50	0	2	0		0	1	2
2002	Nobles	291	12		12	210	1.00	0.90	0.90	100%	N				2	2	3	3	1	2
2003	Nobles	350	15	4	19	35	11	0.94	0.47	200%	N	0	0	0	3	0	0	0	3	1
2001	Norman	178	178	0	178	30	0.00		0.00		N	0	0.00	0	2	0		0	1	178
2002	Norman	42	40	2	42	12.5	1.50	0.90	0.90	100%	N				5				2	42
2003	Norman	87	85	2	87	15	0.8		0		N	0	0	0	5	0	0	0	3	87
2001	Olmsted	116	21	10	31	10.5	0.50	7.10	4.50	158%	N	13	1.32	11	49	2	0	0	2	22
2002	Olmsted	116	21	10	31	10.5	0.5	7.10	4.5	158%	N	13	1.32	11	49	0	2	0	2	22
2003	Olmsted	84	22	10	32	5	3	43.29	25.16	172%	N	20	3.37	18	40	5	0	3	3	41
2001	Otter Tail	299	178	77	255	15	5.00	0.81	0.40	203%	N	0	0.90	1	18	8		5	6	1
2002	Otter Tail	300	275	25	300	55	2.50	0.40	0.20	200%	N	15	2.50	4	55	18		12	3	25
2003	Ottertail	278	90	54	144	199	4	0.57	1.94	29%	N	11	1.94	1	57	11	0	10	7	15
2001	Pennington	15	3	1	4	3.5	0.50		0.00		N	1	0.10	3	2	0		0	2	15
2002	Pennington	23	9	1	10	18	0.40				N				1				2	1
2003	Pennington	22	6	0	6	6	0		0		N	1	0.5	12	1	0	0	0	7	2
2001	Pine	408	307	40	347	300	32.00		0.00		Y	70	8.00	3	3	2		0	2	70
2002	Pine	389	274	200	474	250	45.00	3.00	5.00	60%	Y	93	8.80	2	20	5		7	2	140
2003	Pine	488	11	27	38	57.13	12.48	28.59	20.04	143%	Y	38	16.95	4	27	7	0	5	3	47
2001	Pipestone	30	10	2	12	10	0.50		5.00	0%	N	0	0.00	5	1	0		0	1	17
2002	Pipestone	90	16		16	8					N								1	0
2003	Pipestone	175	25	25	50	10	30		0		N	1	0.5	1	1	0	0	0	1	0
2001	Polk	68	15	2	17	9	2.50		0.00		N	1	0.02	14	4	1		1	2	23
2002	Polk	112		2	2		0.04				N	5	0.23	11	2	2	2	1	4	0
2003	Polk	111	4	2	6	60.05	0.06	0.18	0.15	120%	N	2	2.03	0	1	0	0	0	3	4
2001	Pope				0						N									0
2002	Pope	74	30	32	62	58.4	0.20		0.00		N	0	0.00	0	1		1	1	3	74
2003	Pope	74	25	51	76	96.2	40.6	0.46	76.2	1%	N	58	76.2	0	4	2	0	2	4	100
2001	Ramsey	16	3	0	3	0.21	0.00	5.97	2.32	257%	N	4	0.12	1	2	5		3	2	16
2002	Ramsey	36	1		1	0.01		2.33	1.73	135%	N	17	1.07	8	1	6		2	3	36
2003	Ramsey	31	1	7	8	0.05	1.29	6.51	3.51	185%	N	13	0.17	3	20	5	0	6	3	40
2001	Red Lake	3	2		2	0.1					N				1	0		0	1	3
2002	Red Lake	8			0						N			1						0
2003	Red Lake	5	2	0	2	0.3	0		0		N	0	0	0	0	0	0	0	1	1
2001	Redwood	98	4	4	8	10	10.00	0.00	0.00		N	98	0.50	0	0	0	0	0	1	6
2002	Redwood	87	3	2	5	2.2	1.40	0.60	0.60	100%	N	82		1	1	1	1	1	1	87
2003	Redwood	114	8	2	10	10.5	3		0		N	2	5.2	0	1	0	1	0	1	17
2001	Renville	132	3	0	3	3	0.00	3.37	1.69	199%	N	0	0.00	95	0	0		0	2	0
2002	Renville	509	20		20	17		3.37	1.69	199%	N	0	0.00	0	1	1	0	0	2	1
2003	Renville	250	25	0	25	10	0		0		N	1	0.8	10	0	1	0	0	3	1
2001	Rice	49	8	5	13	10.97	5.20	19.18	9.59	200%	N	10	2.64	21	9	10		9	2	21
2002	Rice	110	6	5	11	8.37	3.08	6.34	3.17	200%	N	8	1.88	10	10	29	0	24	2	32
2003	Rice	270	23	9	32	11.5	4.55	1.86	0.93	200%	N	11	0.27	17	9	23	0	22	3	12

2001	Rock	9	9	0	9	13	0.00	0.00	0.00		N	0	0.00	0	0	0	0	0	2	0
2002	Rock	12	11	1	12	11	0.95				N				1				2	10
2003	Rock	12	8	0	8	16.25	0		0		N	4	4.36	0	3	0	0	1	1	11
2001	Roseau	21	15	2	17	5	4.50		0.00		N	2	0.50	0	4	0		0	6	19
2002	Roseau	35	15	10	25	16	3.00				N	3	0.50		2				6	25
2003	Roseau	44	12	7	19	20	1		0		N	0	0	0	2	0	0	0	7	18
2001	Scott	316	285	31	316	140	50.00	25.90	11.20	231%	N	13	15.00	5	17	6		4	2	79
2002	Scott	169	101	72	173	170	60.00	29.00	9.00	322%	N	15	29.00	26	30	3	0	4	2	34
2003	Scott	460	120	50	170	650	65	34.52	20	173%	N	30	2.45	27	20	3	0	3	3	25
2001	Sherburne	449	15	3.5	18.5	10.5	3.00	47.44	23.70	200%	N	34	33.37	7	28	9	0	4	2	47
2002	Sherburne	1216	19	12	31	5.36	1.94	5.10	2.86	178%	N	68	2.38	10	45	10	0	9	2	52
2003	Sherburne	1430	18	15	33	5.03	2.69	4.23	1.84	230%	N	50	23.99	12	64	3	0	1	4	58
2001	Sibley	86	2	1	3	1.5	0.90		0.00		N	1	0.10	1	0	0		0	2	2
2002	Sibley	92	2	0	2	25	0.00	0.00	0.00		N	2	0.00	2	2	0	0	0	2	0
2003	Sibley	43	4	1	5	8	0.07	1.81	0.63	287%	N	2	0.5	0	2	2	0	0	3	4
2001	St. Louis	3424	264	279	543	2.88	7.70	60.78	46.77	130%	Y	61	10.24	35	100	23	0	20	1	104
2002	St. Louis	3227	354	14	368	33	5.49	29.10	26.4	110%	Y	56	11	34	125	20	27	36	6	188
2003	St. Louis	1645	130	40	170	28.86	6.01	21.10	19.96	106%	Y	38	6.45	8	124	12	4	10	8	67
2001	Stearns	987	13	1	14	42	0.58	15.91	7.94	200%	N	10	0.17	0	6	10	0	10	2	88
2002	Stearns	977	9	0	9	1	0	1.70	0.84	202%	N	10	0.12	0	4	0	10	10	2	84
2003	Stearns	280	54	12	66	7.2	1.3	9.49	5.86	162%	N	30	1.4	1	8	10	0	6	3	40
2001	Steele	172	35	5	40	42	15.00		0.00		N	2	1.00	1	1	0		0	2	20
2002	Steele	172	35	5	40	42	1.50				N	2	1.00	1	1				2	20
2003	Steele	66	17	3	20	51	6		0		N	3	0.75	9	0	3	0	3	3	17
2001	Stevens	7	1	0	1	1.3	0.00		0.00		N	0	0.00	4	1	0		0	1	1
2002	Stevens	35	3		3	2.08					N			6	3	1		1	2	3
2003	Stevens	25	21	3	24	0.5	0.17		0		N	0	0	1	3	1	0	1	3	0
2001	Swift	10	10	0	10	0	0.00		0.00		N	0	0.00	0	1					0
2002	Swift	8			0				1.00	0%	N	1	1.00						1	1
2003	Swift	14	0	0	0	0	0	0.49	1.35	36%	N	3	1.35	0	3	0	0	0	3	3
2001	Todd	174	25	4	29	31.8	2.76	0.20	0.10	200%	N	63	368	1	6	7	0	3	2	64
2002	Todd	174	25	4	29	31.8	2.76	0.20	0.10	200%	N	63	368	1	6		7	3	2	174
2003	Todd	290	14	27	41	8.55	40.25	2.50	1.24	202%	N	102	161.04	0	5	4	0	2	3	106
2001	Traverse				0						N									
2002	Traverse	23	1		1	0.1					N	1	0.09		3					
2003	Traverse	19	7	1	8	6	0.4		0		N	0	0	0	0	0	0	0	4	2
2001	Wabasha	7	4	2	6	2	2.45	28.95	2.60	1113%	N	2	3.00	2	1	1		1	2	6
2002	Wabasha	11	3	3	6	1					N	4	10.00	4	1	1	0	2	3	9
2003	Wabasha	14	4	3	7	3	3		0		N	3	2.49	4	1	2	0	2	3	12
2001	Wadena	95	12	5	17	4.85	1.35		0.00		Y	11	1.10	0	5	0		1	2	17
2002	Wadena	72	14	4	18	4.85	0.65				Y	19	2.90		4	2	0	0	6	19
2003	Wadena	98	3	10	13	1	3.15		0		Y	18	9	0	2	0	0	0	3	18
2001	Waseca	48	45	4	49	80	6.00	8.20	1.76	466%	N	11	0.80	15	3	1		0	1	32
2002	Waseca	48	45	4	49	80	6.00	8.20	1.76	466%	N	11	0.80	15	3		1		1	32
2003	Waseca	68	66	2	68	34	13.3		0		N	2	0.5	5	3	1	0	0	3	2
2001	Washington	148	26	17	43	10	8.00	27.20	13.50	201%	N	10	0.15	8	11	4		2	2	30
2002	Washington	195	50	29	79	3	2.00	21.18	13.05	162%	N	14	0.55	18	23	3	4	2	3	31
2003	Washington	239	5	5	10	6.3	1.5	13.01	5.76	226%	NN	11	0.89	6	13	1	3	1	3	16
2001	Watonwan	71	2	1	3	2.5	1.00		3.00	0%	N	1	3.00	64	4	0	0	1	1	4
2002	Watonwan	130			0	2					N	1	2.00	3	5	3			2	8
2003	Watonwan	8	7	1	8	12	2		0		N	1	2	0	4	3	0	1	3	8
2001	Wilkin	3	3	0	3	6	0.00		0.00		N	0	0.00	0					3	3
2002	Wilkin	4			0						N				1				1	0
2003	Wilkin	3	3	0	3	4	0		0		N	0	0	0	0	0	0	0	1	3
2001	Winona	50	45	10	55	10	5.00	26.00	13.00	200%	N	4	3.90	0	4	2		0	2	4
2002	Winona	50	45	10	55	1	3.00		100.00	0%	N	8	19.90	4	6	2	0	1	2	13
2003	Winona	25	21	0	21	30	0	0.19	0.9	21%	N	1	0.81	3	5	8	0	0	3	7
2001	Wright	174	49	26	75	22.25	6.92	13.73	6.07	226%	N	17	1.50	6	42	28		14	2	30
2002	Wright	173	23	21	44	5.75	5.25	16.74	7.69	218%	N	25	1.98	2	34	14		2	2	44
2003	Wright	179	32	24	56	8	6.5	23.13	11.25	206%	N	30	4.1	4	45	14	0	2	3	45
2001	Yellow Medicine	31	0	0	0	0	0.00		0.00		N	0	0.00	0	0	0	0	0	1	0
2002	Yellow Medicine	31	1		1	1					N	1		1					2	31
2003	Yellow Medicine	49	1	0	1	40	0		0		N	2	0.99	2	4	0	0	0	3	4
2001 Statewide Totals		17,086	6,088	1,275	7,363	3,531	412	535	273	196%		990	610	689	692	297		216		2,688
2002 Statewide Totals		18,507	5,683	1,298	6,981	2,641	411	347	330	105%		1,097	619	626	792	238	116	239		2,701
2003 Statewide Totals		17,561	4,905	1,211	6,116	2,670	480	445	383	116%		1,092	479	538	821	250	42	199		2,805

WCA Data Reported by Local Government Units: 2001, 2002, 2003

Appendix C

Reporting Year	Region	%LO contacts resulting in A/M	% of drain/fill replaced	# Exempt Appl.	Acres Exempt^	Sum AMR Acres	Acres Drained/Filled	Acres Avoided/ Minimized	# Wca Projects	Total Loss (exmptions^plus drain/fill)	Acres Replaced	Percent replaced vs. total loss
2001	< 50 %	33%	220%	265	428.48	372.32	34.24	372.32	336	463	75.17	16%
2002	< 50 %	23%	141%	308	395.33	473.16	18.03	473.16	514	413	25.41	6%
2003	< 50 %	10%	138%	363	206.87	439.54	42.89	439.54	595	250	59.37	24%
2001	> 80%	42%	115%	359	68.875	696.29	86.286	696.29	505	155	98.906	64%
2002	> 80%	50%	104%	398	89.97	912.71	93.835	912.71	945	184	97.18	53%
2003	> 80%	46%	96%	320	61.74	704.3	106.69	704.3	633	168	101.93	61%
2001	50-80 %	37%	291%	280	91.392	2070.71	74.76	2070.71	1399	166	217.22	131%
2002	50-80 %	19%	55%	287	86.086	1160.96	142.17	1160.96	939	228	78.79	35%
2003	50-80 %	34%	84%	267	169.35	1119.87	144.76	1119.87	1094	314	122.03	39%
2001	7-County	75%	185%	86	21.1	803.91	77.48	803.91	448	98.6	143.63	146%
2002	7-County	62%	193%	104	47.249	504.37	75.468	504.37	303	123	145.969	119%
2003	7-County	41%	184%	142	41.44	886.76	88.17	886.76	483	130	161.81	125%
2001 Statewide Totals		***43%***	***196%***	***990***	***610***	***3943***	***273***	***3943***	***2688***	***883***	***535***	***61%***
2002 Statewide Totals		***38%***	***105%***	***1097***	***619***	***3051***	***330***	***3051***	***2701***	***948***	***347***	***37%***
2003 Statewide Totals		***35%***	***116%***	***1092***	***479***	***3595***	***383***	***3150***	***2805***	***862***	***445***	***52%***

APPENDIX D

REPORTED LOCAL ROAD IMPACTS AND REPLACEMENT NEEDS JULY 1996 TO FEBRUARY 2005				
County	**Impact Acres**	**Direct Replacement Acres**	**BWSR Replacement Obligation**	**Total Replacement Acres**
Aitkin	24.84	2.00	22.88	24.88
Anoka	42.66	6.39	68.77	75.16
Becker	3.54	3.54	3.54	3.54
Beltrami	41.23	9.66	31.57	41.23
Benton	36.97	0.00	73.94	73.94
Big Stone	14.00	0.71	27.30	28.01
Blue Earth	19.42	0.89	36.40	37.29
Brown	1.49	0.00	2.98	2.98
Carlton	64.23	3.51	60.72	64.23
Carver	13.04	11.91	14.18	26.09
Cass	36.49	0.39	35.13	35.52
Chippewa	0.10	0.00	0.20	0.20
Chisago	5.88	3.43	8.36	11.79
Clay	8.48	0.00	16.96	16.96
Clearwater	24.52	0.00	24.52	24.52
Cottonwood	0.31	0.00	0.63	0.63
Crow Wing	24.03	5.07	24.14	29.21
Dakota	9.21	0.00	18.42	18.42
Dodge	3.91	0.00	7.82	7.82
Douglas	8.42	0.00	16.83	16.83
Fillmore	0.97	0.00	1.06	1.06
Freeborn	1.32	0.00	2.64	2.64
Goodhue	3.29	0.00	6.57	6.57
Grant	1.02	0.00	2.03	2.03
Hennepin	22.26	0.76	43.44	44.20
Houston	4.65	2.50	6.80	9.30
Hubbard	17.91	2.42	15.71	18.13
Isanti	14.07	0.00	13.94	13.94
Itasca	51.31	14.35	38.04	52.39
Jackson	0.74	0.00	1.48	1.48
Kanabec	6.61	0.00	6.25	6.25
Kandiyohi	9.00	1.45	16.87	18.32
Kittson	14.90	3.30	26.50	29.80
Koochiching	21.06	4.43	16.63	21.06
Lac Qui Parle	0.32	0.00	0.65	0.65
Lake	8.08	0.83	7.25	8.08
Lake of the Woods	15.14	0.00	15.14	15.14
Le Sueur	1.47	0.00	2.94	2.94
Lincoln	2.63	0.00	5.26	5.26
Lyon	4.06	1.32	7.76	9.08

Mahnomen	1.07	0.00	2.14	2.14
Marshall	21.24	1.91	27.63	29.54
Martin	0.82	0.00	1.64	1.64
McLeod	6.20	0.00	12.40	12.40
Meeker	10.56	0.00	21.12	21.12
Mille Lacs	22.86	0.35	22.52	22.86
Morrison	20.51	0.00	37.48	37.48
Mower	1.66	0.00	3.32	3.32
Murray	5.99	0.00	11.98	11.98
Nicollet	2.64	0.28	5.00	5.28
Nobles	0.20	0.00	0.39	0.39
Norman	13.88	3.19	23.65	26.84
Olmsted	4.63	1.74	7.51	9.25
Otter Tail	23.13	1.25	44.26	45.51
Pennington	11.06	0.00	11.06	11.06
Pine	62.79	0.00	62.79	62.79
Pipestone	0.78	0.00	1.56	1.56
Polk	26.61	0.00	52.62	52.62
Pope	17.28	0.00	34.60	34.60
Ramsey	6.23	6.23	6.23	6.23
Redwood	1.30	0.00	2.60	2.60
Renville	7.77	0.00	15.54	15.54
Rice	8.05	0.00	16.10	16.10
Rock	2.00	0.00	4.00	4.00
Roseau	1.09	0.00	2.17	2.17
Scott	13.84	0.00	28.29	28.29
Sherburne	5.22	1.36	8.67	10.03
St. Louis	189.59	56.17	140.57	196.74
Stearns	24.43	0.15	47.72	47.86
Steele	0.97	0.00	1.94	1.94
Stevens	1.62	0.00	3.25	3.25
Swift	10.23	2.11	18.35	20.46
Todd	64.12	1.66	126.46	128.12
Wabasha	10.89	0.60	21.15	21.75
Wadena	3.13	0.00	3.13	3.13
Washington	9.41	2.29	16.73	19.02
Watonwan	4.55	0.00	9.10	9.10
Wilkin	0.63	0.00	1.26	1.26
Winona	0.39	0.25	0.66	0.91
Wright	25.01	8.14	42.06	50.20
Yellow Medicine	1.94	0.00	3.88	3.88
Totals	**1,227.94**	**166.53**	**1,631.88**	**1,788.63**

COMPREHENSIVE WETLAND PROTECTION AND MANAGEMENT PLANS (Updated February 2005)

METRO REGION						
LGU	**BC**	**BWSR GRANT**	**AREA COVERED BY PLAN**	**NOTICE TO AGENCIES**	**BWSR APPROVAL**	**DATE LGU ADOPTION**
Bloomington	Brad Wozney	No	24,570 acres	8-05-96	8-23-97	6-16-97
Burnsville	Les Lemm	$7.5K	17,097 acres	1-97	1-99	1-99
Carnelian Mar.WD	Les Lemm	No	29,767 acres*	10-13-04	Expected, 2005	----------
Chanhassen	Brad Wozney	No	14,651 acres	----------	None sought	94 Ordinance
Coon Rapids	Les Lemm	No	15,063 acres	2003	2004	2004
Eden Prairie	Brad Wozney	No	22,524 acres	1-00	3-24-00	00 Ordinance
Minnehaha WD	Brad Wozney	$15k	115,840 acres	10-98	None Sought	Painters Cr Plan
Minnetonka	Brad Wozney	No	18,042 acres	10-08-96	None sought	97 Ordinance
Plymouth	Brad Wozney	$15k	22,595 acres	1-14-97	None Sought	97 Ordinance
Ramsey Washington Metro WD	Les Lemm	No	33,280 acres	1996	5-28-97	6-97
Rice Creek WD CD 10-22-32	Les Lemm	No	4,600 acres*	2004	Expected - Autumn 2005	----------
Rice Creek WD CD 53-62	Les Lemm	No	4,200 acres*	2004	Expected - Autumn 2005	----------
Rice Creek WD Columbus Twp	Les Lemm	No	23,040 acres*	2004	Expected - Autumn 2005	----------
Rice Creek WD Village Meadows	Les Lemm	No	1,00 acres*	2004	Feb 04	Feb 04
Rosemount	Les Lemm	$15k	22,469 acres	June 97	7-98	6-98-Update 05
St Louis Park	Brad Wozney	No	6,983 acres	3-01		
Savage	Les Lemm	LCMR Grant	10,563 acres	11-99	1-00	00 Ordinance
So. Washington WD	Les Lemm	No		August 98	4-01	
Lakeville	Les Lemm	No	24,002 acres	Done	Approved	2003 Ordinance
Vadnais Lakes Area WMO	Les Lemm	$7,500	15,040 acres	August 99	Summer 00	Not yet adopted

NORTHERN REGION						
LGU	**BC**	**BWSR GRANT**	**AREA COVERED BY PLAN**	**NOTICE TO AGENCIES**	**BWSR APPROVAL**	**DATE LGU ADOPTION**
Aitkin County	Keith Grow	No	1,275,776 acres	February 2001	October, 2004	January, 2005
Beltrami County	Bill Best	$15k	1,954,918 acres	10-15-97	Spring 2000	Spring 2000
Cass County	Dan Steward	Yes (challenge)	1,544,136 acres	June 97	9-24-97	12-97
City of Cloquet	Mark Nelson	No	23,004 acres	2002	October, 2003	2003
Koochiching Co.	Mark Nelson	No	2,017,035 acres	July 98	Spring 2000	Spring 2000
Lake County	Mark Nelson	$7.5k	1,463,547 acres	Done	4-28-99	Spring 1999
Lake of the Woods County	Bill Best	Yes (challenge)	1,138,951 acres	July 2001	Summer 2003	Fall 2003
St. Louis County	Mark Nelson	$15k	4,312,077 acres	Done	4-28-99	Spring 1999

SOUTHERN REGION						
LGU	**BC**	**BWSR GRANT**	**AREA COVERED BY PLAN**	**NOTICE TO AGENCIES**	**BWSR APPROVAL**	**DATE LGU ADOPTION**
Martin County	Chris Hughes	No	466,603 acres	August 1998	December, 2002	August, 2002

Accounts: Exclude BWSR	**Account Balance:** ALL	**County:** ALL	**Major Watershed:** ALL APPENDIX F-1

Account Listing / Status (Available Credits)

Minnesota Wetland Bank

March 31, 2005

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
104	01 Aitkin	10 Mississippi							1.37	Y	Thompson, Thomas A. (218) 927-3320
			A	1.37	NWC	Y	6	Isolated			
1107	01 Aitkin	10 Mississippi							10.72	Y	Gilbert, Jeff (218) 729-8960
			A	10.72	NWC	Y	6	Isolated			
1134	01 Aitkin	10 Mississippi							0.50	Y	McNutt, Richard (218) 729-0206
			A	0.50	NWC	Y	2	Isolated			
1148	01 Aitkin	10 Mississippi							2.00	Y	Gustafson, Jim (Itasca SWCD Acct Mgr) (218) 326-0017
			A	2.00	NWC	Y	6	Isolated			
1169	01 Aitkin	10 Mississippi							0.40	Y	Premier Three Developers, Inc., c/o Jack Johnson (218) 391-3117
			A	0.40	NWC	Y	2	Isolated			
1170	01 Aitkin	10 Mississippi							0.30	Y	Premier Three Developers, Inc., c/o Jack Johnson (218) 391-3117
			A	0.20	NWC	Y	1	Isolated			
			B	0.10	NWC	Y	3	Isolated			
	County - Number of Accounts: 6							**County SubTotal:**	**15.29**		
116	02 Anoka	20 Mississippi							11.02	Y	Robjent, Lyndon (Anoka CHD Acct Mgr) (763) 862-4237
			A	8.74	NWC	Y	3	Flow-through			
			B	2.28	PVC	Y	1	Flow-through			
1022	02 Anoka	20 Mississippi							0.27	Y	Vargo, Mark (D. Rehbein's Acct Mgr) (763) 784-0657
			A	0.00	NWC	Y	4	Isolated			
			B	0.27	NWC	Y	5	Isolated			
			C	0.00	PVC	Y	U	Upland			
	County - Number of Accounts: 2							**County SubTotal:**	**11.29**		
1143	03 Becker	58 Buffalo							18.03	Y	Paakh, A. Bruce (218) 849-4886
			A	5.97	NWC	Y	3	Isolated			
			B	12.06	PVC	Y	U	Upland			
1154	03 Becker	58 Buffalo							2.80	Y	Sletmoen, Douglas (218) 439-6399

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			A	1.40	NWC	Y	4	Isolated			
			B	1.40	PVC	Y	U	Upland			
	County - Number of Accounts: 2							**County SubTotal:**	**20.83**		
1139	04 Beltrami	62 Upper and Lower							12.13	Y	Berger, Ray (218) 647-8413
			A	12.13	NWC	N	2	Floodplain			
1141	04 Beltrami	62 Upper and Lower							0.58	Y	Otterstad, Ron (218) 444-6492
			A	0.00	NWC	Y	6	Isolated			
			B	0.02	NWC	Y	3	Isolated			
			C	0.56	PVC	Y	U	Upland			
	County - Number of Accounts: 2							**County SubTotal:**	**12.72**		
125	05 Benton	17 Mississippi (St.							1.11	Y	Kabe, Galen (J. Miller's Acct Mgr) (320) 251-4109
			A	0.00	NWC	Y	2	Isolated			
			B	0.00	PVC	Y	U	Upland			
			C	1.11	NWC	N	2	Isolated			
	County - Number of Accounts: 1							**County SubTotal:**	**1.11**		
126	06 Big Stone	22 Minnesota							21.50	Y	Anderson, Nick (Big Stone CHD Acct Mgr) (320) 839-2594
			A	15.00	NWC	N	3	Tributary			
			B	6.50	PVC	N	3	Tributary			
	County - Number of Accounts: 1							**County SubTotal:**	**21.50**		
130	10 Carver	33 Minnesota							10.00	Y	Steiner, Paul (Credit Mgr) (952) 944-7596
			A	7.00	NWC	N	3	Isolated			
			B	3.00	PVC	N	U	Upland			
1048	10 Carver	19 South Fork Crow							27.58	Y	Nesvold, Tim (P. Nesvold's Acct Mgr) (952) 546-7000
			A	2.80	NWC	N	2	Flow-through			
			B	5.99	NWC	N	3	Flow-through			
			C	6.50	NWC	N	4	Flow-through			
			D	3.00	NWC	N	5	Flow-through			
			E	9.29	PVC	N	U	Upland			
1115	10 Carver	33 Minnesota							20.10	Y	Knauer, Elroy (952) 466-9882
			A	0.17	NWC	Y	3	Tributary			
			B	11.97	NWC	Y	4	Tributary			

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			C	7.96	PVC	Y	U	Upland			
	County - Number of Accounts:	**3**					**County SubTotal:**		**57.68**		
136	13 Chisago	37 St. Croix							3.97	Y	Sandager, Lee (651) 433-3503
			A	2.47	NWC	Y	4	Flow-through			
			B	1.50	PVC	Y	4	Flow-through			
1104	13 Chisago	37 St. Croix							1.48	Y	Meek, Kenneth (R. Goertz Acct Mgr) (651) 674-6210
			A	0.00	NWC	Y	2	Flow-through			
			B	1.48	NWC	Y	3	Flow-through			
	County - Number of Accounts:	**2**					**County SubTotal:**		**5.45**		
137	14 Clay	60 Wild Rice							2.76	Y	Paakh, A. Bruce (218) 849-4886
			A	1.24	NWC	Y	3	Isolated			
			B	1.52	PVC	Y	U	Upland			
	County - Number of Accounts:	**1**					**County SubTotal:**		**2.76**		
1156	15 Clearwater	66 Clearwater							1.38	Y	Watershed District, Red Lake (218) 681-5800
			A	1.38	NWC	Y	7	Floodplain			
	County - Number of Accounts:	**1**					**County SubTotal:**		**1.38**		
1108	19 Dakota	39 Cannon							2.25	Y	Bohlen, LeRoy (507) 645-7768
			A	1.12	NWC	Y	3	Shoreland			
			B	1.13	PVC	Y	U	Upland			
1144	19 Dakota	38 Mississippi (Red							17.71	Y	Graham, Mike (Bachman Acct. Mgr.) (612) 670-4209
			A	11.63	NWC	Y	3	Tributary			
			B	6.08	PVC	Y	U	Upland			
	County - Number of Accounts:	**2**					**County SubTotal:**		**19.96**		
1001	20 Dodge	41 Zumbro							5.68	Y	Harford, John (Olmsted Cty Acct Mgr) (507) 285-8232
			A	1.82	NWC	N	3	Isolated			
			B	2.87	NWC	N	2	Isolated			
			C	0.91	NWC	N	1	Isolated			
			D	0.06	PVC	N	3	Isolated			
1083	20 Dodge	41 Zumbro							7.43	Y	Samuelson, Jon (507) 867-1666
			A	4.11	NWC	Y	3	Isolated			

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			B	3.32	PVC	Y	U	Upland			
	County - Number of Accounts: 2						**County SubTotal:**		**13.11**		
145	21 Douglas	26 Chippewa							4.79	Y	Sabolik, Arlen and Ruby (320) 965-2396
			A	4.61	NWC	N	4	Isolated			
			B	0.18	PVC	N	4	Isolated			
146	21 Douglas	14 Long Prairie							7.23	Y	Jones, Dale (218) 547-3307
			A	1.54	NWC	Y	3	Isolated			
			B	1.18	NWC	Y	3	Isolated			
			C	2.88	NWC	Y	3	Isolated			
			E	1.63	NWC	Y	3	Isolated			
1018	21 Douglas	26 Chippewa							39.59	Y	Robley, David (Douglas DPW Acct Mgr) (320) 763-6001
			A	39.59	NWC	N	4	Tributary			
1071	21 Douglas	26 Chippewa							7.20	Y	Bump & Mike McGuire, Mike (320) 846-1913
			A	7.20	NWC	N	4	Isolated			
	County - Number of Accounts: 4						**County SubTotal:**		**58.82**		
1116	24 Freeborn	49 Shell Rock							3.69	Y	Bjerke, Byron (507) 373-3817
			A	2.39	NWC	N	4	Flow-through			
			B	0.00	NWC	N	1	Flow-through			
			C	1.30	PVC	N	U	Upland			
	County - Number of Accounts: 1						**County SubTotal:**		**3.69**		
1129	25 Goodhue	41 Zumbro							0.08	Y	Klevan, Darrell (507) 732-5407
			A	0.08	NWC	Y	2	Flow-through			
1153	25 Goodhue	38 Mississippi (Red							1.07	Y	Klevan, James (CR45 Acct Mgr) (651) 385-3051
			A	1.07	NWC	Y	3	Isolated			
	County - Number of Accounts: 2						**County SubTotal:**		**1.15**		
151	26 Grant	23 Pomme de Terre							0.00	Y	Reuss, Randy (320) 986-2901
			A	0.00	NWC	Y	3	Tributary			
			B	0.00	PVC	Y	U	Upland			
1002	26 Grant	23 Pomme de Terre							0.33	Y	Sumption, John (Cass County Acct Mngr) (218) 547-7256
			A	0.33	NWC	N	3	Tributary			

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
1005	26 Grant	55 Mustinka							0.22	Y	Gustafson, Jim (Itasca SWCD Acct Mgr) (218) 326-0017
			A	0.22	NWC	N	3	Tributary			
1056	26 Grant	23 Pomme de Terre							8.44	Y	Alvstad, Steve (218) 747-2802
			A	0.00	NWC	Y	3	Tributary			
			B	1.08	PVC	Y	3	Tributary			
			C	7.36	PVC	Y	U	Upland			
1057	26 Grant	23 Pomme de Terre							11.23	Y	Westrom, Diane (218) 685-4142
			A	2.27	NWC	Y	3	Tributary			
			B	1.26	PVC	Y	3	Tributary			
			C	7.70	PVC	Y	U	Upland			
	County - Number of Accounts: 5							**County SubTotal:**	**20.23**		
1112	27 Hennepin	18 North Fork Crow							7.28	Y	Kuka, Mike; kukafive@aol.com (763) 972-3256
			A	4.93	NWC	Y	4	Flow-through			
			B	2.35	PVC	Y	4	Flow-through			
1119	27 Hennepin	20 Mississippi							2.67	Y	Blundell, Dirk (763) 428-5559
			A	2.34	NWC	Y	4	Isolated			
			B	0.33	PVC	Y	U	Upland			
1121	27 Hennepin	20 Mississippi							2.40	Y	Selstad, Bob (763) 479-3726
			A	1.00	NWC	Y	4	Isolated			
			B	1.40	PVC	Y	U	Upland			
1171	27 Hennepin	20 Mississippi							1.27	Y	Ebert, Greg & Marilou (763) 498-7844
			A	1.27	NWC	Y	3	Isolated			
	County - Number of Accounts: 4							**County SubTotal:**	**13.62**		
1024	28 Houston	43 Root							1.95	Y	Walter, Richard & Terese (507) 895-2446
			A	1.95	NWC	Y	1	Floodplain			
	County - Number of Accounts: 1							**County SubTotal:**	**1.95**		
1047	30 Isanti	37 St. Croix							11.91	Y	Palme, Duane (651) 674-5620
			A	0.31	NWC	N	4	Tributary			
			B	0.98	NWC	N	4	Tributary			
			C	9.01	PVC	N	6	Flow-through			
			D	1.61	PVC	N	U	Upland			

Acct No	County	Major Watershed	Balance by Subgroup	Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
	County - Number of Accounts: 1						**County SubTotal:**	**11.91**		
1019	39 Lake of the Woods	80 Lake of the						4.34	Y	Stromlund, Josh (Lake of the Woods Acct) (218) 634-1945
			A 4.34	NWC	Y	4	Isolated			
	County - Number of Accounts: 1						**County SubTotal:**	**4.34**		
1082	40 Le Sueur	33 Minnesota						20.00	Y	Krocak, Robert & Elizabeth (507) 364-7457
			A 19.52	NWC	Y	3	Flow-through			
			B 0.48	NWC	Y	2	Flow-through			
	County - Number of Accounts: 1						**County SubTotal:**	**20.00**		
159	49 Morrison	21 Rum						12.02	Y	McLennan, Helen (Robert Hobson Acct Mgr) (320) 616-2479
			A 2.84	NWC	Y	2	Tributary			
			B 9.17	PVC	Y	2	Tributary			
1152	49 Morrison	15 Mississippi						16.25	Y	McLennan, Helen (Banick Acct Mgr)
			A 5.97	NWC	Y	3	Flow-through			
			B 10.28	PVC	Y	2	Flow-through			
	County - Number of Accounts: 2						**County SubTotal:**	**28.27**		
160	50 Mower	43 Root						1.04	Y	Bucknell, Bruce (507) 533-9432
			A 1.04	NWC	Y	2	Flow-through			
1105	50 Mower	43 Root						51.36	Y	Erickson, George (507) 279-2126
			A 19.71	NWC	Y	2	Flow-through			
			B 9.50	NWC	Y	3	Flow-through			
			C 22.15	PVC	Y	U	Upland			
1106	50 Mower	48 Cedar						52.17	Y	Erickson, George (507) 279-2126
			A 20.64	NWC	Y	2	Flow-through			
			B 11.25	NWC	Y	3	Isolated			
			C 20.28	PVC	Y	U	Upland			
	County - Number of Accounts: 3						**County SubTotal:**	**104.58**		
1135	55 Olmsted	41 Zumbro						0.42	Y	Schmidt, William & Tamera (507) 289-8674
			A 0.42	NWC	N	2	Flow-through			
			B 0.00	PVC	N	U	Upland			

Acct No	County	Major Watershed	Balance by Subgroup	Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
	County - Number of Accounts: 1						**County SubTotal:**	**0.42**		
161	56 Otter Tail	56 Otter Tail						19.34	Y	Highway Department (Bank), Ottertail County (218) 739-2271
			A 12.78	NWC	N	3	Flow-through			
			B 6.55	PVC	N	3	Flow-through			
	County - Number of Accounts: 1						**County SubTotal:**	**19.34**		
162	59 Pipestone	82 Big Sioux						10.65	Y	Pearson, Gary (Cargill Acct Mgr) (507) 825-5841
			A 1.50	NWC	Y	2	Isolated			
			B 0.75	PVC	Y	2	Isolated			
			C 4.80	NWC	Y	4	Isolated			
			D 3.60	PVC	Y	U	Isolated			
	County - Number of Accounts: 1						**County SubTotal:**	**10.65**		
1098	60 Polk	63 Red Lake						64.94	Y	Carlstrom, Darin (Polk Cty Account Mgr)
			A 14.77	NWC	N	2	Tributary			
			B 8.54	NWC	N	3	Tributary			
			C 12.75	NWC	N	4	Tributary			
			D 16.67	PVC	N	3	Tributary			
			E 12.20	PVC	N	U	Upland			
1118	60 Polk	61 Sandhill						7.78	Y	Highway Department, Polk County (218) 281-3952
			A 1.70	NWC	Y	2	Isolated			
			B 2.90	NWC	Y	3	Isolated			
			C 3.18	NWC	Y	4	Isolated			
	County - Number of Accounts: 2						**County SubTotal:**	**72.72**		
163	61 Pope	26 Chippewa						10.42	Y	Highway Department, Pope County (320) 634-4561
			A 3.75	NWC	N	6	Tributary			
			B 6.67	PVC	N	6	Tributary			
164	61 Pope	26 Chippewa						0.50	Y	Highway Department, Pope County (320) 634-4561
			A 0.50	NWC	N	3	Tributary			
165	61 Pope	26 Chippewa						2.00	Y	Highway Department, Pope County (320) 634-4561
			A 2.00	NWC	N	4	Tributary			
166	61 Pope	16 Sauk						2.45	Y	Elwood, David and Becky (320) 634-4628
			A 1.46	NWC	Y	3	Flow-through			

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			B	0.99	PVC	Y	3	Flow-through			
167	61 Pope	26 Chippewa							0.80	Y	Highway Department, Pope County (320) 634-4561
			A	0.80	NWC	N	3	Flow-through			
168	61 Pope	26 Chippewa							23.43	Y	Highway Department, Pope County (320) 634-4561
			A	11.91	NWC	N	3	Flow-through			
			B	11.52	PVC	N	3	Flow-through			
169	61 Pope	26 Chippewa							0.00	Y	Highway Department, Pope County (320) 634-4561
			A	0.00	NWC	N	2	Flow-through			
1172	61 Pope	16 Sauk							22.80	Y	Fiedler, Jean & Patricia (320) 352-3894
			A	6.50	NWC	N	1	Flow-through			
			B	6.50	NWC	N	3	Flow-through			
			C	3.20	PVC	N	3	Flow-through			
			D	6.60	PVC	N	U	Upland			
	County - Number of Accounts: 8							**County SubTotal:**	**62.41**		
1138	62 Ramsey	20 Mississippi							7.06	Y	Fisher, Linda (Acct Mgr) (952) 896-3210
			A	2.42	NWC	Y	3	Flow-through			
			B	4.64	PVC	Y	U	Upland			
	County - Number of Accounts: 1							**County SubTotal:**	**7.06**		
172	65 Renville	19 South Fork Crow							4.87	Y	Larson, Marlin (Renville CHD Acct) (320) 523-3759
			A	4.87	NWC	N	3	Isolated			
	County - Number of Accounts: 1							**County SubTotal:**	**4.87**		
173	66 Rice	33 Minnesota							22.20	Y	Luebbe, Dennis (Rice CHD Acct. Mgr.) (507) 332-6110
			A	10.90	NWC	Y	4	Tributary			
			B	11.30	PVC	Y	4	Tributary			
1113	66 Rice	39 Cannon							2.85	Y	Mariska, Thomas (507) 267-4590
			A	0.26	NWC	Y	2	Isolated			
			B	0.04	NWC	Y	3	Isolated			
			C	2.54	NWC	Y	4	Isolated			
			D	0.00	PVC	Y	U	Upland			
	County - Number of Accounts: 2							**County SubTotal:**	**25.05**		
1147	68 Roseau	70 Two							28.93	Y	Heggedal & G. Krog, Arne (218) 528-3731

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			A	28.93	NWC	Y	3	Isolated			
	County - Number of Accounts: 1						**County SubTotal:**		**28.93**		
175	70 Scott	33 Minnesota							0.06	Y	Mesenbrink, John (952) 447-5058
			A	0.00	NWC	Y	3	Tributary			
			B	0.00	NWC	Y	4	Tributary			
			C	0.06	PVC	Y	3	Tributary			
176	70 Scott	33 Minnesota							0.00	Y	Mesenbrink, John (952) 447-5058
			A	0.00	NWC	Y	3	Flow-through			
1131	70 Scott	33 Minnesota							7.42	Y	Breeggemann, Donald and Marian (952) 445-2527
			A	4.30	NWC	Y	3	Isolated			
			B	3.11	PVC	Y	U	Upland			
1150	70 Scott	33 Minnesota							4.24	Y	Kane, John (952) 447-2441
			A	3.32	NWC	Y	3	Isolated			
			B	0.92	PVC	Y	U	Upland			
1168	70 Scott	33 Minnesota							10.13	Y	WestStar Properties, Inc., Bill Feldman (612) 961-1294
			A	10.13	NWC	Y	3	Isolated			
	County - Number of Accounts: 5						**County SubTotal:**		**21.86**		
1092	71 Sherburne	17 Mississippi (St.							3.50	Y	Rolf, Steve (Elk River Acct Mngr) (612) 441-7420
			A	3.14	NWC	N	2	Isolated			
			B	0.36	PVC	N	U	Upland			
1103	71 Sherburne	17 Mississippi (St.							0.43	Y	Rolf, Steve (Elk River Acct Mngr) (612) 441-7420
			A	0.43	NWC	N	5	Isolated			
	County - Number of Accounts: 2						**County SubTotal:**		**3.93**		
1123	72 Sibley	33 Minnesota							3.86	Y	City of, Eden Prairie (952) 949-8310
			A	3.86	NWC	Y	3	Isolated			
1142	72 Sibley	33 Minnesota							29.20	Y	Mueller, Mary and Michael (507) 647-2305
			A	0.73	NWC	Y	2	Isolated			
			B	11.63	PVC	N	U	Upland			
			C	16.84	NWC	Y	3	Isolated			
	County - Number of Accounts: 2						**County SubTotal:**		**33.06**		
1063	69 St. Louis	03 St. Louis River							2.08	Y	Anderson, Terry (218) 348-4571

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			A	1.39	NWC	N	5	Isolated			
			B	0.49	NWC	N	4	Isolated			
			C	0.19	NWC	N	3	Isolated			
	County - Number of Accounts: 1							**County SubTotal:**	**2.08**		
181	73 Stearns	16 Sauk							14.69	Y	Miller, Philip and Janice (320) 352-3748
			A	3.41	NWC	Y	3	Tributary			
			B	0.00	PVC	Y	3	Tributary			
			C	11.27	PVC	Y	U	Tributary			
182	73 Stearns	18 North Fork Crow							11.33	Y	Gertken, Brett (320) 251-5271
			A	0.00	NWC	Y	3	Isolated			
			B	4.74	PVC	Y	U	Isolated			
			C	6.58	NWC	Y	2	Isolated			
183	73 Stearns	16 Sauk							11.31	Y	Jerkovich, Frank and Sally (218) 682-2622
			A	5.72	NWC	N	3	Isolated			
			B	0.26	PVC	N	3	Isolated			
			C	5.31	PVC	N	U	Isolated			
184	73 Stearns	16 Sauk							0.02	Y	Meyer, Linus (320) 987-3549
			A	0.02	NWC	Y	3	Isolated			
			B	0.00	PVC	Y	3	Isolated			
			C	0.00	PVC	Y	U	Isolated			
1094	73 Stearns	16 Sauk							8.95	Y	Miller, Philip and Janice (320) 352-3748
			A	4.20	NWC	N	3	Flow-through			
			B	2.80	PVC	N	3	Flow-through			
			C	1.93	PVC	N	U	Upland			
	County - Number of Accounts: 5							**County SubTotal:**	**46.31**		
186	77 Todd	16 Sauk							1.36	Y	Friedrichs, Ken and Therese (320) 351-3651
			A	0.15	NWC	N	3	Tributary			
			B	1.21	PVC	N	3	Tributary			
	County - Number of Accounts: 1							**County SubTotal:**	**1.36**		
1043	80 Wadena	12 Crow Wing							2.40	Y	Highway Department, Wadena County (218) 631-7636
			A	1.20	NWC	N	3	Isolated			

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
			B	1.20	NWC	N	2	Isolated			
			C	0.00	PVC	N	2	Isolated			
	County - Number of Accounts:	**1**					**County SubTotal:**		**2.40**		
1081	81 Waseca	39 Cannon							15.97	Y	Mariska, Thomas (507) 267-4590
			A	0.47	NWC	Y	2	Tributary			
			B	8.30	PVC	Y	3	Tributary			
			C	7.20	PVC	N	U	Upland			
	County - Number of Accounts:	**1**					**County SubTotal:**		**15.97**		
1023	82 Washington	37 St. Croix							5.76	Y	Brandt, Ryan (Swenson Account Mngr) (651) 255-5049
			A	2.42	NWC	N	3	Isolated			
			B	0.00	NWC	Y	3	Isolated			
			C	1.56	PVC	N	U	Upland			
			D	0.41	NWC	Y	2	Isolated			
			E	1.34	PVC	N	U	Upland			
1137	82 Washington	37 St. Croix							32.81	Y	Meadowlark Preserve, LLC, Glenn Rehbein Companies (763) 784-0657
			A	23.52	NWC	N	3	Flow-through			
			B	9.28	PVC	N	U	Upland			
	County - Number of Accounts:	**2**					**County SubTotal:**		**38.57**		
1091	83 Watonwan	31 Watonwan							6.47	Y	Raney, David G. (507) 877-5560
			A	1.14	NWC	Y	1	Floodplain			
			B	0.21	NWC	Y	2	Floodplain			
			C	2.24	NWC	Y	3	Floodplain			
			D	0.00	PVC	Y	U	Upland			
			E	2.88	PVC	Y	3	Floodplain			
	County - Number of Accounts:	**1**					**County SubTotal:**		**6.47**		
190	84 Wilkin	57 Red River of the							0.44	Y	Neppl, Steve (Wilken CHD Acct Mgr) (218) 643-4772
			A	0.44	NWC	N	3	Floodplain			
191	84 Wilkin	56 Otter Tail							1.42	Y	Swedlund, Daniel & Wendy (218) 643-3355
			A	1.42	NWC	N	4	Tributary			
	County - Number of Accounts:	**2**					**County SubTotal:**		**1.86**		

Acct No	County	Major Watershed	Balance by Subgroup		Credit Type	COE	Wetland Type	Topography	Total Acres Available	Credits Available	Account Manager
198	86 Wright	18 North Fork Crow							3.29	Y	Potter, Hank & Judith (320) 963-5476
			A	0.58	NWC	Y	4	Isolated			
			B	2.70	PVC	Y	U	Isolated			
199	86 Wright	18 North Fork Crow							6.86	Y	Potter, Hank & Judith (320) 963-5476
			A	3.59	NWC	Y	4	Isolated			
			B	3.26	PVC	Y	U	Isolated			
202	86 Wright	17 Mississippi (St.							4.23	Y	Maher, Kim (V. Veit Account Contact) (763) 428-2242
			A	4.23	NWC	Y	4	Tributary			
1039	86 Wright	18 North Fork Crow							6.54	Y	Held, Dr. Stanley (763) 682-3740
			A	1.54	NWC	Y	5	Isolated			
			B	5.00	PVC	Y	5	Isolated			
1062	86 Wright	18 North Fork Crow							7.30	Y	Varner, John (763) 658-4285
			A	3.30	NWC	Y	3	Isolated			
			B	4.00	PVC	Y	U	Upland			
1132	86 Wright	18 North Fork Crow							25.98	Y	Olson, Dennis (612) 309-3045
			A	7.84	NWC	Y	4	Flow-through			
			B	4.69	PVC	Y	4	Flow-through			
			C	13.45	PVC	Y	U	Upland			
County - Number of Accounts: 6								**County SubTotal:**	**54.20**		
								GRAND TOTAL:	**911.33**		

Minnesota Board of Water and Soil Resources
520 Lafayette Road North ▪ St. Paul, MN 55155

Phone: (651) 296-3767; Fax: (651) 297-5615
TTY: (800) 627-3529 ▪ Web: www.bwsr.state.mn.us

WETLAND BANKING FACT SHEET

What is wetland banking?

Wetland banking is a convenient way to replace wetlands drained or filled for agriculture or urban development. Wetland banking allows a person wishing to drain or fill a wetland to purchase wetland credits from someone who has already restored or created a wetland and "deposited" those wetland credits in the Minnesota Wetland Bank. The Minnesota Board of Water and Soil Resources (BWSR) administers this bank.

Why do we need it?

Under most wetlands regulations in Minnesota, people who drain or fill wetlands need to write a plan outlining how they will either create new wetlands or restore previously drained wetlands to replace the ones lost. This replacement must generally be in the same watershed or county as the original wetlands. Since direct, on-site replacement is often impractical—and the person proposing the project may have no idea of where to create or restore a wetland—purchasing credits from the Minnesota Wetland Bank is a convenient option. Essentially, the wetland banking system helps connect landowners who have already restored or created wetlands with those who need to replace wetlands they plan to drain or fill.

How do I get started?

A good first step for anyone contemplating making a deposit or withdrawal is to contact the local government unit that administers the Wetland Conservation Act (WCA) in the area where the deposit or withdrawal acreage is located. Wetland banking can also be used for wetlands regulated by other programs. If you're not sure of the appropriate local government office, your local Soil and Water Conservation District (SWCD) can help get you started. SWCD phone numbers are in the county government section of the phone book. You can also go to the interactive map at www.shorelandmanagement.org/contact/index.html.

How do I make a deposit?

To make a deposit, a landowner must file an application and supporting technical information with the local government unit administering the WCA in that area. Forms can be obtained from the local government or at www.bwsr.state.mn.us/wetlands/index.html. After filing with the local government unit, a technical panel inspects the site and advises the local government unit whether or not the application should be approved. If it is approved, the landowner may restore the wetland. A good reference for restoring wetlands is *Native Vegetation in Restored and Created Wetlands* available at www.bwsr.state.mn.us/wetlands/publications/index.html. When construction is completed, the landowner must inform the local government unit; the technical evaluation panel will then inspect the site a second time. If the technical evaluation panel approves the construction/restoration, the landowner must wait for six months (for a restored wetland) or one year (for a created wetland).

After this waiting period, the landowner must again contact the local government unit, which will send the technical evaluation panel to inspect the site for the third time. This waiting period and third inspection are intended to ensure that the wetland has stabilized.

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The technical evaluation panel will recommend to the local government the amount of wetland acreage and type to be deposited in the bank. After the local government certifies that all necessary legal documents have been filed and the correct procedures followed, it provides this information to BWSR.

How do I make a withdrawal?

Purchase of wetland credits is a private sales transaction between the buyer and seller. A prospective buyer can see the names and phone numbers of people with wetland credits available for sale in the appropriate area at www.bwsr.state.mn.us/wetlands/wetlandbanking/index.html. A number of steps are involved in purchasing wetland credits, including:

- The buyer and seller must sign a purchase agreement (available from your local government unit or at www.bwsr.state.mn.us/wetlands/wetlandbanking/index.html).
- The buyer must obtain approval from the agency with regulatory authority over the wetland that the buyer wants to drain or fill. Generally, this agency will be the local government unit administering WCA; the Department of Natural Resources; or the Army Corps of Engineers. Again, your local Soil and Water Conservation District should be able to help you with this.
- The parties must close upon the sale, with the buyer paying for the credits and the seller signing an Application for Withdrawal of Wetland Credits (available from your local government or at the web address above) and giving it to the buyer.
- The buyer obtains all necessary signatures on an Application for Withdrawal of Wetland Credits and sends it, along with a completed replacement plan, to the appropriate regulatory authority, which then forwards it to the Board of Water and Soil Resources.

How much do wetland credits typically cost?

Prices vary dramatically, from $1,000 per acre to $20,000 or more in the Twin Cities metropolitan area.

Who can I contact for more information?

Your local Soil and Water Conservation District or the nearest BWSR office.

BWSR OFFICES

Central office: (651) 296-3767
St. Paul: (651) 282-9969
Duluth: (218) 723-4752
Bemidji: (218) 755-4235
Brainerd: (218) 828-2383
Marshall: (507) 537-6060
New Ulm: (507) 359-6074
Rochester: (507) 280-2873
Fergus Falls: (218) 736-5445
TTY: (800) 627-3529

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REINVEST IN MINNESOTA RESERVE FACT SHEET

Background

The Reinvest in Minnesota (RIM) Reserve Program, one of the first such programs of its kind in the country, began in 1986 and is managed at the state level by the Minnesota Board of Water and Soil Resources. It protects and improves water quality, reduces soil erosion, and enhances fish and wildlife habitat by retiring private land from agricultural production, planting permanent native vegetation, and restoring previously drained wetlands. Other benefits include flood control and groundwater recharge.

How it works

Landowners are paid a percentage of the assessed value of their land to voluntarily enroll it in a conservation easement. A variety of land types are eligible, including wetland restoration areas, riparian agricultural lands, marginal cropland, pastured hillsides, and sensitive groundwater areas. After land is enrolled, it is managed under a conservation plan, which generally includes items like wetland restoration (for areas with drained wetlands), native grass plantings, and tree plantings.

RIM Reserve has several different arms under which it enrolls land: "regular" RIM Reserve; the Conservation Reserve Enhancement Program (CREP); and Permanent Wetland Preserves (PWP), which enrolls existing at-risk wetlands. Most recently, RIM Reserve funds have been used to leverage federal funds through CREP in the Minnesota River basin.

The state funds this program primarily through bonding. The RIM Reserve Program provides direct payments to landowners for conservation easement acquisition. Soil and Water Conservation Districts (SWCDs), which administer the program locally, receive funding through grants from BWSR for administrative and technical support. That grant program is called the RIM Service Grant.

Program information

The program enrolls easements at a payment rate based on a county assessor's average market value of land in the township. In addition, RIM Reserve provides funds to help share the cost of establishing appropriate conservation or wildlife habitat practices on easement lands. Landowners may need to pay a small portion of conservation practice establishment cost if cost exceeds program maximums.

Who is involved?

RIM Reserve has formed the basis for local partnerships among Soil and Water Conservation Districts, environmental groups, conservation groups, and state and federal agencies. Minnesota's 91 SWCDs implement the program locally, using knowledge of local resources to manage each easement to get the most environmental benefit. RIM Reserve is supported by a broad coalition of conservation, environmental, and farming groups.

What if I need more information?

Call your local SWCD. Staff there can provide more details on the program. A directory of SWCDs is located on BWSR's web site: www.bwsr.state.mn.us.

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Appendix H-1

Wetland Data from Anderson and Craig

Jeffrey P. Anderson and William J. Craig. 1984. Growing energy crops on Minnesota's wetlands: the land use perspective. University of Minnesota Center for Urban and Regional Affairs, Publ. CURA 84-3. 95 pp. Percent of remaining wetlands is relative to the pre-statehood wetland area. Data were based upon 640-acre soil landscape mapping units and interpreted for dominance with a 40-acre grid overlay. The reported value for Clearwater county (77.64) corrected by reanalyzing wetland resources upon implementation of M.R. 8420. Houston, Wabasha, and Winona counties were reported to have no pre-statehood wetlands.

County	Current Area	Percent Remaining	County	Current Area	Percent Remaining
Aitkin	573,000	91.1	Mahnomen	13,000	23.2
Anoka	61,000	70.9	Marshall	194,000	19.2
Becker	47,000	54.7	Martin	1,000	0.6
Beltrami	966,000	94.1	Meeker	26,000	21.7
Benton	41,000	65.1	Mille Lacs	84,000	90.3
Big Stone	2,000	1.7	Morrison	218,000	72.7
Blue Earth	6,000	2.2	Mower	1,000	0.5
Brown	2,000	1.0	Murray	1,000	3.0
Carlton	125,000	93.3	Nicollet	3,000	2.1
Carver	4,000	16.7	Nobles	0	0.0
Cass	372,000	91.4	Norman	7,000	2.8
Chippewa	1,000	0.5	Olmsted	0	0.0
Chisago	36,000	64.3	Ottertail	84,000	54.9
Clay	7,000	2.4	Pennington	29,000	8.0
Clearwater	191,000	77.6	Pine	279,000	92.1
Cook	42,000	100.0	Pipestone	0	0.0
Cottonwood	0	0.0	Polk	27,000	4.5
Crow Wing	131,000	86.8	Pope	14,000	23.3
Dakota	4,000	14.3	Ramsey	1,000	33.3
Dodge	1,000	0.9	Red Lake	16,000	8.2
Douglas	12,000	35.3	Redwood	1,000	0.6
Faribault	3,000	1.1	Renville	1,000	0.4
Fillmore	0	0.0	Rice	5,000	13.2
Freeborn	3,000	1.5	Rock	0	0.0
Goodhue	0	0.0	Roseau	361,000	44.1
Grant	1,000	1.1	St. Louis	1,136,000	93.9
Hennepin	9,000	31.0	Scott	2,000	11.8
Houston	0		Sherburne	31,000	72.1
Hubbard	7,000	9.2	Sibley	6,000	2.1
Isanti	48,000	80.0	Stearns	32,000	21.9
Itasca	572,000	95.0	Steele	2,000	2.6
Jackson	2,000	1.4	Stevens	1,000	1.6
Kanabec	60,000	87.0	Swift	10,000	4.2
Kandiyohi	21,000	9.9	Todd	112,000	53.1
Kittson	96,000	18.6	Traverse	1,000	0.4
Koochiching	1,677,000	98.	Wabasha	0	
Lac Qui Parle	2,000	1.2	Wadena	68,000	73.1
Lake	198,000	97.5	Waseca	5,000	4.3
Lake of the Woods	638,000	88.6	Washington	6,000	42.9
Le Seuer	7,000	10.1	Watonwan	1,000	0.9
Lincoln	1,000	2.5	Wilkin	1,000	0.2
Lyon	1,000	0.9	Winona	0	
McLeod	3,000	6.1	Wright	6,000	22.2
			Yellow Medicine	1,000	0.8

WETLAND COMPARISON

Comparison of the relative amounts of WETLAND, DEEPWATER, and UPLAND habitats per county. Data are derived from U.S. Fish and Wildlife Service National Wetland Inventory data. DEEPWATER was assumed to be all L1, PUBG, and PUBH habitats. TOTAL COUNTY AREA (ACRES) is the sum of all WETLAND, DEEPWATER, and UPLAND for a given county.

ID	COUNTY	PERCENT WETLAND	PERCENT DEEPWATER	PERCENT UPLAND	TOTAL COUNTY AREA (ACRES)
1	Aitkin	43.4	7.8	48.8	1,275,882
2	Anoka	27.8	3.1	69.1	285,366
3	Becker	16.1	7.2	76.7	925,024
4	Beltrami	48.4	17.8	33.9	1,954,851
5	Benton	15.6	0.8	83.6	264,069
6	Big Stone	9.1	3.8	87.1	337,853
7	Blue Earth	4.9	1.2	93.9	489,844
8	Brown	4.8	0.7	94.5	395,749
9	Carlton	34.4	1.3	64.3	559,669
10	Carver	15.4	3.4	81.2	240,551
11	Cass	23.7	15.2	61.1	1,544,046
12	Chippewa	3.3	0.7	96.0	376,186
13	Chisago	20.0	4.1	75.9	282,813
14	Clay	4.9	0.7	94.4	674,320
15	Clearwater	25.1	2.9	72.1	659,023
16	Cook	15.8	8.7	75.6	1,027,871
17	Cottonwood	2.6	0.8	96.6	415,260
18	Crow Wing	22.0	12.3	65.8	739,691
19	Dakota	6.5	2.6	90.8	374,907
20	Dodge	1.9	0.0	98.1	281,105
21	Douglas	13.4	10.2	76.4	460,613
22	Faribault	1.7	0.7	97.6	461,497
23	Fillmore	1.2	0.1	98.7	551,380
24	Freeborn	2.4	1.9	95.8	462,093
25	Goodhue	4.2	2.1	93.7	498,996
26	Grant	6.9	3.7	89.4	368,298
27	Hennepin	13.8	7.0	79.2	387,773
28	Houston	5.8	1.1	93.1	363,808
29	Hubbard	12.5	7.0	80.4	639,401
30	Isanti	25.1	2.4	72.5	288,961
31	Itasca	30.7	8.3	61.0	1,871,189
32	Jackson	4.9	0.6	94.5	425,831
33	Kanabec	22.3	1.4	76.3	341,014
34	Kandiyohi	10.9	6.2	83.0	551,512
35	Kittson	10.3	0.2	89.6	706,662
36	Koochiching	66.8	1.1	32.1	2,016,518
37	Lac Qui Parle	5.4	1.0	93.5	464,521
38	Lake	24.8	7.5	67.7	1,462,187
39	Lake of the Woods	66.1	20.5	13.5	1,072,369
40	Le Sueur	11.2	4.0	84.8	303,041

41	Lincoln	5.0	1.2	93.8	351,291
42	Lyon	3.3	0.7	96.0	461,908
43	McLeod	10.3	2.1	87.6	323,428
44	Mahnomen	13.6	4.0	82.4	373,191
45	Marshall	16.9	0.7	82.5	1,160,962
46	Martin	3.3	1.8	95.0	466,699
47	Meeker	14.5	4.2	81.3	412,638
48	Mille Lacs	24.2	15.4	60.4	435,921
49	Morrison	23.3	2.1	74.6	737,659
50	Mower	2.0	0.1	98.0	455,114
51	Murray	3.4	1.7	94.9	460,659
52	Nicollet	7.7	1.2	91.1	298,668
53	Nobles	1.7	0.8	97.5	462,362
54	Norman	3.6	0.1	96.2	544,564
55	Olmsted	2.3	0.2	97.5	418,545
56	Otter Tail	14.2	9.9	75.9	1,424,257
57	Pennington	7.9	0.1	92.0	395,891
58	Pine	29.6	1.3	69.1	917,282
59	Pipestone	1.7	0.1	98.3	298,576
60	Polk	7.1	1.2	91.7	1,279,543
61	Pope	14.3	4.5	81.2	455,250
62	Ramsey	9.8	7.4	82.9	108,790
63	Red Lake	5.2	0.1	94.7	276,932
64	Redwood	1.8	0.1	98.1	563,963
65	Renville	3.0	0.2	96.7	631,656
66	Rice	7.8	2.6	89.6	330,040
67	Rock	1.2	0.2	98.7	309,277
68	Roseau	33.1	0.1	66.7	1,074,233
69	St. Louis	30.8	5.9	63.3	4,306,973
70	Scott	15.3	2.7	82.0	235,686
71	Sherburne	18.9	2.2	78.9	288,409
72	Sibley	6.8	1.1	92.1	384,030
73	Stearns	14.3	2.8	82.9	889,142
74	Steele	2.6	0.2	97.2	276,348
75	Stevens	6.5	1.5	92.0	361,763
76	Swift	5.7	0.7	93.6	481,624
77	Todd	19.6	3.2	77.2	626,581
78	Traverse	3.4	1.8	94.8	371,897
79	Wabasha	5.0	3.6	91.4	351,537
80	Wadena	24.7	0.6	74.7	347,421
81	Waseca	5.7	1.0	93.3	276,776
82	Washington	14.3	12.0	73.7	149,595
83	Watonwan	2.9	0.4	96.7	281,419
84	Wilkin	2.7	0.1	97.3	467,396
85	Winona	2.7	2.4	94.8	410,219
86	Wright	16.2	6.4	77.4	456,881
87	Yellow Medicine	2.7	0.3	97.0	488,779
	STATE TOTALS	**19.7**	**4.7**	**75.5**	**53,683,509**

Wetland Comparison, Including Circular 39, by County

County areal estimates (acres) of Circular 39 Wetland Types, Industrial / Municipal Habitat, Riverine Habitat, and summations for Wetland Habitat, Deepwater Habitat, Total Upland, and Total County Area. These data were derived from National Wetland Inventory (NWI) habitat classification polygon data (Cowardin et al. 1979). The Cowardin data were approximated to U.S. Fish & Wildlife Service Circular 39 wetland types (Shaw and Fredine 1956, reprinted 1979). Circular 39 types 1 (T1) through 8 (T8) are consistent with the classification method. Riverine systems and Industrial / Municipal facilities, often dike-related impoundments, are listed separately because of no specific Circular 39 classification. Deepwater Habitat was estimated as all L1, PUBG, and PUBH habitats while Wetland Habitat was the sum of all other wetland habitats. Total Wetland Habitat *plus* Total DeepWater Habitat *plus* Total Upland *equals* the Total County Area.

		Circular 39 Wetland Types, T1 T8 (Shaw and Fredine 1956)								Industrial/		Total Wetland	Total DeepWater	Total	Total
ID	County	T1	T2	T3	T4	T5	T6	T7	T8	Municipal	Riverine	Habitat	Habitat	Upland	County Area
1	Aitkin	906	72,854	22,974	3,194	5,601	164,923	67,136	212,523	28	3,015	553,154	99,707	623,021	1,275,882
2	Anoka	1,797	5,302	42,886	1,052	3,051	12,744	9,846	1,696	23	1,034	79,431	8,866	197,069	285,366
3	Becker	2,207	10,564	60,004	3,642	13,701	26,904	8,304	23,026	60	261	148,673	66,843	709,508	925,024
4	Beltrami	4,335	138,584	37,805	3,546	2,991	262,147	168,592	323,791	2,734	825	945,350	347,737	661,764	1,954,851
5	Benton	1,306	16,405	14,878	386	569	6,013	904	149	37	580	41,227	2,116	220,726	264,069
6	Big Stone	2,647	1,745	20,892	997	2,208	425	1,772	0	80	52	30,818	12,926	294,109	337,853
7	Blue Earth	5,302	153	12,733	262	692	520	1,574	0	8	2,756	24,000	6,006	459,838	489,844
8	Brown	6,261	325	7,472	267	821	551	1,721	0	148	1,484	19,050	2,895	373,804	395,749
9	Carlton	508	6,805	5,661	510	548	66,349	24,055	86,592	529	1,164	192,721	7,124	359,824	559,669
10	Carver	8,694	230	21,542	324	2,900	850	1,929	0	45	607	37,121	8,210	195,220	240,551
11	Cass	4,691	13,331	82,128	6,680	10,292	115,119	21,354	109,241	1,435	2,427	366,698	234,456	942,892	1,544,046
12	Chippewa	1,160	971	6,777	278	158	507	1,731	3	1	891	12,477	2,700	361,009	376,186
13	Chisago	929	18,910	5,309	355	3,811	11,909	8,920	5,054	98	1,334	56,629	11,554	214,630	282,813
14	Clay	2,037	7,913	15,800	571	903	3,517	1,355	54	235	979	33,364	4,636	636,320	674,320
15	Clearwater	532	56,962	17,847	3,984	1,958	47,894	7,113	21,220	7,238	465	165,213	18,977	474,833	659,023
16	Cook	47	3,588	12,486	3,225	3,341	25,535	4,993	106,487	1,319	1,197	162,218	88,978	776,675	1,027,871
17	Cottonwood	747	64	6,600	121	1,871	75	559	0	108	506	10,651	3,396	401,213	415,260
18	Crow Wing	473	10,521	30,075	1,976	8,213	58,315	22,671	27,671	249	2,301	162,465	90,628	486,598	739,691
19	Dakota	5,995	551	12,491	778	1,213	1,188	1,859	0	52	374	24,501	9,872	340,534	374,907
20	Dodge	2,059	1,125	1,698	22	4	200	186	21	7	9	5,331	117	275,657	281,105
21	Douglas	2,946	253	41,766	1,973	6,743	3,658	3,994	18	44	203	61,598	47,042	351,973	460,613
22	Faribault	762	12	5,207	121	275	212	420	0	146	805	7,960	3,280	450,257	461,497
23	Fillmore	2,929	953	580	98	0	351	88	0	83	1,259	6,341	724	544,315	551,380
24	Freeborn	765	246	8,797	216	363	278	68	0	0	193	10,926	8,695	442,472	462,093
25	Goodhue	5,275	1,740	4,979	107	2,833	811	4,592	19	12	442	20,810	10,569	467,617	498,996
26	Grant	3,958	201	15,229	972	3,894	334	616	0	53	97	25,354	13,561	329,383	368,298
27	Hennepin	2,293	949	34,450	1,571	2,911	3,564	6,482	115	47	1,109	53,491	27,018	307,264	387,773
28	Houston	2,567	924	4,088	985	4,105	556	7,357	14	1	650	21,247	3,962	338,599	363,808
29	Hubbard	805	3,750	18,713	2,403	2,793	32,011	2,667	16,469	25	552	80,188	44,957	514,256	639,401
30	Isanti	3,524	16,035	15,101	630	1,497	23,455	5,640	5,756	10	839	72,487	6,908	209,566	288,961
31	Itasca	6,831	24,190	38,937	9,423	4,506	142,712	52,571	286,374	4,969	3,720	574,233	154,776	1,142,180	1,871,189
32	Jackson	1,903	0	9,748	226	7,308	177	477	0	101	719	20,659	2,672	402,500	425,831
33	Kanabec	2,287	27,939	8,815	593	1,255	21,819	7,799	4,593	5	1,009	76,114	4,749	260,151	341,014
34	Kandiyohi	4,028	2,899	37,813	2,169	4,194	4,790	3,829	48	68	57	59,895	34,065	457,552	551,512
35	Kittson	2,938	42,356	5,112	827	193	17,505	2,290	211	83	1,141	72,656	1,176	632,830	706,662
36	Koochiching	6,088	30,806	26,858	3,782	3,767	171,344	96,320	999,520	57	7,692	1346,234	22,935	647,349	2,016,518
37	Lac Qui Parle	778	2,535	14,463	642	2,675	871	2,706	33	5	571	25,279	4,706	434,536	464,521
38	Lake	63	2,991	8,659	4,704	2,868	51,081	19,188	271,008	48	1,903	362,513	109,682	989,992	1,462,187

39	Lake of the Woods	1,877	51,676	7,966	2,152	18,657	197,111	154,217	272,761	129	1,764	708,310	219,346	144,713	1,072,369
40	Le Sueur	9,027	327	19,852	177	2,461	702	562	0	226	640	33,974	11,993	257,074	303,041
41	Lincoln	2,725	351	11,290	471	2,210	108	179	2	66	3	17,405	4,356	329,530	351,291
42	Lyon	2,072	389	10,229	743	986	196	439	0	64	11	15,129	3,434	443,345	461,908
43	McLeod	9,964	150	20,528	184	1,017	445	1,021	0	28	50	33,387	6,786	283,255	323,428
44	Mahnomen	2,039	7,595	23,954	296	868	8,716	2,545	4,334	35	474	50,856	14,961	307,374	373,191
45	Marshall	5,319	52,328	41,201	5,244	2,596	56,192	22,985	8,446	501	1,073	195,885	7,858	957,219	1,160,962
46	Martin	3,677	72	6,764	211	3,144	164	1,168	0	25	24	15,249	8,257	443,193	466,699
47	Meeker	5,659	1,277	38,380	1,134	3,520	4,921	4,400	127	15	416	59,849	17,517	335,272	412,638
48	Mille Lacs	1,518	38,146	17,499	350	1,281	27,264	10,841	7,621	82	1,004	105,606	67,091	263,224	435,921
49	Morrison	4,232	27,690	68,754	1,308	209	48,966	11,355	6,402	21	2,788	171,725	15,606	550,328	737,659
50	Mower	4,971	1,347	1,510	74	143	354	188	5	77	307	8,976	277	445,861	455,114
51	Murray	1,521	115	11,719	450	1,228	299	423	0	80	9	15,844	7,673	437,142	460,659
52	Nicollet	5,030	160	12,841	904	996	418	1,294	0	13	1,374	23,030	3,626	272,012	298,668
53	Nobles	1,563	61	5,406	174	575	49	34	0	154	47	8,063	3,620	450,679	462,362
54	Norman	2,275	4,032	6,857	217	0	1,921	2,932	216	94	1,291	19,835	612	524,117	544,564
55	Olmsted	3,823	2,823	1,575	80	189	549	207	72	35	338	9,691	958	407,896	418,545
56	Otter Tail	3,676	10,220	100,587	4,338	13,975	31,227	18,367	18,284	180	1,133	201,987	141,524	1,080,746	1,424,257
57	Pennington	1,726	15,299	3,778	76	0	6,059	1,861	276	1,012	1,255	31,342	374	364,175	395,891
58	Pine	4,646	43,255	38,729	447	884	85,005	34,992	60,262	141	2,853	271,214	11,930	634,138	917,282
59	Pipestone	1,264	44	3,221	177	60	35	18	0	29	88	4,936	260	293,380	298,576
60	Polk	3,763	27,237	26,617	440	2,462	14,800	7,228	1,437	4,272	2,600	90,856	15,449	1,173,238	1,279,543
61	Pope	3,258	1,102	38,893	2,308	9,408	5,702	4,300	0	6	55	65,032	20,593	369,625	455,250
62	Ramsey	184	270	5,409	384	1,451	1,579	1,219	44	20	63	10,623	8,023	90,144	108,790
63	Red Lake	1,187	5,106	2,156	65	0	2,202	1,903	259	40	1,450	14,368	250	262,314	276,932
64	Redwood	2,948	335	5,205	407	212	253	339	0	72	642	10,413	374	553,176	563,963
65	Renville	8,327	330	7,401	254	1,012	153	798	0	150	815	19,240	1,491	610,925	631,656
66	Rice	4,573	552	16,377	138	2,420	803	266	0	0	578	25,707	8,579	295,754	330,040
67	Rock	561	54	1,815	239	0	10	29	0	83	847	3,638	482	305,157	309,277
68	Roseau	8,235	119,160	4,149	2,815	1,682	100,511	69,323	49,251	139	634	355,899	1,331	717,003	1,074,233
69	St. Louis	2,934	30,887	43,521	9,975	31,687	274,204	74,891	822,817	24,825	9,951	1,325,692	253,420	2,727,861	4,306,973
70	Scott	9,384	391	20,036	492	664	975	3,006	0	136	1,019	36,103	6,260	193,323	235,686
71	Sherburne	2,405	7,466	22,499	1,123	1,068	11,475	5,002	1,054	131	2,270	54,493	6,480	227,436	288,409
72	Sibley	8,263	76	13,851	103	1,490	179	1,697	0	80	491	26,230	4,263	353,537	384,030
73	Stearns	8,344	2,802	81,058	2,495	3,599	15,555	10,348	1,262	225	1,416	127,104	25,024	737,014	889,142
74	Steele	963	256	4,409	103	678	417	322	0	0	99	7,247	419	268,682	276,348
75	Stevens	6,150	216	13,447	588	1,569	371	773	0	110	304	23,528	5,520	332,715	361,763
76	Swift	494	2,778	16,606	500	1,421	1,508	3,487	0	0	452	27,246	3,464	450,914	481,624
77	Todd	2,765	289	62,649	1,609	1,779	42,972	8,024	1,978	127	731	122,923	20,164	483,494	626,581
78	Traverse	4,369	0	6,320	814	437	86	558	0	0	168	12,752	6,650	352,495	371,897
79	Wabasha	7,327	9	3,281	366	1,994	661	2,543	0	7	1,319	17,507	12,670	321,360	351,537
80	Wadena	1,960	4,334	28,499	123	781	36,639	5,971	5,661	26	1,725	85,719	2,119	259,583	347,421
81	Waseca	2,645	352	9,763	48	2,029	237	616	0	21	9	15,720	2,783	258,273	276,776
82	Washington	1,003	7,660	4,612	218	3,004	1,655	2,613	677	5	0	21,447	17,954	110,194	149,595
83	Watonwan	924	86	4,356	111	1,155	161	1,079	0	54	103	8,029	1,176	272,214	281,419
84	Wilkin	1,870	4,134	4,273	205	0	512	346	3	101	1,021	12,465	253	454,678	467,396
85	Winona	2,200	670	2,203	252	67	682	4,812	0	70	211	11,167	9,991	389,061	410,219
86	Wright	7,092	1,066	43,107	1,937	2,569	7,945	7,773	191	48	2,383	74,111	29,193	353,577	456,881
87	Yellow Medicine	1,642	538	8,635	677	371	156	674	0	43	625	13,361	1,360	474,058	488,779
STATE WETLAND TOTALS		**287,747**	**1,001,195**	**1,691,160**	**111,608**	**247,034**	**2,274,318**	**1,063,646**	**3,765,148**	**53,989**	**94,145**	**10,589,990**	**2,543,015**	**40,550,514**	**53,683,519**

Summary of Minnesota Wetland Activity 2001-2003

Appendix I

			Acres Gained			Acres Lost		
Agency	**Program**	**Component**	**Upland**	**Wetland**	**Total**	**Upland**	**Wetland**	**Total**
BWSR	WCA	Avoid/minimize			10,145			10,145
		Exempt					1,708	1,708
		Impact					986	986
		Replacement	139	1,327	1,466			
		Road Replacement			681			468
Banking			12	1,041	1,053		590 [(1)]	590 [(1)]
DNR	Public Waters				1.4			0.7
	WCA	Impact						26
		Replacement			141			
Mn/DOT	WCA/404	Impact						195
		Replacement			352			
USACOE	CWA-Sec. 404	Impact						2,137
		Replacement			2,322			
USDA								
BWSR	RIM/CREP		29,295	20,661	49,956			
DNR	WMAs			741				
USFWS	Partners for Fish & Wildlife[2]		7,878	11,930	19,808			
	WPAs			3,000	16,773			
USDA-FSA	CRP[2]				64,136			
USDA-NRCS	WRP		11,136	7,958	19,094			
	RIM/WRP		1,516	1,467	2,983			

[1] Withdrawals from the Wetland Bank

[2] Acres are in limited-term contracts

Wetland Restorations on Private Farmland in Minnesota

Agency[1]	Program[2]	Acres currently enrolled in wetland restoration projects[3]	Since calendar year:[4]	Contract or Easement Length	Estimated additional acres to be enrolled by 12/2007	Estimated total acres enrolled through 12/2007
FSA	CRP General Signup	269,983	1997[5]	Mostly10-year contracts	0	269,983
FSA	CRP Continuous Signup	50,896	2001[6]	Mostly15-year contracts	80,000	130,896
NRCS	WRP	60,652	1994	Mostly permanent easements; some 30-year easements[7]	25,000	85,652
NRCS	EWP	5,173	1997	Permanent easements	0	5,173
NRCS	EWRP	2,103	1994	Permanent easements	0	2,103
BWSR	RIM Reserve	20,188	1986	Permanent easements	0	20,188
BWSR	RIM/PWP[8]	11,506	1991	Permanent easements	0	11,506
BWSR/FSA	Mn River CREP	53,966	1998	Permanent easements	0	53,966
BWSR/FSA	Statewide CREP	0	2005 (pending)	Permanent easements	24,000	24,000
BWSR/NRCS	WREP	4,000	2004	Permanent easements	7,250	11,250
Total		**478,467**			**136,250**	**614,717**

Notes:

[1] **Key to Agencies**: FSA – USDA Farm Service Agency; NRCS – USDA Natural Resources Conservation Service; BWSR – Minnesota Board of Water and Soil Resources

[2] **Key to Programs**: CREP – Conservation Reserve Enhancement Program; CRP – Conservation Reserve Program; EWP – Emergency Watershed Protection Program; EWRP – Emergency Wetlands Reserve Program; RIM Reserve – Reinvest in Minnesota Reserve; RIM/PWP – Reinvest in Minnesota/Permanent Wetlands Preserve; WREP – Wetlands Reserve Enhancement Program; WRP – Wetlands Reserve Program

[3] Besides actual wetlands, the acreage shown includes restored upland buffers that are part of the wetland restoration. All data are the most current available as of March 2005.

[4] This column shows the calendar year the program was enacted, except for CRP (see footnotes 5-6, below).

[5] CRP was enacted in 1985, but all currently active CRP contracts with wetlands acreage were enrolled in calendar year 1997 or later. In mid-2003, wetland restoration changed from a General Signup option to a Continuous Signup option, i.e., it is no longer an option under the General Signup.

[6] The CRP Continuous Signup was enacted in 1996, but wetland restorations were not an option until 2001 when the Farmable Wetlands Pilot began. Additional wetland restoration options became available under the Continuous Signup in 2003 and 2004.

[7] Nearly all of the acreage in 30-year WRP easements (approximately 7,000 acres) will become permanent at the end of the 30-year term, through BWSR's RIM/WRP provision.

[8] RIM/PWP acreage consists of pre-existing rather than restored wetlands protected through permanent easements.

WETLAND-RELATED WEB SITES

Minnesota Board of Water and Soil Resources:
http://www.bwsr.state.mn.us/wetlands/index.html

Minnesota Department of Natural Resources, Division of Waters:
http://www.dnr.state.mn.us/waters/index.html

Minnesota Department of Natural Resources, Division of Ecological Services:
http://www.dnr.state.mn.us/ecological_services/wetlands.html

Minnesota Department of Natural Resources, Section of Wildlife:
http://www.dnr.state.mn.us/wildlife/index.html

Minnesota Pollution Control Agency:
http://www.pca.state.mn.us/water/index.html

U.S. Army Corps of Engineers, St. Paul District:
http://www.mvp.usace.army.mil/regulatory/

U.S. Army Corps of Engineers, Headquarters:
http://www.usace.army.mil/inet/functions/cw/cecwo/reg/index.htm

U.S. Environmental Protection Agency:
http://www.epa.gov/owow/wetlands/

U.S. Fish and Wildlife Service, National Wetlands Inventory:
http://www.nwi.fws.gov/

U.S. Fish and Wildlife Service:
http://www.fws.gov/

Natural Resources Conservation Service, Wetland Science Institute:
http://www.pwrc.usgs.gov/wli/