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# Minnesota Wetland Mitigation Banking Study

March 1998

addendum to: Minnesota Wetlands Conservation Plan, Version 1.0, 1997

and

in fulfillment of Minnesota Laws 1996, Chapter 462, Section 40

Minnesota Department of Natural Resources

Minnesota Board of Water and Soil Resources

Minnesota Department of Agriculture

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## Executive Summary

This report fulfills a legislative mandate to study "... alternative procedures and policies for improving the current wetland banking system in the state." This study was conducted by a subcommittee of participants from the Minnesota Wetlands Conservation Planning effort. The subcommittee included representatives from federal, state, and local government agencies and representatives from private sector interest groups. This report is an addendum to the Minnesota Wetlands Conservation Plan, version 1.01, June 1997.

The wetland banking study involved three separate initiatives: a field study of a sample of existing wetland bank sites, an analysis of wetland replacement and banking plans from 1995, and literature reviews to obtain general information on wetland banking and information on banking programs in other states. For the field study, a wetland functional assessment was conducted on 15 wetland bank sites from around the state. This information was used to gain a general understanding of the characteristics and quality of existing wetland bank sites. The analysis of 1995 wetland replacement and banking plans provided a complete picture of wetland replacement for an entire year and allowed comparisons between wetland replacement via banking versus project-specific replacement. The literature survey provided ideas for alternative procedures and possible improvements based national guidance and experiences in other states.

Five issue areas were identified, three concerned with improving the ecological value of wetland bank sites and two concerned with administration of the state wetland bank. These issue areas can be summarized as follows:

- (1) How to improve the quality of wetland bank sites;
- (2) How to improve wetland banking as an environmental tool through siting or targeting decisions;
- (3) How to enhance the current state-level administration structure to adequately handle growing activities and demands;
- (4) How current mitigation policies are being implemented by local, state, and federal government agencies;
- (5) How financial aspects, including the cost of wetland banking credits, will affect the quantity and quality of banked wetlands.

### Findings/Recommendations

Following are some of the key findings of the study, followed by the recommendations of the wetland banking subcommittee. The first three points relate to "on-the-ground" observations, or the actual results of the wetland banking program to date. The remaining findings mostly pertain to administrative issues that are largely responsible for shaping the "on-the-ground" results.



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***1. The quality of wetland bank sites varied, and was generally related to construction method.*** The highest quality sites were restorations of previously drained wetlands, surrounded by permanent upland vegetation. The poorest sites observed were wetlands that had been created through excavation. With the exception of the poorest quality created sites, the banked wetlands analyzed appeared to be reflective of the range of conditions observed in natural wetlands within the study areas.

Recommendations:

- **Wetland replacement standards for all regulatory programs should be rigorously enforced to ensure that all replacement wetlands (banked and project-specific replacements) meet expected levels of quality.**
- **Additional quality goals, including guidelines for vegetative coverage and diversity, should be developed.**
- **Encourage the establishment of a wider range of wetland types, relative to the types of wetlands lost, for both banking and project-specific replacement.**
- **Encourage restoration of previously drained wetlands rather than wetland creation and to particularly discourage creation projects that adversely affect high quality or scarce natural upland features for wetland replacement purposes. This may require some additional flexibility in the WCA rules regarding the location of replacement wetlands.**
- **Develop additional incentives for restoration of partially drained wetlands, based on an analysis of functions gained and lost.**
- **Establish incentives to encourage the highest quality banking sites, for example, award additional public value credits to established bank sites that meet certain high quality criteria, based on TEP review and approval. The Interagency Wetlands Group, with public input, should develop the qualifying criteria.**

***2. Wetland bank sites and project-specific mitigation tend to differ in terms of type of project and distance from impact site.*** The Committee found that wetland banks, in general, tend to be restorations of previously disturbed wetlands while project-specific mitigation projects are typically created wetlands. Project-specific replacement tends to be closer to the site of the wetland impact than bank sites.

Recommendations:

- **Encourage the continued restoration of wetlands to serve as wetland banks, and in general, encourage the use of local wetland banks for replacement of small impacts. However, the decision on which replacement procedure is best for any particular project should be based on a project-specific analysis, taking into account the functions and values lost, the likelihood of achieving successful replacement, land availability, and other factors.**

- Encourage greater use of restoration for project-specific mitigation
- Investigate the relative effectiveness of small, on-site wetland creations versus larger, off-site restorations as compensatory mitigation; document the factors and techniques associated with successful replacement in order to develop improved standards and guidelines.

3. ***The location of wetland bank sites is seldom based on ecological/hydrological needs.*** Presently, the location of wetland bank sites is almost entirely dictated by the presence of landowners who are willing to undertake wetland creation or restoration projects. Wetland banking sites could address watershed needs much more effectively if the location of the sites was based on an analysis of identified problems as well as the presence of willing landowners. The second generation of local water planning provides an opportunity to properly analyze watershed needs and target areas for wetland restoration or creation.

**Recommendations:**

- Federal, state and local governments should collaborate on the identification of high priority sites for wetland restoration or creation that most effectively address watershed needs (water quality, flooding, habitat, recreation, etc.). Such sites should be identified in local surface water management plans. Encourage the establishment of bank sites in these high priority areas.
- State and federal agencies should encourage completion of ongoing gap analysis<sup>1</sup> studies and conduct additional gap analysis studies at the appropriate scales (watershed, ecoregion) to identify critical discontinuities in wildlife habitat and should provide such information to local governments for inclusion in local water plans.
- Agencies that have continuing, large scale wetland banking programs, such as the Minnesota Dept. of Transportation (MnDOT) and the Minnesota Board of Water and Soil Resources (BWSR) wetland banks associated with public transportation projects, should make a concerted effort to locate those banks in identified high priority areas. These agencies should also develop wetland bank sites that reflect the range of wetland types being lost, taking into account cumulative impacts, cost, and overall feasibility.

4. ***Current wetland bank accounting/administration services are insufficient.*** Significant increases in the workload associated with wetland bank accounting and administration have occurred as use of the bank has increased and the responsibility for replacing impacts from public road projects was shifted to BWSR in 1996.

**Recommendation:**

- Establish a full time bank administrator position. The bank administrator would handle

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<sup>1</sup> Gap analysis is an emerging, geographic information system-based approach to identifying discontinuities, or gaps in habitat that are critical for the maintenance of wildlife populations.

the project reviews, legal documentation, trend analysis, reporting, and accounting needs associated with maintaining the state's wetland banking system. Included in the duties of this position is the administration of the public road wetland replacement program.

5. ***Current monitoring and certification are inadequate.*** Compliance with WCA requirements to conduct post-project monitoring of wetland replacement sites, under both project-specific mitigation and wetland banking was found to be inadequate. The fact that no post-project certification is required for project-specific replacement was found to be a problem. There are potential problems with WCA rules on banking as far as ensuring that wetland impacts do not occur until project applicants have obtained banking credits and the wetland bank is properly debited.

Recommendations:

• **Assigning responsibility for monitoring:**

✓ **Put monitoring authority in the hands of a governmental agency and remove the responsibility from the individual land owners,**

*or:*

✓ **Keep land owners responsible for monitoring, but provide technical assistance.**

- **Establish a regional interagency audit team to conduct broad-based follow-up on all regulated activities pertaining to wetlands, including impacts to wetlands and wetland replacement**
- **Revise procedures on wetland banking to ensure that wetland impacts do not occur before certified wetland credits are obtained by the applicant and the wetland bank is properly debited.**

6. ***There exists a lack of comprehensive, easily-accessible data.*** A number of government agencies maintain databases pertaining to some aspect of wetland activities in Minnesota, but there is currently no single source containing all the state's wetland information.

Recommendation:

- **Establish and maintain a central, joint database of wetland activities in the state.** The database should contain current information available from federal, state, and local governments and should be easily accessible.

7. ***Wetland replacement plans are sometimes incomplete.*** It was found that some Local Government Units (LGUs) have been accepting and approving incomplete wetland replacement plan applications.

Recommendations:

- **LGUs should return incomplete wetland replacement plans to the applicant for**

completion and resubmittal.

- **Reviewing parties should identify deficiencies in wetland replacement plans to LGUs and to the BWSR. The BWSR, as part of their WCA oversight responsibilities, should work with LGUs to ensure that wetland replacement plans are complete.**
- **An interagency team should continue to evaluate and improve/simplify the replacement plan forms.**

**8. Public vs. Private Components and Cash Banking.** In Minnesota there are currently two separate banking systems in operation: the entrepreneurial system which is used by private (and a few public) developers and the public system established in 1996 for public road projects. This combination, although workable, leads to potential confusion among users and creates conflicts due to market influences of each system on the other. Based on the experiences of the public road replacement program and of some local government units, "cash banking" is a concept worth exploring to add simplicity and consistency to the wetland replacement/mitigation process. However, some of the drawbacks to cash banking may require that its use be limited to clearly defined situations.

Recommendations:

- **An interagency team, including the Banking Study Committee, should continue to evaluate and improve/simplify the wetland banking process and evaluate the options that may be available using "cash banking" concepts.**

**9. A strong and continuing training program for LGUs is needed.** The decentralized nature of WCA administration (more than 400 LGUs statewide) and the associated turnover in staff, advances in wetland science, and occasional changes to state and federal wetland regulations and policies contribute to the need for continuing training if wetland banking is to be effective and consistently administered statewide. A variety of training opportunities are already available, particularly the annual administrative training for LGUs conducted by the BWSR.

Recommendations:

- **LGUs should continue to be provided with advanced training and education on components of wetland banking and mitigation in the state.**

It's recognized that some of the recommendations in this report will require additional funding. Some possible funding mechanisms were identified, including additional state funding and "user fees" assessed to those impacting wetlands. It is recommended that the state legislature and the responsible state agencies, in conjunction with concerned stakeholders consider these and other options and address this need within one year.

# Wetland Banking Report

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# Wetland Banking Report

## **I. Purpose**

In 1996, as part of several revisions to the Minnesota Wetlands Conservation Act (WCA) the Minnesota State Legislature requested a study of the state's current wetland banking system:

"The commissioner of natural resources, in consultation with the board of water and soil resources and the commissioner of agriculture, shall ensure that the wetlands conservation planning process currently under way includes a study of alternative procedures and policies for improving the current wetland banking system in the state. The study and any resulting recommendations must be reported to the appropriate policy committees of the legislature by June 30, 1997, or upon completion of the wetlands conservation planning final report, whichever is later." (Laws 1996, chapter 462, section 40)

The Minnesota State Wetlands Conservation Planning effort began in 1993, involving federal, state and local government agencies and a diverse group of representatives from private sector interest groups. The wetlands banking study was initiated in 1996 as a subset of the overall wetlands planning effort (see Appendix A for a list of participants). Version 1.0 of the Minnesota Wetlands Conservation Plan was completed and published in June 1997, with the exception of the wetlands banking study, which was still ongoing. This report, though published separately, is an addendum to the Minnesota Wetlands Conservation Plan and fulfills the legislative requirements cited above.

## **II. Introduction to Wetland Banking**

National and state policies aimed at achieving "no-net-loss" of wetlands require a mitigation sequence of avoidance-minimization-replacement of wetland acres and functions impacted by a development project. Regulations for wetland replacement, also known as "compensatory mitigation," have generally required that wetland impacts be replaced on a project-by-project basis and that the replacement wetlands be on-site rather than off-site and in-kind rather than out-of-kind. These two criteria are meant to ensure that wetland functions - such as flood storage, water filtration, or distinctive habitat communities - associated with the wetlands being impacted do not disappear from the impact site. "On-site, in-kind" has been a simple and important principle guiding most mitigation decisions.

Project-specific mitigation, whether or not it is in-kind and on-site, does have shortcomings. Studies of compensatory mitigation practices throughout the United States reveal that project-specific mitigation often fails because (1) the permittee does not construct the mitigation project at all or the project is not constructed according to specifications; (2) technical difficulties prevent a functional wetland from developing; (3)



landscape changes reduce wetland functions and values; and (4) monitoring and management after initial construction does not occur or is insufficient.

An alternative to project-specific mitigation - wetland banking - has been developed for both ecological and administrative reasons. Wetland banks consolidate mitigation from multiple development projects into one or more larger wetland restorations or creations. This consolidation allows economies of scale in planning, implementation, and maintenance and helps reduce certain risks (described above) associated with project-specific mitigation. Conversely, banks tend to transfer wetland functions far from an impact site, clump many small and diverse impacts into fewer, large projects, and may weaken the "avoid first" imperative of no-net-loss policies.

### **Types of Wetland Mitigation Banks and Systems**

The different types of wetland mitigation banking systems may be broadly divided into five classes: single-user banks, public banks, private entrepreneurial banks, fee-based systems, and systems that combine aspects of different wetland banking methods (see also Appendix B).

#### Single-User Banks

Single-user banks are mitigation banks whose credits are used exclusively by a single public or private entity. A typical example of such a bank would be a state Department of Transportation (DOT) which will need to mitigate a large number of impacts (often small, fragmented sites) over a relatively long period of time. With the necessary financial and technical resources at its disposal, a mitigation bank created expressly for DOT use in mitigating the impacts resulting from its many public projects is often a viable alternative. A 1994 study by the Institute for Water Resources found that of the mitigation banks in operation in Summer 1992, more than ninety percent were of the single-user variety. Additionally, of the operating banks identified in the study, it was determined that about seventy percent of the banks were created by government or quasi-government entities.<sup>2</sup>

#### Public Banks

In some cases, banks created by government, quasi-government or not-for-profit organizations may provide credits for sale to the public. While the credits from the public commercial bank are generally produced solely for sale to the public, it is reasonable to assume that excess credits left in a public bank after the project's needs have been met may be, upon regulatory approval, available for sale. Sales of credits in these circumstances are often used to offset the costs of establishing and maintaining the bank.

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<sup>2</sup> Brumbaugh, Robert W.; "Wetlands Mitigation Banking: Entering a New Era?" Wetlands Research Program Bulletin 5, 3/4; 1995; pg. 1-8.

Private Commercial/Entrepreneurial Banks

While not as prevalent as the preceding systems, a private market for mitigation credits is developing. In this scenario, a private entity generates credits, which a third party purchases to meet its own unrelated mitigation requirements. This exchange is akin to a commercial paper transaction. Party A (the generator of the credits) informs Party B (the regulatory agency) that the credits should be released to Party C (the third party with mitigation requirements).<sup>3</sup>

In lieu fee-based Systems (a.k.a. "Cash Banking")

In fee-based mitigation programs, a fee is charged for permit approval in lieu of the permit applicant actually undertaking the compensatory mitigation project. These fees, usually based upon estimated costs of mitigation, are often held in trust by a not-for-profit or government sponsor for use in future creation, enhancement, restoration or preservation projects.

Other Wetland Mitigation Systems

Though many banking systems fall into the categories discussed above, due to the flexibility often allowed in the establishment of mitigation banks, some mitigation systems have attributes of several of the aforementioned bank types. The current Minnesota Wetland Banking System illustrates how a wetland banking system may utilize aspects of the four basic bank types.

### **III. Wetland Banking in Minnesota**

Minnesota's first statewide banking initiative consisted of a partnership between the Minnesota Department of Transportation (MnDOT), the Minnesota Department of Natural Resources (DNR) and the U.S. Fish and Wildlife Service (USFWS). This pioneering effort was one of the first of its kind in the nation and has been used as a model by other states. The inter-agency agreement called "Wetland Habitat Mitigation Banking" (WHMB), was in effect for nine years, until the advent of the WCA. WHMB used a wildlife habitat-based evaluation procedure to quantify both impacts and mitigation efforts. The WHMB system lowered the threshold of accountability to capture impacts that had traditionally not been replaced (i.e., impacts authorized under Corps of Engineers nationwide permits). Under this system a number of major wetland restoration and creation sites were developed statewide. The success of this effort was demonstrated by the fact that at the end of its existence, acres mitigated outnumbered acres impacted by three to one.

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<sup>3</sup> Gardner, R.C.; "Banking on Entrepreneurs: Wetlands, Mitigation Banking, and Takings"; 81 Iowa Law Review 527 (1996). The analogy does not fit precisely, of course. In the case of a draft, Party B is a bank. See U.C.C. § 3-104 (1994) (defining and explaining negotiable instruments). In the case of a wetland mitigation bank, Party A is usually considered the "banking project sponsor".

Under the Minnesota Wetland Conservation Act, a state wetland mitigation bank was established via rule-making in 1994, which facilitates both public and private mitigation banking. While project-specific replacement is still the most widely-used option for wetland mitigation in the state, the Minnesota state wetland bank provides an alternative procedure for meeting the compensatory mitigation needs of wetlands developers or others impacting wetlands.

The Minnesota Board of Water and Soil Resources (BWSR) administers the state wetlands bank. Restored or created wetlands can be deposited in the bank as wetland credits, provided the credits are designated for banking prior to the actual restoration or creation and the credits are approved by an official technical evaluation panel. The account holder is the owner of the banked wetland and the credits. Wetland credits are based on the wetland type, acreage, the extent of any pre-existing wetlands at the site, and other "public value" features that contribute to the quality of the wetland. The credits may be used by account holders as mitigation for their own projects, or the credits may be sold to others needing mitigation. The buyer and seller are free to negotiate the terms of the transaction (i.e., cost of credits), although the wetland replacement ratios will be determined by the applicable regulations and authorities.

The BWSR maintains a record of deposits and withdrawals and oversees banking operation statewide. The BWSR provides review of proposed banking projects as part of the Technical Evaluation Panel, certifies deposits in the bank, including a legal review of property restrictions, records withdrawals, monitors projects, and provides status reports and legal guidance and forms to interested buyers, project sponsors, and local government units. Additional details on the mechanics of the state wetland banking system are provided in Appendix C.

In addition to facilitating wetland banking by private individuals or entities, the Minnesota Wetland Banking System also incorporates public banking aspects for public highway projects. The 1996 amendments to the WCA placed the responsibility for replacement of wetland impacts caused by local government road improvement projects with the BWSR. Although the road replacement wetland program is currently carried out separately from the state wetland bank, the features are similar and the level of BWSR administration and oversight is even greater. The BWSR is currently in the process of developing wetland bank sites in critical rural and urban watersheds for the road replacement program. MnDOT maintains their own banking account under the state wetlands bank for state highway project impacts.

In 1994, all of the state and federal agencies having wetland regulatory responsibilities signed an interagency memorandum of understanding (MOU) on wetland regulatory simplification (Appendix D). In a section of the MOU pertaining to wetland banking, the signatory agencies concurred that it is in the public interest to allow use of the state wetland bank, as established by Minnesota Wetland Conservation Act rules (Chapter

8420), and that the respective agencies will consider the use of wetland bank credits for compensatory mitigation in "applicable and appropriate" situations.

To date, 66 projects representing 1,235 acres of restored and created wetlands have been deposited in the state wetlands bank, with a current "balance" of 934 acres. Another 38 restoration and creation projects that are currently underway or that have been proposed are projected to provide more than 2,000 additional acres of credit. The number of projects in the bank has steadily risen since the wetland banking program was established in 1994 and will continue to increase as sites are developed in counties and watersheds lacking available credits and as new projects are developed to offset continued wetland impacts. The Banking Status Report in Appendix C documents the current status of the bank and illustrates the geographic distribution and types of wetlands currently on deposit.

#### **Selected Rules From the Wetland Conservation Act (WCA)**

(The complete WCA rules regarding wetland banking in the state can be found in Appendix E).

- Wetland replacement accomplished via mitigation banking is subject to the same requirements concerning the amount and location of replacement as for project-specific mitigation. For all impacts except those from public transportation projects (see next bullet), replacement wetlands must be located within the same watershed or county as the impacted wetlands, except that impacts in greater than 80 percent areas may be replaced in less than 50 percent areas. When environmentally preferable, replacement wetlands should be located as close to the impacted wetland as possible, preferably in the same watershed.
- Prior to 1996, wetlands impacted by public transportation projects could be replaced statewide. In 1996, the legislature modified this rule so that wetlands impacted by public transportation projects may be replaced statewide, except that wetlands impacted in a less than 50 percent area must be replaced in a less than 50 percent area, and wetlands impacted in the seven-county metropolitan area by public highways must be replaced in the affected county, or, if no restoration opportunities exist in the county, in another seven-county metropolitan area county.
- Any restored wetland is eligible for deposit into the wetland bank. Any created wetland is eligible for deposit in the wetland bank in greater than 80 percent areas. In less than 80 percent areas, created wetlands are eligible for deposit in the bank only if they are created by excavation in nonwetlands, by dikes or dams along public or private drainage ditches, or by dikes or dams associated with the restoration of previously drained or filled wetlands. Credits resulting from created wetlands or from the restoration of completely drained or filled wetlands are termed "New Wetland Credits" (NWC). "Public Value Credits" (PVC), obtained through the restoration of partially drained wetlands, establishing upland buffers around restored or created wetlands, or constructing

water quality retention basins associated with restored or created wetlands, may also be banked.

- The minimum wetland acreage eligible to establish an account in the wetland bank is 0.1 acres. While there is no maximum wetland acreage eligible for deposit into the state wetland bank, as an incentive to encourage the deposit of small wetlands, the LGU shall assign wetland banking credit to wetland acreage as follows:

Wetland Acreage	Wetland Banking Credit
0 to 10 acres	100 percent of total acreage
over 10 acres	90 percent of total acreage

The LGU may modify the credit given, up to a maximum of 100 percent of the total acreage, if agreed to by the Technical Evaluation Panel (TEP).

- Wetlands that are drained or filled under an exemption of the WCA and subsequently restored are not eligible for deposit into the state wetland bank. Modification or conversion of nondegraded naturally occurring wetlands from one type to another are not eligible for enrollment in the state wetlands bank. Further, the replacement wetland proposed for banking must not have been previously restored or created for other regulatory mitigation/replacement purposes, and not restored with financial assistance from a public conservation program.
- No sooner than six months after a proposed banking wetland is restored, and no sooner than one year after a proposed banking wetland is created, and construction has been approved, the depositor must contact the LGU to request final determination of wetland bank acceptability and approved quantities of wetland banking credits for deposit. The Technical Evaluation Panel (TEP) shall, based on a site visit, ensure that sufficient time has been allowed for the wetland to become established and determine the size and type of wetland as well as topographic setting characteristics. If applicable, the resulting NWC and PVC shall be deposited into a wetland bank. The TEP will provide the information to the LGU, for final certification of wetland banking credits. If the TEP has reason to believe that the wetland characteristics may change substantially, the TEP must postpone its recommendations to the LGU until the wetland has stabilized.
- To be deposited into the state wetland bank, the wetland must be certified as eligible for deposit by the LGU in which it is located. After July 1, 1993, wetlands restored or created without prior LGU approval are not eligible for deposit into the wetland bank. The method of certification by the LGU is optional, but wetland banking credits may not be deposited into the bank within that LGU's jurisdiction without certification. If a LGU elects to certify wetlands for the wetland bank, the LGU is also responsible for insuring that the monitoring provisions for banking are fulfilled. A LGU may decline to certify all wetlands within its jurisdiction or, based on a comprehensive local water plan, a LGU may elect to certify wetlands for deposit into the wetland bank only

in selected areas, for example, high priority regions and areas. If the LGU elects to reject or limit banking, it must do so by local rule or ordinance.

#### **IV. Minnesota Wetland Banking Study**

To complete the banking study mandated by the Minnesota State Legislature, a study committee was formed, consisting of the lead state agencies (as specified in the legislation), as well as a subset of the participants in the Minnesota Wetlands Conservation Planning effort (Appendix A). The study committee met from July 1996 through July 1997. Tasks undertaken by this committee included:

- formulation of a scope of work, or a set of issues meriting detailed consideration;
- design of study methods to address issues;
- assignment of responsibilities for components of study, including field visits, data analysis, literature review, and report writing;
- evaluation of study findings and development of recommendations.

Five issue areas were identified, three concerned with improving the ecological value of wetland banks and two concerned with administration of the state wetland bank. These issue areas can be summarized as follows:

- (1) How to improve the quality of wetland bank sites;
- (2) How to improve wetland banking as an environmental tool through siting or targeting decisions;
- (3) How to enhance the current state-level administration structure to adequately handle growing activities and demands;
- (4) How current mitigation policies are being implemented by local, state, and federal government agencies;
- (5) How financial aspects, including the cost of wetland banking credits, will affect the quantity and quality of banked wetlands.

#### **V. Methods**

The Wetland Banking Committee recognized the need for data collection and compilation before conclusions could be made on the status of the current wetland banking system. Three separate efforts were initiated:

**A. Field Study of Wetland Banking Sites**

A field study of 15 wetland bank sites in Minnesota was conducted by an interagency team in September 1996. This team, consisting of representatives of the BWSR, DNR, MnDOT, USFWS, U.S. Army Corps of Engineers (USACOE), and Local Government Unit (LGU) and Soil and Water Conservation District (SWCD) staff, conducted a functional assessment at each of the sites using the Minnesota Routine Assessment Method. In addition, the following information was collected for each wetland bank visited:

- wetland size
- wetland type
- method of development (creation or restoration)
- date of wetland creation/restoration

Selection of wetland bank sites was based on travel efficiency (allowing the most sites to be visited in the least amount of time) while attempting to achieve a representative sample from various parts of the state and different wetland types. This information was collected to provide empirical data on the characteristics and functional quality of a variety of wetland bank sites in the state. Additional details on the design and the results of the field study can be found in Appendix F.

**B. Analysis of Wetland Replacement and Banking Plans**

The second part of the data collection involved reviewing and compiling data from all wetland replacement plans submitted for the year 1995. This year was chosen as the best available representation of wetland replacement activities in the state under the current WCA rules. The wetland replacement plans were accessed through the files at the DNR. The following information was collected from each replacement plan when available:

- Name of applicant
- acres of wetlands impacted/replacement acres used
- type of wetland impact/replacement
- location of wetland impact/replacement (county, watershed, wetland ecological unit)
- method of replacement (creation, restoration, bank)
- class of project impacting wetland (e.g., residential, commercial, public transportation, etc.)
- Date of impact/completion of replacement acres
- Distance from impacted wetland to replacement wetland
- Replacement rule governing location (i.e., public transportation, 80-50, county/watershed)
- Status of monitoring reports

Further information was obtained from the BWSR files and telephone contact with several LGUs. A database containing the available information was established and used to analyze the data. The results of this analysis can be found in Appendix G.

### **C. Literature Reviews**

The third phase of the data collection was a literature review of wetland banking systems in place in other states, as well as a review of the *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks* (Federal Register 60(228):58605-58614, 1995). The Committee reviewed a variety of banking systems used outside of the state and discussed whether these systems might be applicable for use in Minnesota.

The Federal Guidance document was reviewed for information on the following mitigation banking topics:

- monitoring
- wetland size and type
- service area for bank
- restoration vs. creation vs. enhancement vs. preservation
- cash banking
- pre-sale of credits
- cost-effectiveness
- incentives for higher quality restorations

These reviews can be found in Appendices B and H.

## **VI. Findings**

The Committee, through the analyses of the field study, wetland replacement plan data, and literature reviews, identified a number of weaknesses in the current banking system. The first three points relate to “on-the-ground” observations, or the actual results of the wetland banking program to date. The remaining findings mostly pertain to accounting, administration, and monitoring issues that influence the effectiveness of the banking program.

### **A. The quality of wetland bank sites varied, and was generally related to construction method**

WCA rules (8420.0550) contain standards for replacement wetlands that apply to both project-specific wetland replacements as well as restored or created wetlands that are to be banked. These standards are designed to “. . . ensure adequate replacement of wetland functions and values.” To gauge the quality of previously deposited banked wetlands, the committee conducted a functional analysis of a sample of wetland banks. This study is presented in Appendix F. The following is from the “conclusions” section of the study report:



"Based on the functional assessments and subjective impressions, the overall quality of the wetland banking sites varied widely. The highest quality sites tended to be restorations surrounded by permanent upland vegetation. Two of the highest quality sites were on lands in public ownership. The two poorest sites observed were wetlands that had been created through excavation. The primary problems with these sites were side slopes that were too steep and water levels too deep to reliably support aquatic vegetation<sup>4</sup>. With the exception of the poorest quality created sites, the wetlands analyzed appeared to be reflective of the range of conditions observed in natural wetlands within the study areas."

Associated with the issue of bank quality is question of types of wetlands being banked, and the extent to which they reflect the types of wetlands being lost. The WCA requires that the functions and values of a wetland that is drained or filled be replaced with a wetland of equal function and value. To a certain extent, wetland type dictates functions and values. The analysis of 1995 wetland replacement plans showed that wetland types 2, 3, and 4 were over-represented in wetland replacement projects (both banked wetlands and project-specific replacement) compared to the level of impacts of those types, while types 6, 7 and 8 were under represented. It should be noted that the data in this regard was skewed by one very large project that affected a large amount of type 6, 7 and 8 wetlands. The analysis was further clouded by the fact that types 2 and 6 wetlands often intergrade and can be difficult to classify as one or the other type. Nonetheless, the analysis shows that wetland types 6, 7 and 8 are seldom (never for type 8<sup>5</sup>) the goal of wetland replacement projects. Also, it is the experience of wetland banking committee members that lowland hardwood wetlands are rarely proposed as replacement.<sup>6</sup> Finally, it is widely acknowledged that the WCA rules on wetland replacement create an incentive to establish type 3 and 4 wetlands.

**B. Wetland bank sites and project-specific mitigation tend to differ in terms of type of project and distance from impact site.**

The Committee found that wetland banks, in general, tend to be restorations of previously disturbed wetlands while project-specific mitigation projects are typically created wetlands. In 1995, a total of 35 projects used mitigation banks to satisfy their wetland

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<sup>4</sup> One of the poorest quality, excavated wetland bank sites was subsequently withdrawn from the bank and was never debited for any wetland impacts.

<sup>5</sup> Type 8 wetlands, or bogs cannot be created and opportunities for complete restorations are few or non-existent. Minnesota has thousands of acres of partially drained bogs, some of which are potentially restorable; however, current WCA rules limit their use for wetland replacement.

<sup>6</sup> This was not evident in the analysis of wetland replacement plans because the data did not distinguish between herbaceous Type 1 wetlands and lowland hardwood, Type 1L wetlands.

replacement requirements. Four of the 35 projects obtained their credits from banks which were known to be creations, while 27 of the projects debited banks which were known to be restorations. Of the 64 currently approved wetland bank sites, \_\_\_ are restorations, while the remainder are wetland creations. Conversely, 163 project-specific mitigation projects in 1995 were creations, and 27 were restorations. Information was not available on the method of establishment of the remaining bank and project-specific sites.

The wetland banking committee was also interested in the relative distances between wetland impacts and their replacements. Distance-from-impact can be important because many wetland functions, such as water filtration and habitat, are not readily transferable.

Data from 1995 showed that the majority (87 percent) of project-specific mitigation projects occurred either on-site or within one mile of the impact. This contrasts sharply with mitigation through wetland banking, in which only 10 percent of replacements were within one mile of the impact. A significant proportion (27 percent) of the replacements via wetland banking was located more than 50 miles from the impact. This information is displayed in Figure 1 below, and Figures 4 and 5 of Appendix G.

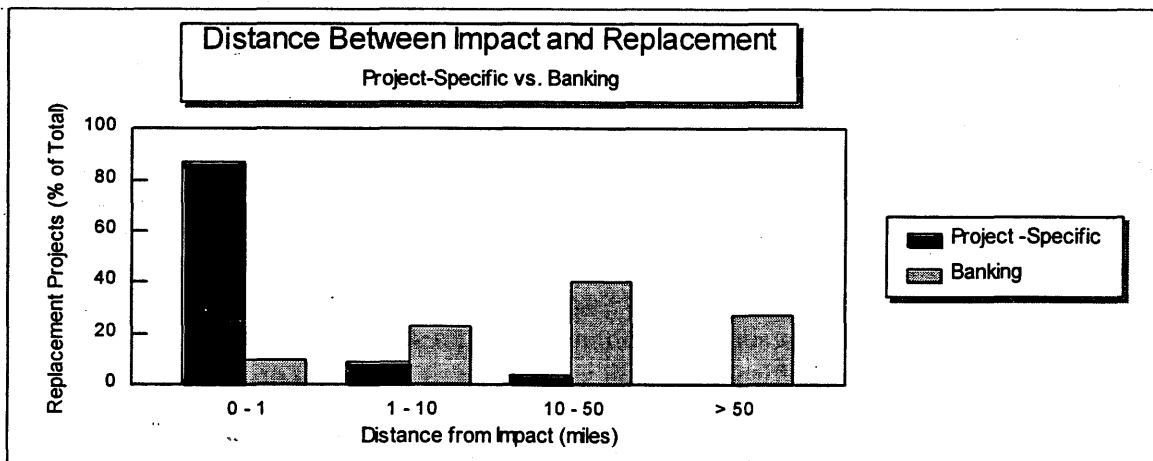


Figure 1. Comparison of the distance between wetland impact site and replacement site for project-specific replacement and replacement via wetland banking.

The wetland banking committee was also interested in determining the time differential between the date of a wetland impact and the date of creation of the wetland bank site which was debited as mitigation for the impact. The data show that for 1995, 7.4 acres had been established approximately five years before the impact occurred; 1.9 acres were established about three years prior to the impact; 2 acres were established approximately two years before the impact; 1.7 acres were established about 1.5 years prior to the impact, and 6.27 acres were established 1 year prior to wetland impact. The data also show that 44.03 acres were established concurrent with the impact. Additionally, 7.18 acres of bank were established 0.5 years after the impact. There were 62.33 acres debited from banks in 1995 which had insufficient data available to determine the time

differential. Technically, the banking credits that were established concurrent with or after the wetland impacts should not have been designated as banked acres, since by definition, wetland banking involves establishing credits prior to the impact.

For project-specific mitigation, the files did not contain information on when the replacement wetlands were constructed. The WCA rules require prior or concurrent replacement, or a financial guarantee that replacement will occur, for those projects using project-specific mitigation; however, the rule does not require an official post-construction sign-off or review of the mitigation wetland to ensure that the mitigation has actually occurred.

***C. The location of wetland bank sites is seldom based on ecological/hydrological needs***

Presently, the location of wetland bank sites is almost entirely dictated by the presence of landowners who are willing to undertake wetland creation or restoration projects. In some instances the landowners sell the rights to conduct such projects to other entities, such as transportation agencies. To date, this system has resulted in a fairly equitable distribution of banking sites statewide (see maps in Appendix C) and in many cases, the restored or created wetlands address certain watershed needs. However, it's possible that wetland banking sites could address watershed needs much more effectively if the location of the sites was based on an analysis of identified problems as well as the presence of willing landowners. In addition, the collective nature and pro-active planning associated with wetland banking may provide a better opportunity to accomplish this compared to project-specific mitigation. The WCA contains a provision that requires local governments, through their surface water management plans, to identify high priority areas for wetland preservation, enhancement, restoration and establishment. WCA rules contain criteria for identifying such areas. These high priority areas are just beginning to be identified during the current round of water plan revisions and have not yet been used to target wetland bank sites.

Most banking projects involve the restoration of previously disturbed wetlands. However, there are circumstances where wetland banking projects and, more often, project specific replacement projects have the potential to adversely affect desirable upland habitats such as native prairie or woodlands. These projects are always wetland creation projects, rather than wetland restorations.

***D. Current wetland bank accounting/administration services are insufficient***

Presently, the BWSR is the sole agency responsible for tracking banking activities, including crediting, debiting and legal oversight of property and transaction records. Significant increases in the workload associated with wetland bank accounting and

administration have occurred as use of the bank has increased substantially (due to greater demand and acceptance) and as the responsibility for replacing impacts from public road projects was shifted to BWSR in 1996.

Because of the increased work load, the BWSR has been unable to track trends associated with wetland banking such as distance from impacted wetlands to bank sites used and also wetland types impacted and types of replacement acres used. To effectively evaluate wetland replacement based on the WCA goals, it is necessary to track these cumulative impacts. These data are desirable because they yield the information necessary to effectively target wetland bank sites to best meet ecological needs. As the use of wetland banking continues to increase, more BWSR staff time will be required to update and maintain the records of these transactions, conduct monitoring of projects, and to manage wetland restoration projects needed to replace impacts from local public road projects.

***E. Current monitoring and certification are inadequate***

A lack of monitoring of wetland bank sites was identified as a weakness in the current wetland banking system. This was identified as a problem with project-specific mitigations, as well. Mitigation sites, including newly established banks, are to be monitored annually for five years after completion (unless the technical evaluation panel deems it unnecessary after three years). Under WCA rules, monitoring reports for each site are to be sent to the appropriate LGU to help ensure the success of the mitigation wetland.

It was found during the data collection portion of this study that these annual monitoring reports are not being received by the LGUs on a regular basis. Based on a small sampling of LGUs, it was found that only about 8 percent of the project-specific mitigations occurring in the jurisdiction of these LGUs had annual monitoring reports submitted. For project-specific mitigation, this means that little information is available as to whether the mitigation actually did occur or whether the site is functioning as a wetland.

While wetland bank sites are subject to an initial evaluation by the Technical Evaluation Panel (TEP), the bank holders are also required to submit annual monitoring reports for five years after the banks are established. According to the same LGUs surveyed on project-specific mitigation monitoring, it was found that about 25 percent of the wetland bank holders within their jurisdictions were submitting annual monitoring reports. Again, these results are based on a small sampling of LGUs contacted and the results can only be considered as rough estimates.

Finally, the committee found that there are potential problems with WCA rules on banking as far as ensuring that wetland impacts do not occur until project applicants have officially obtained banking credits and the wetland bank is properly debited.

***F. There exists a lack of comprehensive, easily-accessible data***

A number of government agencies maintain databases pertaining to some aspect of wetland activities in Minnesota, but there is currently no single source containing all the state's wetland information. During the data analysis phase of the study, it was necessary to access the BWSR files, the DNR files, and contact several LGUs in order to obtain the required data.

The BWSR compiles an annual report which summarizes WCA activities in the state. The LGUs annually submit to the BWSR reports which contain such information as the number of replacement plans submitted, number of exemptions issued, and total wetland acres impacted and replacement acres used. The BWSR also records and tracks all the wetland banking activities in the state. In addition, the wetland restorations occurring under the Reinvest in Minnesota (RIM) Program are also recorded by the BWSR.

Another database available is the DNR's Environmental Review Database which tracks land use changes over time. These changes are projections based on environmental review documents such as environmental assessment worksheets, environmental impact statements, and various permits, including wetland replacement plan applications. The database tracks changes in wetland acreage as well as other land use alterations.

In addition, the USACE maintains a database for tracking all of the activities that they regulate. This database, called the Regulatory Assessment and Management System contains information for each project on the type of authorization, the acres and type of wetland affected, and mitigation efforts, including acres of impact avoided and acres of compensatory mitigation.

While information on wetland activities in the state is available, it currently must be extracted from a number of different sources which all have different standards and conventions for cataloging data. Therefore, it has been difficult to detect any significant trends in cumulative wetland losses and to determine whether the long-term goals of the WCA and other wetland regulatory and restoration programs are being achieved.

***G. Wetland replacement plans are sometimes incomplete***

It was found that some LGUs have been accepting and approving incomplete wetland replacement plan applications. The cause may be that the LGUs have not been diligent in evaluating the applications, the reviewing agencies are not thoroughly reviewing them, or a combination of the two. During the data collection portion of the study, it was estimated that about 10 percent of the wetland replacement plans reviewed were unclear or incomplete.

### H. Public vs. Private Components and Cash Banking

In Minnesota there are currently two separate banking systems in operation: the entrepreneurial system which is used by private (and a few public) developers and the public system established in 1996 for public road projects. This combination, although workable, leads to potential confusion among users and creates conflicts due to market influences of each system on the other.

An entirely entrepreneurial system offers the advantage of minimal government involvement and relies on free-market fiscal forces. An entirely public system would offer consistency and quality benefits that would remove many of the concerns about banking stated in earlier sections. Although a single system (i.e., entirely public or entirely entrepreneurial) would be simpler, changes to the current dual system were not considered by the committee.

In-lieu-fee, fee mitigation, "cash banking" or other similar arrangements, wherein funds are paid to a natural resource management entity for implementation of either specific or general wetland or other aquatic resource development projects, are not generally considered to meet the definition of mitigation banking as they do not typically provide compensatory mitigation in *advance* of project impacts. Moreover, such arrangements do not typically provide a clear timetable for the initiation of mitigation efforts. According to federal guidance<sup>7</sup>, the Corps of Engineers, in consultation with the other agencies, may find there are circumstances where such arrangements are appropriate so long as they meet the requirements that would otherwise apply to an offsite, prospective mitigation effort and provides adequate assurances of success and timely implementation. In such cases, a formal agreement between the sponsor and the agencies is necessary to define the conditions under which its use is considered appropriate.

#### Benefits of a "cash banking" system

- Simplicity for credit buyers.
- Uniform pricing possible.
- May be more cost-effective.
- Quality of sites is in public sector control.

#### Drawbacks of a "cash banking" system

- Market for entrepreneurial bankers affected by loss of demand and/or government price fixing.
- Negative balance: wetland losses occur before replacement unless "jumpstarted" by public funding.
- Government staff needed to develop sites.

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Federal Register, 60(443); March 6, 1995; pages 12286-12293.

Some of the drawbacks may be tempered if the credit buyers are limited to public project sponsors.

## **VII. Recommendations:**

The wetland banking committee reached agreement on several recommendations for improving wetland banking in Minnesota. Rule revision will be the primary mechanism to effect these recommendations, but other mechanisms could include statutory changes, memorandums of agreement, changes in operational policies, guidance development and educational efforts.

### **A. Wetland Bank Quality**

- **Wetland replacement standards for all regulatory programs should be rigorously enforced to ensure that all replacement wetlands (banked and project-specific replacements) meet expected levels of quality.**
- **Additional quality goals, including guidelines for vegetative coverage and diversity, should be developed.**
- **Encourage the establishment of a wider range of wetland types, relative to the types of wetlands lost, for both banking and project-specific replacement.**
- **Encourage restoration of previously drained wetlands rather than wetland creation and to particularly discourage creation projects that adversely affect high quality or scarce natural upland features for wetland replacement purposes. This may require some additional flexibility in the WCA rules regarding the location of replacement wetlands.**
- **Develop additional incentives for restoration of partially drained wetlands, based on an analysis of functions gained and lost.**
- **Establish incentives to encourage the highest quality banking sites, for example, award additional public value credits to established bank sites that meet certain high quality criteria, based on TEP review and approval. The Interagency Wetlands Group, with public input, should develop the qualifying criteria.**

### **B. Project-specific mitigation vs. banks**

Project-specific replacement and replacement through wetland banking each have advantages and disadvantages. It's impractical to recommend one over the other for all circumstances. Given the findings of this study that most project-specific mitigation tends to be created wetlands while most wetland banks tend to be restorations, and given that previous studies have shown that restorations are usually more successful than wetland creations, there is some rationale for promoting wetland banking. On the other hand, wetland banks were generally observed to be farther away from impact sites than project-specific replacements, and therefore less likely to replace localized wetland benefits. The following recommendations take these considerations into account.

- **Encourage the continued restoration of wetlands to serve as wetland banks, and in general, encourage the use of local wetland banks for replacement of small impacts. However, the decision on which replacement procedure is best for any particular project should be based on a project-specific analysis, taking into account the functions and values lost, the likelihood of achieving successful replacement, land availability, and other factors.**
- **Encourage greater use of restoration for project-specific mitigation**
- **Investigate the relative effectiveness of small, on-site wetland creations versus larger, off-site restorations as compensatory mitigation; document the factors and techniques associated with successful replacement in order to develop improved standards and guidelines.**

### **C. Wetland Bank Location**

- **Federal, state and local governments should collaborate on the identification of high priority sites for wetland restoration or creation that most effectively address watershed needs (water quality, flooding, habitat, recreation, etc.). Such sites should be identified in local surface water management plans. Encourage the establishment of bank sites in these high priority areas.**
- **State and federal agencies should encourage completion of ongoing gap analysis<sup>8</sup> studies and conduct additional gap analysis studies at the appropriate scales (watershed, ecoregion) to identify critical discontinuities**

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<sup>8</sup> Gap analysis is an emerging, geographic information system-based approach to identifying discontinuities, or gaps in habitat that are critical for the maintenance of wildlife populations.



in wildlife habitat and should provide such information to local governments for inclusion in local water plans.

- Agencies that have continuing, large scale wetland banking programs, such as the MnDOT and BWSR wetland banks associated with public transportation projects, should make a concerted effort to locate those banks in identified high priority areas. These agencies should also develop wetland bank sites that reflect the range of wetland types being lost, taking into account cumulative impacts, cost, and overall feasibility.

**D. Bank Accounting/Administration**

- **Establish a full time bank administrator position.**

The bank administrator would handle the project reviews, legal documentation, trend analysis, reporting, and accounting needs associated with maintaining the state's wetland banking system. Included in the duties of this position is the administration of the public road wetland replacement program.

**E. Monitoring and Certification**

The Committee discussed the following options for improving monitoring and certification.

- **Assigning responsibility for monitoring:**

**Alternatives:**

- ✓ **Put monitoring authority in the hands of a governmental agency and remove the responsibility from individual land owners.**

Options:

1. Establish a position at the BWSR whose primary responsibility would be monitoring of mitigation sites. This position is in addition to the full time bank administrator position recommended under Part D. This position could have a statewide responsibility to conduct and coordinate monitoring of all project-specific mitigation and bank sites according to the WCA rules. Also, this position would be responsible for a share of the wetland administration duties during seasons where in-field monitoring is not feasible to allow more specific bank information to be tracked (e.g., database development and coordination).
2. Give LGUs the responsibility to monitor mitigated wetlands within their jurisdiction.

3. Establish a designated regional audit team to monitor mitigation wetlands. This team should consist of a group of interagency wetland specialists to complement the TEP.
4. Establish a monitoring system using a combination of the above suggestions

*or:*

- ✓ **Land owners remain responsible for monitoring, but with technical assistance.**

The land owner would remain responsible for ensuring that their monitoring reports are completed, but the actual monitoring may be conducted by a wetland specialist (i.e., a consultant or government employee). The landowner would be responsible for the associated costs. One possibility is to allow LGUs to collect an "escrow" payment from applicants that is released upon satisfactory completion of monitoring requirements.

- **Establish a regional interagency audit team to conduct broad-based follow-up on all regulated activities pertaining to wetlands, including impacts to wetlands and wetland replacement**

Regardless of whether monitoring remains the responsibility of landowners or is assigned to governmental agencies, the banking committee believes that the overall wetland regulatory system would be improved by routine oversight by an interagency group. This team would periodically review all facets of wetland regulation, identify deficiencies and make recommendations for improvement, and foster improved interagency coordination.

- **Revise procedures on wetland banking to ensure that wetland impacts do not occur before certified wetland credits are obtained by the applicant and the wetland bank is properly debited.**

#### ***F. Database***

- **Establish and maintain a central, joint database of wetland activities in the state.**

The database should contain information available from federal, state, and local governments. Important trends such as types and locations of wetland impacts and wetland acres used for replacement could be detected and tracked over time. This information could be used to more effectively target bank sites, determine deficiencies in monitoring, aid in general wetland mitigation program management, and determine whether the goals of the WCA and other regulatory and restoration programs are being achieved.

***G. Wetland Replacement Plans***

- **LGUs should return incomplete wetland replacement plans to the applicant for completion and resubmittal.**
- **Reviewing parties should identify deficiencies in wetland replacement plans to LGUs and to the BWSR. The BWSR, as part of their WCA oversight responsibilities, should work with LGUs to ensure that wetland replacement plans are complete.**
- **An interagency team should continue to evaluate and improve/simplify the replacement plan forms.**

***H. Public vs. Private Components and Cash Banking.***

- **An interagency team, including the Banking Study Committee, should continue to evaluate and improve/simplify the wetland banking process and evaluate the options that may be available using “cash banking” concepts.**

Based on the experiences of the public road replacement program and of some local government units, “cash banking” is a concept worth exploring to add simplicity and consistency to the wetland replacement/mitigation process. However, some of the drawbacks to cash banking (see page 16) may require that its use be limited to clearly defined situations.

***I. LGU Training***

- **LGUs should continue to be provided with advanced training and education on components of wetland banking and mitigation in the state.**

This training should address issues such as improving the quality of mitigation sites, improving administration of project-specific and wetland bank sites, and

more thorough review of replacement plans. The BWSR should continue to oversee the LGU activities and provide additional guidance and training where needed.

***J. Cost of Additional Services***

- **More funding should be allocated to cover the costs of additional recommended services.**

The Committee considered how to pay for the extra services which were recommended (dedicated monitor, technical panel, database, etc.). The following possibilities were identified:

1. The state government would fund the additional services. This logic is based on the idea that wetlands are valuable to the public, and therefore, the public should share the financial responsibility to protect them. The land owners should not be required to cover the financial burden while the general public can reap the benefits.
2. Those impacting wetlands would be charged a user fee. The idea behind a user fee system is that "the polluter pays." Those impacting wetlands are benefiting from this impact (e.g., developers) and therefore they, not the public, should be responsible for compensation. Further, the user fee may provide a disincentive for wetland impacts.

The Committee did not reach agreement on how to handle the additional costs at this time. The state legislature, in conjunction with the concerned stakeholders, will need to address this issue.

## VIII. Glossary

Creation of wetlands - Construction of wetlands in an area that was not wetlands in the past.

50 percent to 80 percent counties - Those counties in Minnesota with less than 80 percent but greater than 50 percent of their presettlement wetlands remaining.

Greater than 80 percent counties - Those counties in Minnesota with greater than 80 percent of their presettlement wetlands remaining.

High quality wetland - Self-sustaining wetland that exhibits the full range of elements (biological and chemical) and processes characteristic of its type.

Less than 50 percent counties - Those counties in Minnesota with less than 50 percent of their presettlement wetlands remaining.

Mitigation, compensatory mitigation, mitigation wetland - As used in the state wetland plan, mitigation refers to the restoration, creation, enhancement, and in exceptional circumstances, preservation of wetlands expressly for the purposes of compensation for the loss of other wetlands due to human activities. Synonymous with "replacement".

Minnesota Routine Assessment Method For Evaluating Wetland Values (MNRAM) - An analytical method to evaluate wetland functions and values. Using MNRAM, an evaluator assigns a low, medium, high, exceptional, or not-applicable rating to a consolidated set of nine wetland functions and values:

- |                           |                                    |
|---------------------------|------------------------------------|
| *Flood and storm water    | *Fishery habitat                   |
| *Shoreline protection     | *Floral diversity and integrity    |
| *Ground water interaction | *Aesthetics, recreation, education |
| *Water quality protection | *Commercial uses                   |
| *Wildlife habitat         |                                    |

New wetland credit (NWC) - Wetland replacement credit that can be used for any portion of wetland replacement.

Off-site replacement - Wetland replacement that is not adjacent to or contiguous with the impact site.

On-site replacement - Wetland replacement that is adjacent to or contiguous with the impact site.

Project-specific mitigation - The direct creation or restoration of wetlands to replace wetlands being impacted.

Public value credit (PVC) - Wetland replacement credit that can only be used for the portion of wetland replacement required above a 1:1 ratio.

Replacement - See "Mitigation"

Restoration of wetlands - The re-establishment of an area that was historically a wetland but currently provides no or minimal wetland functions due to manmade alterations such as filling or drainage.

Technical evaluation panel (TEP) - A panel established by the Minnesota Wetland Conservation Act to address technical issues related to wetland functions, values, location, type, and size, and to make recommendations on wetland replacement plans, exemption, and no-loss determination, sequencing determinations, local comprehensive wetland plans, and wetland banking plans. A panel is comprised of a technical professional with expertise in water resource management appointed by the local government unit, a technical professional representing the county soil and water conservation district, and a technical professional representing the Minnesota Board of Water and Soil Resources.

Wetland bank site - The TEP-approved restored or created wetland and the associated upland area available for sale of credits.

Wetland credit - A quantifiable unit of restored or created wetland and associated land resources used to offset wetland losses, often referred to in the context of wetland banking. In Minnesota, the unit of measure is acres, categorized by wetland type.

Wetland debit - A unit of wetland value withdrawn from an approved bank for compensation of a wetland impact.

Wetland ecological unit - Ecological "information zones" that provide a way to:

- \* describe regional differences
- \* support watershed-based administration
- \* get away from "one-size-fits-all" wetlands management

Fourteen wetland ecological units are identified in the Minnesota Wetlands Conservation Plan, ver. 1.0.

Wetland function - A physical, chemical, or biological process or attribute of a wetland. Theoretically, all wetland functions can be measured or quantifies objectively.

Wetland Types

Type 1 - Seasonally flooded basin or flat

Type 2 - Wet meadow

Type 3 - Shallow marsh

Type 4 - Deep marsh

Type 5 - Shallow open water

Type 6 - Shrub swamp

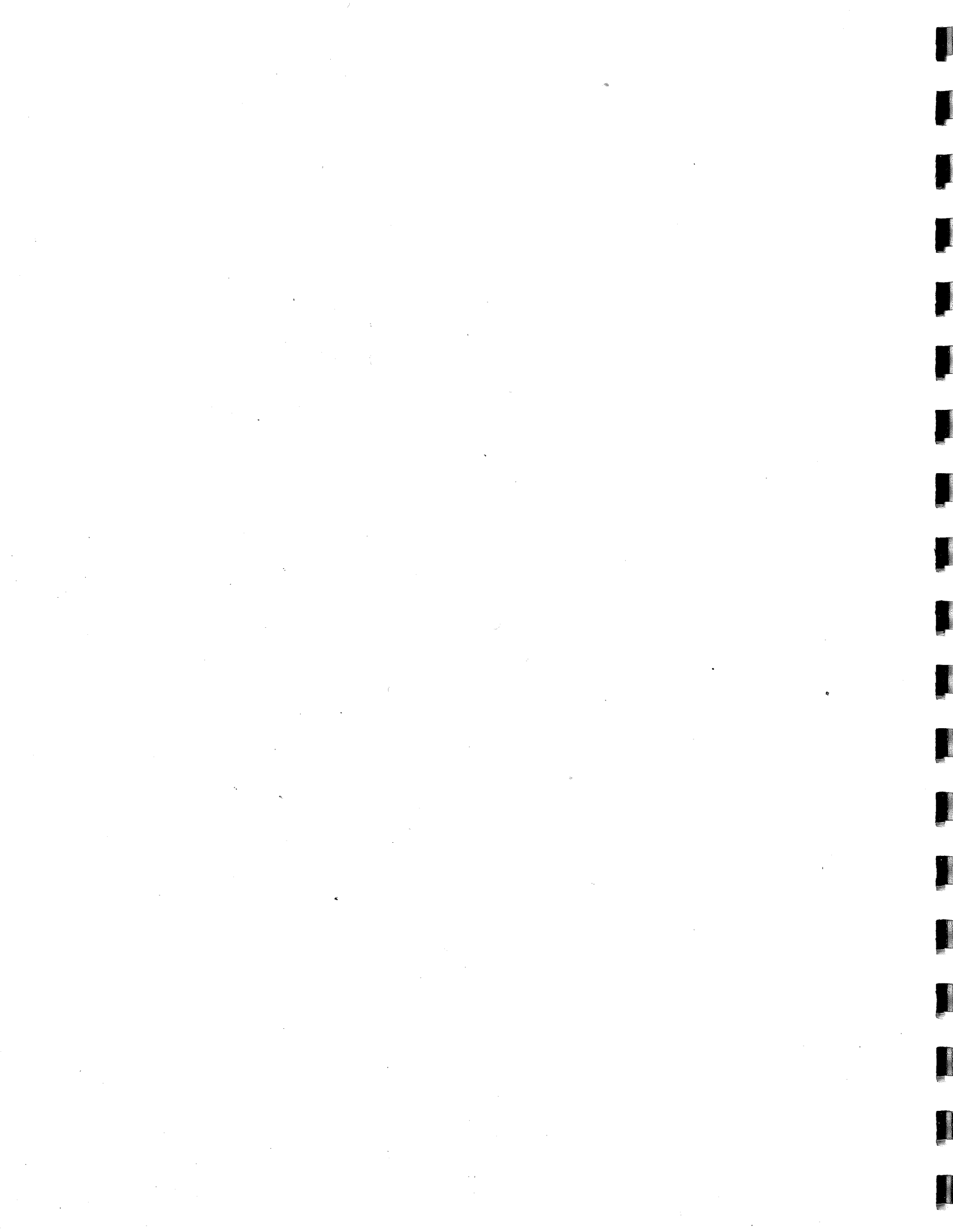
Type 7 - Wooded swamp

Type 8 - Bog

Wetland value - The extent to which a physical, chemical, or biological process or attribute of a wetland is beneficial or valuable to individuals or society. Since wetland values are culturally derived, they may be difficult to quantify and may change over time.

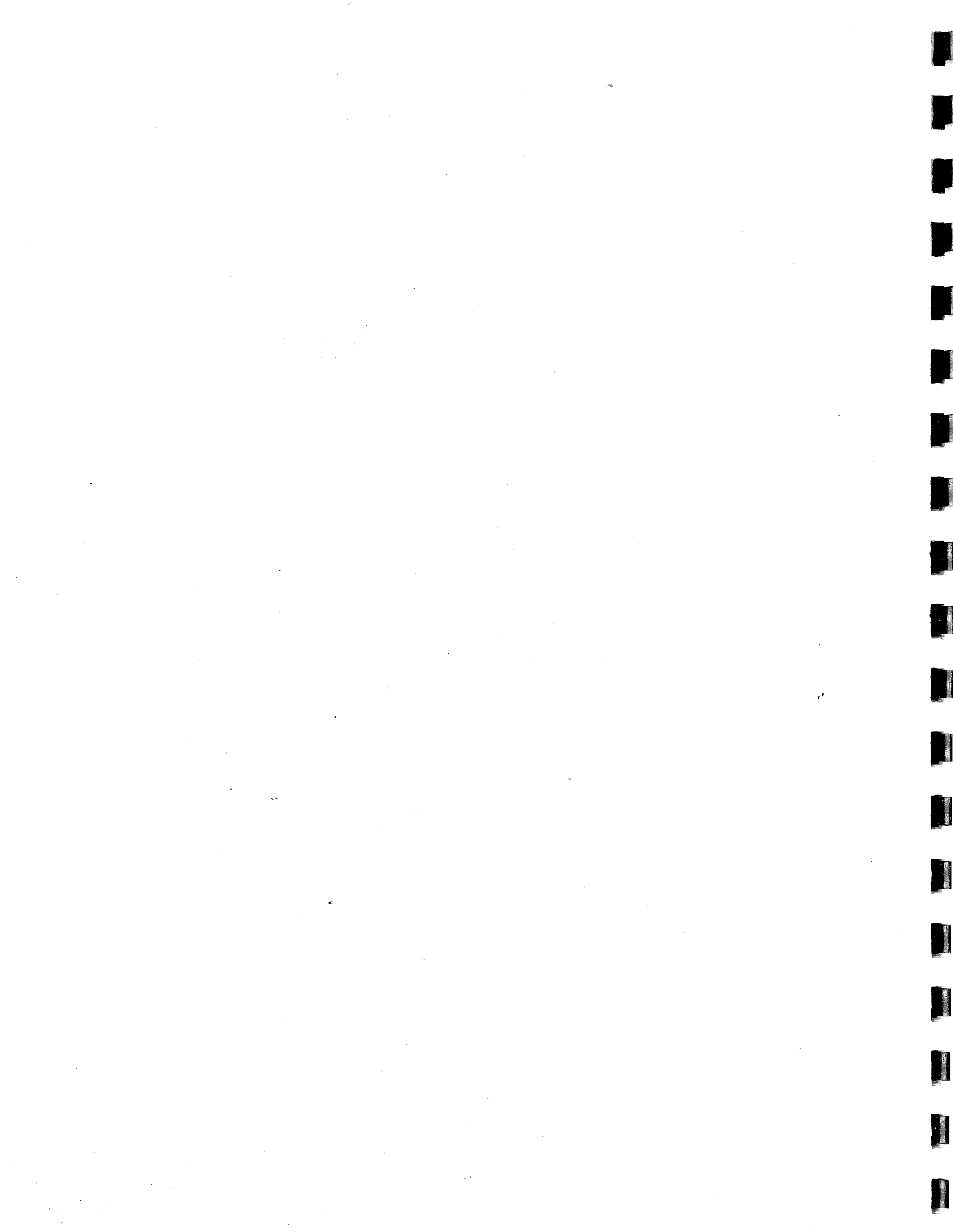
**Appendix A: Wetland Banking Subcommittee Members**



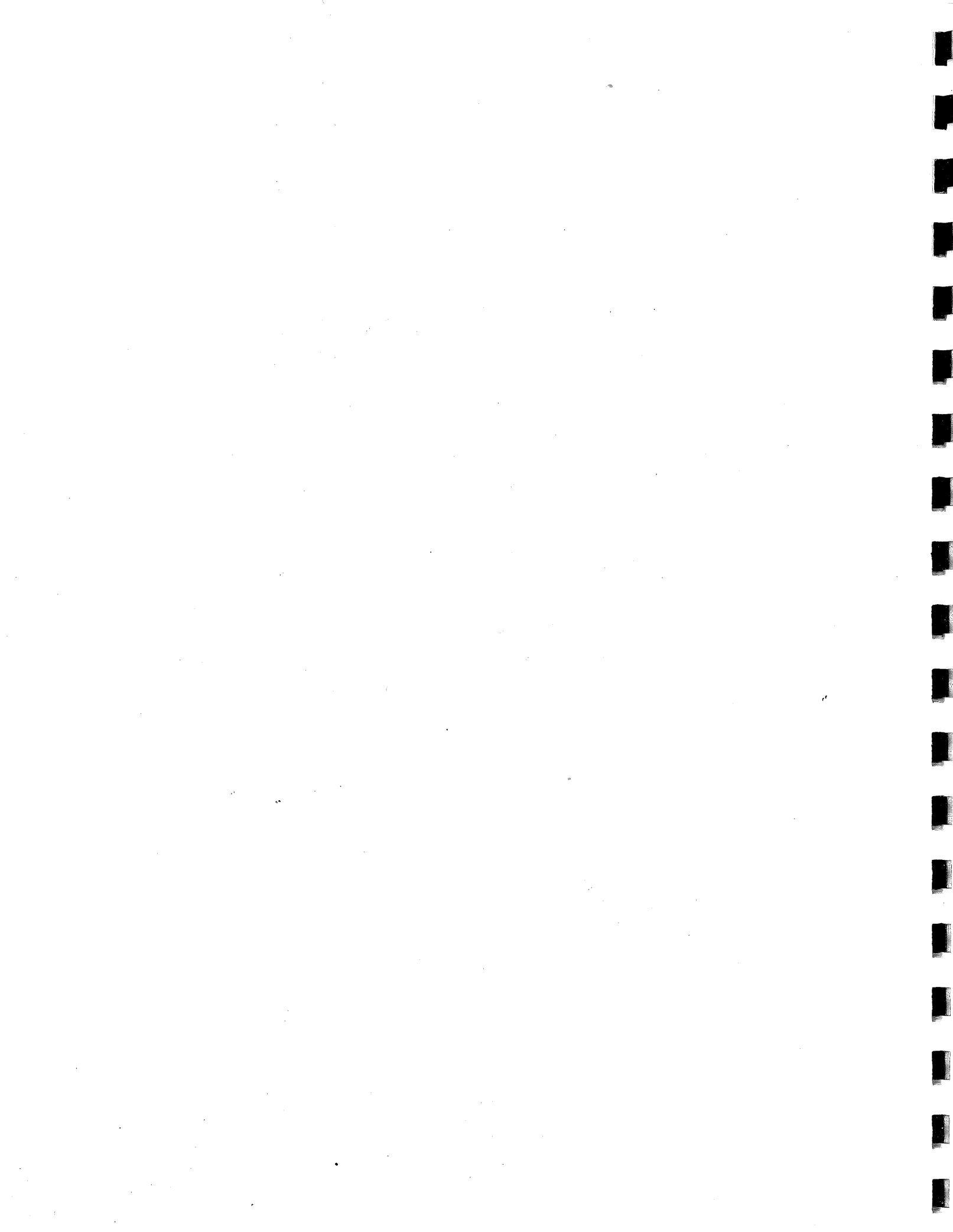


## Wetland Banking Subcommittee Members

<u>Name</u>	<u>Affiliation</u>
Mark Dittrich	MN Department of Agriculture
Steve Eggers	U.S. Army Corps of Engineers
Keith Faruq	MN Department of Transportation
Patty Hoch	MN Department of Transportation
Ken Kailing	Consulting Ecologist
Amy Janke	MN Department of Agriculture
John Jaschke	MN Board of Water and Soil Resources
Lynn Lewis	U.S. Fish and Wildlife Service
Mark McNamara	Wright Soil and Water Conservation District
Cheryl Miller	National Audubon Society
Loyd Mitchell	U.S. Fish and Wildlife Service
Doug Norris	MN Department of Natural Resources
Don Ogaard	Red River Watershed Management Board
Barbara Ohman	MN Board of Water and Soil Resources
Frank Pafko	MN Department of Transportation
John Smyth	Bonestroo and Associates
Matt Seltzer	MN Attorney General's Office
Sarma Straumanis	MN Department of Transportation
Larry Zdon	MN Pollution Control Agency



**Appendix B:**    Review of Selected Aspects of Mitigation Banking Programs



# Mitigation Banking Programs: Selected Aspects

## I. Certification and Monitoring

**Federal Guidance** specifies formation of a Mitigation Bank Review Team (COE, EPA, NRCS, FWS) to oversee development and implementation of banking instruments and plans. The COE is ultimately responsible for decisions about the bank, for noticing the public, authorizing bank use for any particular project, and determining the number of credits required to compensate impacts. The Guidance recommends monitoring for "an appropriate interval," generally every year for five years and puts responsibility on bank sponsor, with performance standards specified in a legally-binding banking instrument.

### **Other programs and ideas:**

- a single lead agency implements, manages, and monitors bank activities
- interagency team certifies bank and conducts annual review (Wisconsin)
- monitoring by state or federal inspector, with services paid for by credit producer
- county manager provided annual reports on banks to interagency team
- a certified, professionally qualified bank monitor conducts monitoring (rather than self-monitoring) and reports to appropriate agency
- monitoring results go to permitting agency, interagency team, and/or public
- banking instrument contains contingency plan (e.g. failure because of floods or droughts)

## II. Size and Type considerations for banks

**Federal guidance** advises consideration of ecological suitability of proposed site for achieving goals of the bank, including size and location relative to other ecological features. It is also suggested that decisions about type and location be made within context of comprehensive watershed management plan.

### **Other programs and ideas:**

#### **Consider landscape context**

- conduct watershed or other geographical inventory and base comprehensive plan for restoration and mitigation on (1) recreating historic wetland assemblage; (2) optimizing the array of functions and values; or (3) maximizing one or more particular functions
- conduct aquatic systems inventory and establish preferences accordingly
- allow out-of-kind mitigation transactions within context of a comprehensive plan

#### **Establish preferences**

- prioritize wetland types, sizes, and locations needed to restore impaired functions
- establish preferences for wetland complexes
- set ratios to encourage particular types of wetlands (e.g., 3:1 for vernal pools and climax riparian wetlands)
- integrate with existing habitats
- include credit for buffer zone
- establish preferences for banks that are 30 - 70 acres; or "the bigger, the better"

- for smaller wetlands, encourage small shallow basins within matrix of undeveloped upland

### **III. Bank Siting and Service Area**

**Federal guidance** recommends site selection based on anticipated mitigation need and ecological suitability of site for achieving goals and objectives of bank. Recommends a watershed-based plan.

#### **Other programs and ideas:**

##### **Service area is a delineated ecological region**

- according to a watershed plan which specifies on-site and off-site options
- area wherein impacts can reasonably be expected to be compensated
- same harbor or adjacent coastal or shoreland zone
- same biotic region or subregion
- same USGS hydrologic unit
- same Bailey unit
- same floristic province
- or, by administrative unit - county, park boundary, COE district, or within 8 mile radius

##### **Other siting/service area considerations**

- physical connection and integration with existing habitats
- situated to ensure adequate hydrology (floodplain or high watertable), having a majority of hydric soils
- sited so that no high quality habitat or natural areas (e.g., oak groves and prairies) are affected
- going outside service area only on a restricted and case-by-case basis
- higher replacement ratios outside service area (2:1 in Chicago District)

### **IV. Cash banking** (Collection of fees for some future project in-lieu of specific compensatory mitigation action)

**Federal Guidance:** Fee mitigation arrangements are not considered to meet the definition of mitigation banking because they do not typically provide compensatory mitigation in advance of project impacts nor do they have timetables for implementation. COE may find unique circumstances where this is appropriate so long as certain conditions are met.

#### **Eligibility**

- case-by-case for individual permits or automatic under general permits
- eligibility only to projects in defined area
- eligibility based on defined criteria for mitigating site-specific and off-site impacts

#### **Fees**

- fee based on cost of mitigation and varies per acre (Arkansas)
- set fees per acre (Louisiana)

- fee based on acquisition, design, construction, monitoring but management (according to established plan) is paid for by owner of site (Maryland)
- set fees on pro-rata basis for restoration of particular marsh
- flat fee under general permit; individual permits vary
- fees or ratios (2 : 1) should be higher for cash & pre-sale banking because uncertainty of success is higher

## **V. Pre-sale of credits** (Debiting bank credits from a specific mitigation bank before wetland is fully functioning)

**Federal guidance:** Number of credits available for withdrawal should generally be commensurate with level of aquatic functions attained at a bank at the time of debiting. Level of functioning determined by performance standards or use of functional assessment. Minimum requirements prior to debiting: (1) banking instrument approved; (2) bank site secured; (3) financial assurances in place. The temporal loss of functions associated with debiting prospective projects may justify higher compensation ratios.

### **Other programs and ideas**

- advance sale of 25% if approved plan, secured site, financial assurance so long as work begins within 6 months (Wisconsin)
- Percentage of credits available at charter stage; when hydrology is established; when vegetation is planted; and when certification occurs (Chicago)
- No debiting before hydrology established, but set percentage at development stages prior to certification (Michigan)
- higher ratios for pre-sale, such as 1.5 : 1 (various states)
- financial assurances if credits sold before bank fully functioning (performance bond, escrow, collateral bond)
- contingency plan (with sufficient funding) if credits sold before fully functioning

## **VI. Incentives for High Quality Wetlands**

**Federal guidance** makes no reference to quality incentives.

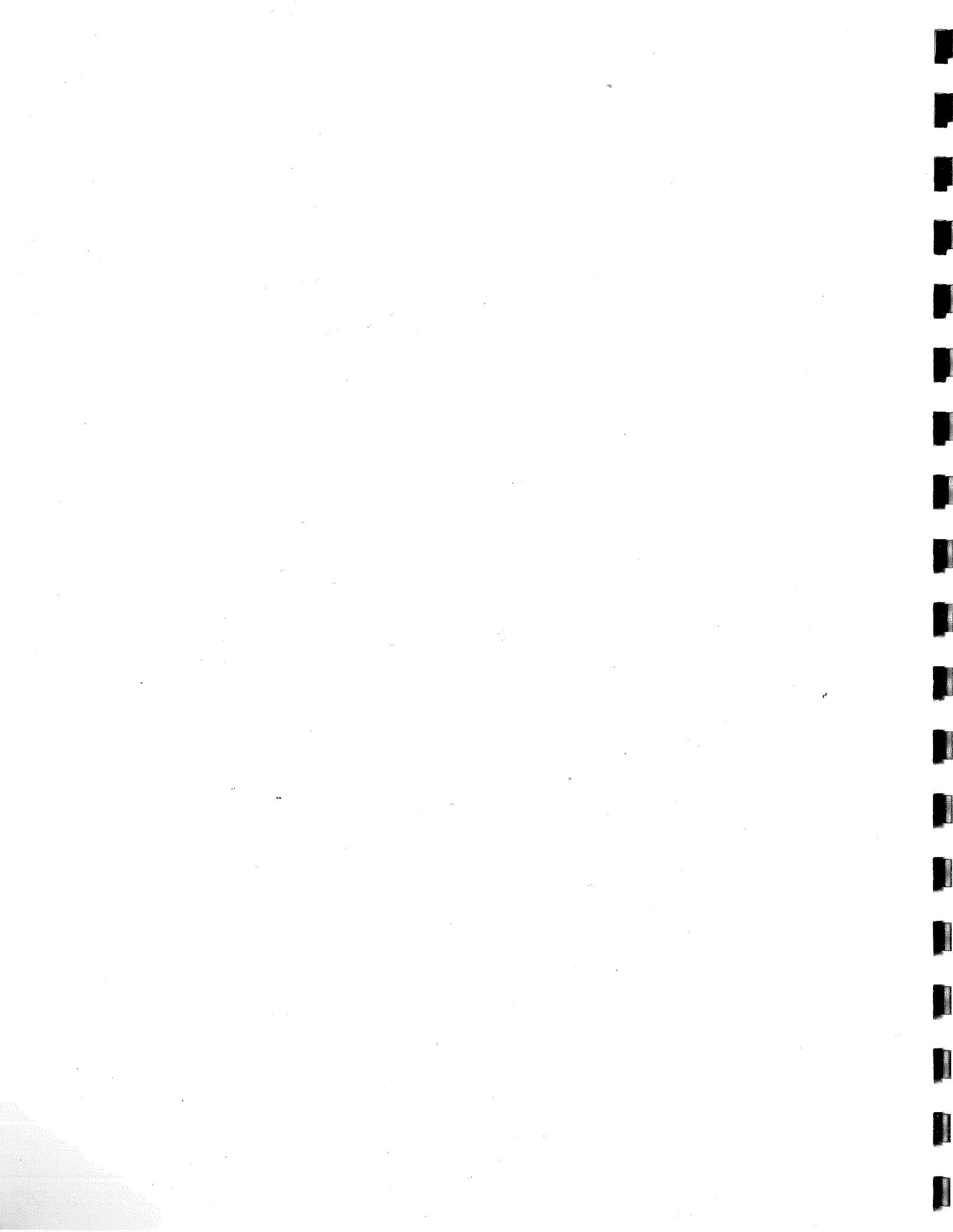
### **Other programs or ideas**

- banking instrument sign-off contingent on meeting performance standards which specify in detail vegetation, hydrology, adjacent land use, etc. Enforce performance standards with de-certification of bank, if necessary
- establish site selection criteria that will tend to promote high quality wetlands: connectivity to natural areas, upland areas as buffers, adjacent to public lands to create large scale habitat areas; contain no known hazardous waste.
- flood control should not be primary purpose of bank
- bank plan identify and incorporate various factors related to natural diversity
- use compensation ratios on a sliding scale to capture functions/values of impacted and replacement wetland. One axis of a matrix identifies whether the impacted wetland is pristine or slightly to severely degraded; the other axis stage of success of the replacement wetland (no criteria met; 2-6 criteria met; etc.)



- restoration projects selected on basis of feasibility, ecological merit, potential to yield new insights, competency of plan and implementation team
- certification for bank operators
- involvement of universities in research and training
- penalties for non-compliance with terms of agreement
- guarantee a reasonable return absent an active market for credits. Either a floor price could be established or the government could agree to buy surplus
- to keep price high enough for investors, limit number of potential mitigation sites by either pre-designating them or by limiting quantities of mitigation land in bank at any one time. Alternatively, could make a banks a public utility or regulated monopoly)
- establish credit using HEP, HES, or other quality indices rather than solely acreage

**Appendix C: Minnesota Wetland Banking System and Status Report**



# MINNESOTA WETLAND BANKING SYSTEM

## INTRODUCTION

Minnesota is known as "The Land of 10,000 Lakes," and the state's water resources are among its greatest attractions and its most cherished natural amenities. An important component of these water resources is the State's wetlands: bogs, marshes, fens and other areas that are crucial to ecological balance and important natural habitats. In 1991, the Minnesota Legislature passed the Wetland Conservation Act, the purpose of which was to halt the loss and degradation of wetlands, and to conserve them for future generations.

Part of that legislation was authority to establish a wetland banking system in Minnesota. The resulting administrative rules created a market-based system of wetland credits. In brief, this allows landowners who restore or create wetlands, and who agree to maintain them in perpetuity, to receive credits that can be sold at a price determined on the open market<sup>1</sup>. Persons who need to drain or fill wetlands in other locations can buy these credits, allowing them to proceed with building projects and other activities requiring the draining or filling of wetlands.

Serving as the intermediary in these transactions is the Minnesota Board of Water and Soil Resources (BWSR). Under authority given to it by the Legislature, BWSR oversees the wetland banking system, which allows landowners to deposit their credits in the state wetland bank and locate potential purchasers; and persons who need to drain or fill wetlands to purchase credits necessary for approval of their projects.

The administrative rules adopted by BWSR expressly allow the use of wetland banking credits deposited in the state wetland bank as a means of providing replacement under the Wetland Conservation Act. Wetland banking credits may also be used to provide wetland mitigation under other regulatory programs, such as the program administered by the United States Army Corps of Engineers, the United States Department of Agriculture, and the

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<sup>1</sup>Subject to approval by regulatory authorities, wetland banking credits may be used to provide replacement wetlands to mitigate wetland impacts. No warranty or representation is made as to the value of wetland banking credits.

Minnesota Department of Natural Resources. The use of wetland banking credits as a form of wetland mitigation under such programs is subject to the approval in each case of the responsible agency. In 1994, the state and federal agencies which administer programs for the protection of wetlands within Minnesota entered into an Interagency Memorandum of Understanding for wetland regulatory simplification. Under the Interagency Memorandum of Understanding, the regulatory agencies concurred that it is in the public interest to allow use of the state wetland bank, where appropriated, as a compensatory option, and that the respective agencies will consider the use of state wetland bank credits in applicable and appropriate situations.

The establishment and administration of the state wetland banking system by BWSR is authorized in Minn. Stat. § 103G.2242 (1996). The administrative rules adopted by BWSR for the implementation of the state wetland bank are found in Minn. R. 8420.0700-.0760 (1995), amended by 20 Minn. Reg. 2629 (June 10, 1996).

### **DEPOSITING WETLAND CREDITS**

To receive wetland credits, the owner of the land on which a restored or newly created wetland is located must hold fee title to or a sufficient perpetual easement in the land. Prior to restoring or creating the wetland, the landowner must apply to the Local Government Unit (LGU) having jurisdiction over the site of the banked wetland for approval of a wetland bank plan. Minn. R. 8420.0740, subp. 1. When the wetland has been restored or created, and has been certified as successful by the Technical Evaluation Panel (TEP) after a mandatory waiting period (6 months for wetland restorations and 12 months for wetland creations), the landowner records a *Declaration of Restrictions and Covenants* on the land. This *Declaration of Restrictions and Covenants* then runs with the land, and binds all future owners of the land and requires the wetland to be maintained in perpetuity. At this point, the landowner is ready to deposit the credits. The following summarizes the procedures for depositing credits:

1. Technical Evaluation Panel (TEP) and LGU make final determination that the restored wetland is suitable for deposit into the bank. Minn. R. 8420.0740, subp. 1.L.

2. TEP and LGU allot the appropriate number of wetland credits to the Applicant. Minn. R. 8420.0740, subp. 1.K.
3. Applicant records or files the required *Declaration of Restrictions and Covenants* in the real property records of the county where the banked wetland is located.
4. Applicant obtains a *Consent and Subordination Agreement* from any parties with existing interests in the land (e.g., lenders who hold a mortgage on the property or fee owners if Applicant holds an easement interest).
5. Applicant signs the *Application for Deposit of Wetland Credits* in the presence of a notary.
6. LGU reviews evidence provided by Applicant that Applicant holds necessary fee title or perpetual easement to land on which restored or newly created wetland is located. If the Applicant's interest in the land is an easement, then the easement must expressly allow the establishment and perpetual maintenance of the wetland. The LGU may wish to consult with the LGU's attorney on title and easement issues.
7. LGU obtains proof from the Applicant that a *Declaration of Restrictions and Covenants* with any necessary *Consent and Subordination Agreement(s)* has been recorded or filed. The LGU may wish to consult with the LGU's attorney as to the need for and adequacy of any *Consent and Subordination Agreement(s)*.
8. LGU signs the *Application for Deposit of Wetland Credits*.
9. Applicant sends fully signed *Application for Deposit of Wetland Credits* and required attachments to BWSR and retains duplicate copies for Applicant's records.
10. BWSR reviews *Application for Deposit of Wetland Credits* to insure that it is in proper form and properly signed by Applicant and Local Government Unit.
11. BWSR confirms that *attachments* listed at end of *Application for Deposit of Wetland Credits* have been attached.
12. BWSR prepares *Master Account Record*.
13. BWSR mails copy of *Master Account Record* to Applicant.

### **TRANSFERRING AN ENTIRE WETLAND ACCOUNT**

In some cases, a landowner who has restored or created a wetland and deposited credits into the wetland bank may wish to transfer the entire account and all the credits in it to another

party. If this other party is not going to use the wetland credits right away as part of a replacement plan, the only way to transfer the credits is to transfer ownership of the fee title or easement to the site of the banked wetland. In other words, until the credits are used to provide replacement under an approved replacement plan, the credits must be held by a person who holds fee title to or a suitable perpetual easement in the land. Upon transfer of the fee title or easement, BWSR will transfer the credits to the new owner. This is called a **voluntary transfer**, which the Account Holder makes as follows:

- Transfer fee title or perpetual easement to New Account Holder, according to the normal procedures for real estate conveyance.
- Complete *Application for Voluntary Transfer* and sign it in the presence of a notary.
- Have New Account Holder sign *Application for Voluntary Transfer*.
- Send BWSR *Application for Voluntary Transfer* and certified copy of recorded instrument showing conveyance of fee title or easement to New Account Holder.

In other cases, Account Holder's interest in the land on which the banked wetland is located will be transferred to another party involuntarily in a bankruptcy, divorce, foreclosure, or by passing as part of a decedent's estate. In this case, BWSR will transfer the credits to the new owner of the Account Holder's interest in the land upon application by the new owner and receipt of proof of ownership reasonably satisfactory to BWSR. This is called an **involuntary transfer**, and it is accomplished by the new owner of the Account Holder's interest in the land as follows:

- Complete *Application for Involuntary Transfer* and sign it in the presence of a notary.
- Obtain certified copy of recorded or filed instrument showing transfer of fee title or suitable perpetual easement to new owner, plus supporting documents as specified in the Minnesota Standards for Title Examinations.

- Send BWSR *Application for Involuntary Transfer*, and certified copies of appropriate document(s).

For either voluntary or involuntary transfers, documents other than a deed to the new Account Holder may be required, as specified in the Minnesota Standards for Title Examinations. Since the supporting documentation is different for each type of transfer, BWSR will seek the advice of the Attorney General's office as necessary to verify that all formalities necessary for the transfer have been complied with to the reasonable satisfaction of BWSR.

### **PURCHASE, SALE, AND WITHDRAWAL OF WETLAND CREDITS**

The wetland banking system is most frequently used by landowners who must buy credits for a replacement plan under the Wetland Conservation Act where an existing wetland must be drained or filled and project-specific replacement is not possible. Wetland banking credits may also be used to provide wetland mitigation under programs other than the Wetland Conservation Act when approved by the appropriate regulatory authority such as the United States Army Corps of Engineers, the United States Department of Agriculture, or the Minnesota Department of Natural Resources. Except in the case of the transfer of an entire wetland account, wetland credits may be bought and sold only when the buyer has received regulatory approval for use of the credits, and when the credits are immediately withdrawn from the wetland bank upon purchase. Four parties are involved in such a transaction: the Account Holder/Seller; the User of Credits/Buyer; the Local Government Unit or other regulatory agency having jurisdiction over the impact site; and BWSR, which operates the wetland bank.

The transaction between buyer and seller is like any other private sale, and both buyer and seller should seek legal counsel when appropriate. The price and the other terms of the sale are negotiable between the parties. BWSR keeps a list of holders of wetland accounts and can supply buyers with names of prospective sellers. BWSR will provide information on the number of credits in an Account as shown in its records, and approve withdrawals, but does not guarantee



title to the credits or the land which banked wetlands are located, or make any representations as to their value.

There are a number of preliminary steps which must occur before a transfer of credits can be processed by BWSR. First, buyer and seller must reach an agreement on the sale of the credits and enter into a *purchase agreement*. The sale of the credits will be contingent upon the approval by the local government unit or other regulatory authority to allow buyer to use the credits for replacement or other mitigation. Second, buyer must obtain approval for a replacement plan or other regulatory approval which allows for the use of the credits. Third, the parties will close upon the sale of the credits. After closing, buyer will pay the remainder of the purchase price for the credits and seller will sign the *Application for Withdrawal of Wetland Credits* and deliver it to buyer. Subsequently, buyer will send the Application to BWSR and BWSR will process the transaction.

The following is a summary of the relevant procedures:

1. User of Credits/Buyer and Account Holder/Seller reach agreement on sale of credits and enter into *purchase agreement*. The sample form should be modified by parties to meet their needs. In modifying the sample form, the parties should consult their attorneys if necessary.
2. User of Credits/Buyer obtains the required approval of the replacement plan from the Local Government Unit, and has an agent of the LGU sign the *Application for Withdrawal of Wetland Credits*. Prior to approving the replacement plan, LGU must, among other things, circulate the *Application for Withdrawal of Wetland Credits* as signed by the User of Credits/Buyer and verify the availability of the credits with BWSR pursuant to Minn. R. 8420.0720, subp. 2.F. Alternatively, the User of Credits/Buyer obtains approval for use of the credits to provide mitigation under a regulatory program other than the Wetland Conservation Act. Approval must be obtained from the appropriate regulatory authority, such as the United States Army Corps of Engineers, the United States Department of Agriculture, or the Minnesota Department of Natural Resources.
3. User of Credits/Buyer and Account Holder/Seller close upon sale of credits with User of Credits/Buyer paying purchase price and fulfilling other conditions negotiated by parties.
4. Account Holder/Seller signs the *Application for Withdrawal of Wetland Credits* in the presence of a notary.

5. User of Credits/Buyer sends the *Application for Withdrawal of Wetland Credits* to BWSR.
6. BWSR reviews *Application for Withdrawal of Wetland Credits* and, if approved, processes withdrawal by noting on *Master Account Record* and sending a copy of approved *Application for Withdrawal* to Account Holder/Seller and User of Credits/Buyer. Draining or filling of impacted wetland may not commence until User of Credits/Buyer is in receipt of *Application for Withdrawal* approved by BWSR.

**References:**

Minnesota Rules Chapter 8420

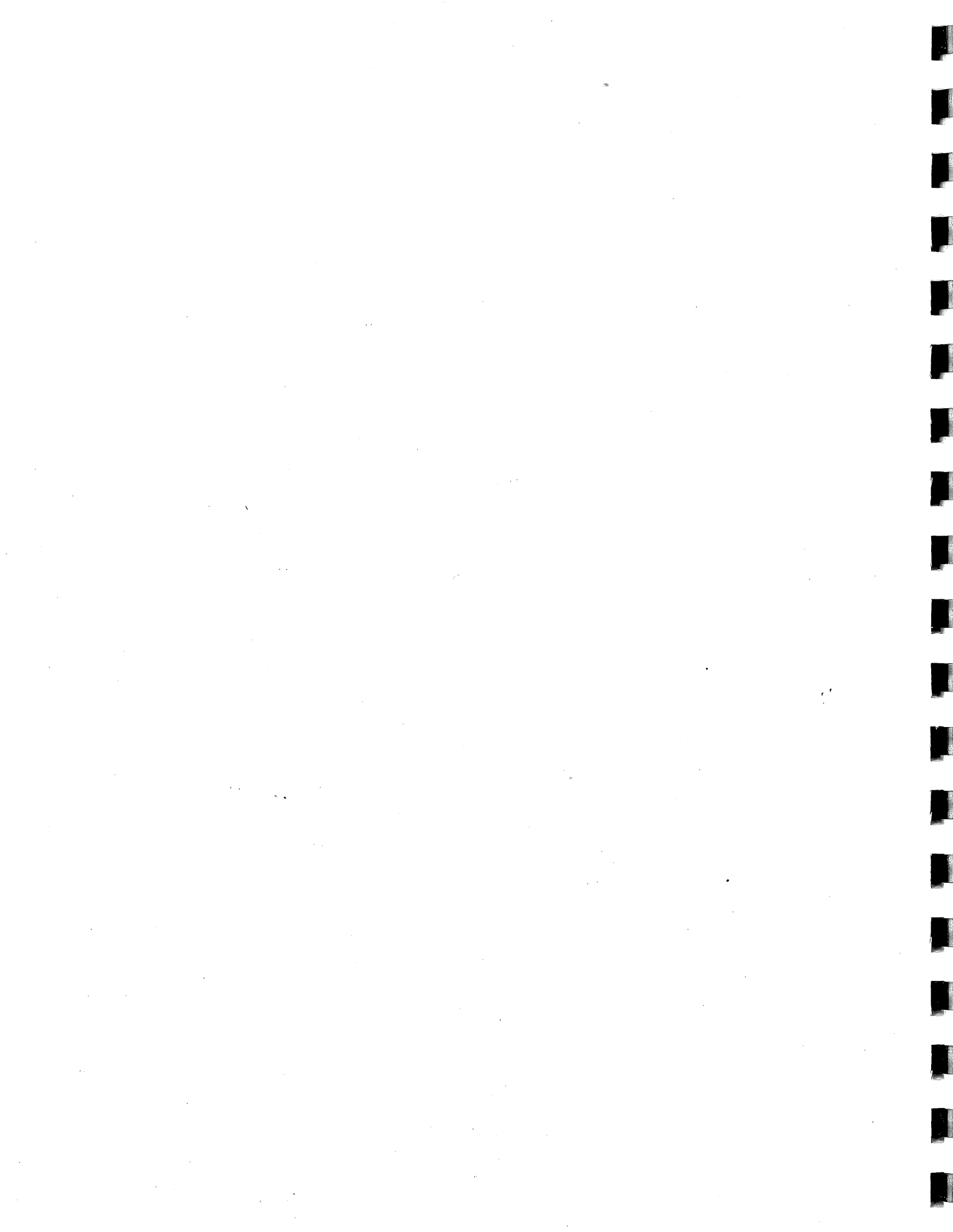
Minnesota Statutes 103A.201, 103B.3355, 103G.222 - 103G.2242, 103G.2372

**Authors:**

John Jaschke, Minnesota Board of Water and Soil Resources

Matt Seltzer, Minnesota Attorney General's Office

m:bankpro.pap



# MN Wetland Conservation Act: Wetland Banking Status Report

March 23, 1998



## I. Projects deposited in the bank.

Location (Co.)	Water-shed #	Size (ac.) NWC+PVC	Estimated Balance	Type	Account Holder	Phone #
Aitkin**	10	132.40	0.00	1/2/3	Warren/Dixie Enevoldsen	(507)835-3055
Aitkin	10	76.00	76.00	1/2/3/U	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	74.00	72.13	1/2/3/U	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	36.40	36.40	1/2/3	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	33.90	33.90	1/2/3	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	35.90	35.90	1/2/3	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	40.00	40.00	1/2/3	Deer Run, L.L.P.	(507)835-3055
Aitkin	10	36.40	36.40	1/2/3	Deer Run, L.L.P.	(507)835-3055
Anoka	21	0.32	0.02	3	Russ Johansen	(612)434-4640
Anoka	20	19.16	19.16	2/3/4/U	Walls Brothers Farms	(612)464-7060
Becker	60	55.37	38.91	2/3	Becker Co./SWCD	(218)847-2651
Becker	58	3.26	1.31	3	Jared & Cecelia Grieser	(218)439-6256
Beltrami	7	2.20	0.00	3	City of Bemidji	(218)751-3196
Benton	17	5.00	4.67	3	Larry/Loris VanHooser	(320)387-2835
Big Stone	22	21.50	21.50	3	Co. Hwy. Dept.	(320)839-2594
Carver	33	0.48	0.48	3	City of Chanhassen	(612)937-5739
Carver	33	26.90	26.90	3	City of Chanhassen	(612)937-5739
Carver	33	9.30	9.30	2/3/4	City of Chaska	(612)448-7851
Carver	33	25.60	12.70	3/U	Walter Carpenter	(612)825-9557
Cass	11	6.97	5.12	3	Cass County Env. Serv.	(218)547-3300
Cass	9	2.20	0.77	3	Cass County Env. Serv.	(218)547-3300
Cass (in Grant)	23	10.00	8.43	3	Cass County Env. Serv.	(218)547-3300
Chisago	37	1.20	1.20	4	Lee Sandager	(612)433-3503
Chisago	37	9.00	9.00	4	Lee Sandager	(612)433-3503
Clearwater	66	4.32	4.32	3	Co. Hwy. Dept.	(218)694-6132
Dakota (in Goodhue)	38	3.44	3.44	3/6	Co. Hwy Dept.	(612)891-7100
Dodge	41	45.00	41.87	2	Co. Hwy. Dept.	(507)374-6694
Dodge	41	25.60	1.52	1/2/3	Duane Johnson	(507)477-3441
Douglas	14	14.00	3.82	2/3/6	Co. Hwy. Dept.	(320)763-6001
Douglas	16	9.10	7.97	3	Gregory Larson	(320)763-4733
Douglas	26	50.10	50.10	4/5	Co. Hwy Dept.	(320)763-4733
Douglas	26	10.53	10.44	4	Arlen & Ruby Sabolik	(320)965-2396
Freeborn	48	31.40	25.30	1/2/3/4/U	Glen Jensen/M. Drury	(507)256-4700
Goodhue	38	2.81	2.81	3/6	Co. Hwy. Dept.	(612)388-2812
Grant	55	14.00	0.00	3	Theodore Myron	(218)589-8546
Grant	26	10.00	0.00	3	Arley Ellingson	(320)986-2773
Grant	23	16.36	16.24	3	Randy Reuss	(320)986-2901
Hennepin	20	1.60	1.60	3	City of Minnetonka	(612)939-8200
Itasca	7	5.10	5.00	3	Tom Hammerlund	(218)326-1881
Itasca (in Grant)	55	2.00	1.36	3	Itasca SWCD	(218)326-6595
Itasca (in Grant)	55	10.00	8.00	3	Co. Hwy. Dept.	(218)327-2853

## Projects deposited in the bank (cont.)

<u>Location (Co.)</u>	<u>Water- shed #</u>	<u>Size (ac.) NWC+PVC</u>	<u>Estimated Balance</u>	<u>Type</u>	<u>Account Holder</u>	<u>Phone #</u>
Mille Lacs	21	8.36	4.97	3	Co. Hwy. Dept.	(612)983-3146
Morrison	15	36.40	23.74	6	Co. Hwy. Dept.	(320)632-0120
Morrison	10	1.37	0.95	4	Harold Strom	(320)749-2910
Morrison	21	43.10	38.93	2	Robert Hobson	(320)355-2363
Pope	26	13.17	12.71	3	Co. Hwy. Dept.	(320)634-4561
Pope	26	0.50	0.50	3	Co. Hwy. Dept.	(320)634-4561
Pope	26	2.00	2.00	4	Co. Hwy. Dept.	(320)634-4561
Pope	16	2.97	2.97	3/U	Becky/David Elwood	(320)634-4628
Pope	26	0.80	0.80	3	Co. Hwy. Dept.	(320)634-4561
Pope	26	34.55	34.55	3/4	Co. Hwy. Dept.	(320)634-4561
Pope	26	0.48	0.48	2	Co. Hwy. Dept.	(320)987-3549
Ramsey	20	5.60	5.60	3/4	Richard Leonard	(612)484-3361
Renville	19	4.87	4.87	3	Renville Cty. Hwy. Dept.	(612)523-2135
Rice	33	22.20	22.20	4	Co. Hwy. Dept.	(507)332-6110
St. Louis	3	8.70	7.55	3/6	Alan Palkowski	(218)865-4611
Scott	33	1.96	1.96	3	John Mesenbrink	(612)447-5058
Scott	33	0.46	0.26	3	John Mesenbrink	(612)447-5058
Sibley	33	12.25	10.25	3	Mike & Mary Mueller	(507)647-2305
Stearns	18	55.91	55.43	3/U	Brett Gerken	(320)251-5271
Stearns	16	18.53	17.68	3/U	Frank & Sally Jerkovich	(218)682-2622
Stearns	16	17.71	17.71	3/U	Linus Meyer	(320)987-3549
Stevens	23	8.50	8.50	3	Craig Murphy	(320)392-5176
Todd	16	14.70	10.20	3	Ken Friedrichs	(320)352-3651
Wadena	12	8.25	8.25	2/3	Brian Roth	(218)445-5268
Waseca** (Deer Run)	39	60.00	0.05	1/2/3	Warren/Dixie Enevoldsen	(507)835-3055
Wilkin	56	1.42	1.42	4	Daniel Swedlund	(218)643-3355
Wilkin	57	0.44	0.44	3	Co. Hwy. Dept.	(218)643-4622
Winona	43	4.00	4.00	2	Steven Olbrich	(808)696-4761
Winona	43	8.50	6.60	2/3	Zephyr Valley Co-op	(507)454-8206
Wright	18	11.20	10.90	2/3/4	Co. Hwy. Dept.	(612)682-1933
Wright	18	0.63	0.39	3	Co. Hwy. Dept.	(612)682-1933
Wright	17	1.70	1.70	4	Co. Hwy. Dept.	(612)682-1933
Wright	18	1.20	1.20	3/4	Co. Hwy. Dept.	(612)682-1933
Wright	18	5.80	4.47	4	Hank Potter	(612)963-5476
Wright	18	11.50	11.50	4/U	Hank Potter	(612)963-5476
Wright	18	20.68	20.68	2/3/4	Charles Christian	(612)428-4181
Aitkin** (Deer Run)	10	0.00	64.17	1/2/3	MNDOT	
Cottonwood	31	11.60	6.63	3	MNDOT	
Dakota	20	7.50	7.50	3/4	MNDOT	
Douglas	14	10.60	8.34	4	MNDOT	
Douglas	26	3.10	2.19	3	MNDOT	
Itasca	3	46.10	17.30	4	MNDOT	
Murray	51	35.90	6.60	2	MNDOT	
Otter Tail	56	13.00	11.88	3/4	MNDOT	
Scott	33	12.60	12.28	3	MNDOT	
Stearns* (Miller)	16	22.10	20.94	3/U	MNDOT - Metro	(612)779-5054
Todd	14	208.50	203.20	3/4	MNDOT	

Waseca** (Deer Run)	39	0.00	22.90	1/2/3	MNDOT - Metro	(612)779-5054
Waseca* (Russell)	32	21.30	21.30	1/2/3	MNDOT - Metro	(612)779-5054
<b>Total</b>		<b>1761.53</b>	<b>1435.63</b>			

- \* complete transfer purchase
- \*\* partial transfer purchase (project listed twice, acres listed once)

**II. Projects ready for deposit.**

<u>Location (Co.)</u>	<u>Water-shed #</u>	<u>Size (ac.)</u>	<u>Type</u>	<u>Account Holder</u>	<u>Phone #</u>
Cottonwood	31	8.2	3	MNDOT - Mankato	(507)389-6351
Benton	17	35.0	3	Larry/Loris VanHooser	(320)387-2835
Sherburne	17	0.8	5	City of Elk River	(612)441-7420
<b>Subtotal</b>		<b>44.0</b>			

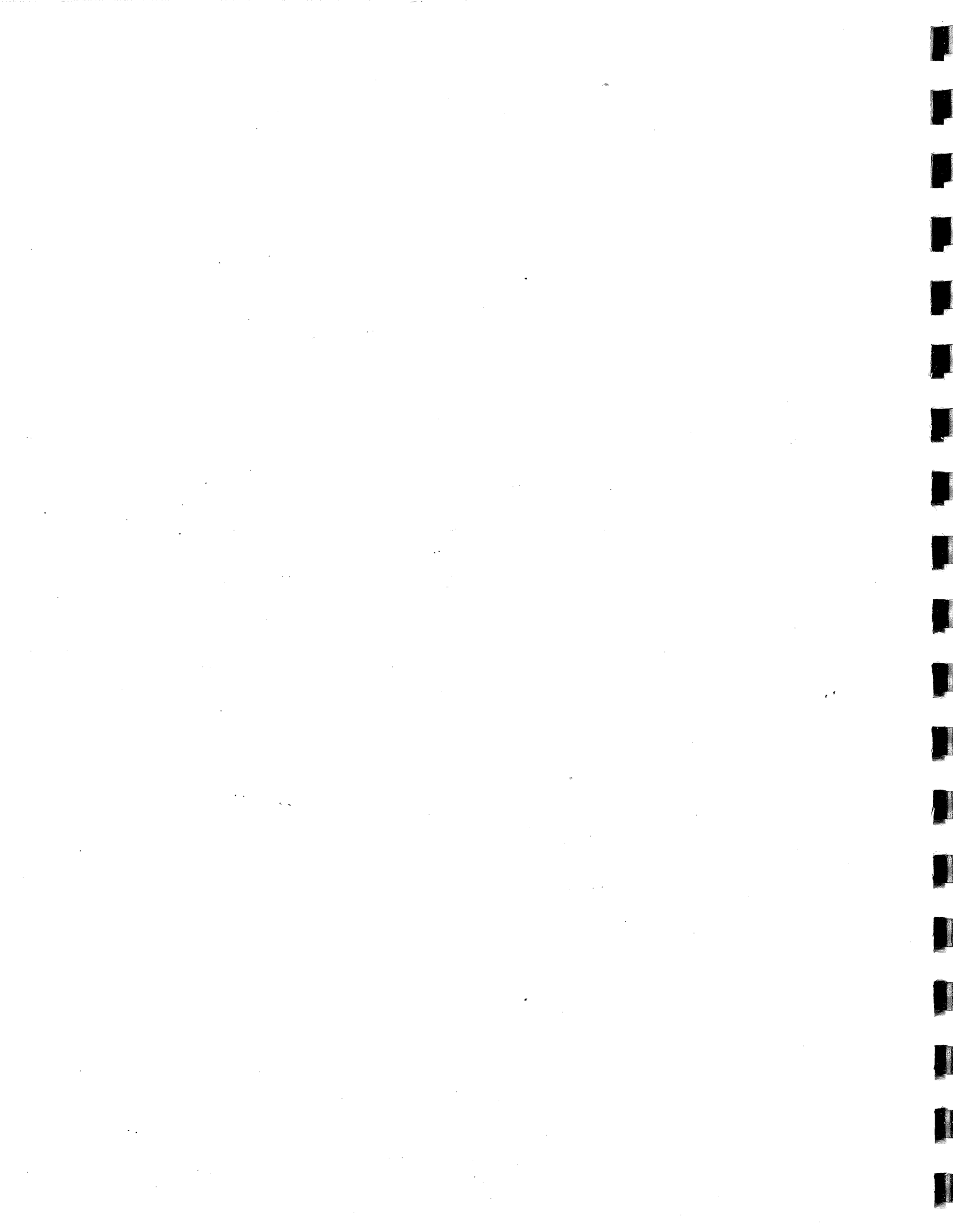
**III. Potential Projects/Credit Availability.**

Potential for wetland restoration projects is great in the agricultural areas of the state (<50% counties) and very limited in the northern forested areas (>80% counties). MNDOT has enrolled their credits into the state banking system but will likely use them all for state highway projects. County Highway Department may choose to sell credits to landowners as long as the credits are not sold below cost. Privately held credits are generally available for sale unless the account holder has an anticipated need for the credits.

**IV. Cost of Credits.**

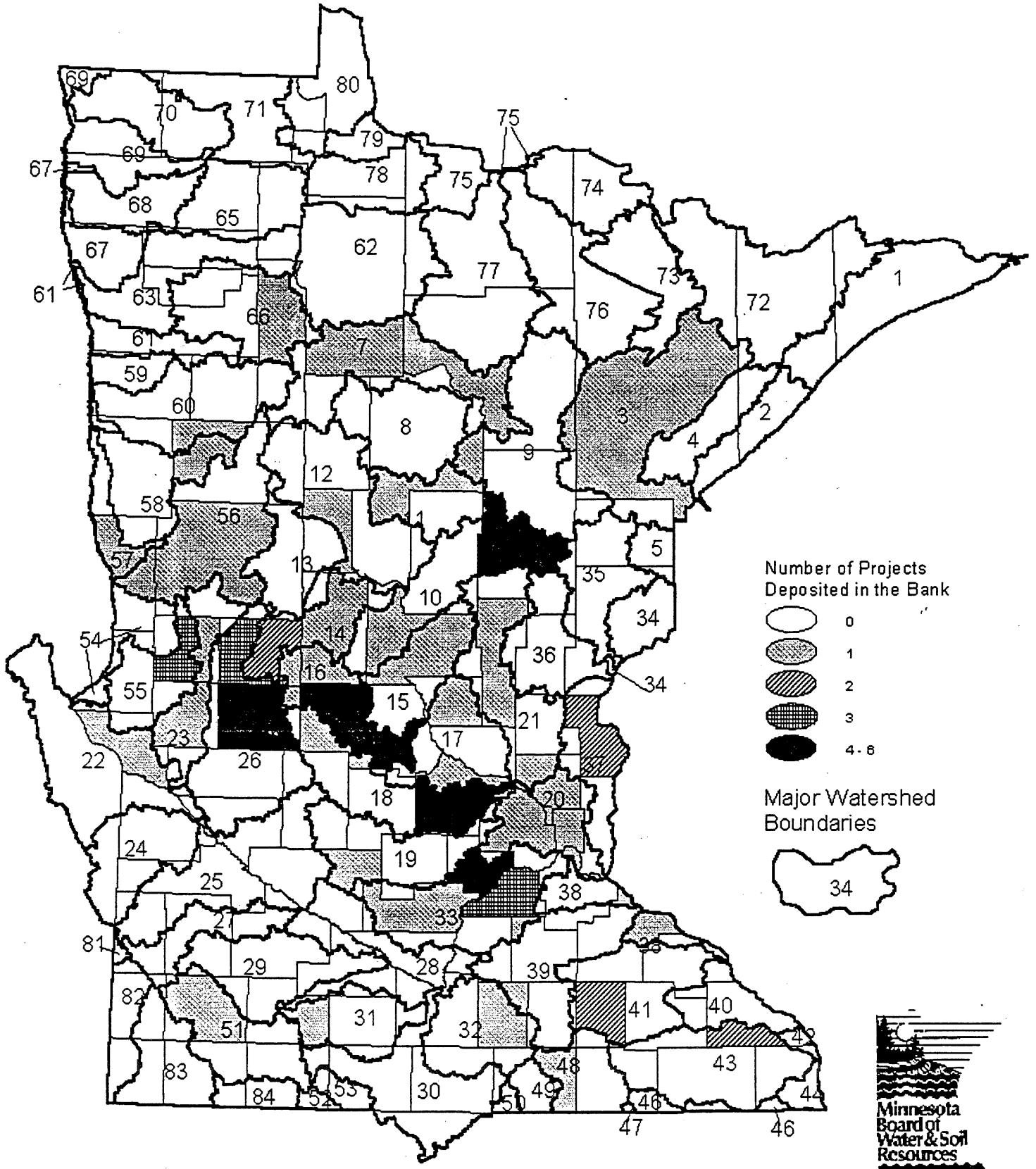
"What will wetland banking credits cost?" is a question asked frequently. Market forces of supply and demand combined with the site specific factors of location, land value, size, and construction methods will determine the price. Currently, wetland banking credits range from about \$1000 to \$20,000 per acre and may be somewhat higher in the Twin Cities and other metro areas.

prepared by: John Jaschke, MN Board of Water and Soil Resources, (612)297-3432



# Minnesota Wetland Conservation Act: Wetland Banking Projects

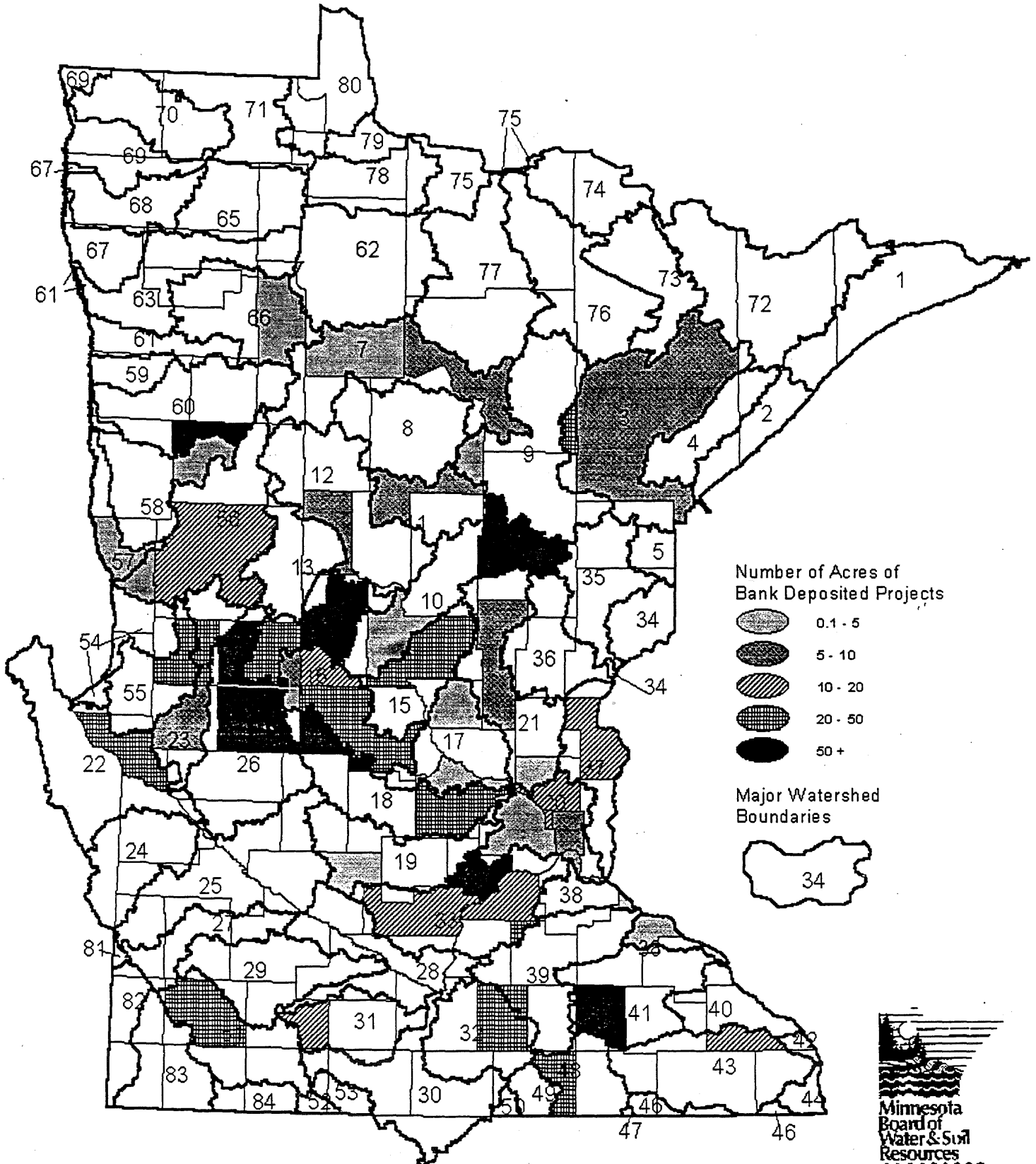
Number of Projects per Watershed within each County  
Deposited in the Bank as of March 23, 1998



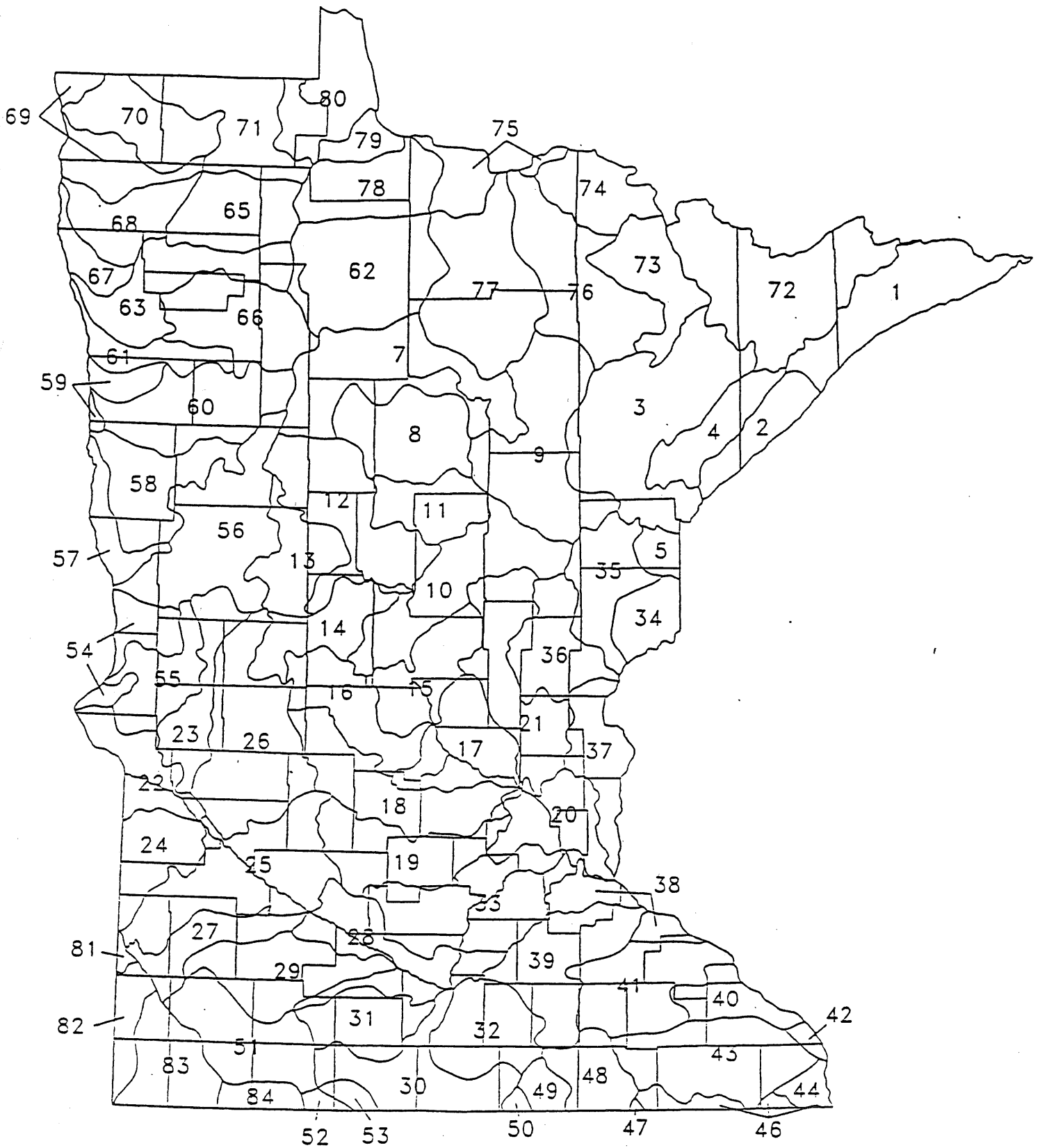


# Minnesota Wetland Conservation Act: Wetland Banking Acres

Number of Acres per Watershed within each County  
 Deposited in the Bank as of March 23, 1998



# MINNESOTA'S 81 MAJOR WATERSHEDS



LIST OF 81 MAJOR WATERSHED UNITS OF MINNESOTA

1	Lake Superior (north)	44	Mississippi River (Nevo)
2	Lake Superior (south)	46	Upper Iowa River
3	St. Louis River	47	Wapsipinican River (Headwaters)
4	Cloquet River	48	Cedar River
5	Nemadji River	49	Shell Rock River
7	Mississippi River (Headwaters, Lake Winnibigoshish)	50	Winnebago River (Lime Creek)
8	Leech Lake River	51	West Fork des Moines River (Headwaters)
9	Mississippi River (Grand Rapids)	52	West Fork des Moines River (Lower)
10	Mississippi River (Brainerd)		
11	Pine River	53	East Fork des Moines River
12	Crow Wing River	54	Bois de Sioux River
13	Redeye River (Leaf River)	55	Mustinka River
14	Long Prairie River	56	Otter Tail River
15	Mississippi River (Sartell)	57	Red River of the North (Headwaters)
16	Sauk River		
17	Mississippi River (St. Cloud)	58	Buffalo River
18	North Fork Crow River	59	Marsh River
19	South Fork Crow River	60	Wild Rice River
20	Mississippi River (Metro)	61	Sandhill River
21	Rum River	62	Upper and Lower Red Lake
22	Minnesota River (Headwaters)	63	Red Lake River
23	Pomme de Terre River	65	Thief River
24	Lac qui Parle River	66	Clearwater River
25	Minnesota River (Granite Falls)	67	Grand Marais Creek (Red River of the North)
26	Chippewa River		
27	Redwood River	68	Snake River
28	Minnesota River (Mankato)	69	Tamarack River (Red River of the North)
29	Cottonwood River		
30	Blue Earth River	70	Two River
31	Watonwan River	71	Roseau River
32	Le Sueur River	72	Rainy River (Headwaters)
33	Minnesota River (Shakopee)	73	Vermillion River
34	St. Croix River (Upper)	74	Rainy River (Rainy Lake)
35	Kettle River	75	Rainy River (Manitou)
36	Snake River	76	Little Fork River
37	St. Croix River (Stillwater)	77	Big Fork River
38	Mississippi River (Red Wing) and Lake Pepin	78	Rapid River
39	Cannon River	79	Rainy River (Baudette)
40	Mississippi River (Winona)	80	Lake of the Woods
41	Zumbro River	81	Big Sioux River (Medary Creek)
42	Mississippi River (La Crescent)	82	Big Sioux River (Pipestone)
43	Root River	83	Rock River
		84	Little Sioux River

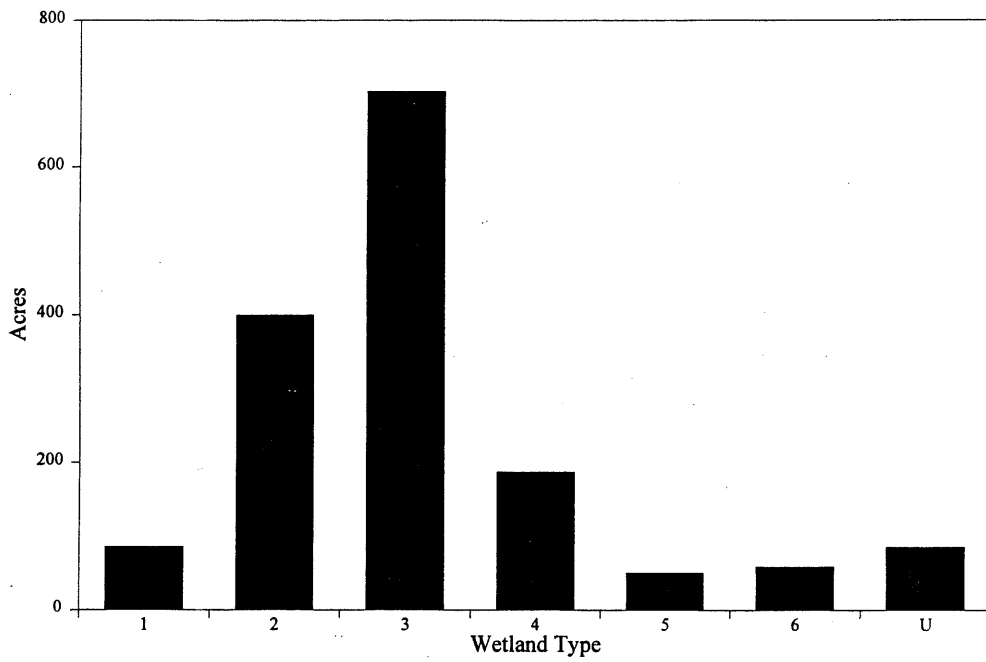
\* transfer purchase

prepared by: John Jaschke, MN Board of Water and Soil Resources, (612)297-3432

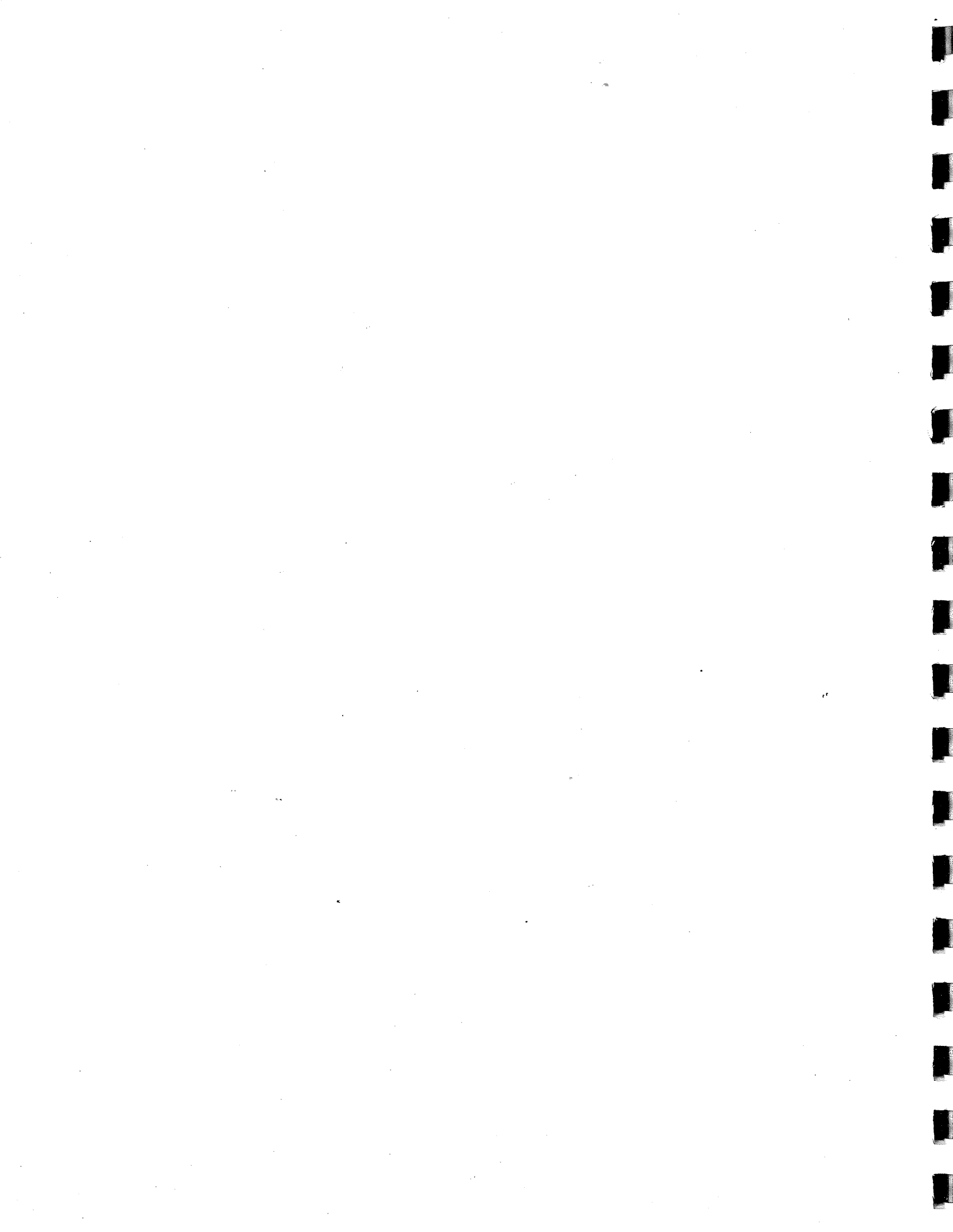
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### MN Wetland Banking: Deposits by Type

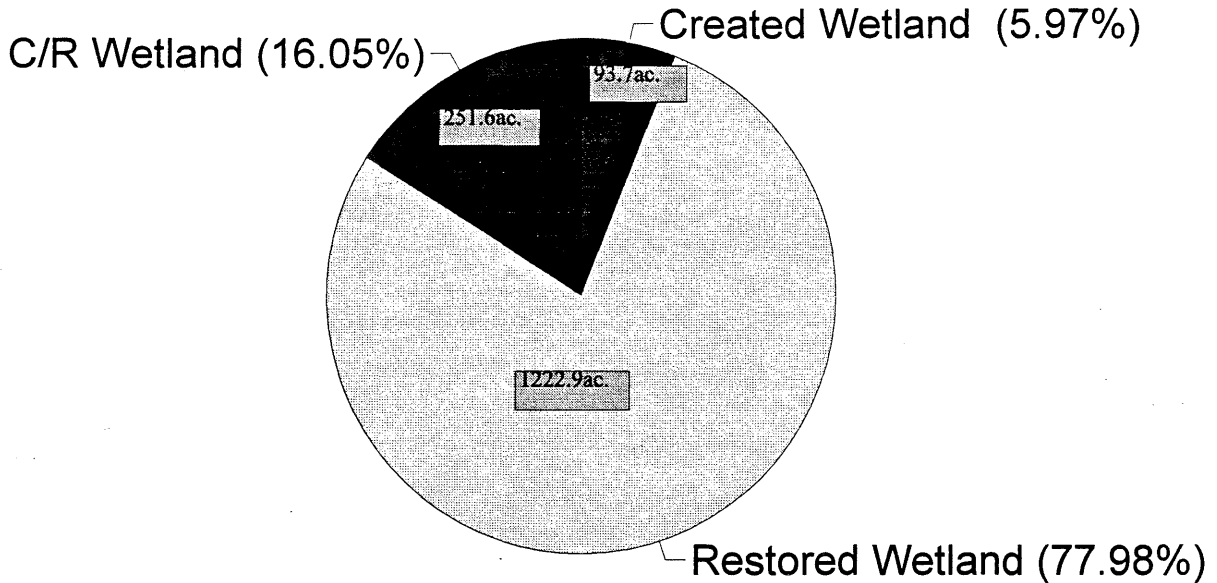
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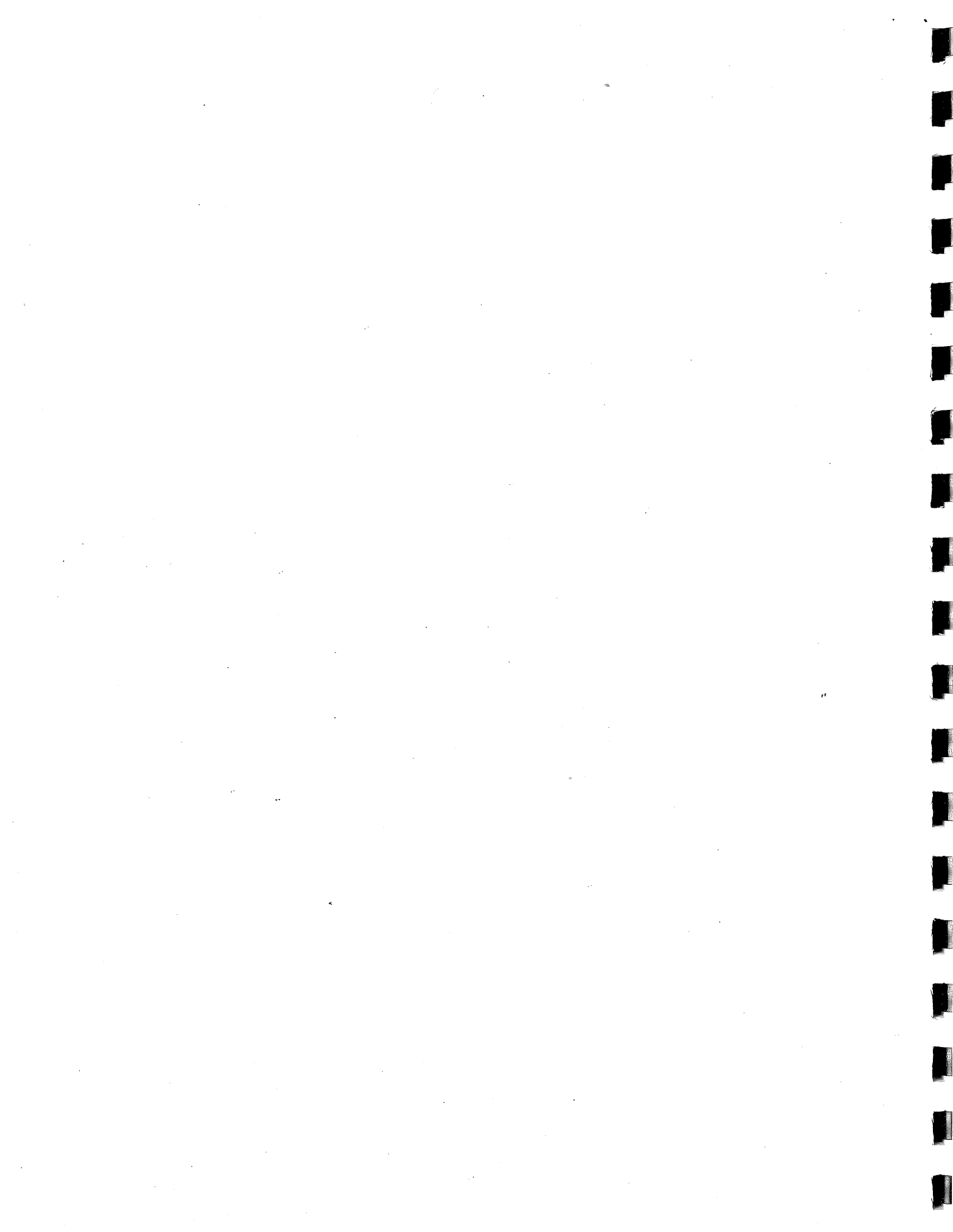


Wetland Type	Acres
1	85.78
2	399.3
3	703.6
4	185.8
5	50.1
6	58.29
U	85.2



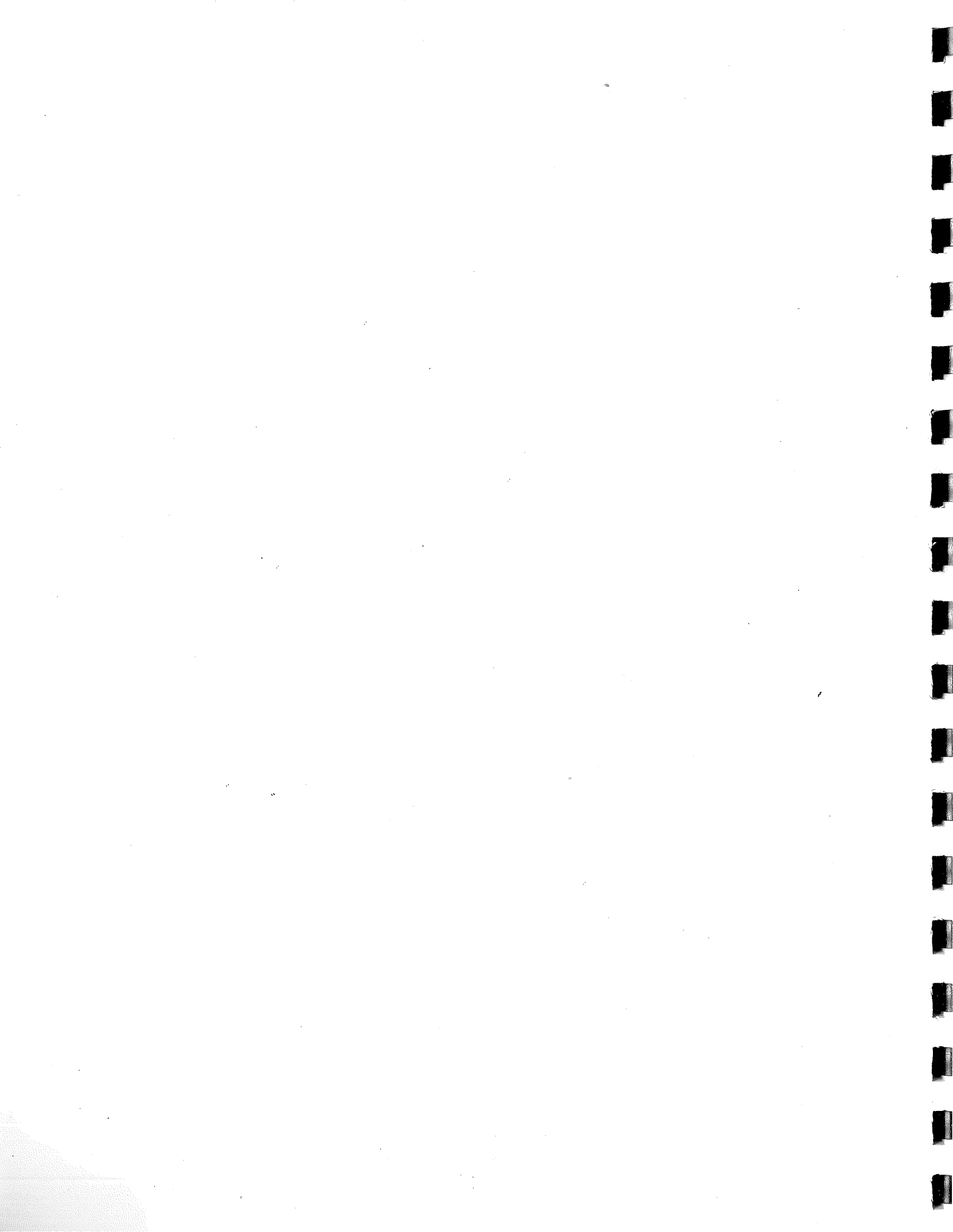
# Percentages of Created, Restored and Created/Restored Wetlands





**Appendix D:**    1994 Interagency Memorandum of Understanding on Wetland  
Regulatory Simplification





# INTERAGENCY MEMORANDUM OF UNDERSTANDING for the State of Minnesota

## WETLAND REGULATORY SIMPLIFICATION

### I. WETLAND BANKING

WHEREAS, landowners that have received wetland project approvals, as required by state and federal laws, rules and regulations, should have access to all applicable replacement options; and

WHEREAS, the State Wetland Bank established by the Minnesota Wetland Conservation Act, Minn. Rules Chapter 8420, provides a potential option for compensatory mitigation through wetland replacement; and

WHEREAS, the participating Federal agencies concur that the State Wetland Bank is consistent with the Corps of Engineers (Corps) and Environmental Protection Agency (EPA) Mitigation Memorandum of Agreement dated February 7, 1990 and the Generic Mitigation Banking Guidelines promulgated by EPA - Region 5 and the Corps - St. Paul District on July 10, 1991; and,

WHEREAS, benefits of use of a wetland banking program include:

1. Appropriate and perpetual mitigation, pursuant to Wetland Conservation Act requirements, is assured as wetland replacement credits will meet the principles and procedures for review, deposit, auditing and monitoring as provided for in the Wetland Conservation Act.
2. More efficient and cost-effective mitigation will be realized as landowners will be able to seek wetland replacement that would likely meet all of the agencies' requirements for compensatory mitigation.
3. A positive balance of wetland acres will be realized as wetland restoration and creation projects must be completed and deposited before credits can be withdrawn; and

WHEREAS, Wetland bank credits provide a replacement option only where the proposed use of such credits meets all of the compensatory mitigation requirements (e.g., size, type and location) of the Federal, state or local approval agency(s); and

WHEREAS, the undersigned agencies concur that the consideration of state wetland bank credits should be allowed as a potential compensatory mitigation option by landowners if such option is consistent with the approval agency's applicable compensatory mitigation requirements; and

THEREFORE, the undersigned agencies concur that it is in the public's interest to allow use of the State Wetland Bank, where appropriate, as a compensatory option, and that the respective agencies will consider state wetland bank credits in applicable and appropriate situations.

### II. STATEWIDE GENERAL PERMIT(S)

WHEREAS, federal wetland policy encourages the U.S. Army Corps of Engineers to issue Regional General Permits where state and/or local government regulations duplicate those of the Clean Water Act; and

WHEREAS, Federal wetland policy (as issued on August 24, 1993) states that "...PGPs (Programmatic General Permits) are extremely useful in reducing unnecessary duplication between Federal and non-Federal regulatory programs and in generally enhancing the role of State and local governments...in decisions regarding wetlands and other aquatic resources."; and

WHEREAS, the Wetland Conservation Act, as administered by local governments and overseen by state government, overlaps the wetland protection provisions of the Federal Clean Water Act for many projects; and

WHEREAS, implementation of the Statewide General Permit(s) is intended to provide:

- i.) increased efficiency for Federal, State and local government regulatory programs; and
- ii.) improved service to the regulated public by establishing "one-stop shopping", at the local government level, for seeking the approvals necessary to conduct many projects impacting wetlands; and,

WHEREAS, the Wetland Conservation Act requirements and the provisions of a Statewide General Permit(s) provide for oversight of local government activities by the Federal and State Governments and affected members of the public; and

THEREFORE, the undersigned agencies concur that it is in the public's interest to develop a Statewide General Permit(s) that effectively protects wetlands while minimizing regulatory duplication.

### III. COLLABORATIVE EFFORTS

WHEREAS, through Inter-Agency Wetlands Group and other joint efforts, further opportunities exist for wetland regulatory simplification and coordination, including:

1. Development of an interagency wetlands newsletter service and brochures to a wide spectrum of public and private interests; and
2. Scientific training for agency staff (conducted by an interagency team) in wetland identification and delineation; and
3. Where appropriate -- reciprocal acceptance of wetland delineations completed under each agency's respective authority, if they are conducted consistent with the techniques prescribed in the present and future versions of the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, the *U.S. Army Corps of Engineers Wetland Delineation Manual*, and the *National Food Security Act Manual*; and,
4. Comprehensive administrative training and guidance for agency staff implementing and complying with wetland regulations; and
5. Continued acceptance of the combined project notification/application form as a permit application form to all agencies for wetland projects; and
6. State Wetland Planning efforts; and
7. Coordination of wetland preservation and incentive programs.

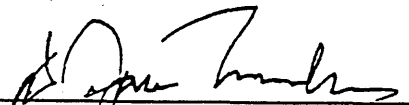
THEREFORE, the undersigned agencies agree to undertake and continue these initiatives and other collaborative efforts resulting in effective wetland protection through regulatory simplification.


### IV. GENERAL

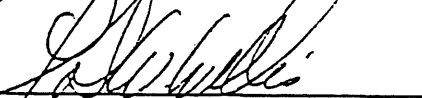
1. The policy and procedures contained within this Memorandum of Understanding (MOU) do not create any rights, either substantive or procedural, enforceable by any party regarding an application for a permit or enforcement action brought by the United States or the State of Minnesota. Deviation or variance from the administrative procedures included in this MOU will not constitute a defense for violators or others concerned with any State or Federal enforcement action.

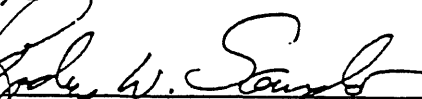
2. Nothing in this MOU is intended to diminish, modify, or otherwise affect statutory or regulatory authorities of any of the signatory agencies. All formal guidance interpreting this MOU and background materials upon which this MOU is based will be issued jointly by the agencies.
3. Nothing in this MOU will be construed as indicating a financial commitment by the signatory agencies for the expenditure of funds except as authorized by specific appropriations.
4. This MOU will take effect on the date of the last signature below and will continue in effect until modified or revoked by agreement of all signatory agencies. Any one of the signatory agencies may revoke its participation in this MOU by a 90 days prior written notice to all of the other signatory agencies. Modifications to this MOU may be made by mutual agreement and approval by all the signatory agencies. Such modifications will take effect upon signature of the modified document by all the signatory agencies.

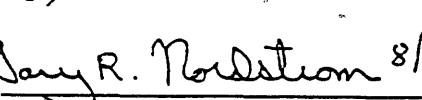
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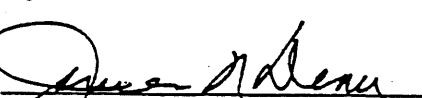
  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 D. James Nielsen, Chairman, Board of Water & Soil Resources

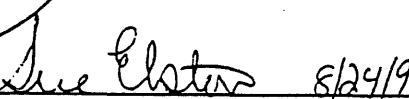
  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 James T. Scott, Colonel, Corps of Engineers, District Engineer


  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Chuck Williams, Commissioner, MN Pollution Control Agency

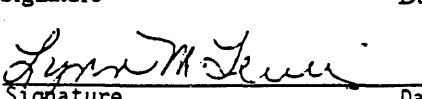
  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Rod Sando, Commissioner, MN Dept. of Natural Resources

  
 Signature \_\_\_\_\_ Date 8/24/94  
 Gary Nordstrom, SCS State Conservationist, USDA

  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 James N. Denn, Commissioner, MN Dept. of Transportation

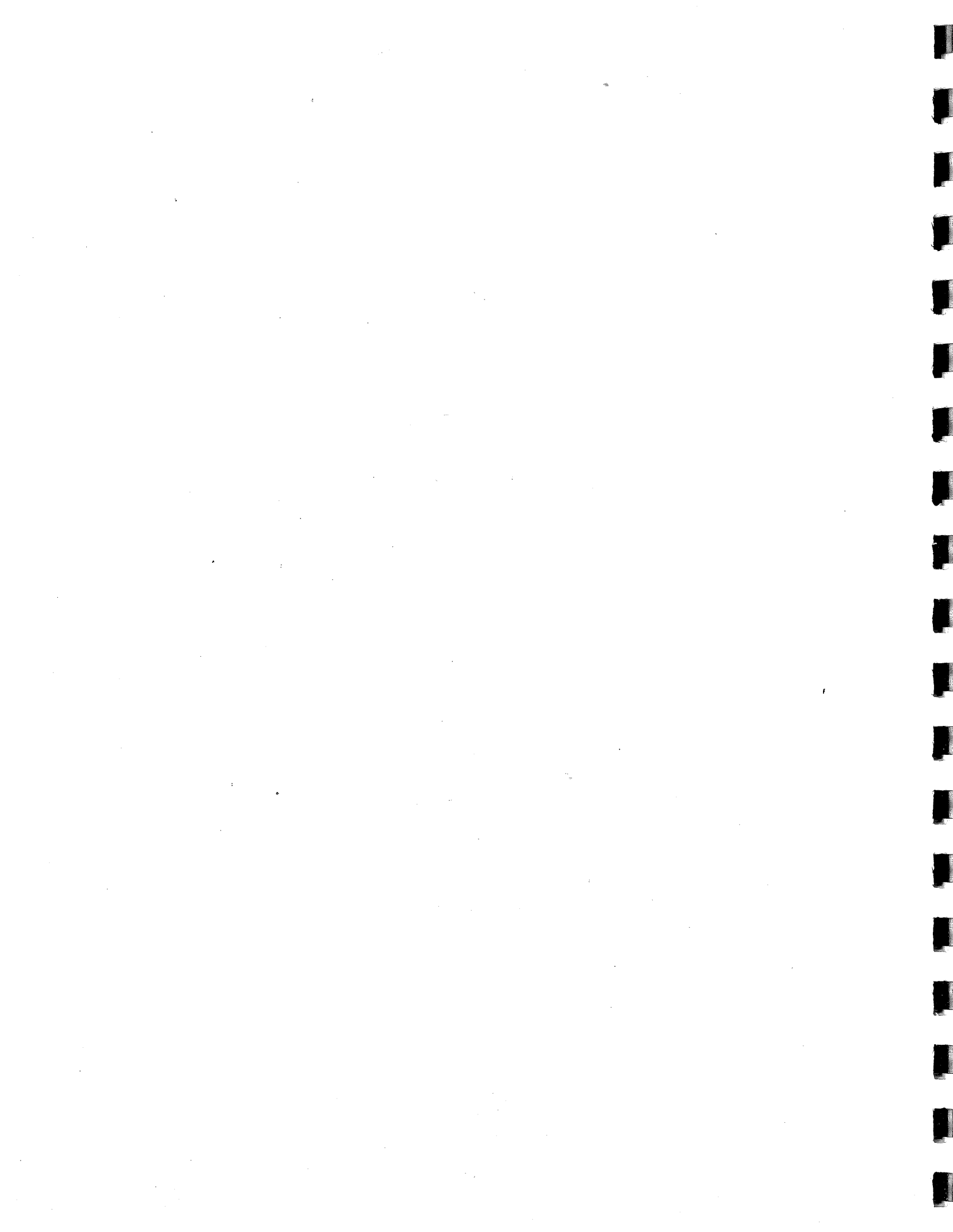
  
 Signature \_\_\_\_\_ Date 8/24/94  
 Dale Bryson, Water Division Director, Region 5 - USEPA

  
 Signature \_\_\_\_\_ Date 8-24-94  
 Elton Redalen, Commissioner, MN Dept. of Agriculture

  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Lynn Lewis, Field Supervisor, Twin Cities Field Office - USFWS



**Appendix E:**     Wetland Conservation Act Rules on Wetland Banking (Minn.  
Rules Chapter 8420)



E. in a greater than 80 percent area, based on the classification and criteria set forth in the plan, expand the application of the exemptions in Minnesota Statutes, section 103G.2241, subdivision 1, paragraph (a), clause (4), to also include nonagricultural land, provided there is no net loss of wetland values.

**Subp. 3. Board review and approval; mediation; judicial review.**

A. The plan is deemed approved 60 days after the local government unit submits the final plan to the board, unless the board disagrees with the plan as provided in item D.

B. The board may not disapprove a plan if the board determines the plan meets the requirements of this part.

C. In its review of a plan, the board shall advise the local government unit of those elements of the plan that are more restrictive than state law and rules.

D. If the board disagrees with the plan or any elements of the plan, the board shall, in writing, notify the local government unit of the plan deficiencies and suggested changes. The board shall include in the response to the local government unit the scientific justification, if applicable, for the board's concerns with the plan. Upon receipt of the board's concerns with the plan, the local government unit has 60 days to revise the plan and resubmit the plan to the board for reconsideration, or the local government unit may request a hearing before the board. The board shall hold a hearing within the boundaries of the jurisdiction of the local government within 60 days of the request for hearing. After the hearing, the board shall, within 60 days, prepare a report of its decision and inform the local government unit.

E. If, after the hearing, the board and local government unit disagree on the plan, the board shall, within 60 days, initiate mediation through a neutral party. If the board and local government unit agree in writing not to use mediation or the mediation does not result in a resolution of the differences between the parties, then the board may commence a declaratory judgment action in the district court of the county where the local government unit is located. If the board does not commence a declaratory judgment action within the applicable 60-day period, the plan is deemed approved.

F. The declaratory judgment action must be commenced within 60 days after the date of the written agreement not to use mediation or 60 days after conclusion of the mediation. If the board commences a declaratory judgment action, the district court shall review the board's record of decision and the record of decision of the local government unit. The district court shall affirm the plan if it meets the requirements of this part.

**Subp. 4. Effective date; replacement decisions.**

A. The plan becomes effective as provided in subpart 3, items D to F, and after adoption of the plan into the

official controls of the local government unit.

B. After the effective date of the plan, a local government unit shall make replacement decisions consistent with the plan.

**Subp. 5. Plan amendments.** Amendments to the plan become effective upon completion of the same process required for the original plan.

**Subp. 6. Water planning processes apply.** Except as otherwise provided for in this part, all other requirements relating to development of the plan must be consistent with the water plan processes under Minnesota Statutes, sections 103B.231 and 103B.311.

SA: L 1996 c 462 s 39

HIST: 20 SR 2629

**STANDARDS AND CRITERIA FOR STATE WETLAND BANKING**

**8420.0700 PURPOSE.**

The purpose of parts 8420.0700 to 8420.0760 is to provide standards for the establishment and administration of a state wetland banking system as authorized by Minnesota Statutes, section 103G.2242.

SA: MS s 14.06; 103B.101; 103B.3355

HIST: 18 SR 274

**8420.0710 [Repealed, 20 SR 2629]**

**8420.0720 PRINCIPLES OF WETLAND BANKING.**

**Subpart 1. Goal.** Implementation of a wetland banking system must comply with the purposes and goals of the act by achieving a no-net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands.

**Subp. 2. Sequencing prerequisite.** The state wetland banking system may only be used for replacement of drained or filled wetlands when the local government unit determines that the applicant has complied with all of the sequencing requirements of part 8420.0520; that the project would otherwise be allowed if adequate replacement could be secured by the applicant; that project-specific replacement is not reasonable or desirable; and that the owner of the account agrees to the withdrawal of wetland banking credits from the account.

**Subp. 3. Geographic limitations.** Wetland banking is allowed for any impact, however, wetland impacts should be replaced in a location that either most closely resembles lost functions and public values at the impact site or in a location that maximizes important wetland functions and public values.

**Subp. 4. Eligible wetlands.** Restored wetlands are eligible for deposit into the wetland bank. Created wetlands are eligible for deposit in the wetland bank in counties in which 80 percent or more of the presettlement wetlands are



intact. In other counties, created wetlands are eligible for deposit in the bank only if they are created by excavation in nonwetlands, by dikes or dams along public or private drainage ditches, or by dikes or dams associated with the restoration of previously drained or filled wetlands.

**Subp. 5. Ineligible wetlands.** Wetlands that are drained or filled under an exemption in part 8420.0122 and subsequently restored are not eligible for deposit in the wetland bank. Modification or conversion of nondegraded naturally occurring wetlands from one type to another are not eligible for enrollment in a statewide wetlands bank.

**Subp. 6. Account balance.** Accounts must maintain a positive balance. A wetland bank account shall specify acreage by wetland type deposited by the account holder minus subsequent withdrawals.

**Subp. 7. Wetland banking credit transfers.** Wetland banking credits may be transferred to another account holder providing the fee title or easement is transferred also, and providing all the remaining wetland banking credit for a wetland remains in one account. Wetland banking credits may be withdrawn by an applicant and partial withdrawals are allowed. The account holder is responsible for the success of the wetland until completion of monitoring. After completion of monitoring, the fee title owner or easement or license holder and anyone who has contracted with the owner is responsible for maintaining the wetland and replacing it according to this chapter if the wetland is subsequently drained or filled, by structural failure, or otherwise.

**Subp. 8. Deed recording.** For wetlands proposed for deposit, a deed covenant must be recorded stating that the subject wetland was or will be restored or created for mitigation banking purposes.

**Subp. 9. Qualification.** A wetland cannot be deposited for wetland banking credit that cannot, under parts 8420.0500 to 8420.0630, be used for replacement.

SA: MS s 14.06; 103B.101; 103B.3355; L 1996 c 462 s 39

HIST: 18 SR 274; 20 SR 2629

#### **8420.0730 ADMINISTRATION AND MANAGEMENT AUTHORITY.**

**Subpart 1. Establishment.** The board shall establish a state wetland bank. The board or the board's assignee is responsible for management of the bank including recording all bank transactions, maintaining bank records, and ensuring that the operation of the bank complies with parts 8420.0700 to 8420.0760. The board shall notify all local government units upon establishment of the bank. Any banking system including those established by local governments must comply with parts 8420.0700 to 8420.0760 and must be approved by the board and the commissioner.

**Subp. 2. Deposit prerequisites.** To be deposited into the

wetland bank, a wetland must be certified as eligible for deposit by the local government unit in which it is located, according to part 8420.0740, subpart 1. The method of certification by local government units is optional, but wetland banking credits may not be deposited into the bank within that local government units jurisdiction without certification. If a local government unit elects to certify wetlands for the wetland bank, the local government unit is also responsible for ensuring that the monitoring provisions in part 8420.0750 are fulfilled. A local government unit may decline to certify all wetlands within its jurisdiction or, based on a comprehensive local water plan, a local government unit may elect to certify wetlands for deposit into the wetland bank only in selected areas, for example, high priority regions and areas. If the local government unit elects to reject or limit banking, it must do so by rule or ordinance, as applicable.

**Subp. 3. Annual report.** Each local government unit participating in the wetland bank shall submit an annual report to the board on a form prescribed by the board.

SA: MS s 14.06; 103B.101; 103B.3355; L 1996 c 462 s 39

HIST: 18 SR 274; 20 SR 2629

#### **8420.0740 PROCEDURES.**

##### **Subpart 1. Deposits and credits.**

**A. Restored wetlands are eligible for deposit into the wetland bank.** Created wetlands are eligible for deposit in the wetland bank in counties in which 80 percent or more of the presettlement wetlands are intact. In other counties, created wetlands are eligible for deposit in the bank only if they are created by excavation in nonwetlands, by dikes or dams along public or private drainage ditches, or by dikes or dams associated with the restoration of previously drained or filled wetlands. Modification or conversion of nondegraded naturally occurring wetlands from one type to another are not eligible for enrollment in a statewide wetlands bank.

**B. Wetland replacement credits approved before July 1, 1993, are eligible for deposit into the state wetland banking system if the wetland replacement credit was authorized by a public agency specifically for a wetland bank that has been approved by the commissioner.** Also, wetland replacement credits that have been deposited in a local government unit bank before July 1, 1993, and after January 1, 1992, are eligible for deposit into the state wetland banking system if the deposit meets all the criteria in parts 8420.0700 to 8420.0760 based on a site inspection and review by the board and the commissioner.

**C. After July 1, 1993, wetlands restored or created without prior local government unit approval as specified in this part are not eligible for deposit into the wetland bank.**

**D. The minimum wetland acreage eligible to establish an account in the wetland bank is 0.1 acres.**

E. There is no maximum wetland acreage eligible for deposit in the wetland bank. The local government unit, upon recommendation of the technical evaluation panel, must identify the acreage that will receive credit. As an incentive to encourage the deposit of small wetlands, the local government unit shall assign wetland banking credit to wetland acreage as follows:

Wetland Acreage	Wetland Banking Credit
0 to 10 acres	100 percent
over 10 acres	90 percent

The local government unit may modify the credit given, up to a maximum of 100 percent, if agreed to by the technical evaluation panel.

F. The initial deposit of wetland banking credits must be done by the fee title owner or easement or license holder of the wetland.

G. Except as provided for in item B, in order to deposit wetland acres into the wetland bank, the depositor must notify the local government unit in writing, before restoration or creation, that the proposed wetland is specifically designated for deposit into the wetland bank. This notification may be part of the documentation requested in item H. In cases where excess wetland acreage is expected to result from a specific replacement plan according to parts 8420.0530 to 8420.0550, the owner must indicate on the replacement plan that the excess acreage is to be considered available for wetland banking.

H. In cases where a wetland is proposed to be restored or created solely for wetland banking purposes, that is, the wetland is not part of a project-specific wetland replacement plan, the depositor must submit to the local government unit a bank plan containing the information required in part 8420.0530, items A and D.

A copy of the bank plan shall be mailed to members of the technical evaluation panel, members of the public who have requested a copy, and members of the watershed district or watershed management organization if there is one. Based on input from the technical evaluation panel and other comments received, the local government unit must determine the likelihood that the restoration or creation will be successful and, if affirmative, approve the plan and advise the depositor of the wetland banking credits likely to be accepted into the wetland bank. Approval of the plan shall be considered official acknowledgment that the wetland is designated for replacement.

I. In cases where a wetland is to be restored or created by an agency, department, or subdivision of the local government unit for deposit into the wetland bank, the local government unit must prepare the information required in part

8420.0530, items A and D, and notice this information according to item H.

J. The proposed wetland must be restored or created within two years of approval or the bank plan must be resubmitted for consideration. Upon approval, the depositor shall restore or create the wetland and notify the local government unit when construction has been completed. The technical evaluation panel shall inspect the site when construction is completed to ensure that construction specifications have been followed. Failure to follow approved construction specifications is sufficient grounds for the local government unit to deny consideration of the wetland for banking.

K. No sooner than six months after construction has been completed and approved for restored wetlands, and no sooner than one year after construction has been completed and approved for created wetlands, the depositor shall contact the local government unit to request a final determination of wetland bank acceptability and approved quantities of wetland banking credits for deposit. The technical evaluation panel shall ensure that sufficient time has been allowed for the wetland to become established, especially vegetation and hydrology, before making this determination. If the technical evaluation panel has reason to believe that the wetland characteristics may change substantially, the panel must postpone its recommendation to the local government unit until the wetland has stabilized.

Based on a site visit, the technical evaluation panel will determine the size and type of wetland as well as topographic setting characteristics and, if applicable, the new wetland credits and public value credits resulting from the to be deposited wetland. The technical evaluation panel will provide the information to the local government unit.

L. The local government unit shall notify the depositor of its findings as to the suitability of the wetland and approved wetland banking credits. If the depositor chooses to proceed with a deposit into the bank, the depositor must record the notice specified in part 8420.0530, item D, subitem (6), and submit proof of the recording to the local government unit for the wetlands to be deposited. If the depositor chooses not to proceed with the deposit, the depositor may return the wetland to its preconstruction condition without replacement within five years. At any time within the five-year period, the depositor may request certification for deposit into the bank or may amend the bank plan and submit the plan to the local government unit for approval and subsequent certification. After five years, any activity in the wetland is subject to this chapter.

M. To be deposited into the bank, the following information concerning the wetland must be submitted to the board by the local government unit in which the wetland is located:

(1) name, address, and telephone number of the depositor;

(2) location of the wetland, including legal description, public land survey coordinates, county, and watershed;

(3) a copy of the deed for the property containing the wetland with the required covenant recorded;

(4) size of the wetland acreage to be deposited, to the 0.1 acre, by wetland type and topographic setting characteristics and, if applicable, the new wetland credits and public value credits; and

(5) certification that the wetland is approved for deposit into the bank.

N. The board shall acknowledge the deposit to the depositor and local government unit and officially enter the information in item M into the wetland bank. Information on deposited wetlands shall be available from the board on request according to subpart 2, item D.

O. Wetlands deposited into the wetland bank, on which withdrawals have occurred, are subject to replacement for any subsequent drainage or filling.

P. Wetlands deposited into the wetland bank are subject to the monitoring provisions in part 8420.0750.

#### Subp. 2. Withdrawals.

A. Before consideration of use of the wetland bank, applicants must satisfy the requirements of part 8420.0520. It must be clearly demonstrated that the applicant has made a good faith effort to avoid, minimize, rectify, or reduce or eliminate over time the impact on the wetland, and that no feasible and prudent alternative to the impact exists. The local government unit must certify that the project would otherwise be allowed if adequate replacement could be secured by the applicant and that the applicant has made a good faith effort to do so and has not succeeded in locating a site.

B. The use of the wetland bank is allowed.

C. When using the wetland bank to replace drained or filled wetlands, the replacement must comply with part 8420.0540.

D. The board, on request, will provide the following information to persons making inquiries concerning available wetland bank deposits with a local government unit jurisdiction, county, or watershed:

(1) account holder: name, address, and telephone number;

(2) available wetlands: wetland acres by type and topographic setting characteristics, and, if applicable, the new wetland credits and public value credits;

(3) location: section, township, range, county, and watershed.

E. The applicant may then contact, negotiate, and purchase the required wetland banking credits from the account

holder. When the account holder and applicant come to agreement, the applicant will provide requested information on a notarized wetland banking credit withdrawal form developed by the board, and include the wetland banking credit withdrawal form as part of the wetland replacement plan transmitted to the local government unit. The wetland banking credit withdrawal form will include information indicating the wetland type by acres for withdrawal, location of banked wetland, and the topographic setting characteristics and, if applicable, the new wetland credits and public value credits of the banked wetland.

F. The local government unit must circulate the applicant's wetland replacement plan and the wetland banking credit withdrawal form to identify specific wetland banking credits as the applicable replacement wetland, using the public comment and review process in part 8420.0230 and to the local government unit whose jurisdiction covers the location of the wetland banking credits. The local government unit must contact the board to verify that replacement credits indicated on the wetland banking credit withdrawal form are available before final approval of wetland bank withdrawals.

G. On approval of the applicant's wetland replacement plan using wetland banking credits as wetland replacement, the local government unit shall notify the board to debit the appropriate banked wetland by type and acreage. The board will complete the accounting transactions and send a notice of wetland banking credit withdrawal to the account holder.

H. The applicant shall not be allowed to begin proposed drain or fill activities until the local government unit formally approves the wetland replacement plan using the acknowledged wetland banking credits as replacement.

I. An individual, corporation, local government unit, or other organization may buy and hold wetland banking credits from account holders in the bank for later use or resale. Transfer of wetland banking credits must be accomplished through use of a board wetland banking credit transfer form, and must be maintained in an account in the state wetland banking system. An account will be established for the individual or organization on presentation to the board of a wetland banking credit transfer form, and required organization information. The board will notify both account holders on transfer of the wetland banking credits. An account transfer must be accompanied by transfer of the fee title or easement. A wetland banking credit for a wetland may not be split between accounts. Wetland banking credits may also be transferred between banks approved by the board.

SA: MS s 14.06; 103B.101; 103B.3355; L 1996 c 462 s 39

HIST: 18 SR 274; 20 SR 2629

#### 8420.0750 AUDITING AND MONITORING.

##### Subpart 1. Annual report and audit.

A. The board will develop wetland bank deposit, withdrawal, and credit transfer and withdrawal forms and distribute them to local government units indicating a desire to certify restored wetland banking credits for deposit in the wetland bank.

B. The wetland bank data file maintained by the board will contain at least the following information:

(1) wetland acres by type, topographic setting characteristics, restoration or creation date, and bank acceptance date, fee owner, location by (public land survey coordinates, local government unit, county, and watershed of the banked wetland); and

(2) previous withdrawals against each banked wetland by impact wetland (wetland acres by type, topographic setting characteristics, and, if applicable, the new wetland credits and public value credits, date of wetland impact), ownership (fee owner, address, telephone number) and location (public land survey coordinates, local government unit, county, and watershed of the impacted wetland).

C. The board may periodically inspect wetland bank records and correspondence maintained by a local government unit to determine compliance with this part.

D. An annual wetland bank report shall be prepared and distributed by the board to applicable local government units, soil and water conservation districts, watershed districts, watershed management organizations, the departments of natural resources and agriculture, and on request.

##### Subp. 2. Monitoring.

A. After the wetland is entered into the bank, the local government unit responsible for monitoring under part 8420.0230 and the account holder shall continue monitoring according to parts 8420.0600 to 8420.0630. The account holder is responsible for the success of the wetland until completion of monitoring, even after all the credit has been withdrawn.

B. The board shall inspect wetlands deposited into the wetland bank at least once each five years to ensure that the wetlands conform to conditions specified in the approved bank plan, and to make a determination of needed corrective action.

SA: MS s 14.06; 103B.101; 103B.3355; L 1996 c 462 s 39  
HIST: 18 SR 274; 20 SR 2629

#### 8420.0760 ENFORCEMENT AND CORRECTIVE ACTIONS.

A. Enforcement of parts 8420.0700 to 8420.0750 is governed by part 8420.0290 and Minnesota Statutes, section 103G.2372.

B. If, on inspection, the board determines that wetlands deposited in the wetland bank are not in compliance

with this chapter, the board must prescribe corrective measures to the local government unit to bring the wetland into compliance.

C. If satisfactory remediation does not result, the board may refuse future wetland bank certifications by the local government unit and require all wetland replacements to be on a project-specific basis.

D. If a local government unit determines that a banked wetland does not substantially meet the specifications in the approved bank plan, the local government unit must notify the board, and the board shall restrict further withdrawals from the account until the local government unit notifies the board that the wetland has been brought into compliance. The board may also restrict withdrawals when a local government unit is the account holder and the board determines that a banked wetland does not substantially meet the specifications in the approved bank plan.

E. The local government unit or the board can undertake reconstruction work and require reimbursement of reasonable costs from the fee title owner or easement or license holder.

SA: MS s 14.06; 103B.101; 103B.3355  
HIST: 18 SR 274

#### STANDARDS AND CRITERIA FOR IDENTIFICATION, PROTECTION, AND MANAGEMENT OF CALCAREOUS FENS

##### 8420.1010 PURPOSE.

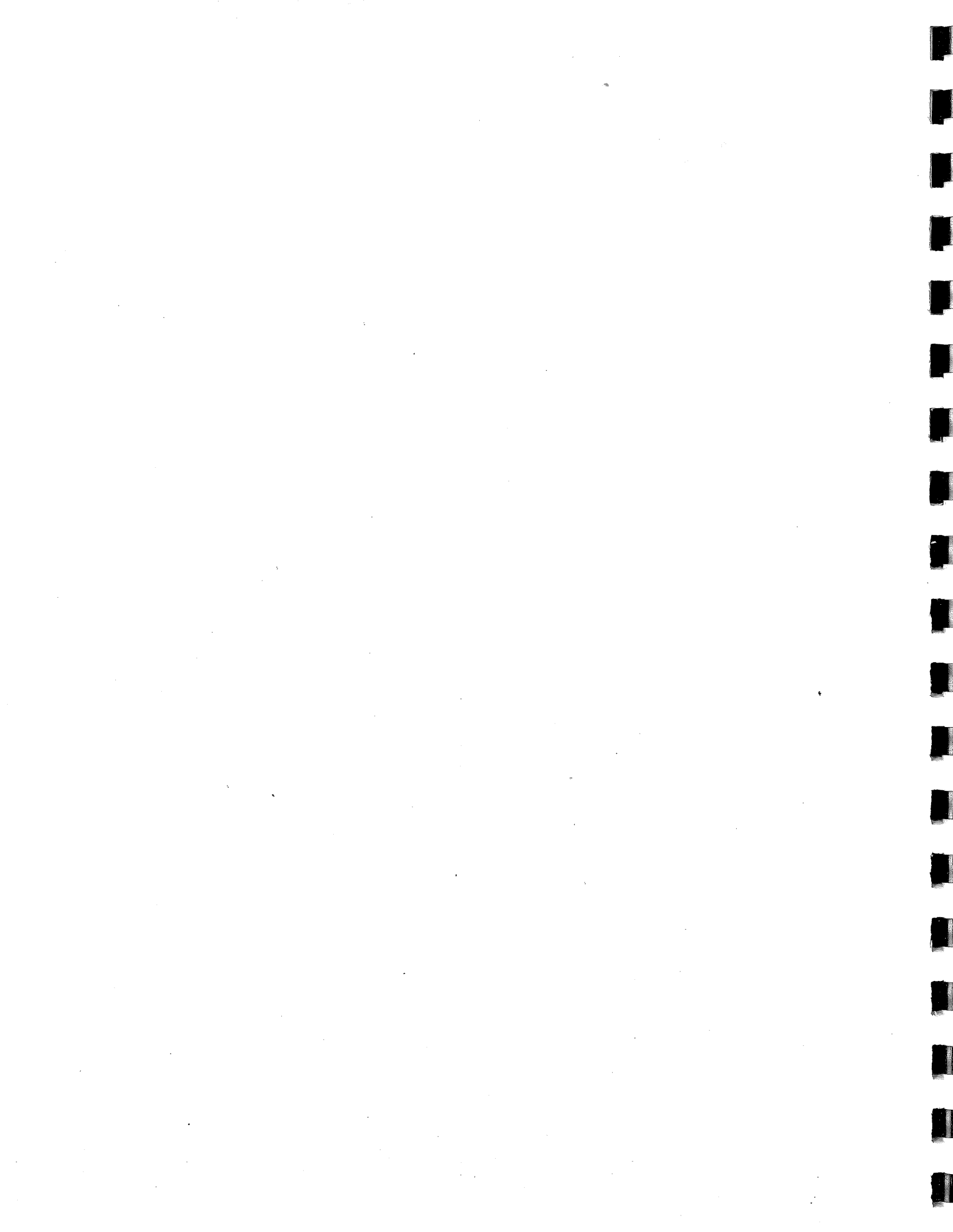
The purpose of parts 8420.1010 to 8420.1060 is to provide minimum standards and criteria for the identification, protection, and management of calcareous fens as authorized by Minnesota Statutes, section 103G.223. Calcareous fens may not be drained or filled or otherwise altered or degraded except as provided for in a management plan approved by the commissioner.

Part 8420.0122 does not apply to calcareous fens.  
SA: MS s 14.06; 103B.101; 103B.3355; L 1996 c 462 s 39  
HIST: 18 SR 274; 20 SR 2629

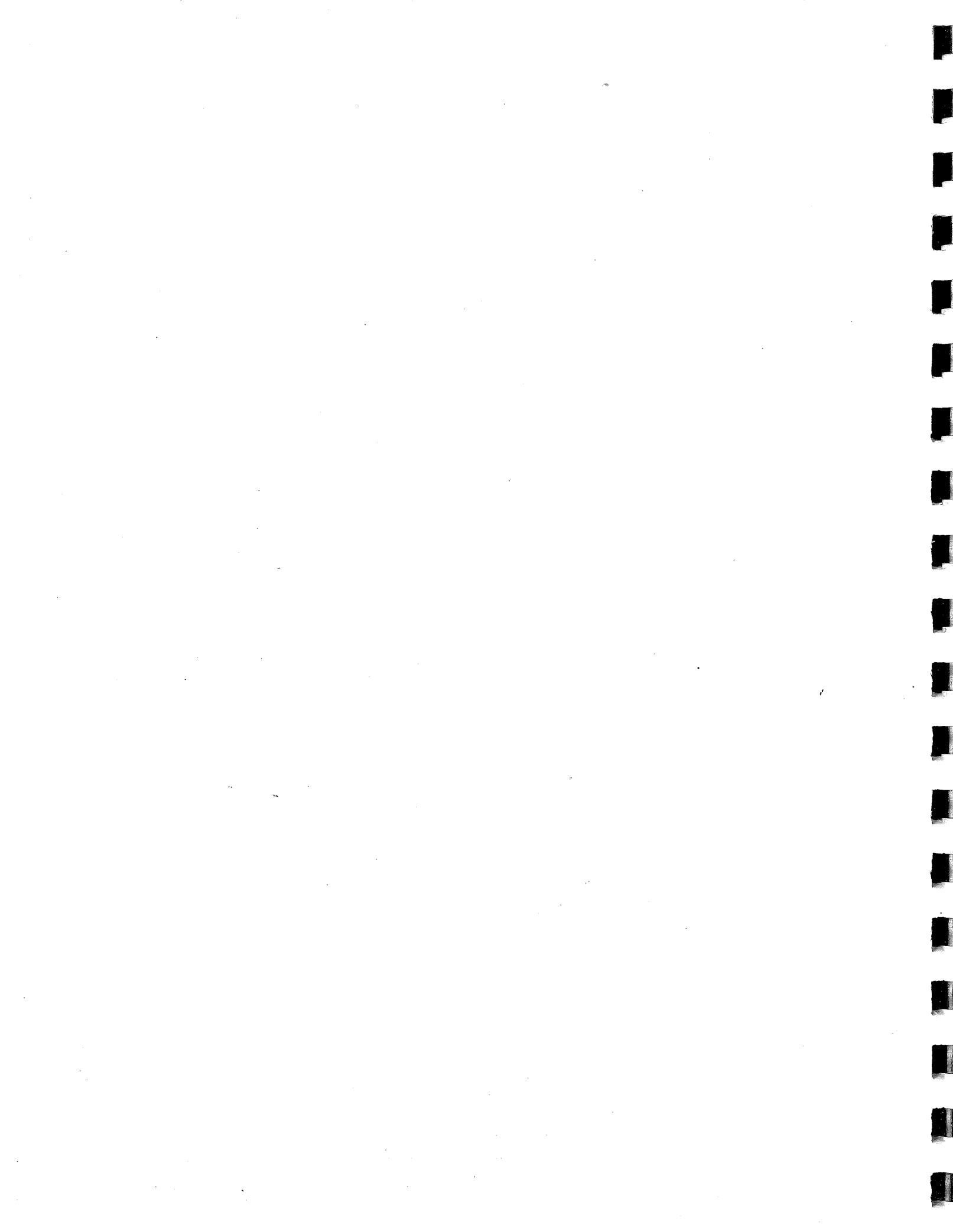
##### 8420.1020 IDENTIFYING CALCAREOUS FENS.

A calcareous fen is a peat-accumulating wetland dominated by distinct groundwater inflows having specific chemical characteristics. The water is characterized as circumneutral to alkaline, with high concentrations of calcium and low dissolved oxygen content. The chemistry provides an environment for specific and often rare hydrophytic plants.

SA: MS s 14.06; 103B.101; 103B.3355  
HIST: 18 SR 274



**Appendix F: Field Study of Wetland Bank Sites**



# Functional Analysis of Completed Wetland Mitigation Banking Sites in Minnesota

*Wetland Banking Subcommittee  
Minnesota Wetlands Conservation Planning  
June 1997*

## Introduction

The Minnesota Wetlands Conservation Act of 1991 authorized the use of wetland banking as a compensatory mitigation alternative. To date, 64 wetland banking sites have been developed and approved in Minnesota, representing approximately 1,123 acres of restored or created wetlands. An additional 41 sites, representing approximately 2,307 acres of restored or created wetlands, have been proposed or are in various stages of development. From the approved bank sites, approximately 239 acres have been used so far to compensate for wetland losses. To gain a better understanding of the quality of completed banking sites and to determine the need for improvements to the banking system, the Wetland Banking Subcommittee conducted an analysis of a sample of bank sites.

## Methods

An interagency team<sup>1</sup> selected and conducted field visits on 15 wetland banking sites during September, 1996. The selection of sites for analysis was constrained by the team members' time and travel availability. Therefore, sites were selected based on travel efficiency (being able to sample the most sites in the least amount of time) while attempting to achieve a representative sample from various parts of the state and different wetland types. The site selection process was also influenced by the availability of local government and agency staff that were familiar with the sites.

For each banked wetland, information was collected regarding the size and type of the wetland, whether the wetland was restored or created, and when it was restored or created. Each banking site was analyzed for functional quality using the Minnesota Routine Assessment Method for Evaluating Wetland Functions (MnRAM, Version 1.0). This method is a qualitative approach to functional assessment based on the best professional judgement of a team of wetland professionals. By systematically answering a series of questions relating to a variety of functions, the assessment team arrives at rating of exceptional, high, medium, or low for each function. The method does not attempt to integrate the various functions to achieve an overall rating for the wetland.

The data collected for all of the banked wetlands were summarized and analyzed graphically to identify factors associated with wetland quality. Due to the small sample size, it was not possible to conduct a meaningful statistical analysis.

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<sup>1</sup>Comprised of representatives of the Minnesota Dept. of Natural Resources, Minnesota Board of Water and Soil Resources, Minnesota Dept. of Transportation, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, local government and/or Soil and Water Conservation District staff.



**Results and Discussion**

Four counties were selected for the study, within which all approved banking sites were analyzed, for a total of fifteen sites (Table 1). The size of the banked wetlands ranged from 0.7 acres to 60 acres. Circular 39 Wetland Types 2,3,4,5 and 6 (Shaw and Fredine 1956) were represented, with Types 3 and 4 predominant in both number and acreage (78% of the total acreage) (Figure 1). An analysis of all wetland banks in Minnesota approved as of March 1997 revealed that 62% of the total acreage was Type 3 and 4 wetlands. There were no forested wetlands represented in this study. There were also no Type 1 wetlands represented, although some of the wetlands had a Type 1 fringe. All of the sites except two were restorations of previously drained wetlands, accomplished either by breaking drainage tiles or by plugging ditches or both. One of the wetland creation sites was done by excavation at a site that was previously upland. The other created wetland involved excavation within an existing wetland, but was classified as a created wetland because the original wetland was completely modified from its natural state. One site was a combination restoration/creation, involving tile breakage and excavation. At the time of the analysis, all of the sites except one ranged in age from 1 to 5 years since restoration or creation. The exact age of one of the sites in Douglas County was unknown, but less than 10 years.

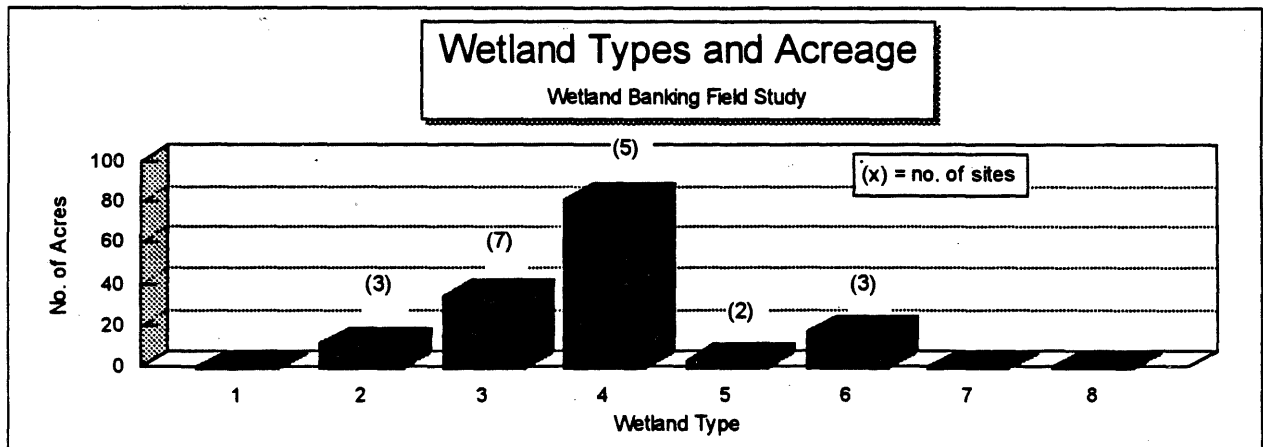
**Table 1**

County	Number of Bank Sites	Total Acreage of Bank Sites
Anoka	2	7.5
Cass	2	9.2
Douglas	6	97.3
Wright	5	33.9
Total	15	147.9

The size of the banked wetlands ranged from 0.7 acres to 60 acres. Circular 39 Wetland Types 2,3,4,5 and 6 (Shaw and Fredine 1956) were represented, with Types 3 and 4 predominant in both number and acreage (78% of the total acreage) (Figure 1). An analysis of all wetland banks in Minnesota approved as of March 1997 revealed that 62% of the total acreage was Type 3 and 4 wetlands. There were no forested wetlands represented in this study. There were also no Type 1 wetlands represented, although some of the wetlands had a Type 1 fringe. All of the sites except two were restorations of previously drained wetlands, accomplished either by breaking drainage tiles or by plugging ditches or both. One of the wetland creation sites was done by excavation at a site that was previously upland. The other created wetland involved excavation within an existing wetland, but was classified as a created wetland because the original wetland was completely modified from its natural state. One site was a combination restoration/creation, involving tile breakage and excavation. At the time of the analysis, all of the sites except one ranged in age from 1 to 5 years since restoration or creation. The exact age of one of the sites in Douglas County was unknown, but less than 10 years.

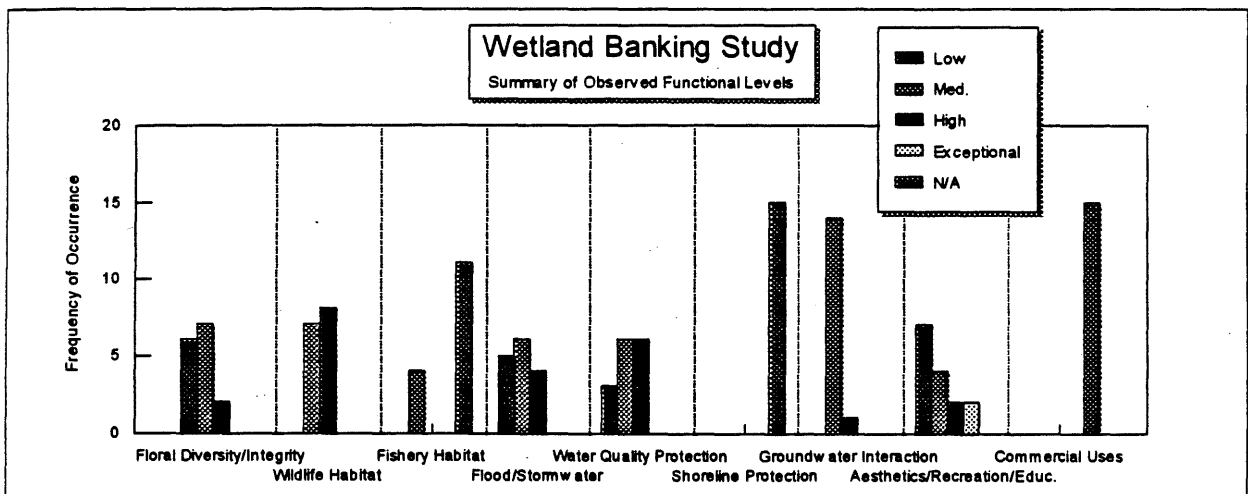
the wetland creation sites was done by excavation at a site that was previously upland. The other created wetland involved excavation within an existing wetland, but was classified as a created wetland because the original wetland was completely modified from its natural state. One site was a combination restoration/creation, involving tile breakage and excavation. At the time of the analysis, all of the sites except one ranged in age from 1 to 5 years since restoration or creation. The exact age of one of the sites in Douglas County was unknown, but less than 10 years.

**Figure 1. Summary of wetland types and acreage for bank sites studied.**



The results of the functional analysis are summarized in Figure 2. Shoreline protection was found to be a non-applicable function for all of the sites. Similarly, commercial use was rated non-applicable for all of the sites, however, it was noted that one of the sites was proposed to be leased for hunting purposes. All of the sites were rated as medium or high quality for wildlife habitat, reflecting the MnRAM's guidance that only very degraded wetlands should be rated low for this

**Figure 2. Summary of functional ratings of bank sites studied.**



function. Four of the sites were capable of supporting populations of fish, primarily minnows, and received low to medium ratings. The rest of the sites were rated as non-applicable for fisheries. Two sites were rated as having high quality floral diversity/integrity. Both of these sites were restorations, one of which was a previously tilled agricultural field. Neither site had been seeded or planted with wetland plants following restoration, although the surrounding upland of one of the sites was seeded with an upland grass mixture. Of the sites that were rated low for floral diversity/integrity, two were excavated wetlands that had steep sideslopes and may have been too deep to support aquatic vegetation. Many of the other wetlands that received low ratings for floral diversity/integrity were so rated because they were dominated by monocultures of invasive species such as reed canary grass or cattail. However, this is also commonly observed in natural wetlands. "Aesthetics/recreation" was the only function for which an exceptional rating was given, which occurred at two sites. Both sites were within or adjacent to public recreational lands. Groundwater interaction was rated "medium" for all sites except one, primarily because the assessment team was unable to accurately assess this function due to inadequate information on local hydrologic conditions.

Graphical analysis of the relationships between certain of the measured functions was generally inconclusive. No obvious relationship was observed between the age of the wetland (years since restoration or creation) and its floral diversity/integrity functional level. Similarly, there was no obvious relationship between wildlife habitat and flood/stormwater functions. These two functions are generally thought to be inversely related. Most likely, the sample size of this study was insufficient to reveal such relationships. Many site specific factors are responsible for the manner in

which a restored or created wetland develops and its functional capacity. A very large sample size would be required to adequately account for these factors. Another confounding factor was that the functional assessments in this study were conducted near the end of a very dry summer. Water levels were extremely low in most of the wetlands studied, making it difficult to rate many of the functions.

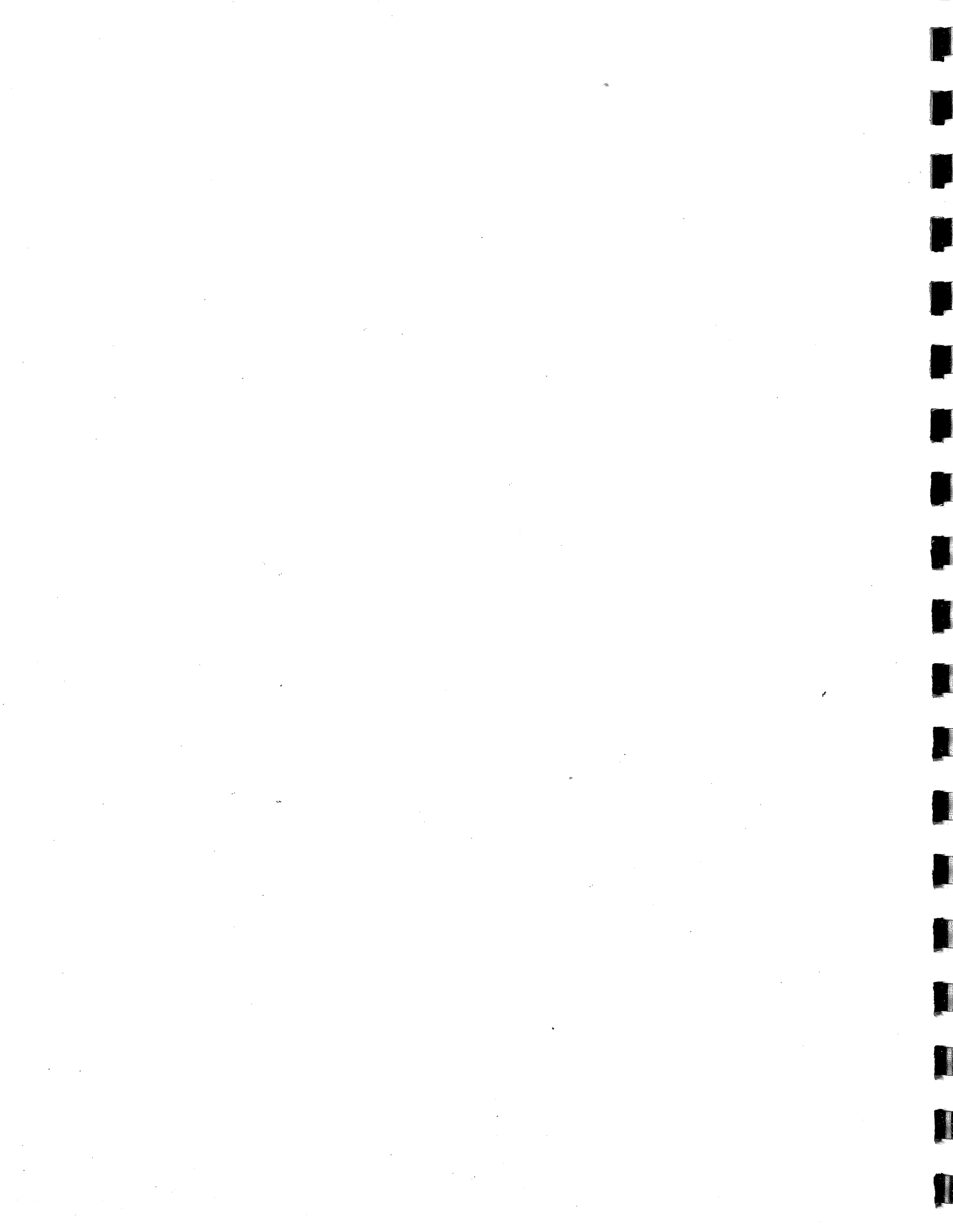
### **Conclusions**

The main goal of this study was to collect empirical data on the characteristics and functional quality of a variety of wetland banking sites in Minnesota. This information would be used to develop recommendations for improving the quality of wetland banking projects.

Based on the functional assessments and subjective impressions, the overall quality of the wetland banking sites varied widely. The highest quality sites tended to be restorations surrounded by permanent upland vegetation. Two of the highest quality sites were on lands in public ownership. The poorest sites observed were wetlands that had been created through excavation. The primary problem with these sites were sideslopes that were too steep and water levels too deep to reliably support aquatic vegetation. The majority of the wetlands analyzed appeared to be reflective of the range of conditions observed in natural wetlands within the study areas.

The limited scope of this study precludes any detailed findings beyond the preceding general conclusions. Ideally, a study of the characteristics and quality of wetland banking sites would sample many more sites and would include a reference population of natural wetlands. Also, the MnRAM is not sufficient by itself for conducting a detailed analysis of the development and quality of restored or created wetlands. To gain a thorough understanding, it would be necessary to conduct vegetation and wildlife surveys and measure water quality parameters over several years. Such a comprehensive study was beyond the means of the Wetlands Banking Subcommittee in the time frame available.

**Appendix G:**    Analysis of 1995 Wetland Replacement Plans



# APPENDIX \_\_\_\_\_

## Analysis of Wetland Replacement Plan Data for 1995

### I. Introduction

The wetland banking committee, consisting of members of the Minnesota Department of Natural Resources (DNR), the Board of Water and Soil Resources (BWSR), and the Minnesota Department of Agriculture, was charged by the Minnesota Legislature to evaluate and determine the effectiveness of wetland banking in the state. This Committee then established a work group consisting of representatives of the Minnesota Pollution Control Agency (PCA), the Minnesota Department of Transportation (MnDOT), the Audubon Society, the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), Soil and Water Conservation Districts, and the private sector to assist in the project. To aid in this evaluation, the Committee requested that a database be compiled for all the wetland replacement plans that were submitted in 1995. This year was chosen as the best available representation of wetland activities in the state under the current Wetland Conservation Act (WCA) rules.

Data requested by the wetland banking committee included:

- Location of wetland (both impacted and replacement) according to county, watershed, and wetland ecological unit (WEU, identified in the *Minnesota Wetlands Conservation Plan*).
- Size of wetland impact on a per wetland and per project basis.
- Size of the impacted wetland vs. size of the replacement wetland.
- Distance from impact to replacement site (in miles)
- Type of wetland impacted vs. type of replacement wetland (Circular 39)
- Time differential (+ or -) between date of actual wetland impact and date of completion of replacement wetland.
- Class of project for which replacement plan was prepared (i.e. Public transportation, Residential, Commercial, Industrial, Agriculture, Recreational, Utility, etc.).
- Replacement method (i.e. restoration vs. creation)
- WCA rule governing the location of replacement wetlands.
- Presence or absence of a monitoring program.

### II. Methods

#### *Data collection*

Data collection began by contacting the DNR State Wetland Program Coordinator. The DNR had a record of 240 wetland replacement plans entered into their database for the state of Minnesota in 1995. This database did not contain all the information requested by the wetland banking committee. It was decided that the best source of information would be the actual hard copies of the plans located in the DNR files. Over the course of several weeks, the wetland replacement plans were removed from the appropriate files at the DNR, all pertinent information was extracted from these plans, and these data were periodically entered into a Microsoft Excel version 4.0 spreadsheet.

While the majority of the data needed for the database was found in the DNR files, there was a significant number of holes in the data. Some of these holes were filled through a variety of sources. The BWSR files on wetland banking provided some additional information on those projects which used banking as a means of wetland mitigation. Also, a sampling of Local Government Units (LGUs) were contacted to provide further information on projects located within their jurisdiction. Lastly, in some instances, the DNR Wetland Program Coordinator was able to extract additional information from the wetland replacement plans on file at the DNR.

During 1995, a wetland replacement plan submitted by LTV Steel Mining Company was estimated to impact 308.4 acres of wetlands in St. Louis County, though the impacts have not yet occurred as of the writing of this report. The mitigation was also to occur in St. Louis County and would include 515 acres of a bank, which had not yet been established. This project has been recorded in the database, but was not included in the data analyses unless noted in the figures and tables. The Committee felt that the inclusion of this project in the data analyses would significantly skew the data due to the magnitude of the impacts.

There were other smaller projects which are also known to have not been started or mitigated as of April 30, 1997. Those projects which fit into these categories are noted as such in the **Notes** column of the database. The Committee decided to include these projects for the data analyses because all LGUs could not be contacted within the scope of this study and it is expected that this constitutes a "typical" year in Minnesota.

On April 30, 1997, the data collection phase of the study was completed. Some holes in the database still existed, but the Committee decided that the available data would provide a good representation of wetland activities during 1995.

### ***Data Analyses***

The database was created using a Microsoft Excel version 4.0 spreadsheet. All the collected data were entered into the spreadsheet and a database was established. It should be noted that there are discrepancies in total numbers shown in the tables and graphs. This is due to the missing information in the database. These missing data prohibit some projects from being sorted under specific categories of interest and are thus not represented in those totals. In spite of this, the data are still considered representative of wetland activities occurring in 1995.

## **III. Findings**

### ***A. Wetland activities in 1995***

To determine which wetland replacement projects, occurring in 1995, used banking as a means of mitigation, banking was specified in the criteria range of the database. Those projects falling under that category were extracted. It was determined that about 15% of the wetland replacement projects (not including LTV) used banking as a means of mitigation. These 36 projects accounted for 78.7 acres of impacts and 131.3 replacement acres used from banks. The same procedure was followed for projects in which project-specific mitigation was used. Project-specific mitigation accounted for 386.7 replacement acres to mitigate for 164.8 acres of impacts. This information is displayed in Tables 1 and 2.

*B. Types of wetlands impacted and replacement acres used*

The types (Circular 39) of wetland acres impacted were determined by extracting each wetland type from the database individually. The total wetland acres of an individual type were summed. In addition, wetlands which were part of complexes were considered to be of the type listed first in the complex. For example, a wetland complex listed as types 2,3,4 would be recorded as a type 2 in the analyses. The total number of acres impacted of a particular wetland type is then the total of the individual impacts to that wetland type as well as those impacts which were a part of a complex in which that type was the first listed. It was recognized that this method may not provide an accurate representation of actual wetland impacts in complexes, but due to limited time and resources, this convention was considered the best alternative. This procedure also was followed for the types of replacement acres used in 1995. See Tables 1 and 2 for the acres of each wetland type impacted, the replacement acres used, and the number of acres of each wetland type in complexes. (See Figures 1-3).

**Table 1.**

<b>Banking Projects</b>				
<b>wetland types</b>	<b>Impacted acres w/LTV</b>	<b>Impacted acres w/o LTV</b>	<b>Replacement acres used w/LTV</b>	<b>Replacement acres used w/o LTV</b>
1	10.37	10.37 (3.49) *	4.6	4.6 (4.6)
2	16.58	11.18 (4.27)	85.02	85.02 (62.66)
3	24.08	6.08 (4.88)	554.49	39.49 (1.18)
4	3.01	0.01 (0)	1.96	1.96 (0)
5	0	0 (0)	0	0 (0)
6	107.21	48.11 (45.54)	0.26	0.26 (0)
7	192.98	2.98 (0.2)	0	0 (0)
8	32.9	0 (0)	0	0 (0)
<b>Totals</b>	<b>354.23</b>	<b>78.73</b>	<b>646.33</b>	<b>131.33</b>

\* Numbers in parentheses represent the acres of each type found in complexes.

**Table 2.**

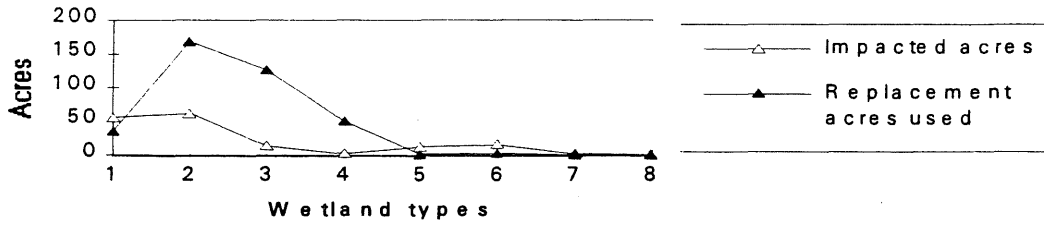
<b>Project Specific</b>		
<b>Wetland type</b>	<b>impacted acres</b>	<b>replacement acres used</b>
1	55.09 (29.56) *	43.43 (39.94)
2	63.09 (34.83)	168.77 (115.55)
3	13.98 (3.98)	127.44 (46.75)
4	2.43 (0.82)	50.72 (2.32)
5	12.47 (10.5)	1.72 (0)
6	15.64 (1.32)	2.86 (0)
7	2.11 (0.12)	0.71 (0)
8	0 (0)	0 (0)
<b>Totals</b>	<b>164.81</b>	<b>386.65</b>

\* Numbers in parentheses represent the acres of each type found in complexes



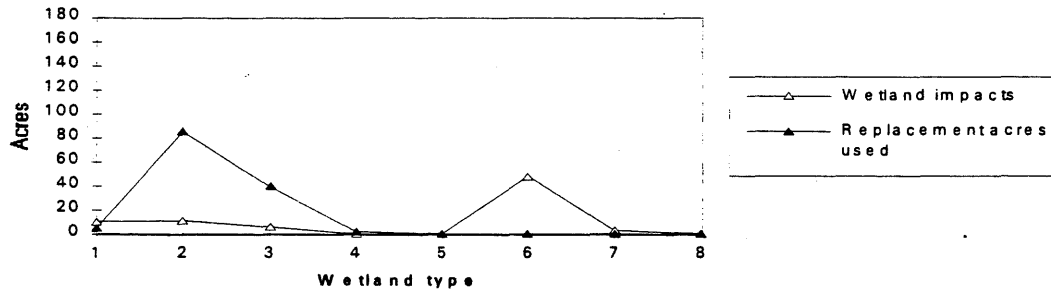
**Figure 1.**

**Wetland Impacts and Replacement Acres Used (Project Specific)**



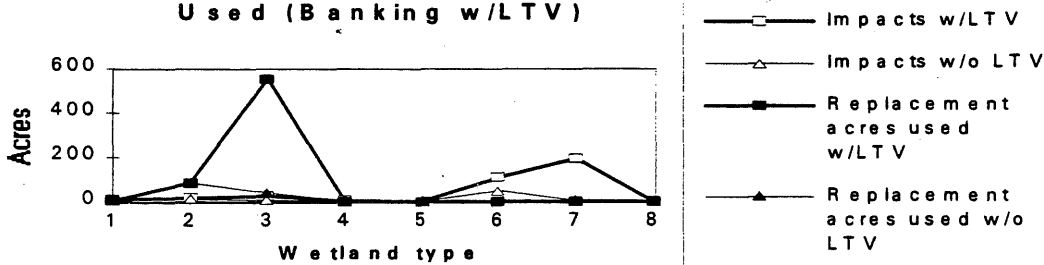
**Figure 2.**

**Wetland Impacts and Replacement Acres Used (Banking w/o LTV)**



**Figure 3.**

**Wetland Impacts and Replacement Acres Used (Banking w/LTV)**



*C. Size of wetland impacts and replacements*

Average size of impact per wetland basin was calculated to be 0.45 acres for those projects using project-specific mitigation and 0.75 acres for projects in which banking was used for mitigation. In many cases, there was more than one wetland basin impacted per individual project. The average wetland impact for those projects using project-specific mitigation was 0.94 acres and for projects using banking for mitigation the average was 2.25 acres per project. The average replacement acres used was 2.04 acres for project-specific mitigation and 4.11 acres for banking projects. The LTV Steel Mining project was not included in these calculations.

*D. Location of wetland impacts using banking and project-specific mitigations*

The data were analyzed to determine whether project-specific mitigation or banking was more dominant in some parts of the state. There were 84 projects using project-specific mitigations in the Mississippi River (Metro) and Minnesota River (Shakopee) watersheds alone. This accounts for nearly 44% of those projects which used project-specific mitigation in 1995. The remaining project-specific mitigations were concentrated in the east-central watersheds in the state with a few outliers scattered around the rest of the state.

For those projects occurring in 1995 in which banking was used as the means of wetland mitigation, only four were located in the metro area. This accounts for about 11% of the projects statewide which used wetland banks for mitigation during this year. The remaining impacts generally occurred in the north-central to south-central watersheds in the state. (See Table 3).

Table 3.

Number of impacts (by watershed) mitigated through project-specific mitigation and banking in 1995		
Impacted watershed	project-specific mitigation	banking
(3) St. Louis River	4	4
(7) Mississippi River (Headwaters, Lake Winnibigoshish)	3	4
(9) Mississippi River (Grand Rapids)	1	
(10) Mississippi River (Brainerd)	2	1
(11) Pine River	4	3
(12) Crow Wing River	4	5
(13) Redeye River (Leaf River)	3	
(14) Long Prairie River	9	1
(15) Mississippi River (Sartell)	1	
(17) Mississippi River (St. Cloud)	8	
(18) North Fork Crow River	8	3
(19) South Fork Crow River	5	
(20) Mississippi River (Metro)	60	
(21) Rum River	12	
(22) Minnesota River (Headwaters)		3
(23) Pomme de Terre River	1	
(26) Chippewa River	3	
(27) Redwood River	1	
(30) Blue Earth River	1	
(33) Minnesota River (Shakopee)	24	4
(34) St. Croix River (Upper)	4	1
(35) Kettle River	4	
(36) Snake River	5	2
(37) St. Croix River (Stillwater)	7	
(38) Mississippi River (Red Wing) and Lake Pepin	4	
(39) Cannon River	2	2
(41) Zumbro River	2	2
(43) Root River	1	
(44) Mississippi River (Nevo)	2	
(56) Otter Tail River	2	1
(61) Sandhill River	1	
(65) Thief River	1	
(66) Clearwater River	2	
(70) Two River	2	
(77) Big Fork River	1	
(79) Rainy River (Baudette)	1	
(84) Little Sioux River	1	

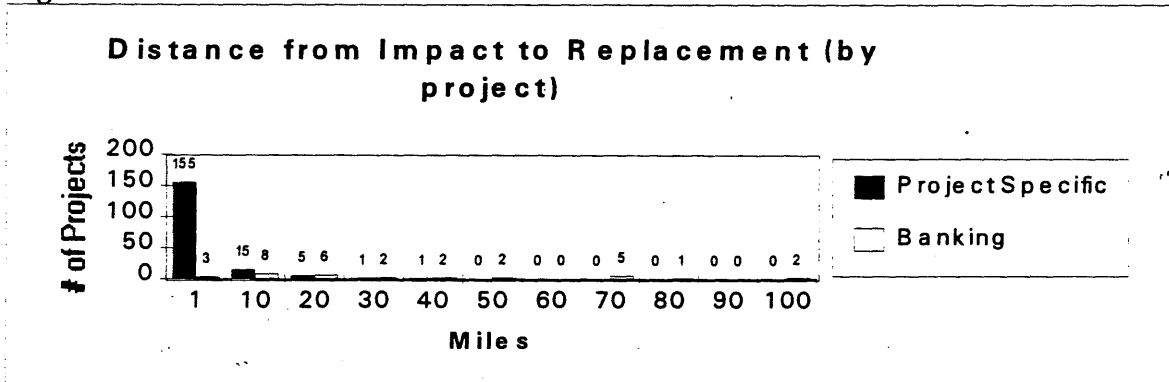
E. Distance from wetland impacts to replacement sites

The wetland banking committee was also interested in how far the wetland impacts were located from the replacement acres used. It was determined that for project-specific mitigations, 75% (155 projects) of the acres in 1995 were mitigated within one mile of the impact. Thirteen percent (16 projects) of the acres were located between >1 and 10 miles from the impact. Ten percent (5 projects) of the acres were between >10 to 20 miles, less than 1% (1 project) was between >20 to 30 miles, and less than 1% (1 project) was located between >30 to 40 miles from the impact.

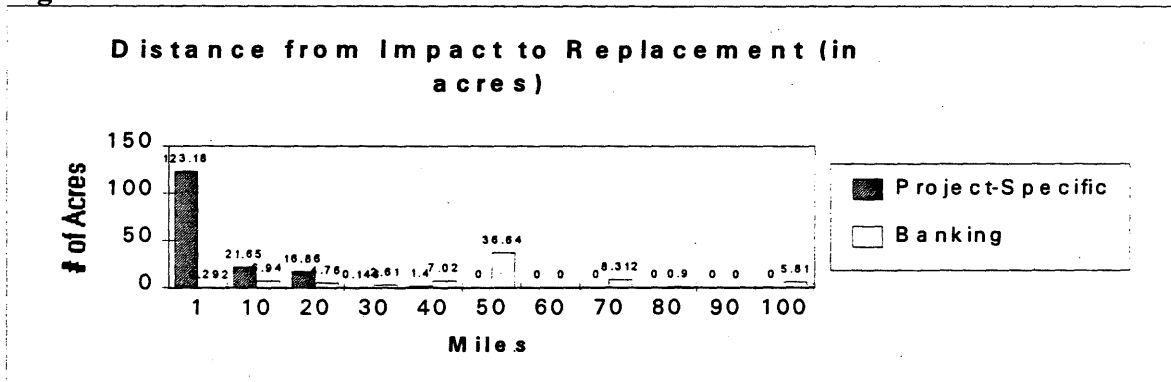
For projects in which banking was used as the form of mitigation, one percent of the mitigation acres (3 projects) were located within one mile of the impact; nine percent of the acres (7 projects) were between >1 to 10 miles; seven percent of the acres (6 projects) were between >10 to 20 miles; four percent (2 projects) were between >20 to 30 miles; ten percent (2 projects) were located between >30 to 40 miles; 50% (2 projects) were located between >40 to 50 miles; 11% (5 projects) were located between >60 to 70 miles; one percent (1 project) was located between >70 to 80 miles; and eight percent of the acres (2 projects) were mitigated >90 miles from the impact. This information is displayed in Figures 4 and 5.

Additionally, it was found that 93% of all wetland mitigations (including project-specific and banking) during 1995 were known to occur within the same WEU as the impacted wetland. Seven percent of the mitigations were known to occur within a different WEU than the impacted wetland.

**Figure 4.**



**Figure 5.**

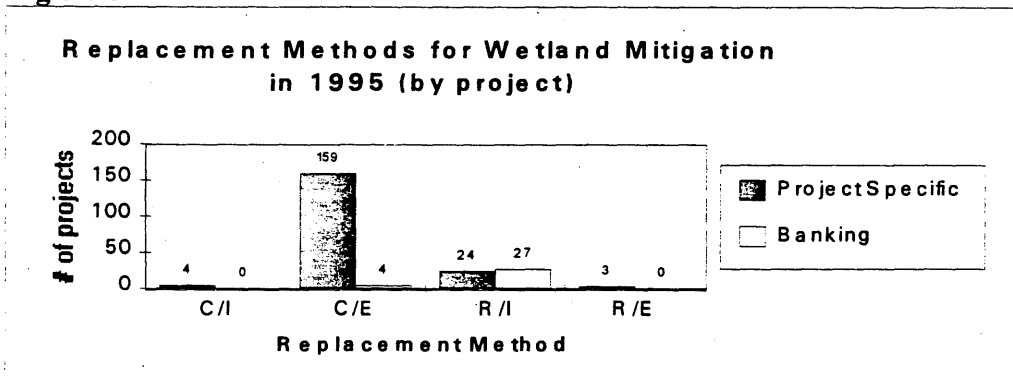


*F. Method of wetland replacement*

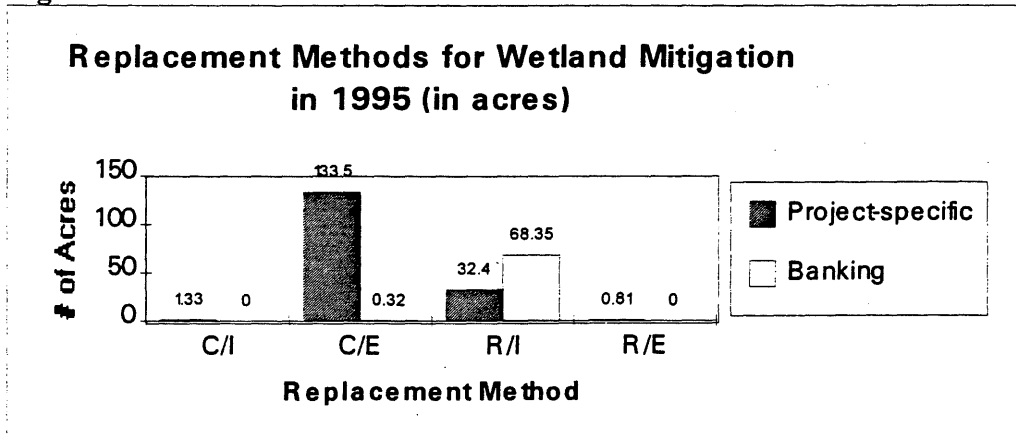
An analysis was conducted on the method of replacement used for both project-specific and banking projects. The categories are restoration by excavation (R/E), restoration by inundation (R/I), creation by excavation (C/E), and creation by inundation (C/I). Restoration by excavation involves removing fill from an area that was previously a wetland. Restoration by inundation requires restoring the hydrology to a prior wetland. Creation by excavation, as the name implies, involves digging a depression in an area and allowing it to fill with water. Alternately, creation by inundation requires the construction of a dam or other water control structure which will impound water in a given area, creating a wetland.

For those projects using project-specific mitigation, 84% (159) mitigated through creation by excavation (C/E). Two percent (4) of these projects created replacement wetlands by inundation. Restoration by excavation accounted for 2% (3) of the project-specific mitigations, and 13% (24) were accomplished through restoration by inundation. For projects using banking as a means of mitigation, 13% (4) used banks that were created by excavation, and zero banks were used which were created through inundation. Zero projects used banks restored by excavation, and 87% (27) of the projects used banks that were restored by inundation. These data are shown in Figures 6 and 7.

**Figure 6.**



**Figure 7.**



*G. Time between wetland impact and completion of replacement wetland*

The wetland banking committee was also interested in determining the time differential between the date of a wetland impact and the date of creation of the bank site which was debited as mitigation for the impact. The data show that for 1995, 7.4 acres had been established approximately five years before the impact occurred; 1.9 acres were established about three years prior to the impact; 2 acres were established approximately two years before the impact; 1.7 acres were established about 1.5 years prior to the impact, and 6.27 acres were established 1 year prior to wetland impact. The data also show that 44.03 acres were established concurrent with the impact. Additionally, 7.18 acres of bank were established 0.5 years after the impact. There were 62.33 acres debited from banks in 1995 which had insufficient data available to determine the time differential. This information is given in Table 4.

For project-specific mitigation, the files did not contain information on when the replacement wetlands were constructed. The WCA rules require prior or concurrent replacement, or a reasonable guarantee that replacement will occur, for those projects using project-specific mitigation. The WCA rule does not require an official sign-off or review of the mitigation wetland to ensure that the mitigation has actually occurred.

**Table 4.**

<b>Time differential between wetland impact and the establishment of the debited bank (from available 1995 data)</b>		
		<u>acres</u>
( + means the bank site was created prior to the impact)	+ 5 years	7.4
	+ 3 years	1.9
	+ 2 years	2.0
	+ 1.5 year	1.7
	+ 1 years	6.27
	concurrent	44.03
(- means the bank site was created after the impact)	-0.5 years	7.18
	<b>Insufficient data to determine time differential</b>	<b>62.33</b>

*H. Replacement rule governing location*

The wetland replacement plans submitted in 1995 were analyzed to determine the WCA rules followed governing the location of replacement wetlands. It was found that for those projects in which project-specific mitigation was used, 88% (184 projects) were known to be mitigated within the same county or watershed as the impact. Of the remaining project-specific mitigations, 12% (25 projects) had insufficient data available to determine the WCA rule. For those projects in which banking was the means of mitigation, 58% (21 projects) debited banks which were located within the same county or watershed as the impact. Eleven percent (4 projects) of these projects used the public transportation rule, three percent (one project) used the 80-50 rule, and 28% (10 projects) had insufficient data to determine the WCA rule. Figures 8 and 9 show this information.

Figure 8.

WCA Rules for Wetlands Replaced in 1995 (by project)

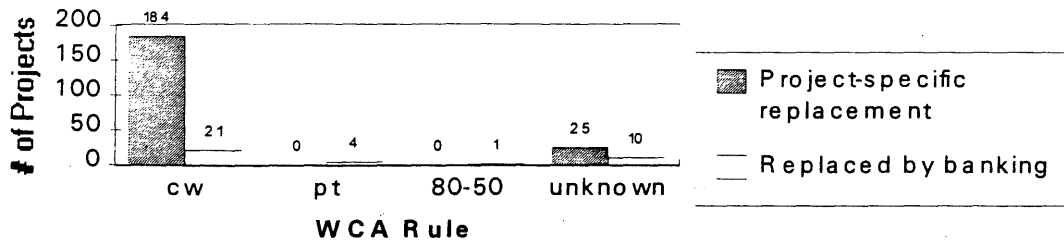
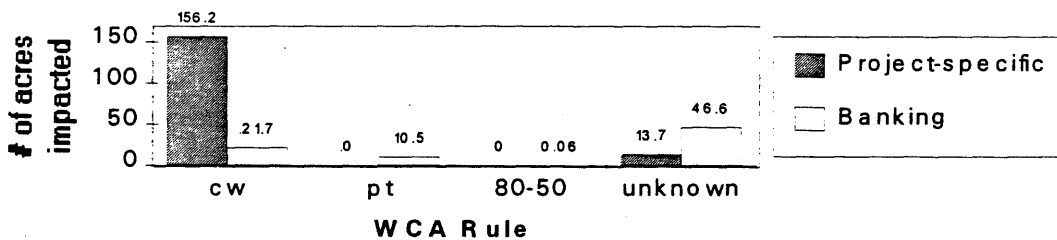


Figure 9.

WCA Rules for Wetlands Replaced in 1995 (in acres)



*I. Class of project impacting wetlands*

An analysis was conducted to determine the reason for wetland impacts, referred to as the project class. The classes are as follows: Safety, commercial, recreation, flood control, industrial, residential, public transportation, and utilities. The data are given in detail in Table 5.

Table 5.

Summary of Wetland Impacts by Class of Project (w/o LTV)						
Class of Project	Number of Projects	Total Acres Impacted	Total Replacement Acres Used	Average Acres of Impact Per Project	Average Replacement Acres Used Per Project	Acres Replaced Through Banking
Safety (A)	1	0.07	0.14	0.07	0.14	0
Commercial (C)	29	27.03	49.99	0.87	1.72	7
Recreation (E)	9	9.35	21.63	1.04	1.97	12.68
Flood Control (F)	1	0.07	0.14	0.07	0.14	0
Industrial (I)	8	43.71	59.58	6.24	5.42	43.9
Residential (R)	111	43.43	155.61	0.39	1.37	26.54
Public	51	114.1	232.48	2.28	4.31	28.81
Transportation (T)						
Utilities (U)	2	1.65	2.19	0.83	1.1	0

#### *J. Monitoring reports*

The lack of monitoring reports submitted for wetland replacement plans in 1995 was a concern of the wetland banking committee. This information was available only where individual LGUs were contacted, therefore there is a significant number of projects in which these data are not available. For those projects in which project-specific mitigation was used, eight percent (16 projects) are known to be submitting monitoring reports, ten percent (20 projects) are known to not be submitting monitoring reports, 17% (35 projects) are not required to submit monitoring reports (mitigation not completed one full year prior to this report, etc.), and 65% (132 projects) had no information available on the status of their monitoring. For banking projects, 25% (nine projects) are known to be submitting monitoring reports, 22% (eight projects) are known to not be submitting reports, 11% (four projects) are not required to submit monitoring reports, and 42% (15 projects) have insufficient data on monitoring reports to determine their status.

### **IV. Conclusions**

#### *A. Types of impacted wetlands and replacement acres used*

Some trends concerning wetland banking and project-specific mitigation could be detected through the data analysis. First, those projects using project-specific mitigation tended to impact type 2 wetlands the most (63.09 acres), followed closely by type 1 impacts (55.09 acres). The majority of replacement acres used for project specific mitigation were of types 2 (168.77 acres) and type 3 (127.44 acres).

For those projects using banking for wetland mitigation (not including the LTV Steel Mining project), type 6 wetlands were impacted the most (48.11 acres). The replacement wetland acres used for these banking projects were mostly of type 2 (85.02 acres), with a smaller amount of type 3 wetland acres used (39.49 acres). Wetland types 2 and 6 have similar hydrology, but the vegetation differs in its level of succession.

#### *B. Distance from wetland impact to replacement sites*

A second trend detected in the data analysis was that project-specific mitigation primarily occurred within one mile of the wetland impact. Of the projects using project-specific mitigation, 177 had enough data available to determine distance from wetland impact to mitigation site. Of those 177 projects, 88% (155 projects) were known to be mitigated within one mile of the impact. Of the 31 banking projects in which distance from wetland impact to bank location could be established, 55% (17 projects) were within 20 miles. The remaining 45% (14 projects) were located between >20 to >90 miles.

#### *C. Method of wetland replacement*

Creation by excavation was the most common method of project-specific mitigation. Of the 190 projects using project-specific mitigation in which the replacement method was known, 84% (159 projects) mitigated through creation by excavation. The next largest category for replacement method used for project-specific mitigation was restoration by inundation, accounting for 13% of the projects (24 projects). In contrast, those projects mitigated through the use of banking most commonly used banks which were established through restoration by inundation. This category accounted for 87% (27 projects) of the 31 banking projects in which



the bank information was available. Thirteen percent (four projects) of these projects used banks which were established through creation by excavation.

*D. Replacement rule governing location*

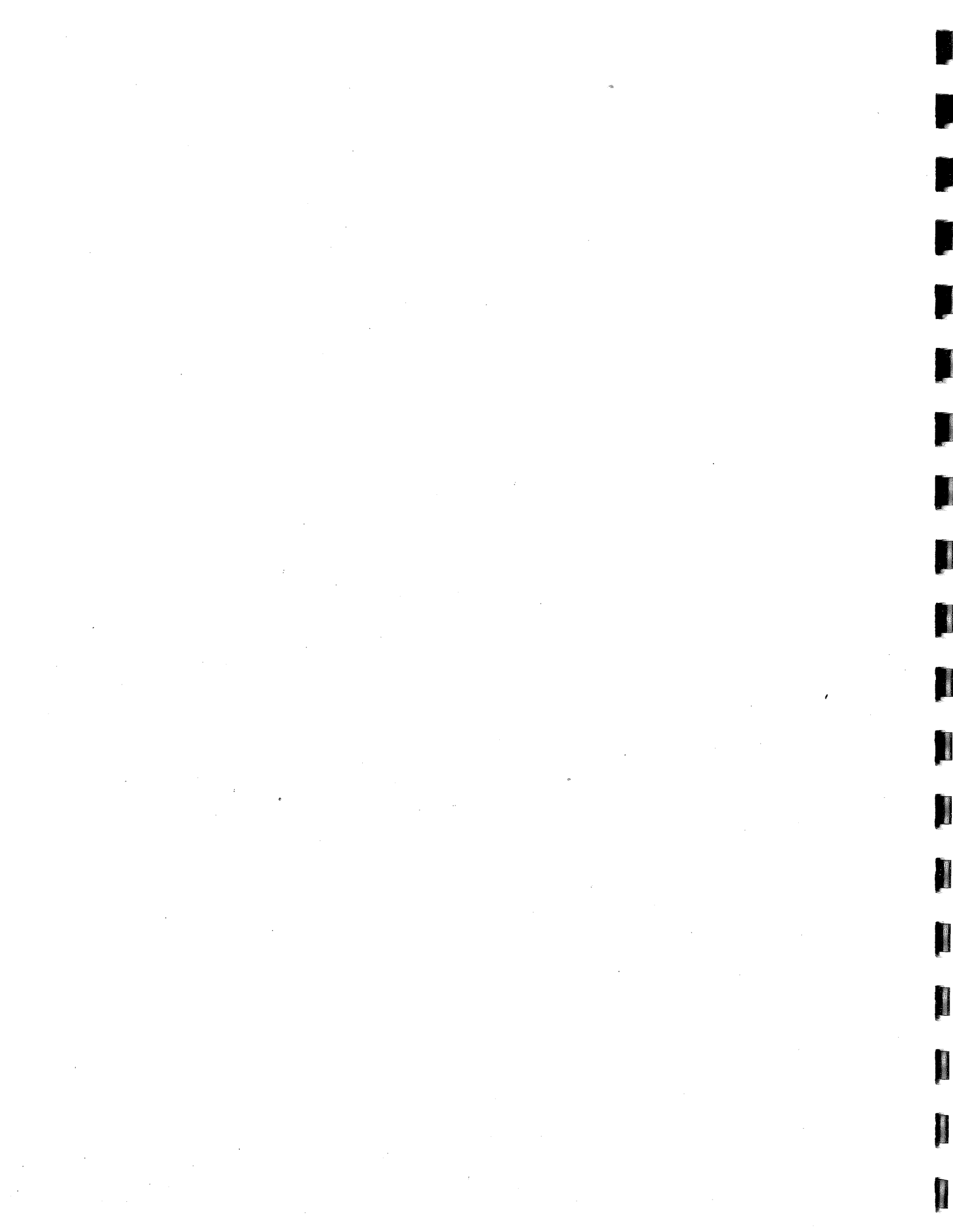
Replacement within county or watershed was overwhelmingly predominant for both project-specific mitigation and those projects using banking for mitigation. Of the 36 banking projects (w/o LTV), 58% (21 projects) were known to use banks located within the same county or watershed as the impact. For project-specific mitigation, 88% (184 projects) were known to be mitigated within the same county or watershed.

There were 51 projects occurring in 1995 that were known to be public transportation projects. Of these 51 projects, only eight percent (four projects) were known to use the public transportation rule under the WCA. This rule states that wetland impacts occurring due to public transportation projects may be replaced statewide except those occurring in a less than 50% area must be replaced in a less than 50% area. In addition, those impacts occurring in the seven-county metropolitan area must be mitigated in the affected county, or if no mitigation opportunities exist, within another county in the metro area.

*E. Class of project impacting wetlands*

With the LTV Steel Mining project removed from the database, public transportation projects accounted for the largest acreage of wetland impacts in 1995, with 51 projects impacting 114.1 acres. Industrial and residential projects accounted for the next largest wetland impacts with 43.71 and 43.43 acres, respectively. Industrial projects used banking for mitigation more than any other project class. Industrial projects used 43.9 acres of banks, equaling nearly 74% of their mitigation requirements for 1995. Public transportation projects used 28.81 acres of banks accounting for about 12% of their required mitigation, while residential projects used 26.54 acres accounting for approximately 17% of their mitigations for the year.

**Appendix H:**    Review of Federal Guidance for the Establishment, Use and  
Operation of Mitigation Banks



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**DATE:** February 25, 1997

**TO:** Mitigation Banking Committee Members

**FROM:** Loyd Mitchell, Twin Cities Field Office, U.S. Fish and Wildlife Service

**RE:** Review of Federal Guidance for the Establishment, Use and Operation of Mitigation Banks

As agreed on at our December 10, 1996 meeting, I have reviewed the subject document (Federal Guidance) with respect to the following mitigation banking focus topics:

- |   |  |
|---|--|
| o monitoring  | o cash banking                               |
| o wetland size and type                                     | o pre-sale of credits                        |
| o service area for banks                                    | o cost-effectiveness                         |
| o restoration vs. creation vs. enhancement vs. preservation | o incentives for higher quality restorations |

In general, the Federal Guidance presents unspecific discussion of many of the listed focus topics, presumably to allow flexibility given the nationwide scope of the document. Comments on the various topics, and guidance provided in the Federal Guidance, is presented below.

**Monitoring**

**Section II.E.3. (Page 15)** -- The Federal Guidance puts the responsibility of monitoring on the bank sponsor; monitoring requirements and performance standards, against which monitoring results are to be compared, should be specified in the "banking instrument" that legally authorizes and establishes the bank. Monitoring should be conducted at "appropriate" intervals, and generally for five years. The Federal Guidance recommends annual monitoring reports be submitted to the bank authorizing agencies.

**Wetland size and type**

The Federal Guidance does not provide an in-depth discussion of recommended size and type of wetland(s) suitable for mitigation banks. However, in discussion of site selection for a bank (Section II.B.2.), the Federal Guidance suggests that agencies should carefully consider the ecological suitability of the proposed site for achieving the goals of the bank, including size and location of the site relative to other ecological features. In Section II.B.6., the Federal Guidance suggests that decisions regarding the location and type of wetlands to be established at a proposed bank site should be made in the context of a comprehensive watershed Management plan.

### Service area for banks

Section II.B.1. (Page 5) -- Relative to goals of a bank, the Federal Guidance suggests that the overall goal should be to fully compensate for wetland losses in a manner that contributes to the long-term ecological functioning of the watershed within which the bank is located.

Section II.D.3. (Page 12) -- The Federal Guidance defines service area as "...the area (e.g., watershed, county) wherein a bank can reasonably be expected to provide appropriate compensation for impacts to wetlands and/or other aquatic resources." (emphasis added). The Federal Guidance also states that use of a bank to compensate for impacts outside of the defined service area may be authorized on a case-by-case basis, where it is determined to be practicable and environmentally preferable. The Federal Guidance recommends that the geographic extent of the service area should essentially be based on watersheds, but recognizes that service area can include larger watersheds or other ecological units when supported by state, local, or regional conservation plans.

### Restoration vs. creation vs. enhancement vs. preservation

Section II.B.3. (Page 6) -- The Federal Guidance states that restoration should be the first option; enhancement and creation should only be considered ... "where there are adequate assurances to ensure success and that the project will result in an overall environmental benefit."

Section II.B.4. (Page 7) -- The Federal Guidance devotes an entire paragraph to the role of preservation in mitigation banking. Typically, credit can be given for preservation in conjunction with restoration, enhancement, or creation activities, and when the preservation will augment the functions of the restored, created, or enhanced resource; the amount of credit is based on that degree of augmentation. Only in exceptional circumstances can credit be given based solely on the preservation of existing wetlands, and then only in accordance to existing regulations, policies, and guidance. The Federal Guidance further cautions that determination of whether preservation is appropriate as the sole basis for generating credits at a bank site requires careful judgment regarding whether the wetlands proposed for preservation are of regional importance, and whether those wetlands are under demonstrable threat of loss or substantial degradation due to human activities that might not otherwise be prevented.

### Cash banking

Section II.D.7. (Page 14) -- "Credits may be sold to third parties." The cost of the credits is determined by the bank sponsor (i.e., seller).

Section II.F.1. (Page 16) -- The Federal Guidance states that "in-lieu-fee", fee mitigation, or similar arrangements where cash is given to a resource agency for implementation of specified or general wetland development projects, are not considered to meet the definition of mitigation banking. However, it goes further to allow such arrangements where the Corps, in consultation with other agencies, determines it meets regular requirements for an off-site mitigation effort, and can be reasonably assured of success; a formal agreement, similar to a banking agreement, should be drawn up to document the action.

### Pre-sale of credits

Section II.D.6. (Page 13) -- The Federal Guidance recommends that credits available for withdrawal be commensurate with the ecological functions attained at the bank site, but recognizes that some "pre-sale" of credits may be necessary to generate some early revenue for the bank, which in turn would further the likely ecological

success of the bank. However, the Federal Guidance stresses that measures necessary for the long-term viability of the bank should be accomplished prior to debiting, and thus, pre-sale of credits should be restricted to conditions where the bank instrument and mitigation plan have been approved, the site has been secured, and appropriate financial assurances have been established. Also, the biological improvements on which the early sale of credits is based should be completed no later than one growing season after the sale.

#### Cost-effectiveness

The Federal Guidance makes no specific reference to cost effectiveness only to say that the goal of a mitigation bank should be to provide "economically efficient" mitigation opportunities (Section II.B.1, Page 5).

#### Incentives for higher quality restorations

The Federal Guidance makes no reference to providing incentives for higher quality bank sites.

