

# Wisconsin Land and Water Conservation

Annual Progress Report — 2004

*Summarizing Wisconsin's achievements in reducing polluted runoff and conserving land and water resources.*



- ◆ *Soil and Water Resource Management Program*
- ◆ *Runoff Management Program*

- ◆ Wisconsin Department of Agriculture, Trade, and Consumer Protection
- ◆ Wisconsin Department of Natural Resources

## **2004 Annual Progress Report**

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The *2004 Land and Water Conservation Annual Report* is dedicated to William R. Elman. Bill passed away in September 2005 after a valiant fight against brain cancer.

Bill spent more than 30 years in a wide-range of planning and management projects focusing on land use, environmental management, municipal development and government affairs in Wisconsin and Illinois. He was appointed to the Land and Water Conservation Board in 1998, and served as secretary, vice-chair and chair. During his service on the board, Bill provided valuable ideas and advice on state and county conservation program activities, and his conservation work on the board will remain visible for many years to come as State of Wisconsin citizens enjoy the benefits of preserved farmland, and cleaner streams, rivers, and lakes.

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## INTRODUCTION

Wisconsin is home to a rich tapestry of water resources and myriad land uses that affect them. The state also has a rich history of protecting those resources with the help of farmers, conservation groups, watershed and lake groups and the federal government. This report to the Wisconsin Land and Water Conservation Board summarizes progress made in 2004 on programs administered by the Department of Agriculture, Trade and Consumer Protection (DATCP) and the Department of Natural Resources (DNR) to promote conservation and control polluted runoff from both rural and urban sources. The report is submitted in part to meet the requirements under s. 281.65(4)(o) and s. 92.14(12), Wis. Stats.

In 2004, county land conservation departments (LCDs) and municipalities delivered over \$47 million in conservation and storm water management practices and technical assistance to about 2,300 agricultural producers and 66 municipalities. That money has been used to control erosion from farm fields and construction sites, repair eroded streambanks and shorelines, manage livestock manure to keep it out of waterways and slow down and reduce the pollutants from the storm water that flows off city streets and parking lots.

Considerable progress was made during the year in controlling nonpoint source pollution through cost-sharing over 3,400 Best Management Practices (BMPs). Nearly 90% of the most critical pollution sites have been resolved in Priority Watershed and Lake Projects. Some progress toward implementing the nonpoint source performance standards and prohibitions was evident in 2004, but we are still at the headwaters of these ambitious goals.

Most of the data for this report came from LCD staff. Other sources were DNR, DATCP, Natural Resources Conservation Service (NRCS) and U.W. Extension (UWEX). The following programs are included in this report:

- Land and Water Resource Management Plans (LWRM)
- Priority Watersheds and Lake Projects (PWP)
- Targeted Runoff Management Grant Projects (TRM)
- Urban Nonpoint Source and Storm Water Management Grant Projects (UNPS)
- Farmland Preservation Program (FPP)



## PROGRAM MANAGEMENT: Supporting Locally-led Conservation

### ***West Branch Sugar River Restoration***

Years of hard work by dedicated people paid off in October 2004, when a 19-mile stretch of the West Branch Sugar River in Dane County became the first Wisconsin river to be removed from EPA's list of impaired waters because of environmental restoration. The river segment was on the list because of stream bank erosion, overgrazed pastures, cattle access, barnyard runoff, lack of in-stream habitat, cropland runoff, hydrologic modification, gully erosion and upland sediment delivery.

The project was awarded about \$955,000 in TRM grants from 1999 through 2004. Matching funds and in-kind labor totaling over \$288,000 from Dane County LCD, Deer Creek Sport and Conservation Club, Trout Unlimited, Badger Fly Fishers, Dane County Conservation League, Madison Fishing Expo, Upper Sugar River Watershed Association, Upper Sugar River Initiative, NRCS, DATCP and other DNR grants made the project happen.



*TRM grant funds were used to stabilize the stream banks*

The water quality objective of the TRM projects was to reduce streambank erosion by 60%, resulting in an overall reduction in sediment load of over 13,000 tons per year. Through the TRM projects, over 20,000 feet of riprap were strategically placed and 57 acres were seeded to stabilize the bank; 58,000 feet of streambank was shaped to help reduce erosion; 13,000 feet of fencing was installed to restrict livestock access; and over 1,000 fish habitat structures were placed in the stream. There is now public access to 12 miles of stream thanks to the cooperation of the 14 landowners who live along that stretch of river.

DNR has been monitoring the site since 1999. Fish monitoring results show that the trout fishery is coming back and the fish are naturally reproducing.

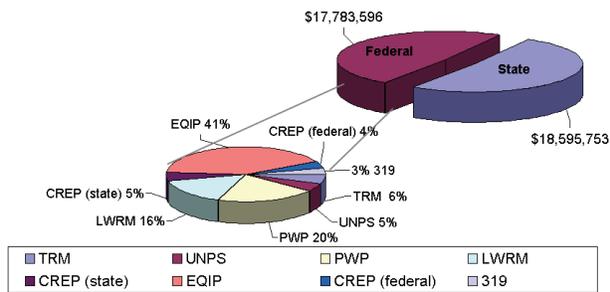


*Dane County Executive accompanies DNR and Dane County conservation staff as they monitor a restored section of the river.*

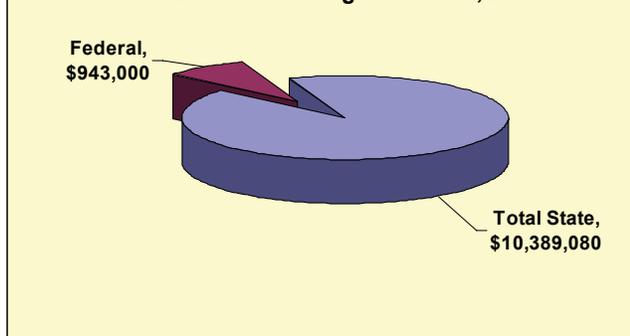
## Funding for Conservation

In 2004, staff from county land conservation departments (LCDs) and municipalities delivered about \$47.7 million in cost-shared conservation practices and technical assistance to about 2,300 agricultural producers and 66 urban municipalities. Funding came from both state (\$29.0 million) and federal (\$18.7 million) funds<sup>1</sup>. Additional contributions of money, time and other resources came from counties, municipalities, landowners, and non-profit organizations, the amount of which is beyond the scope of this report.

**Total Federal & State Cost-Share, 2004**



**Federal & State Staffing Assistance, 2004**



## SOIL AND WATER RESOURCE MANAGEMENT PROGRAM

The Soil and Water Resource Management (SWRM) program supports locally-led conservation efforts by providing counties staffing grants and cost-share funding to implement strategies designed to meet local land and water priorities identified in approved Land and Water Resource Management (LWRM) plans. In 2004, DATCP approved revised LWRM plans for 15 counties. The amount of DATCP's staffing grants to counties was slightly reduced in 2004, and supported fewer county-based conservation staff. Counties increased the percent of cost-sharing they spent or extended.

### Financial Data

#### SWRM Program

- \$9.2 million:** amount provided by DATCP to counties for staffing and support
- \$5.7 million:** amount allocated by DATCP for LWRM cost-sharing in 2004
- \$1.8 million:** amount of state CREP for BMPs
- 348:** number of county-based conservation staff
- 88:** percent of LWRM cost sharing spent in 2004 or extended to 2005

#### DNR Grant Programs

- \$2.0 million:** amount of TRM \$ spent on BMPs
- \$1.7 million:** amount of UNPS \$ spent on urban BMPs
- \$1.2 million:** amount of UNPS \$ spent on urban staff, planning, design, etc.
- \$7.3 million:** amount of PWP \$ spent on BMPs

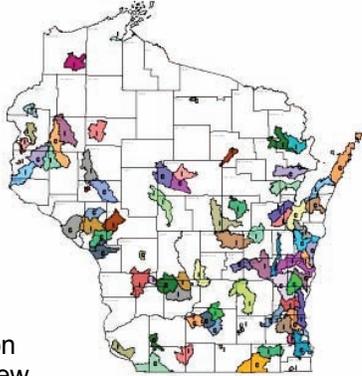
#### Federal Grant Programs

- \$14.9 million:** amount provided through EQIP for BMPs
- \$ 1.6 million:** amount of fed. CREP for BMPs
- \$ 1.3 million:** amount of s. 319 \$ spent on BMPs
- \$ 0.9 million:** amount provided by NRCS for local technical assistance

<sup>1</sup> These totals do not include federal or state CREP incentive payments.

## PRIORITY WATERSHED AND LAKE PROGRAM

Projects in this program set pollution reduction goals based on the severity of polluted runoff from both agricultural and urban sources. DNR administers funds for best management practices (BMPs). DATCP funds local staff that provide technical assistance, education, and project management. Legislation passed in 1997 ended new project selection. All projects will be completed by 2009.



### Critical Sites

While most participation in priority watershed/lake projects is voluntary, projects selected after 1993 are required to address the most critical sites needed for water quality improvement. Local project managers help landowners install BMPs or change management practices on these sites. The State can and does take enforcement action for failure to correct pollution problems. Data collected for livestock, cropland and streambank/shoreline critical sites are detailed under those sections of this report.

## TARGETED RUNOFF MANAGEMENT GRANTS

DNR administers TRM grants to local governments to address both urban and rural polluted runoff. Projects are site specific and usually last two years. Typical TRM projects—cost-shared at 70%—include stream bank protection, detention ponds, and livestock manure management.

## URBAN NONPOINT SOURCE AND STORM WATER MANAGEMENT GRANTS

These DNR grants cover both planning and construction projects to address polluted urban runoff. They typically last two years. Governmental units are eligible for grants even if they are covered by storm water permits under ch. NR 216, Wis. Adm. Code. Planning grants can pay for 70%—up to \$85,000—of storm water management planning, education, ordinance and utility development and enforcement. Construction grants may cover 50% of the cost of BMPs such as storm water detention ponds, infiltration practices, and streambank and shoreline stabilization, up to \$150,000.

## Priority Watershed and Lake Projects

*status as of Dec. 31, 2004*

- 36:** number of active priority watershed and lake projects
- 50:** number of closed/completed projects
- 1,383:** number of participating landowners
- 7,648:** total number of participants from active projects and those closed from 2000-2004
- 98:** number of nonpoint source impaired waters benefiting from project implementation

### TRM Grants

- 37:** number of TRM projects awarded in 2004 (32 agricultural, 5 urban)
- 128:** total number of TRM projects, 2000-2004 (79 agricultural, 49 urban)
- 77:** number of projects completed through 2004
- 9:** number of nonpoint source impaired waters benefiting from projects ending in 2004 (31 ended in 2004)

### Urban NPS Grants

- 56:** number of UNPS project grants awarded in 2004 (27 planning, 29 design/construction)
- 200:** total number of projects, 2000-2004 (98 planning, 102 design/construction)
- 119:** number of completed projects through 2004
- 26:** number of nonpoint source impaired waters benefiting from projects ending in 2004 (41 ended in 2004)

### Best Management Practices

- 989:** number of BMPs installed as part of the SWRM program
- 55:** percentage of practices under \$3000 installed using SWRM funds
- 10:** percentage of practices over \$10,000 installed using SWRM funds
- 2440:** number of BMPs installed through TRM, UNPS, and PWP

### Critical Sites

- 25:** number of priority watershed & lake projects addressing critical sites
- 1,653:** number of critical sites identified in priority watershed plans
- 89:** percent of identified critical sites resolved as of Dec. 31, 2004

## IMPLEMENTING RUNOFF PERFORMANCE STANDARDS

Wisconsin's approach to controlling polluted runoff from agricultural and urban land uses has included statewide performance standards and prohibitions since Oct. 2002.

Since that time there has been an increased focus of grant dollars toward performance standards implementation. Performance standards and prohibitions are now required components of certain state programs, more implementation tools have been put in place and there is an increased use of regulatory options for serious water quality violations (see sidebar). Urban municipalities that were included in the Phase I federal storm water requirements have ordinances that include the non-agricultural performance standards.

Most of the agricultural best management practices cited in this report contribute toward meeting the performance standards and manure management prohibitions. However, the process of evaluating and documenting sites for compliance, and notifying landowners of compliance status is evolving slowly. Counties cite as reasons decreasing staff and funding levels, less emphasis on conservation work as a result of consolidation of county government departments and questions about the implications of compliance.

### IMPLEMENTATION HIGHLIGHTS

In 2004,

- Eleven counties were conducting systematic inventories of farms for compliance.
- TRM and UNPS grant awards were more closely tied to performance standard implementation.

#### Agricultural Performance Standards Implementation

- 15:** *number of counties that reported implementation data*
- 25:** *number of counties that have or are developing ordinances containing performance standards and/or prohibitions*
- 7:** *number of counties reporting enforcement activities.*
- 3:** *counties with signed Memorandums of Understanding with DNR*
- 21:** *counties with tracking systems in place to document implementation activities and compliance*
- 100:** *percent of revised LWRM plans that include performance standards/prohibitions*
- 66:** *number of counties that have or are updating county soil and water standards to require FPP participants to meet the performance standards/prohibitions*

**Table 1 Compliance with Agricultural Performance Standards (15 counties reporting)**

Performance Standards/ Manure Management Prohibitions	Evaluated	In Compliance
Cropland soil erosion can't exceed "tolerable" rates ( <i>acres meeting T</i> )	77,927	77,927
Manure storage facilities, when built, modified or abandoned, must meet accepted standards ( <i>number of facilities</i> )	124	118
Clean runoff must be diverted away from livestock and manure storage areas located near waterbodies or areas susceptible groundwater contamination ( <i>number of farms</i> )	79	71
Application of manure and other fertilizers must be according to an approved nutrient management plan ( <i>acres planned</i> )	100,214	100,176
No overflow of manure storage facilities ( <i>number of facilities</i> )	48	47
No unconfined manure piles near waterbodies ( <i>number of farms with</i> )	315	308
No direct runoff from feedlots or stored manure into state waters ( <i>number of facilities</i> )	620	587
No trampled streambanks or shorelines from livestock ( <i>number of farms with</i> )	142	135

- Counties began using a single electronic form to report LWRM and agricultural performance standards data to DNR and DATCP (see Table 1).
- Educational materials were developed that included brochure and website (see I&E section).
- The implementation mechanism, Ch. NR 216, Wis. Adm. Code, became effective in Aug. 2004. Public hearings were held on draft general permits.
- Post-construction technical standards and guidance were taught to 650 engineers and consultants.

## Implementing the Agricultural Performance Standards

Counties are taking different approaches to implementing the agricultural performance standards. The Winnebago County Land and Water Conservation Department is providing information on the standards directly to each individual livestock operator. In 2001, Winnebago County began a comprehensive program designed to inform all livestock owners about the county's revised livestock waste management ordinance. The intent of the program is to educate all livestock owners of their responsibilities so they stay in compliance with the ordinance and the livestock performance standards and prohibitions. The visits are informal and on-farm, and the staff member conducting the ordinance review discusses pertinent sections of the ordinance and how it relates to the individual's livestock operation, along with services and programs provided by the department.

A road survey throughout the county yielded over 700 livestock sites ranging from large dairy operations to small hobby farms. Each livestock site was assigned a unique number. Each site is spatially located on the county's Geographical Information System (GIS) and specific data regarding who conducted the review, date of the review, type and number of livestock, animal lots and manure storage facilities and operator is logged into the data base. When a livestock waste permit is issued for a new animal lot or manure storage facility, an ordinance review is conducted. These newly permitted sites are recorded and the information can then be added to the GIS system. A five-year implementation strategy was developed to disperse the workload among the staff. To date, LWCD staffs have met with nearly 625 livestock owners to review the requirements of the ordinance and the livestock performance standards and prohibitions. Winnebago County will continue with the visits until they are completed. The GIS data base allows the county to generate contact lists at any time, based on multiple parameters, and to exchange information with livestock owners. Operators found to be out of compliance with the performance standards during a livestock ordinance review are considered priority farms to receive county technical and financial assistance.



## CONSERVATION RESULTS

### BEST MANAGEMENT PRACTICES<sup>2</sup>

Data tracked by DNR and DATCP show that 3,441 agricultural and urban BMPs were installed during 2004. The Soil and Water Resource Management program structure encourages installation of low-cost practices.

### CROPLAND SOIL EROSION CONTROL

Keeping productive soil on the land and out of the water is one of Wisconsin's primary conservation goals. The state and counties administer a variety of programs that work together to help landowners reduce soil erosion to tolerable ("T") levels or below.

In 2004, state cost-sharing through SWRM, TRM or Priority Watershed and Lake programs helped pay for agricultural BMPs that help reduce soil erosion, including:

- 92,791 acres of cropland practices such as conservation tillage, cover crops and windbreaks to hold soil in place and grassed waterways to repair and prevent gullies.
- 167 practices to deflect or slow down runoff from slopes, such as grade stabilization structures.

Table 2 indicates the number and types of erosion control practices installed through the SWRM, TRM and PW programs. Some practices installed primarily for other purposes also have erosion control benefits.

### *Lincoln and Marathon County Joint Grazing Project*

In cooperation with the Central Wisconsin River Graziers Network, Lincoln and Marathon Counties participated in a joint grazing project. The main goal of the project is to promote the implementation of management intensive grazing (MIG) as a profitable option for livestock producers, and also protect and improve the environment. Paul Daigle, Conservation Specialist with the Marathon County Conservation, Planning, and Zoning Department provided the technical assistance for this project. In 2004, the project developed or reviewed 29 MIG farm plans, and assisted 34 landowners to install practices to implement MIG on their farms. 32 farms also used no-till drills available through the project. Education programs included 15 pasture walks, 15 newsletters, training conferences, and 6 newspaper articles. The grazing project is funded through a Grazing Lands Conservation Initiative grant and the Lincoln and Marathon County Land Conservation Departments.



### *Sediment Reductions In Priority Watershed And Lake Projects*

Nearly all Priority Watershed and Lake projects inventoried sources of soil erosion and developed goals to control sediment resulting from cropland soil erosion. Many also set specific goals to control gully erosion.

The total pollutant reduction goal<sup>3</sup> for both cropland and gully erosion control was 781,531 tons per year (about 40% of the estimated load). By the end of 2004, sediment delivery to surface water had been reduced by 640,434 tons per year. This represents 82 percent of the projects' goals.

*Table 2  
Erosion Control Practices Installed with State Funds*

Practices	Quantity Installed	
	SWRM	PWP/TRM
Conservation tillage, cover crops, wind breaks, gully controls ( <i>acres</i> )	8,265	84,526
Grade stabilization and drainage structures, berms, terraces ( <i>number</i> )	106	61
Field diversions, waterway systems ( <i>feet</i> )	172,050	3,171

<sup>2</sup> Conservation practices installed using state dollars only.

<sup>3</sup> Includes data from projects that closed from 2000-2004

### Cropland Erosion Critical Sites

Twenty-three Priority Watershed and Lake projects identified a total of 1,369 sites deemed critical sources of cropland soil erosion. By the end of 2004, landowners and county staff had resolved 1,223 of those sites—89 percent—mostly through implementation of best management practices or management changes.

### Transect Survey

Landowners continue to make progress towards conserving productive soil on the land. The Transect survey is a statistical method for estimating cropland soil erosion based on a visual examination of field conditions. In 2004, 23 counties conducted the Transect survey to measure the rate of soil erosion. In these counties, approximately 82% of fields were at or below the tolerable rate of soil loss, which has not changed measurably since 2000. This is particularly noteworthy given the increase in row crops—such as corn and soybeans—that typically increase soil erosion. To offset the increase in these crops, landowners are implementing cropping practices such as contour farming and no-till that help reduce soil erosion.

### Farmland Preservation Program

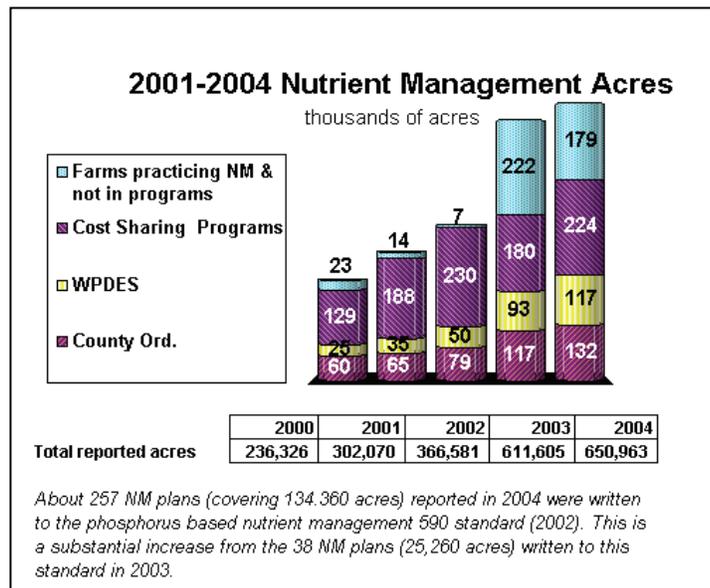
The Farmland Preservation Program identifies and protects agricultural areas against unplanned or poorly planned development. The program is designed to preserve agricultural land and open spaces by promoting orderly land use planning and development, by securing soil and water conservation, and providing tax relief

<b>8.1 million:</b>	<i>number of Wisconsin's 16.2 million acres of farmland protected through the FPP</i>
<b>19,500:</b>	<i>number of farmland owners received farmland preservation tax credits</i>
<b>\$14.4 million:</b>	<i>value of farmland preservation tax credit</i>
<b>\$721:</b>	<i>average tax credit per claimant</i>
<b>21:</b>	<i>percentage of the total property taxes offset by farmers who claimed the credit</i>
<b>36:</b>	<i>percentage of Wisconsin's potentially eligible farmers who claimed the credit</i>

to farmers in the program. All landowners receiving the credit must meet county soil and water conservation standards, which in all counties require soil erosion rates to be at or below tolerable rates. County land conservation department staffs check each participating landowner for compliance with the conservation standards at least once every six years.

During 2004, most LCCs updated their county conservation standards to include all the agricultural performance standards; the 10 remaining counties will update them during 2005. Beginning in 2005, many FPP participants will need to meet a compliance schedule that includes the expanded conservation standards in order to receive the tax credit.

### NUTRIENT MANAGEMENT



### 2004 Planning Progress and Trends

The nutrient management (NM) agricultural performance standard requires landowners to develop and follow a NM plan to manage soil nutrient levels to maintain or reduce nutrient delivery. The NM standard was effective in October 2003 for new cropland fields, and is effective beginning in 2005 for fields in source water protection areas; those draining to 303(d) impaired waters; and those draining to outstanding and exceptional resource waters. The standard is effective in 2008 for all other fields. Wisconsin also requires farmers to have a NM plan when they are regulated under a county ordinance or state permit and when they accept government cost-share

dollars for the installation of manure storage or barnyard runoff control structures.<sup>3</sup>

DATCP tracks acres covered by a nutrient management plan through bulk fertilizer suppliers and through the nutrient management plan checklist submitted by farmers, agronomists, and governmental agency staff for every plan developed through a government program. Since 1995, Wisconsin farmers have reported a total of 6879 nutrient management plans to DATCP covering approximately 2.5 million acres.

In 2004, fertilizer distributors reported 1449 plans on 650,963 acres. Through the 2004 *Nutrient Management Plan Checklist*, 44 counties reported nutrient management plans covering 479,232 acres. This was a slight increase from 2003. The checklists also showed 297 farmers prepared their own plans on 73,736 acres.

Wisconsin continues to transition from a nitrogen (N)-based nutrient management standard towards a phosphorus (P)-based standard. In 2004, 257 plans on 134,360 acres were written to the P-based standard. This is a 676% increase from 2003, when only 38 P-based plans on 25,260 acres were reported.

## MANURE MANAGEMENT

In 2004, landowners used state cost sharing to install manure management practices, including:

- 359 manure storage structures and practices to control runoff from barnyards, feedlots and milk houses

- 4,747 acres of rotational grazing and other practices to keep manure out of sensitive areas

Table 3 lists the types and number of practices installed. Nutrient management is reported in the previous section.

## Nutrient Reductions in Priority Watershed & Lake Projects

Almost all of the Priority Watershed and Lake Projects inventoried all barnyards and feedlots in the project areas and identified phosphorus from livestock manure in these areas as key water quality problems. Several projects also identified excess phosphorus problems related to improperly stored or applied manure and milkhouse waste, and developed reduction goals for those sources. Three projects tracked reductions in chemical

Table 4

**Nutrient Reductions in Priority Watershed and Lake Projects<sup>3</sup>**

Parameter	Initial loading (lbs./yr.)	Reduction goal (lbs./yr.)	Amt. Reduced (lbs./yr.)	% of goal Achieved
Phosphorus	480,987	225,374	200,119	89
COD	850,856	411,568	294,476	72

oxygen demand (COD) from BMPs and management changes associated with barnyards and feedlots.<sup>3</sup>

Through 2004, these projects had achieved most of their nutrient reduction goals. (see Table 4)

### Livestock Related Critical Sites

Twenty-two Priority Watershed and Lake projects reported progress on the 212 livestock related critical sites identified in those projects. As of the end of 2004, 198 critical sites-93 percent-had been resolved primarily through the installation of best management practices.

Table 3

**Manure Management Practices Installed with State Funds**

Practices (not a complete list)	Quantity Installed	
	SWRM	PWP/TRM
Barnyards, manure storage, roofs, milkhouse waste control, livestock watering (number)	141	218
Access roads, rotational grazing, roofs (feet)	15,864	13,529
Rotational grazing, heavy use area protection (acres)	1,426	3,321

## REGULATORY APPROACHES

### Notices of Discharge (NODs)

The DNR has been implementing this approach to addressing significant discharges to state waters from smaller-scale livestock operations under ch. NR 243 since the mid-1980's. DATCP engineers and county staff provide technical assistance and, if necessary, cost sharing to address problems identified through citizen complaints

and DNR inspections.

The number of NODs issued has declined from a historic range of 30 to 40 per year to 17 between 2000 and 2004, with none being issued in 2004. The primary reasons were a decrease in funding, increased DNR workload to both issue permits for Concentrated Animal Feeding Operations (CAFOs) and address acute manure runoff incidents, reliance on county implementation of performance standards and a reliance on funding through TRM grants. Because TRM is a competitive grant program, DNR no longer has a timely and guaranteed funding source for NOD projects.

### ***Concentrated Animal Feeding Operations***

Under ch. NR 243, DNR regulates livestock operations with 1,000 or more animal units. These CAFOs require a Wisconsin Pollution Discharge Elimination System (WPDES) permit.

### ***Revisions To NR 243***

During 2004, DNR continued meeting with an advisory committee to draft administrative code revisions to meet federal regulatory changes. Major proposed revisions primarily apply to large, permitted CAFOs and include:

- restrictions on applying manure on frozen or snow-covered ground plus 180-days of liquid manure storage
- statewide phosphorus-based nutrient management requirements
- adjustments to animal unit equivalency numbers
- allowances for temporary manure stacking in winter
- additional groundwater protection associated with land applied manure
- development of emergency management plans

### **NOD Statistics as of Dec. 31, 2004:**

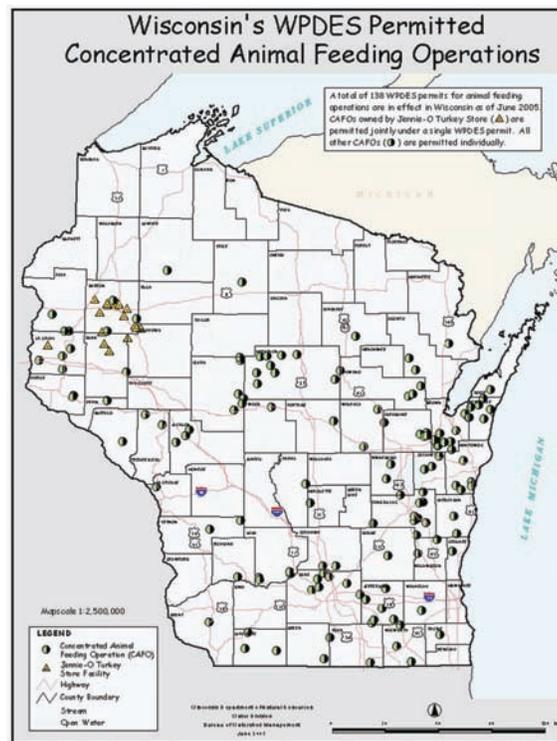
- 56:** number of active NOD actions underway
- 589:** number of NODs since program began
- 3:** notices of noncompliance with agricultural performance standards/prohibitions (NR 151)
- \$6.3:** millions of grant dollars to NOD recipients since 1985

### **CAFO Statistics as of Dec. 31, 2004**

- 135:** number of CAFOs with WPDES permits:
- 16:** number permits issued/reissued during 2004
- 5:** number of permits pending
- 8.6:** permit backlog (goal = 10% or less)

### ***Livestock Siting***

In April 2004, the Governor signed into law Wisconsin Act 235 that provides a predictable framework for county and municipal decisions to site or expand livestock facilities. DATCP is developing a rule—ATCP 51—to implement the law. A panel of technical experts met during the summer and early fall of 2004 to develop the standards that will be contained in the department's administrative rules that implement the legislation. In March 2005 DATCP held 12 public hearings on the proposed rules,



receiving almost 550 comments. A revised proposal was reviewed by the ATCP Board in September 2005 and forwarded to the legislature. A final rule should be effective in winter 2006. For additional information, visit <http://datcp.state.wi.us/core/environment/land->

[water/siting.html](#) or contact a county land conservation department.

## STREAMBANK, SHORELINES, WATER QUALITY AND HABITAT PROTECTION

### *Conservation Reserve Enhancement Program*

Wisconsin's Conservation Reserve Enhancement Program (CREP), is a cooperative effort with the USDA's Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS); Wisconsin state agencies DATCP and DNR; and Wisconsin county land conservation committees and landowners. Wisconsin's CREP goal is to enroll 100,000 acres into riparian buffers, filter strips, wetland restorations, grassed waterways, and grassland habitat to improve water quality and grassland habitat for endangered grassland birds and other wildlife. Landowners can choose to enroll their land in either 15-year agreements or perpetual easements.

### *State Funded Conservation Practices*

Many landowners used LWRM, TRM and PWP cost-share dollars to install practices that protect and restore streambanks and shorelines, protect groundwater, and improve habitat. These conservation practices were some of the most popular and accounted for most of the practices installed in the northern-third of the state. Partners such as fishing and hunting groups, conservation organizations, friends groups, local conservation staff, U.S. Fish and Wildlife Service, and DNR staff often contribute matching funds along with expertise and labor to make these projects successful.

In 2004, state programs provided cost sharing to landowners for streambank and shoreline BMPs, and for groundwater protection practices such

as well abandonments. Table 6 shows the type and number of practices installed and the number of contracts as a measure of landowners served.

### *Streambank/Shoreline Sediment Reduction In Priority Watershed And Lake Projects*

The majority of the Priority Watershed and Lake projects established goals to reduce by 95,970<sup>6</sup> tons per year the amount of sediment that erodes from streambanks and shorelines, based on total load estimates of 189,553 tons per year. By the end of 2004, those projects reported reductions of 78,219 tons per year, or 82 percent of the reduction goal.

### *Streambank/Shoreline Critical Sites*

Twelve Priority Watershed and Lake Projects identified a total of 59 streambank/shoreline erosion sites as critical sources of sediment to surface water. By the end of 2004, 90 percent (53

sites) had been resolved, with 6 remaining.

### *Easements*

The acquisition of easements along rivers, streams and lakes has been a long-standing tool used cooperatively by landowners, counties, DNR, NRCS and others to protect water quality. Through December 1, 2004, DNR held a total of 1,336 water quality easements encompassing 12,882 acres of land.<sup>4</sup> This includes 70 easements covering 1,486 acres purchased with PWP, TRM and UNPS grants, and 1,266 easements encompassing 11,397 acres purchased for the protection of water quality and fisheries habitat using the state Stewardship Fund and grants from the USFWS.

Table 5  
**CREP Information**

	Maximum Allowed or Goal	Enrolled or In Process November 1, 2004
Total of all practices	100,000 acres	38,551 acres
Grassland Projects	15,000 acres	10,920 acres
Riparian Buffers	80,000 acres	25,274 acres
Wetland Restoration	5,000 acres	2,357 acres

*Based on FSA October 1, 2002, October 1, 2003, and November 1, 2004 report on acres offered for CREP.*

*As of October 1, 2004 Wisconsin has paid a total of about \$8.5 million to 2044 landowners on 30,500 acres. About 38% of the 100,000 acre goal has been offered by landowners into CREP.*

<sup>4</sup> Total reflects correction to 2003 data of 4,078 acres incorrectly credited to water quality easements.

### ***Gilbert Creek Habitat Restoration Project***

Trout Unlimited and DNR began the Gilbert Creek Restoration project in 2002. Last summer, the DNR's heavy equipment crew continued to work its way downstream into land owned by the DNR. About 3000 feet of stream were restored. Volunteers from the surrounding area worked each Tuesday evening seeding, mulching, and placing sod along the reconstructed banks.

From July through October, there were at least 794 volunteer hours invested in this project. Volunteers came from a wide variety of groups and organizations including the Dunn County Fish and Game; Dunn County Land Conservation Division; DNR; NRCS; RC & D; Trout Unlimited Chapters (from Eau Claire, River Falls, and the Twin Cities); Boy Scouts and Leaders from Elk Mound; Menomonie High School students and teachers; UW-Eau Claire, UW-Madison and UW-Stout students and professors; "Me and the Outdoors" Class from the University of Minnesota; a group of disable youth from Wisconsin; and many local unaffiliated "Friends of Gilbert Creek." The project is a true example of community and government working together.



## ***Protecting and Restoring Wisconsin's Shoreland***

The Vilas County Land and Water Conservation Committee and Department (LWCD) encourage shoreland owners to maintain or establish shoreland buffers. A 35-foot native vegetation buffer can improve water quality by filtering out pollutants and nutrients before they run into lakes and streams; reduce noise pollution from motorboats and lake activity; improve wildlife habitat by providing food, shelter and homes for songbirds, fish, beneficial insects, and other wildlife; reduce shoreline erosion because the long roots of native plants are better at stabilizing shorelines; and increase leisure time as less time is needed to mow and maintain your property.

In 2004, the LWRM planning cost-share program funded five streambank and shoreline protection projects with 645 linear feet of shoreline restored and protected. Some 22,575 sq. ft. of shoreland buffer areas were planted with native vegetation. Due to high demand for cost-share funds, the county also created a ranking and evaluation process for assigning county cost-share conservation practice funding to area landowners. This process ensures the limited cost-share funds are targeted to the areas of greatest need. Because of the popularity of the cost-share program and the limited funding available, the county has been working with several Vilas County Lakes Associations, including Bills and Carpenter Lakes, that are considering their own incentive programs to encourage shoreland owners to install buffers.



*Unbuffered streambanks allow sediments to runoff into the waters of the state affecting its quality.*

In addition to providing cost-share support and technical assistance for conservation plans, the Vilas County LWCD provides numerous educational opportunities for landowners and others to learn about installing buffers and controlling shoreland erosion at events like lake association meetings and lake fairs. Hundreds of participants in the county's educational programs become familiar with the life that inhabits the shoreline and learn how to protect and restore the natural beauty and function of the shoreline; gain a greater appreciation for the potential ecological richness of the shore and near shore areas; and play an important role in protecting the complex network of life that sustains healthy aquatic ecosystems. LWCD staff also target education materials on shoreland protection and restoration to local contractors, area nurseries and landscapers, resorts, and other businesses county-wide. The County posts shoreline buffer information and cost share program highlights on its website.

For more information on the Vilas County cost share and shoreland restoration programs can be found on its website at: <http://www.co.vilas.wi.us/landconv/> .



Restoring buffers and stabilizing stream banks protect water resources

## URBAN STORMWATER MANAGEMENT

### URBAN BEST MANAGEMENT PRACTICES

In 2004, 66 municipalities installed urban practices under TRM and UNPS grants to control storm water runoff. There were also 20 designs and 58 planning activities funded under these grants for the year. Table 6 shows the type and number of practices installed.

### DNR STORM WATER PERMIT PROGRAM

Since the mid-1990s, DNR has administered a program to address the issue of polluted urban storm water runoff that comes from such sources as construction sites, lawns, streets and parking lots to storm sewers and is discharged to rivers, streams, lakes and groundwater without treatment. In 2003 and 2004, DNR revised the applicable administrative rules, ch. NR 216, Wis. Adm. Code, to meet the requirements of the Environmental Protection Agency's (EPA) Storm Water Phase II regulations.

Phase II addresses storm water discharges from small municipal separate storm sewer systems (MS4s) that serve less than 100,000 people and construction sites that disturb one to five acres. The rule contains six minimum measures for small MS4s that EPA believes should significantly reduce pollutants in urban storm water. The rule, which became effective August 2004, governs storm water discharge permits for a large number of municipalities, industrial facilities and construction sites.

**Municipal:** Currently, there are 62 municipalities regulated under individual storm water permits. A general permit for municipalities is under development. DNR expects to have about 220 municipalities eventually covered under either an individual or general storm water municipal permit.

**Industrial:** There are currently five industrial storm water general permits that cover 5,000 industrial facilities. There are just two individual industrial storm water permittees (Dane County and the General Mitchell Airport). Another 850

facilities are covered under the Tier 3 general permit that is being revoked and the majority of these facilities are being moved to the "no-exposure" certification group.

**Construction:** DNR authorizes coverage under a storm water permit for construction sites with one or more acres of land disturbance. There are on average 3,500 active construction sites covered under the storm water construction site general permit where 1,500 applications were received in the 2004 calendar year.

Table 6  
**Urban Practices Installed**

Projects	TRM/UNPS
Detention ponds, infiltration devices, other practices ( <i>number</i> )	181
Streambank, Shoreline Protection ( <i>feet</i> )	3,330



## INFORMATION AND EDUCATION

### COUNTY ACTIVITIES

In 2004, counties and other grantees continued to lead or participate in educational activities ranging from general efforts designed to raise awareness of conservation and polluted runoff control to technical workshops targeted to specific audiences.

#### County Education Highlights

##### Nutrient Management Training

**912:** *number trained through workshops*

**2,115:** *number of plans written by workshop attendees*

##### Drinking Water Education

**89:** *number of workshops/presentations*

**1,700:** *number of wells tested*

**990:** *number of well tests reporting data*

**13:** *percent of wells exceeding nitrate drinking water standards*

**14:** *percent of wells exceeding bacteria drinking water standards*

##### Storm Drain Stenciling

**633:** *number of volunteers*

**2,132:** *number of drains stenciled*

##### Other Conservation Education

**935:** *number of participants at field days*

**391:** *number trained at soil erosion control workshops*

Priority watershed participants received about 4,300 contacts from local project staff through personal visits, targeted mailings and phone calls. Reported results include 29 new contracts with landowners, increased BMP inspections and better targeting of funds.

Conservation staff distributed about 5,000 shoreland information packets, made presentations to over 12,000 community members, distributed 16,000 bulletins promoting

Soil Stewardship Week and reached over 14,000 youth through conservation field days, classroom presentations, Envirothons, scholarships and speaking/poster contests.

Hundreds of volunteers stenciled storm drains with reminders to "Dump No Waste-Drains to Stream" (or River or Lake) or cleaned up river and lake shores. Thousands of people received conservation and pollution reduction messages from conservation staff at events such as county and lake fairs. Watershed newsletters, press releases and tours helped keep program participants informed and engaged.

### BASIN EDUCATION

Wisconsin's Basin Education Initiative employs a collaborative approach in promoting land and water resources management in the state. University of Wisconsin-Extension, in cooperation with WDNR, WDATCP, NRCS and FSA, provides educational programs and other services in areas delimited by the state's major river basins. Through a variety of interactive processes, citizens, agency staff and other key stakeholder groups work together to identify and address the important resource issues in their particular basins.

In 2004, educational efforts have included storm water issues, construction site erosion control, streambank and shoreline protection, and volunteer environmental monitoring (in particular, water quality and promotion of rain gardens).

These are a few examples of the programs and activities Basin Educators and their partners have worked on:

- ◆ Six storm water management workshops drew a total of 748 participants who learned about post-construction standards, plan writing and new NR 216 requirements.
- ◆ Black River Cleanup and Festival had 170 participants who donated 434 hours of service collecting 1 ton of garbage from a 35-mile stretch of river.
- ◆ At a stream crossing workshop, about 20 road crew, town officials and agency staff learned to assess problem road crossings to help prevent erosion and stabilize steep bank areas.

- ◆ Numerous rain garden activities including displays, presentations, distributing how-to manuals and teaching kits, staffing booths, conducting tours and helping to build them.

Basin Educators also helped develop educational support materials, including fact sheets, brochures, displays, maps and websites with support from the Environmental Resources Center Publications Unit, WDNR and other organizations. Some examples include:

- ◆ *Wisconsin's Runoff Rules: What Farmers Need to Know*, a fact sheet explaining new runoff regulations.
- ◆ Runoff rules web site ([runoffinfo.uwex.edu](http://runoffinfo.uwex.edu))—a portal web site to materials available from state and federal agencies.
- ◆ *Have You Thought about Managed Grazing?* A starting point brochure for managed grazing and resources for assistance.
- ◆ *Protecting Your Waterfront Investment: 10 Simple Shoreland Stewardship Practice*. Fact sheet on simple steps to curb pollutants, cut runoff, and capture and cleanse pollutant-carrying runoff before it reaches a waterway.
- ◆ Rain Garden displays and signs.
- ◆ Brochure describing Green Bay's coastal wetlands, their importance to northern pike spawning, and threats posed by development and runoff pollution.
- ◆ Assistance to Standards Oversight Council (SOC). Developed SOC educational display.

More information at <http://basineducation.uwex.edu>

## **VOLUNTEER STREAM MONITORING**

During 2004, hundreds of youth and adults monitored the water quality of streams or rivers. Fifteen counties reported having citizen monitoring programs. Most of these activities are facilitated through Water Action Volunteers (WAV), a partnership between DNR and UWEX, (at least 4 counties have their own programs).

WAV trains volunteers and provides them with the checklists and other publications they need to measure parameters such as stream flow, dissolved oxygen, temperature, turbidity, habitat and macroinvertebrates. Monitoring equipment is available to volunteers through Water Education Resource Centers, which act as lending libraries for local citizens.

WAV stream monitoring efforts continue to grow toward central, northwestern and northeastern Wisconsin. WAV partnered with DNR biologists and University of Wisconsin researchers to monitor crayfish in wadable streams. Trainings were held to initiate the project and volunteers collected crayfish and sent them to the university for identification and development of locator maps for the various types of crayfish in the state, including the invasive rusty crayfish.

WAV participated in an Upper Midwest research project to test a variety of *E. Coli* monitoring test kits versus laboratory methods and to test the usability of the kits for volunteers in the field. WAV developed a website for the project, located at <http://www.uwex.edu/ces/csreesvolmon/EColi/index.html> and developed survey tools used to evaluate the volunteers and trainers participating in the project. Pilot testing using the recommended method will begin in Wisconsin in 2005. WAV also created 9 new wildcards to help monitors with macroinvertebrate identification in 2004.



## Upper Mississippi River Festival

The Upper Mississippi River Festival was held in Prairie du Chien on May 11-12, 2004. The festival is a partnership involving nearly 20 public and private organizations with ties to the history, culture and natural resources of the Upper Mississippi River. The celebration focuses on issues that have influenced the past, as well as the future health of the Mississippi River, its watersheds and bluff lands. Festival participants explore and investigate these issues, draw conclusions from their findings and consider how their actions or personal choices affect the environment. The presentations are designed to emphasize hands on experiences for students in grades 7-9 from area schools in Iowa and Wisconsin. Around 850 students from 14 schools – 650 from Grant County alone -- participated in the two day event this year.

2004 was the 150<sup>th</sup> anniversary of the Grand Excursion up the Mississippi River, a trip taken by 1200 people involved in the completion of the first railroad to connect the East Coast and the Mississippi River. This year's Upper Mississippi River Festival focused on how the attention attracted to the region by the excursion impacted everything from the economy to natural resources. Stream channelization, river traffic, wildlife, even a clam camp were among topics of discussion. Overall, students enjoyed this opportunity for hands-on learning outside their classroom.



*These kids aren't afraid to dive in and get wet! Some didn't quite know what to make of these slimy little creatures, taking a step back in time to the clam camps.*



*Soil tells us many things about how people used to live and what the land used to look like. These kids found some clay in this soil!*

*The Mississippi River is home to dozens of different types of aquatic life, thanks in large part to the pools along its banks. This display shows how water moves around different sizes of rocks and other obstacles, making habitat for fish.*



*These students are experiencing first-hand the power of water. Steve Bertjens (not pictured) of Southwest Badger RC & D explained how water can destroy anything in its path if not controlled.*

