



**Indiana
Department of
Environmental
Management**

**Office of Water
Quality**

September 2007

**FFY 2007 Annual Report to the
U.S. Environmental Protection Agency**

Section 319 Nonpoint Source Grant Program

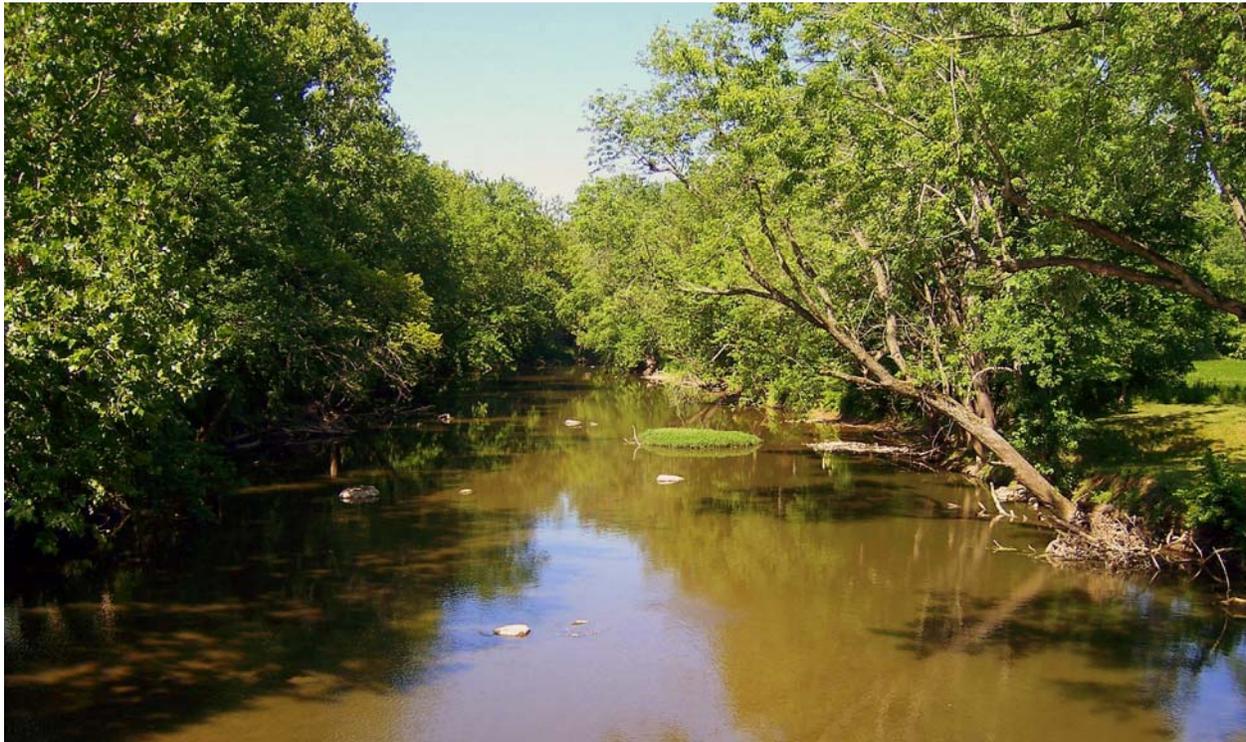
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OVERVIEW

This *2007 Nonpoint Source Program Annual Report*, as required by Section 319 of the Clean Water Act, reports Indiana's progress towards reducing nonpoint source pollution. It highlights the state's efforts during the reporting period to collect data and assess water quality, implement projects that reduce or prevent nonpoint source pollution, and educate and involve the public to improve and maintain the quality of water resources for current and future generations of Hoosiers. The report provides an overview of nonpoint source pollution and the Indiana Department of Environmental Management's (IDEM) role in leading efforts to address this significant source of water pollution. Information on program goals and achievements is presented, as well as information on how IDEM's Nonpoint Source Program is evolving to become more effective. Additionally, the report presents information on how IDEM's chief partners play an important role in the work to address nonpoint source pollution. Lastly, the report provides information on projects funded through Section 319 of the Clean Water Act.

IDEM and our many partners are working together on a watershed by watershed basis to improve and protect our water resources. The prevention of NPS pollution requires the cooperation of many groups and agencies at the federal, state, and local level, as well as all citizens living in the watershed. We cannot accomplish our goal of clean water without the help of many people working together.



Cover Photo: Denise Szocka, IDEM-MACS
Above Photo: Selena Medrano, IDEM-NPS/TMDL

INTRODUCTION

What's the Problem?

Nonpoint source (NPS) pollution remains the largest source of water quality problems in Indiana. Information from the 2006 Indiana Integrated Water Monitoring and Assessment Report shows that NPS pollution is a significant source of impairment in Indiana waterbodies. Bacteria, nutrients, and sediments are the leading NPS pollutants of concern in Indiana. NPS pollution comes from many diffuse sources across the landscape that are difficult to specifically identify or abate in contrast to point source pollution, which is discharged from a single, identified, and regulated source, such as a pipe. While some NPS pollution is naturally occurring, most of it is a result of human activities.

The Watershed Approach to Addressing Nonpoint Source Pollution

Environmental problems, such as NPS pollution, often cut across media and political jurisdictions. Consequently, environmental mitigation and protection require a comprehensive and collaborative approach that works with a multitude of programs and agencies. The watershed approach provides a framework for coordinating and integrating the myriad programs and resources. This approach directs the focus on water quality in a geographic area delineated by a watershed. A watershed is an area of land that drains to a particular waterway, such as a stream, lake, river, or wetland. By examining water quality issues on a watershed basis, problems can be observed in relationship to their sources so that the causes can be addressed in the most effective manner. The Watershed Approach is based on four basic principles:

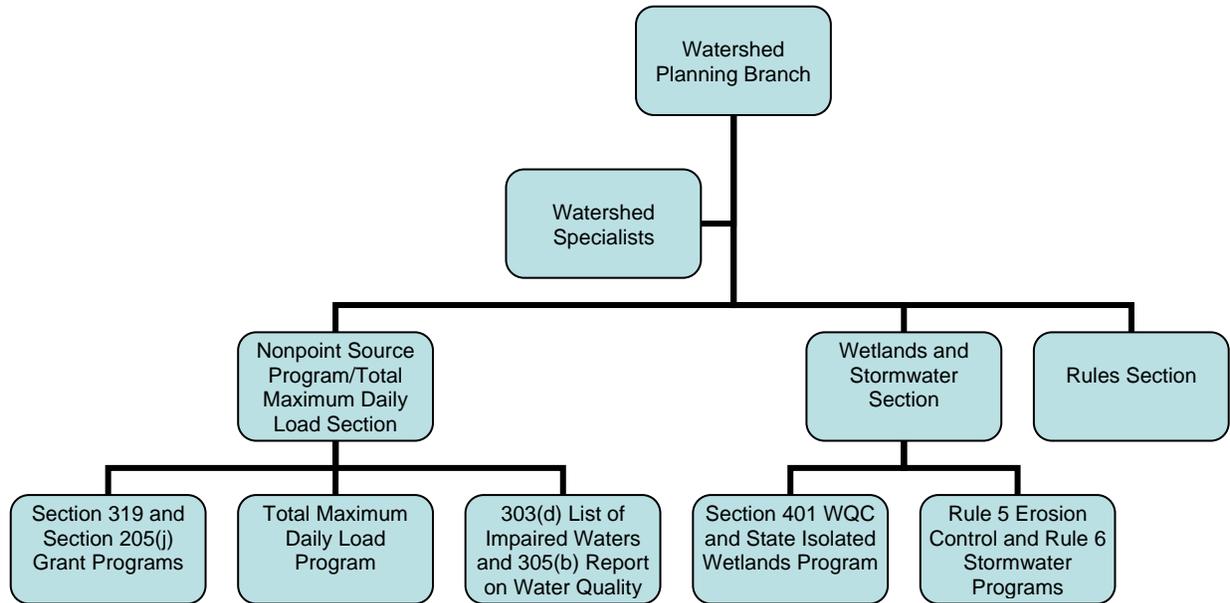
1. Geographic focus based on hydrological rather than political boundaries
2. Water quality objectives based on scientific data
3. Coordinated priorities and integrated solutions
4. Diverse, well-integrated partnerships

IDEM's ongoing effort to implement the watershed approach includes:

- Ensuring that internal resources continue to be focused on addressing the most significant water quality issues facing Indiana by conducting a semi-annual review of Office of Water Quality (OWQ) activities and making any necessary adjustments;
- Improving internal coordination between water quality assessment, watershed planning and implementation programs to facilitate an integrated watershed management approach to restoring impaired waterways; and
- Improving coordination with local watershed groups, community groups, and other state and federal agencies to better leverage efforts in ways that will achieve greater improvements in water quality.

Putting the Pieces Together to Improve Water Quality

IDEM has aligned several programs to address more effectively NPS pollution. This functional rethinking of several key water programs has greatly improved coordination of agency programs and increased assistance to partners outside of the agency.



Organization chart for IDEM's Watershed Planning Branch

IDEM relies on the interactions between the programs in the Watershed Planning Branch to lead statewide efforts to address NPS pollution. Each program brings a different set of resources and expertise to this issue –

1. Section 319 and 205(j) Grant programs – provide funding to a variety of groups and agencies to develop comprehensive watershed plans to address NPS pollution, implement plans to carry-out on the ground solutions, and conduct education, outreach and assessment work to inform the public about NPS pollution and measure progress towards correcting problems. In addition, these programs work internally and externally to build capacity for watershed managers and other environmental professionals through trainings, seminars, conferences, and other educational opportunities.
2. Total Maximum Daily Load (TMDL) Program – develops reports to assess sources of pollution within a watershed and establish load reductions to ensure that water quality standards will be met. This program works closely with the 319/205(j) Program to increase local interest in applying for grants, implementing aspects of the TMDL report, and sharing information on water quality within a given watershed.

3. 305(b)/303(d) Program– compiles information and develops the Integrated Report and 303(d) List of Impaired waters which together describe the status of water quality within the state of Indiana. This information is disseminated internally and externally. Impaired waters are the chief priority of the Watershed Planning Branch, with priorities in all programs set to address directly the causes of impairments through planning, implementation, and regulatory oversight.
4. Wetlands/Stormwater programs – provide regulatory oversight on both issues through the implementation of state and federal permit programs. These programs work closely with other staff to provide technical expertise on a variety of issues including wetland and channel restoration, erosion control, and directly assist groups with education on water quality topics.
5. Rules Program – develop rules and policy documents to implement agency regulatory programs that impact both point and NPS pollution.
6. Watershed Specialists – facilitate all aspects of watershed planning at the local level. This includes providing technical support, coordination of meetings and bringing of groups together, aiding with grant applications and information transfer, reviewing watershed plans, and working with groups to find new ways to improve water quality on the local level. Staff in this program are integral to coordination of all programs within the branch.

Additionally, IDEM's efforts to address NPS pollution rely heavily on the efforts of our partners. With the extent and variety of NPS issues across Indiana, the need for cooperation across political boundaries is essential. Many local, regional, state, and federal agencies play an essential part in addressing NPS pollution, especially at the watershed level. They provide information about local concerns and infrastructure and build support for the kind of pollution controls that are necessary to prevent and reduce NPS pollution. By establishing coordinated frameworks to share information and resources, Indiana can more effectively focus its water quality protection efforts.

In particular, IDEM works closely with the Natural Resources Conservation Service, the Indiana Department of Agriculture, the Indiana Department of Natural Resources, and the Indiana Association of Soil and Water Conservation Districts. A workgroup comprised of key staff from these organizations meets on a bi-monthly basis to exchange information and work toward better coordination of programs and resources on the mutually important issue of NPS pollution. IDEM has broadened discussions to include emerging issues on urban stormwater and wetland regulation. Lastly, IDEM has worked more closely with the Coastal Zone Program to begin addressing nonpoint source issues in the Lake Michigan watershed in a more coordinated manner.

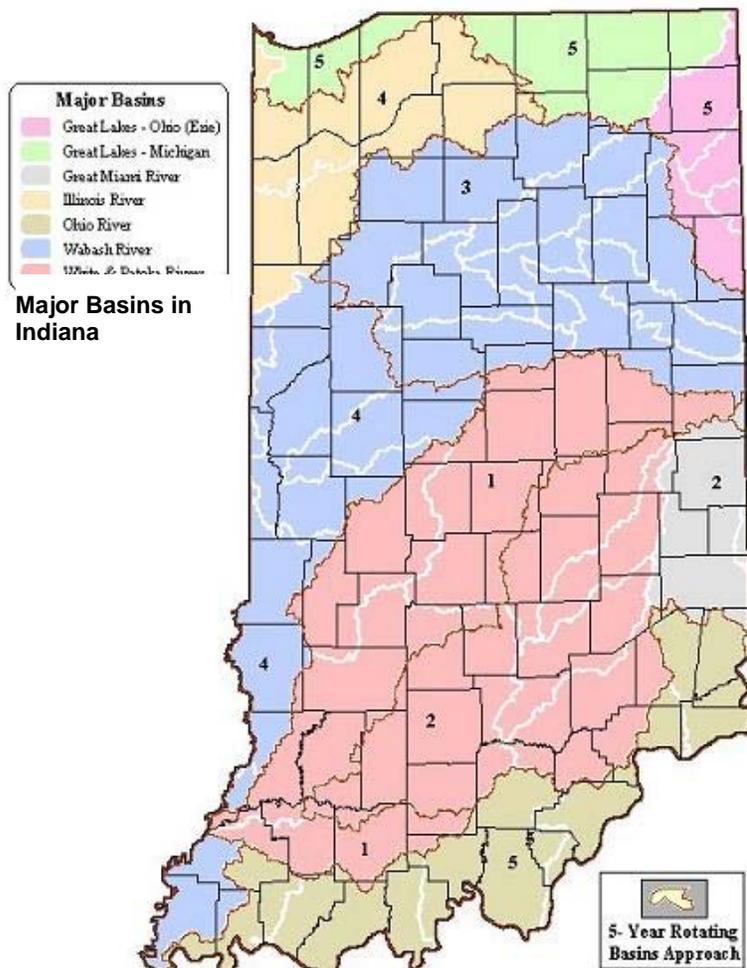
STATUS OF INDIANA'S SURFACE WATERS

The Office of Water Quality assesses the quality of Indiana's waters using a rotating basin approach. Approximately one-fifth of the state's waters (1-2 basins) are assessed for support of aquatic life, fishing and recreational uses each year. The monitoring program is designed to characterize the overall environmental quality of each major river basin and to identify those monitored waterbodies within each basin that are not fully supporting their designated uses. The results are reported in the Indiana Integrated Water Monitoring and Assessment Report (commonly known as the 305(b) Report).

Waters that do not fully support one or more of their designated beneficial uses, even though all permitted dischargers are meeting their permit limits, are placed on the Indiana's 303(d) List of Impaired Waters, which may be viewed at –

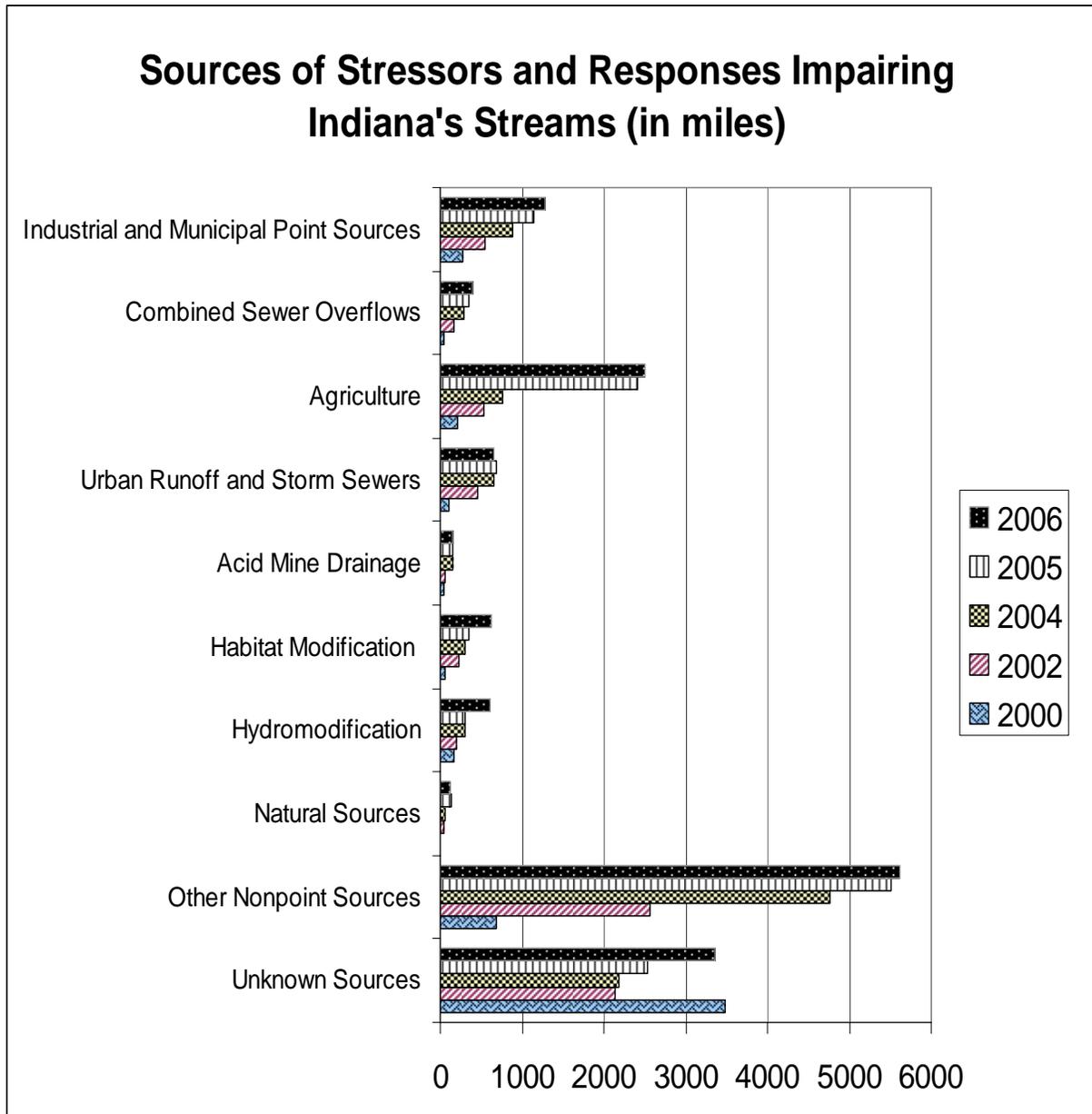
[http://www.in.gov/idem/programs/water/303\(d\)/index.html](http://www.in.gov/idem/programs/water/303(d)/index.html)

According to the 2006 Integrated Water Quality Monitoring and Assessment Report, Indiana has monitored 47% of its streams to determine whether they are capable of supporting a well balanced warm water aquatic community. Of the streams monitored, 81.7% were supporting their designated aquatic life use. When these stream-specific results were analyzed statistically, it was found that 50% of the state as a whole supports aquatic life use. Indiana has monitored 35.3% of its streams for recreational uses. Of the streams monitored, 32.5% support full-body contact recreational uses, while 67.5% were found to be impaired. These numbers are presently being revised for the 2008 assessment and listing cycle and reflect the most current information available.



For more information on the assessment of Indiana waters, see the 2006 Integrated Water Quality Monitoring and Assessment Report at –

[http://www.in.gov/idem/programs/water/305\(b\)/index.html](http://www.in.gov/idem/programs/water/305(b)/index.html)



Sources of Stressors and Responses Impairing Indiana's Streams

Many of the problems caused by point source pollution have been addressed during the last thirty years through the National Pollutant Discharge Elimination System (NPDES) permit program. The primary focus now is on reducing NPS pollution in order to restore waterbodies that are identified as impaired on Indiana's 303(d) list.

IDEM's NPS GOALS AND PROGRESS

The goal of IDEM's NPS program, as stated in the current *Nonpoint Source Management Plan* (2005-2010), is to:

Restore waters impaired by nonpoint source pollution and support preservation of local water quality through locally led partnerships

In this reporting period, IDEM continued to retool and refocus the efforts of its NPS program. The key focus areas of the NPS program this reporting period include –

- improve coordination with partners (internal and external)
- target funding of projects on impaired waters to create watershed management plans and implement watershed plans
- build capacity to address NPS pollution on the local level
- actively manage funded projects to ensure successful completion of goals
- work closely with USEPA to identify needed areas of improvement
- expand the scope of projects to include urban NPS pollution issues
- develop consistent methods to assess the efforts of projects to address NPS pollution

IDEM is currently revising the existing *Nonpoint Source Management Plan*, with the assistance of an outside contractor. The goal is to produce a more streamlined document that focuses on the key Indiana NPS issues, accurately reflect the current resources, and lay out steps to achieve realistic water quality improvement goals. The project is in early data-gathering stages, with upcoming workgroup meetings to refine the overall document. USEPA will be kept apprised of all drafts and IDEM looks forward to USEPA input in the process.

Short-term Goal Progress

In 2005, IDEM set forth a series of short-term goals to assess our progress on addressing NPS pollution. The status of these goals is reported in this document. These goals will be revised for the next reporting period as the *Nonpoint Source Management Plan* is updated. IDEM will establish short-term goals that are more measurable, meaningful, and reflect the direction of the program as a whole.

The NPS Program short-term objectives are listed below, along with action items to accomplish the objectives, and the measures being used to track progress in meeting them. The objectives have baseline values reported for 2005. Explanation of progress towards goals is included following the metric table for each objective.

I. Objective: Support restoration through development & implementation of watershed management plans

A. Target support to watershed groups in priority areas working on 303(d)-listed waters

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of active watershed groups	66	76	82			
2. Number of new watershed groups	N/A	8	4			

STATUS: The continued efforts of IDEM's Watershed Specialists have increased locally-led watershed group formation within Indiana.

B. Set solicitation priorities each year to target restoration projects to implement watershed management plans in areas with impaired streams/lakes

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of watersheds with plans that meet USEPA's Nine Elements	25	38	49			

STATUS: IDEM actively works with watershed groups to ensure that USEPA and IDEM requirements are met for every watershed plan funded by 319 and 205(j) grants. IDEM also seeks input from USEPA on ways to improve these plans.

C. Participate in the Region 5 Accountability Pilot Watershed-based planning and restoration in lieu of TMDL.

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Percent of completed watershed plans in the pilot that are implemented	0	0	0			

STATUS: This measure does not accurately reflect the work that has been completed by the projects in this pilot and will likely be revised for future reports. There are currently five projects in the Accountability Project: Cedar Creek, Eagle Creek, Little Elkhart River, Dunes Creek, and Clifty Creek. Load reductions have occurred in two projects. It is expected that reductions will occur in all five projects this coming year.

II. Objective: Aid in the reduction and cleanup of NPS pollution to ground and surface water

A. Work with State Revolving Fund staff to identify and implement opportunities for partnerships.

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of nonpoint source SRF projects	16	10	3			
2. Measure or estimate NPS load reduction from SRF projects.	Not complete	Not complete	Not complete			

STATUS: Nonpoint source projects funded by SRF comprise IDEM's match requirements for implementation of Section 319 grant funds. IDEM has not developed formal methods for estimating pollutant load reductions from these projects at this time. Work on this short term goal did not occur during this reporting period. We have initiated a set of meetings with SRF staff to develop formal methods with a deadline of December 31, 2007 to have them developed for implementation in 2008.

B. Support environmentally friendly land use development

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of 319 projects with low impact development (LID) component	2	4	6			
2. Estimated sediment load reduction from LID areas funded by 319	0	0				

STATUS: IDEM is actively working with groups in urban areas of the state to identify urban best management practices and LID principles for funding through the 319 grant program. IDEM expects to see an increase in projects with this type of BMP, as urban areas begin to look for more creative solutions to stormwater and urban water quality. Although sediment load reductions have not been documented, other reductions of urban NPS pollutants have been documented by these projects. This is discussed in further detail later in this report.

Currently, six projects funded with Section 319 grants have LID components:

Grant Year	Project	Sponsor
2002	Cedar Creek WMP Implementation Phase I	St Joseph River Watershed Initiative
2003	Small Grants for IN Lakes Water Qual Imp.	ILMS
2003	Dunes Creek WMP	Save the Dunes
2005	Clifty Creek Watershed Project	Bartholomew Co SWCD
2005	Tippecanoe River 2-stage Ditch Dev.	The Nature Conservancy
2006	Salt Creek Implementation Demo.	Save the Dunes

III. Objective: Support the Coastal Zone Management (CZM) Plan

A. For projects within the Coastal Zone, give priority to projects that are integrated with the Coastal Zone Program (CZP)

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of 319 projects in the Coastal Zone that also implement 6217	2	5	7			

STATUS: Projects that are currently integrated with the CZP include:

Grant Year	Project	Sponsor
2001	Dunes Creek WMP Implementation Phase I	Save the Dunes Conservation Fund
2002	Salt Creek WMP	Save the Dunes Conservation Fund
2003	Dunes Creek Watershed Plan	Save the Dunes Conservation Fund
2004	Trail Creek WMP Update	Sanitary District of Michigan City
2005	Little Calumet River WMP	Gary Storm Water Management District
2005	Lake George	City of Hobart
2006	Salt Creek Implementation Demo	Save the Dunes

IDEM is working with the Department of Natural Resources CZP to identify needs within this section of the state and establish funding priorities. IDEM's 319 Program will be providing direct financial assistance to the CZM Program to meet goals and objectives upon submittal of a grant proposal, anticipated in late 2007.

IV. Objective: Develop tools to measure program effectiveness

A. Develop and implement the Evaluation Framework

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Meet milestones in the Framework	100% on schedule	100% on schedule	100% on schedule			

STATUS: The development of social indicators to measure the effects of NPS pollution programs will provide another means for assessing the efficacy of programs. The project is on track for completion in 2008.

V. Objective: Share information on NPS restoration and status of water quality

A. Develop and implement a system to store environmental monitoring data in AIMS and transfer to STORET

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of 319 projects with environmental data in AIMS	0	0	1			

STATUS: To provide a mechanism to enter 319 project data into EPA's Storage and Retrieval System (STORET), the NPS Program has requested that funds be used to build onto and improve the existing water quality database management system, AIMS, currently used by the Assessment Branch in IDEM. The current AIMS application handles data from multiple water quality and aquatic biota programs and will be expanded to include the programs, projects, and data collected through the NPS and water quality grants. The improvements will incorporate web browser access to staff and management and enhanced STORET interface capabilities that will benefit all water quality programs in meeting federal mandates for this program and the agency's other water quality monitoring programs. Additionally, the querying and analytical tools available in AIMS will help in the evaluation of the data through statistical and GIS applications and be integrated with the Assessment Branch point and nonpoint source monitoring data for further program analyses.

The project is currently in the contracting stage to secure the expertise to upgrade the AIMS application to accommodate the user and programmatic needs. Efforts were made to begin NPS data entry into the existing AIMS system for upload to the existing STORET by the end of the first quarter of 2007. This data was selected for inclusion into the system due to its current compatibility with the current AIMS. As the enhanced system is ready, the new NPS data will be uploaded, and testing will be done using data mapper-type software to upload current and older data that is in alternate formats.

B. Develop systems and tools for watershed planning, implementation, and TMDLs

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of tools and reports available via the www to Indiana watershed coordinators, TMDL Program	4	4	4			

STATUS: The four tools that form the baseline of this metric are -

Indiana Water Quality Atlas: Internet Mapping and Analysis

The Indiana Water Quality Atlas (IWQA) is a collaborative project to create a web-based interactive atlas of water quality-related GIS data. The primary project partners are IDEM, the Indiana Geographic Information Council (IGIC), Indiana Land Resources Council (ILRC), Upper White River Watershed Alliance (UWRWA), and Natural Resources Conservation Service (NRCS). The Atlas aims to spur water quality and watershed management, land use planning, and data exploration by facilitating access to a wide variety of spatially and temporally

referenced data through a common interface. It also promotes interdisciplinary research by providing new tools to combine, analyze, and display multi-dimensional data from a wide array of disciplines. Access to the application can be found at

<http://www.in.gov/idem/publications/maps/iwqa.html>

A Study of Indicators of Nonpoint Source Pollution

The overall goal of the study was to develop an essential suite of indicator parameters, for use by state agencies and watershed groups, which can be cost-effectively used to assess NPS impairments and identify specific causes and sources linked to the impairments. The study resulted in the development of a user’s manual available upon request, which will be posted to the IDEM website in FFY 2008.

Indiana Watershed Planning Guide and Watershed Management Plan Template

This project revised and updated the *Watershed Action Guide for Indiana* and created the *Indiana Watershed Planning Guide* which provides guidance and specifications on the development of a watershed management. In addition, these documents provide a watershed plan template for watershed coordinators and stakeholders. This document is distributed in hard copy and is also available on the website at:

<http://www.in.gov/idem/catalog/documents/water/iwpg.pdf>

Using Watershed Planning Tools for TMDLs

The purpose of the project was to develop a framework for integrating IDEM’s TMDL strategy with its watershed planning and restoration program and to coordinate internal discussions for enhancing collaboration on watershed restoration efforts. The materials developed through this project are being used by the TMDL Program.

Tools that are under development and are described in greater detail in this report include the IQWA (Phase II), the Evaluation Strategy Framework, and AIMS database upgrade for NPS monitoring data.

C. Improve communication between and among agencies and the watershed management community

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Implement an advisory group of state, federal agencies, and local/ regional coordinators	No advisory group	Interagency advisory group	Interagency advisory group			
2. Number of projects with three or more active, contributing partners	6	21	36			

STATUS: IDEM works closely with the NRCS, the Indiana Department of Agriculture (IDOA), the IDNR, and the Indiana Association of Soil and Water Conservation Districts (IASWCD). A workgroup comprised of key staff from these organizations meets on a bi-monthly basis to

exchange information and work toward better coordination of programs and resources on the mutually important issue of NPS pollution. IDEM places a high emphasis on the formation of active partnerships for all watershed projects. The increase in the number of projects with three or more active partners reflects changes to grant review criteria, direct assistance from IDEM staff, and the recognized need to engage all stakeholders in watershed-based activities.

D. Support lake water quality assessments and track trends in lake water quality

Measure	2005 Baseline*	2006	2007	2008	2009	2010
1. Lake acres with specific water quality assessment	74,361	69,472	74,361			
2. Number of lakes assessed for trophic conditions	401	403	401			

*2004 Integrated Water Quality Monitoring and Assessment Report

STATUS: For 2007, the number of lake acres with specific water quality assessments and the number of lakes assessed for trophic state returned to the baseline values reported in 2006. This is due, in large part, to the timing of this report, which precedes the 2007 CWA Section 314 lakes assessments for trend and trophic state. These assessments are conducted as the data becomes available, and IDEM only recently received the necessary data from the Clean Lakes Program. Until these assessments are complete, there will be no new numbers to report for trophic state. There were also no significant changes made to IDEM's designated use assessment methodology for lakes between 2006 and 2007, which resulted in similarly little change in reported values. However, IDEM's designated use assessment methodology for lakes is presently under revision. New designated use assessments are currently underway and will be reported during the 2008 305(b)/303(d) listing cycle and the 2008 NPS annual report.

E. Identify surface water and ground water interactions and locations with residential well contamination

Measure	2005 Baseline	2006	2007	2008	2009	2010
1. Number of basins assessed	0	14	0			
2. Number of residential wells assessed	143	130	40			

STATUS: This measure will be reevaluated for next year and modified to reflect more accurately agency priorities.

RESTORATION EFFORTS AND ACHIEVEMENTS

A primary focus of IDEM's NPS Program is on-the-ground work to improve water quality. Funding for the implementation of watershed plans that work to restore water quality on waterways impaired for NPS pollution has resulted in measurable improvements in terms of estimated pollutant load reductions and stakeholder involvement, but much more work remains to restore fully water quality.

Section 319(h) & Section 205(j) Grant Programs

The NPS/TMDL Section in the Office of Water Quality manages two federal pass-through grant programs aimed at improving water quality in the state: Section 319(h) and Section 205(j); each named after the portion of the Clean Water Act that authorizes the program. The 205(j) Grant Program is dedicated to water quality management planning. Funds are used to determine the nature, extent, and causes of point and NPS pollution problems and to develop plans to resolve these problems. In FFY 2007, Indiana received \$260,544 in 205(j) funds and will submit a proposal to USEPA to fund grants for two external planning projects and an internal project designed to develop and pilot a NPS monitoring strategy. Nine 205(j) projects closed this year, including five projects that developed watershed management plans. A list of open 205(j) projects during this fiscal year may be found in Appendix D.

The Section 319(h) Program is one of the primary resources for reducing NPS pollution in Indiana. In FFY 2007, Indiana received \$4,318,700 in Section 319(h) funds and awarded grants for twelve projects, which will begin in mid-2008. Each year proposals are submitted, reviewed by a committee, and selected for funding based on the NPS Program's priorities and the quality of the proposal. The focus has changed from funding many smaller projects, to fewer, larger, better quality projects with a greater opportunity for showing water quality improvements. This is being achieved, in large part, through the IDEM Watershed Specialists working with potential project sponsors before and during development of their project proposals. Better thought-out projects and fewer, better quality proposals are now being submitted. In addition, more emphasis is being placed on project partners and documentation of their commitment to the project in the grant application. Strong partnerships are a key to project success.

Projects are administered through grant agreements that spell out the tasks, schedule and budget for the project. Projects are normally 2-3 years long and work to reduce NPS pollution and improve water quality in different ways including education and outreach, technical assistance, and development and implementation of watershed management plans. IDEM Project Managers work closely with the project sponsors to help ensure that the project runs smoothly and the tasks of the grant agreement are fulfilled.

There are currently seventy-two open 319 projects, a decrease of ten from last year. A map showing the locations of Section 319(h) and Section 205(j) projects funded in the last five years is shown in Appendix A. A list of Section 319(h) projects open during this fiscal year is located in Appendix C. Final reports and products from the projects that closed this year are included as an attachment to this report, and a list of the final reports is included in Appendix E. Basic

project information is entered and maintained in EPA's Grant Reporting and Tracking System (GRTS) database for all Section 319(h) projects. The GRTS mandated elements entered for projects include the project schedule, budget, description, BMPs implemented, estimated pollutant load reductions, and progress reports. Projects implementing BMPs are also located and stored in the web-based Reach Indexing Tool (WebRIT). Streams receiving direct benefit from these projects are selected and identified using the National Hydrography Dataset (NHD). General information about the two grant programs in Indiana may be found on IDEM's website at:

<http://www.in.gov/idem/programs/water/wsp/index.html>

NPS Program Focus

In an effort to more efficiently meet our NPS Program goals, coordinate with the TMDL Program and its efforts to identify and reduce NPS pollution, and focus more of the Section 319(h) funds on impaired waters, IDEM has identified priority projects for Section 319(h) funding for the last several funding cycles. The focus of the Program for FFY 2007 was:

- Watershed management planning and implementation in areas with approved TMDLs;
- Watershed management planning and implementation in areas with waterbodies on the 2006 Section 303(d) list; and
- Implementation of watershed management plans that meet the IDEM Checklist that includes the EPA required nine elements

A Geographic Information System (GIS) map was created (Appendix B) to help identify areas that have been involved in the planning and implementation of watershed management plans and the relationships with the TMDL development activities. It also shows the areas of Indiana where there are watersheds with NPS impaired waterbodies as listed in the 2006 303(d) List of Impaired Waterbodies. This assists with the continuation of the targeted approach to watershed management providing for coordination of TMDL, planning, and implementation efforts in areas of the state most in need of restoration. Targeting areas for watershed planning with developed TMDLs helps expedite the planning process since groups can use information in the TMDL regarding watershed NPS problems, sources and needed load reductions.

Of the twelve Section 319(h) projects funded in FFY 2007, eleven address one or more of the program priorities. Eight of the funded projects are restoration and implementation projects and three are watershed planning projects in areas with waterbodies on the 303(d) list and approved or soon to be approved TMDLs.

The NPS Program priorities were selected because developing and implementing comprehensive watershed management plans is an effective way to focus efforts and resources on a watershed and its particular problems and develop solutions to those problems. In this process, local stakeholders join forces to develop plans, usually at the multiple 11-digit or 14-digit hydrologic unit code (HUC) level that make sense for the particular conditions found in that watershed. The group identifies the problems, causes, sources, and critical or target areas in the watershed, then sets goals and chooses measures or best management practices (BMPs)

to be implemented to achieve those goals. Indicators are chosen and monitored to evaluate the effectiveness of the implementation efforts.

Before a watershed management plan can be implemented using Section 319(h) funds, it must meet the required elements of IDEM's *Watershed Management Plan Checklist*. This checklist incorporates EPA's nine required components of a watershed based plan and is found on the following website:

<http://www.in.gov/idem/programs/water/wsp/fy2003checklist.doc>

A *Watershed Management Plan Guidance* document is provided to help groups achieve the elements required in the checklist. This document is found on the following website:

<http://www.in.gov/idem/programs/water/wsp/wmpguidance.html>

Organizing a group to develop a watershed management plan that meets the required elements can be a daunting task. To help groups develop watershed management plans, IDEM developed the *Indiana Watershed Planning Guide*:

<http://www.in.gov/idem/programs/water/wsp/watershedmgmtinfo.html>

In addition to the resources listed above, additional help is provided to groups by the project's IDEM Project Manager and Watershed Specialist. These key people meet with the local Watershed Coordinator, attend stakeholder meetings, and help guide the group through the decision making process, and provide technical support on issues such as determining pollutant loads and/or load reductions needed for the Plan. This extra guidance is invaluable as groups strive to develop a Plan that meets IDEM's Checklist and can be implemented. Once the Plan is complete, it provides a road map for how to allocate resources most effectively to address the priority water quality concerns in the watershed.

In both grant programs this fiscal year, a total of ten watershed management plans were completed and approved, or will be approved shortly. Twenty-three additional plans are being developed and will be completed and ready for implementation in the next two years. Of the seventy-two active 319 projects, forty-three are implementing watershed management plans. These projects are installing BMPs in critical areas of the watershed as determined by the watershed management plan.

Pollutant Load Reductions

One important indicator of program (and project) success is the amount of sediment, phosphorus, nitrogen, *E. coli*, and other pollutants reduced as a result of the BMPs installed. Load reductions, in most cases, are estimated using the following program:

[Region V Load Estimation Model \(Region V Model\)](#)

The Region V model estimates load reductions from structural and agricultural field practices and urban runoff. Reductions achieved through practices related to nutrient, bacteriological,

and pesticide management are not usually captured through this estimation method. Another model or method for estimating these load reductions needs to be used. The estimated load reduction data for each BMP is submitted by the project sponsor with the request for payment and entered into an Access database at IDEM, as well as the EPA GRTS database. Reported estimated load reductions from Section 319(h) projects (from the IDEM Access database) for this fiscal year are:

- Sediment: 12,522 tons/yr
- Phosphorus: 23,069 lbs/yr
- Nitrogen: 65,982 lbs/yr

These reductions are a result of BMPs installed between 9/1/06 and 8/31/07. BMPs installed include filter strips, conservation cover, residue management (no-till), streambank and shoreline protection, pasture and hay planting, grassed waterways, critical area planting, livestock fencing, heavy use area protection and prescribed grazing. Other BMPs implemented which may not be reflected in the load reduction estimations include development and implementation of nutrient and pesticide management plans and repair/replacement of septic systems. Total estimated load reductions achieved since the year 2000 are:

- Sediment: 492,964 tons/yr
- Phosphorus: 228,068 lbs/yr
- Nitrogen: 357,822 lbs/yr

Additional load reductions were achieved from urban BMPs installed this fiscal year including rain gardens, urban grassed swales, and urban porous pavement. These additional load reductions, taken from the GRTS database and estimated using the urban worksheet in the Region V Model, include:

- Biological Oxygen Demand: 604 lbs/yr
- Lead: 4 lbs/yr
- Zinc: 5 lbs/yr

Project Highlights

Of the twenty-one Section 319(h) projects that closed this year, four are highlighted in this report as examples of successful projects working to improve water quality through watershed planning, implementation of BMPs (BMPs), and education and outreach.

CORE4 Initiative Project

The Owen County Soil and Water Conservation District implemented the Core4 Initiative project during a three year period (September 2003 to September 2006) to address water quality concerns in several watersheds. The goal of the project was to improve water quality by changing farming practices in the area using Core 4 Conservation Systems (conservation tillage, nutrient management, pest management, and conservation buffers) as a template for watershed-wide management to reduce NPS pollution. This was achieved by providing technical and cost-share assistance to implement selected BMPs in the watersheds. The three targeted watersheds are located in the southwest part of Owen County and northwest Greene County and include 1) Lick Creek-Hauser Creek, HUC 05120203090110; 2) Lick Creek-Need/Brush Creek-Eel River, HUC 05120203090120; and 3) Fish Creek West Fork, HUC 05120202020130. These three watersheds encompass over 32,000 acres (40% cropland and 30% pasture/hayland) that drain into the Lower White River. Many of these waterbodies are included on Indiana's 303(d) list of impaired waterbodies. More information on this project may be found on the Owen County SWCD web site at:



<http://owenswcd.org/Core4.htm>

Accomplishments

BMPs implemented through the CORE 4 Initiative Project include residue management/no-till, nutrient management, pest management, stream crossing, watering facilities, winter feeders, and cover crop. The BMPs have and will continue to provide benefits in these three targeted watersheds. The following is a summary of estimated improvements for water quality:

Grid Soil Sampling for Nutrient and Pest Management Planning	2,289.20 acres
Acres converted to Mulch Till System for erosion control	2,647.90 acres
Acres converted to No-Till System for erosion control	2,298.50 acres
Nutrient Management accomplished via BMPs	1,811.90 acres
Pest Management accomplished via BMPs	1,747.00 acres

Sediment Reduction is estimated to be 13,891 tons annually
Nitrogen Reduction is estimated to be 30,726 pounds annually
Phosphorus Reduction is estimated to be 15,463 pounds annually

Funding

Owen County SWCD utilized \$177,797 in Section 319(h) funds and provided a 30% match for the project.

Future Activities

The nutrient and pest management planning component of the CORE 4 Project was particularly successful. It will be continued throughout the county via a Clean Water Indiana Grant from the Indiana State Department of Agriculture. The Owen County SWCD also received another Section 319(h) Grant in 2006 to create a watershed management plan in three additional watersheds in the middle part of the county - Big/Limestone Creek, Mill/Little Mill Creek, and Fall/McCormick's Creek watersheds. When this plan is complete the District plans to apply for an implementation grant to execute more BMPs utilizing the CORE 4 principles.

Youngs Creek Watershed Management Plan Implementation

In September 2001 the Johnson County Soil and Water Conservation District (SWCD) received a Section 319(h) grant to conduct the Youngs Creek Watershed Assessment Program. The Assessment Program provided the first thorough examination of concerns and issues facing residents of the Youngs Creek Watershed. The Assessment Program culminated in October 2003 with the completion of a watershed management plan, *The Youngs Creek Watershed: A Plan for the Future*. Implementation of the Plan began with this project in December 2003. Implementation activities included a cost-share program for BMPs that helped fulfill the objectives of the Youngs Creek Plan, and a comprehensive education/outreach program to increase public awareness and participation in the project.

Accomplishments

Conservation Practice	Acres	Sediment Reduction (tons/yr)	Phosphorus Reduction (lbs/yr)	Nitrogen Reduction (lbs/yr)	Cost
Variable Rate Technology	553.02	--	*	*	\$5,115.16
Conservation Tillage Equipment (9 projects)	6,662.1	14,517	17,699	35,379	\$24,763.16
Wildlife Habitat Improvement	5.8	36	72	662	\$801.68
Pasture Hayland Seeding	30	236	248	497	\$5,000
Filter Strip for Youngs Creek	5.15	45	41	77	\$3,078.33
Totals	7,256.07	14,834	18,060	36,615	\$38,758.33

* Nutrient reduction was not calculated

Public outreach and education were an integral part of this project. The education/outreach efforts included public meetings, press releases, newsletters, field days, workshops, school presentations, presentations to groups and organizations, storm drain labeling, stream clean-ups and many others on topics including conservation tillage; erosion control; Planning with

POWER; BMPs and water quality. Approximately 650 stakeholders attended the workshops and field days during the project. A website was created for the watershed project (<http://www.swcd.org/watershed.htm>) and updated regularly throughout the project.

Funding

The Johnson County SWCD utilized \$236,238 in Section 319(h) funds and provided \$105,925 in match for the project – a 31% match.

Future Activities

In the fall of 2006, Johnson County SWCD received a third Section 319(h) Grant to continue programs in the Youngs Creek Watershed. With this funding the SWCD will develop and implement a cost-share program for BMPs such as livestock exclusion, riparian buffers, conservation tillage, and others that address the natural resource concerns outlined in the Youngs Creek Watershed Management Plan. They will also be developing a management plan for the Indian Creek Watershed, with headwaters located in the southwest part of Johnson County. Public education and outreach will continue to be a focus in these watersheds.

Little Elkhart River Watershed Management Plan

The Little Elkhart River is on the IDEM 303(d) list of impaired waterbodies for impaired biotic communities. This subwatershed of the St. Joseph River (Lake Michigan) watershed presents unique challenges with approximately 75% of landowners belonging to the Amish community. The six Indiana county SWCDs that lie within the St. Joseph River Basin have been working in conjunction with Natural Resources Conservation Service (NRCS) and, through a livestock specialist, have established a close relationship with the Amish community, opening the opportunity to develop and implement a long-range, detailed plan for the watershed. The 3 sub-watersheds targeted through this grant project, Bontrager Ditch/Emma Lake (HUC 04050001140010); Bontrager Ditch/Hostetler Ditch (HUC 04050001140020); and Little Elkhart Ditch/Topeka (HUC 04050001140030) comprise the headwaters of the Little Elkhart River in LaGrange County. A watershed management plan had been completed for the entire St. Joseph River watershed in both Indiana and Michigan, which gave general information about problems in the watershed, but because of the size of the watershed, was not able to focus on specific local problem areas.

A steering committee was established with a mixture of community members and professionals who met on a regular basis throughout the grant period. Several Amish landowners and community leaders attended the steering committee meetings and were receptive to the information presented from preliminary water monitoring results and the land use inventory findings to the final results in the watershed management plan. This involvement of Amish stakeholders is critical for future implementation activities.

Accomplishments

The watershed management plan (WMP) was approved by IDEM in April 2007. The WMP outlines problem areas in detail and gives the district supervisors and staff the direction they need to begin making changes in those areas. As a result of the detailed land use inventory, four BMPs were identified as having priority in the watershed to address the critical areas of concern. These include fencing livestock from surface waters, alternative watering systems, repairing ditch bank damage, installing filter/buffer strips, and installing waste management systems on barnyards adjacent to surface waters. More information on the Plan may be found on the LaGrange County SWCD web site at:

<http://www.lagrangeswcd.org/watershed.php>

Funding

The LaGrange County SWCD utilized \$145,118 in Section 319(h) funds and provided a 25% match for the project.

Future Activities

In March 2007, the LaGrange County SWCD received a Section 319(h) grant to implement BMPs in the St. Joseph River watershed focusing on the Bontrager Ditch/Emma Lake subwatershed. The SWCD is also conducting a monitoring program within the Bontrager Ditch/Emma Lake subwatershed and the Bontrager Ditch-Hostetler Ditch subwatershed. The monitoring program is designed as a paired watershed study with the Bontrager Ditch/Emma Lake subwatershed designated as the treatment watershed and the Bontrager Ditch-Hostetler Ditch subwatershed designated as the control watershed.

In late 2007 the SWCD received another Section 319(h) grant to produce a WMP for the four remaining sub watersheds within the Little Elkhart River watershed: HUCs 04050001140040, 04050001140050, 04050001140060, and 04050001140070. Upon completion of the WMP, the District will install BMPs in these four watersheds and install additional BMPs in two of the three watersheds included in the WMP from the Little Elkhart River Watershed Management Plan project (not including the control watershed). The NRCS District Conservationist will be working closely with these projects, and as projects are found that could benefit from USDA Farm Bill Program funds, those will be utilized for installation of BMPs.

A \$75,000 Great Lakes Commission Grant was received for two demonstration sites in the watershed. These sites will include livestock exclusion fencing, once observations are completed over a period of months. This grant includes monitoring livestock movement in and out of the water in two locations – one a dairy farm and one a horse farm.

Indiana Department of Natural Resources Lake and River Enhancement funds amounting to over \$300,000 have also been awarded for implementation of BMPs in the Little Elkhart River watershed. The majority of these funds will be used for streambank stabilization projects, filter strips, waste management systems, and conservation tillage. Allocation of these funds began in 2007 with BMPs being installed in the fall and over the next five years.

Innovations in Reducing NPS Pollution Conference

A Section 319(h) grant was awarded to The Nature Conservancy to help support a three day regional conference on innovations in reducing NPS pollution organized by the Rivers Institute at Hanover College. A conference planning committee was formed from members of The Nature Conservancy, The Rivers Institute at Hanover College, NRCS, Ohio Farm Bureau Federation, The Ohio State University, Division of Soil Conservation (Indiana), University of Illinois Extension, U.S. Geological Survey (Indiana), Division of Soil and Water Conservation (Ohio), North Central Region of NACD (Indiana), U.S. Fish & Wildlife Service (Indiana), Purdue University, Office of Water Quality (IDEM), Indiana University, and the Conservation Technology Information Center.

Accomplishments

The conference was held November on 28-30, 2006. There were sixty oral and poster presentations given at the conference, with over 170 persons attending.

The conference program included:

- Pre-Conference Workshop on Watershed Management, titled "*Finally a Tool I Can Use! – Watershed assessment tools you can easily access and use.*"
- Two Opening Plenary Sessions titled *National Perspectives on NPS Pollution and Watershed Management in the Midwest.*
- Seven sets of Concurrent Technical Sessions including such topics as:
 - Innovative Monitoring and Assessment*
 - Innovative Methods at the Ag/Urban Interface*
 - Innovative Trading and Incentive Programs*
 - Innovations in Drainage Systems*
 - Innovative Programs and Institutions*
 - Innovative Methods: Nutrients and Pathogens*
 - Innovative Analytical Tools*
 - Innovations in Streambank Restoration*

Conference evaluation forms were distributed in the registration packets. Responses were received from about 50 participants by the end of the conference. A summary of their evaluation scores is presented in Table 1. Most participants gave high marks in response to questions regarding logistics, the effectiveness of presentations, the quality of conference facilities, the assistance provided by staff members, and the food and beverages. Many other positive comments were received by participants.

Below are some topics the participants would like to see as the focus of a conference next year:

- *Bring policy makers in to present.*
- *Zoning and drainage*
- *More on urban and mixed-use development impacts on watersheds*
- *Comprehensive watershed management*

- Value and need of cooperative work to address watershed problems
- Urban runoff and Phase II storm water regulations
- Watershed groups (others) implementing some programs and their results
- Well, all I can say is bring it on!
- Potential impacts of climate change on water quantity and quality
- Impacts of energy development
- Water quality and effects on aquatic biology
- Managing water quality for Biodiversity
- Technical information for implementing BMPs – more engineering assistance, computer models
- More about cover crops - including how cover crops affect the costs and revenues of producers

Table 1. Summary of Scores Received from Participants who Submitted Conference Evaluation Forms

Item	Rating Scale				
	Poor		Good		Excellent
1. Conference Logistics	1	2	3 (8)	4 (14)	5 (19)
2. Assistance provided by Rivers Institute staff (before and during the conference)	1	2	3 (6)	4 (11)	5 (25)
3. Content and effectiveness of publicity materials	1	2	3 (6)	4 (19)	5 (14)
4. Conference facilities (location/rooms)	1 (1)	2	3 (2)	4 (16)	5 (23)
5. Meals and Breaks	1 (1)	2	3 (5)	4 (11)	5 (24)
6. How would you rate the program overall?	1	2 (1)	3 (7)	4 (16)	5 (18)
7. Keynote Speaker	1	2	3 (4)	4 (16)	5 (18)
8. Quality of information presented during the Conference	1	2	3 (7)	4 (20)	5 (14)
9. Dinner Event with speaker Wes Jackson	1 (1)	2 (6)	3 (6)	4 (7)	5 (16)
10. Printed Materials	1	2	3 (6)	4 (14)	5 (19)
11. My expectations were met by the conference.	True (38)	False (1)			
12. I would recommend Rivers Institute conferences to others.	True (38)	False (1)			

Note: Numbers in parentheses are the numbers of responses pertaining to each rating score.

Conference proceedings were published by the Rivers Institute at Hanover College and distributed to participants in a hard copy book format and on CD.

Funding

The Nature Conservancy utilized \$27,439 in Section 319(h) funds and provided a 27% match for the project.

WORKING TO IMPROVE THE NPS PROGRAM

IDEM's NPS Program is actively working to expand agency resources devoted to addressing NPS pollution, develop planning and assessment tools to better gauge the effect of grant-funded projects, and fund projects to build watershed planning capacity within the state. This section of the report details efforts undertaken during this reporting period that will increase the effectiveness of the NPS Program in Indiana.

NPS Management Plan

The NPS/TMDL Section continues the process of formally revising and updating the Program's NPS Management Plan that will map out NPS pollution priorities for the next five years. IDEM contracted with Brilljent to help develop the plan, and a draft Plan is expected to be completed in early 2008 for EPA review. IDEM will be involving our key stakeholders in this process, which will be user-friendly and reflect the latest information on NPS pollution.

Program Guidance

The NPS Program (NSP) has been working this last year to develop and improve guidance for project sponsors. As IDEM's NSP evolves and expectations and policies change, new and more detailed guidance needs to be developed. Although there was guidance available for sponsors regarding agricultural cost-share, it was determined that a single comprehensive guidance document addressing agriculture cost-share program policies and requirements was needed. To that end, a document entitled *Clean Water Act Section 319 Agricultural Cost-Share Guidance for Indiana* was developed and is now available on the web:

http://www.in.gov/idem/resources/grants_loans/319h/docs/aqcostshareguide.pdf

The document provides general program information, funding restrictions, definitions of basic terminology and frequently asked questions. A major policy improvement to the cost-share program is the requirement for sponsors to document critical areas in the watershed (as identified in the watershed management plan) in the Cost-Share Program Development Guidelines they submit for approval. Subsequent BMP installations under the cost-share program must be in these critical areas. An additional improvement is the deletion of unnecessary paperwork (NRCS Pest and Nutrient Management Checklists) previously required. The cost-share guidance document is expected to be revised periodically as new issues, questions and policies arise.

In addition to the guidance document, the 319A Cost-Share Form was revised (and will soon be available on the web) to be more succinct and easier to use, while providing additional needed information. Clearer guidance and tighter key requirements for sponsors will lead to better cost-share programs and easier reporting of measurable results to the state and EPA.

The NSP is now turning more attention to the urban environment and the NPS pollutants associated with these areas. Many projects are beginning to develop urban cost-share

programs and install urban or low impact development (LID) BMPs. One of the issues with funding urban BMPs is the overlap with the NPDES Municipal Separate Storm Sewer System (MS4) Program. Section 319(h) funds cannot be used to fund measures required by this program. Therefore, guidance was needed to give applicants and sponsors information on the use of 319 funds in MS4 areas. A guidance document was recently developed entitled *Guidance on Section 319 Grant Funding Eligibility for Projects within Designated Municipal Separate Storm Sewer System (MS4)*. This document is available on the web at:

http://www.in.gov/idem/resources/grants_loans/319h/guide_ms4-319.html

The document is comprised of frequently asked questions on Section 319(h) NPS grant eligibility for projects within MS4s. A companion flowchart is also under development, which is designed to lead quickly customers through a series of questions to help them ascertain if their project has possible funding restrictions. The NPS Program is currently developing additional guidance to help sponsors develop and implement cost-share programs (BMPs) in urban areas. This is expected to be completed next year.

Lastly, the NSP is working on a **Grant 101 Bootcamp** to help educate new recipients of grants on program requirements and help recipients orient their work to maximize time and resources. This outreach program will become a mandatory requirement for the recipients of 2008 Section 319(h) funds. A pilot program will be run in late 2007 with recent recipients in order to develop appropriate presentations and materials. The goals of this program will be to familiarize grant recipients with required paperwork, grant agreement conditions, timelines, and to educate them on how to form effective steering committees, how to draft a watershed management plan, how to build partnerships, and to help them identify ways to become sustainable beyond the scope of Section 319(h) grant awards.

Evaluation Strategy Framework/Social & Environmental Indicators

In an effort to measure the effectiveness of Indiana's NPS Program, the NPS/TMDL Section developed an evaluation strategy framework that is updated yearly. The goal of this strategy is to develop and use indicators, both social and environmental, to establish baselines; to improve performance-monitoring systems, including a description at both the State level and project level of evaluation activities; to document what the State and citizens do and the impact of those actions on the environment; and to integrate the NPS program with the monitoring and assessment programs. The strategy will be implemented in a graded/stepwise approach with full implementation of the strategy into the NPS Program by September 30, 2009.

Purdue University is using Section 319(h) funds to develop social indicators and to support IDEM's development of environmental indicators for NPS management. **Social indicators** in this context are used to measure the social components of NPS projects, including measures of capacity, awareness, attitudes, and behaviors of target audiences. Many watershed groups implicitly try to build community and individual capacity, but have lacked the tools to measure the success of this work. Using social indicators as part of a package of assessment tools is a way to address these shortcomings and provide an immediate indication of how a project is proceeding. Purdue is working in conjunction with the other five land grant universities in EPA

Region V to develop and test these social indicators. Pilot tests of the social indicators are currently being conducted in three watersheds – Clifty Creek, Eagle Creek, and the South Fork of the Kilmore Creek. Surveys to collect baseline social data are being sent to members of the target audiences in each of these watersheds. Purdue will then help these groups interpret the data and modify their interventions to fit more appropriately the social conditions in their watersheds. Purdue is also conducting capacity building with IDEM staff to develop a comprehensive understanding of how to collect, use and interpret social indicator data.

Purdue is also supporting IDEM in the development of a flexible **environmental indicators** framework that will allow each NPS project to select indicators that are most useful in documenting its success while facilitating statewide estimates of environmental outcomes of the NPS program. A comprehensive list of potential indicators has been compiled, and indicators are being evaluated to determine which are the most clear, valid, useful, practical, and cost-effective for Indiana projects. The framework will include indicators of changes in management, stressors of water quality, and water quality condition. To determine where environmental indicators have the highest potential to build on existing water quality data, Purdue is also facilitating a process for inventorying water monitoring efforts in Indiana. The process includes key representatives from the entire water quality monitoring community, including consultants, federal agencies, health departments, industry, municipalities, public drinking water, a regional planning agency, state agencies, SWCDs, universities, and volunteer monitors. A prototype web-based inventory of data is being populated, which will facilitate statewide access to this information and eventually promote efficiencies in monitoring and evaluation of nonpoint project outcomes.

As a means of storing and collecting the indicator data, a database is being developed for IDEM to house the physical, chemical, and biological data collected as a product of the 319 and 205(j) projects. This contractor will be hired and the database is expected to be finished this year. This database is being developed in a cooperative effort by the NPS/TMDL Section and the Assessment Branch. The social indicators will be stored in a region wide database that is also in the planning stages. This database will be used to store social indicator data for all of Region 5 and will be interfaced with GRTS.

Accountability Pilot Project

Indiana has five watersheds included in USEPA Region V's Accountability Pilot Project. Watershed projects included in the Pilot utilize planning followed by implementation to meet water quality standards in lieu of establishing a TMDL for the impaired waterbodies within the watersheds. For each project, updates on the project's status are submitted annually to EPA through a database. A summary of the management actions and project milestone dates submitted this year for each of the five watersheds are as follows:

Cedar Creek - The St. Joseph River Watershed Initiative is implementing the management plan for Cedar Creek by placing BMPs to reduce NPS pollution that focuses on *E. coli*, sediment and phosphorous. Critical milestones for the project include a 40% average annual reduction in *E. coli*, 10% average annual reduction in total phosphorus and a 15% reduction in annual sediment loads by November of 2007 when the first phase of implementation ends. They anticipate completing implementation efforts in 2015 with the ability to de-list in 2019.

Little Elkhart River – LaGrange County has completed a management plan for headwater streams of the Little Elkhart River system. This mostly rural watershed with significant livestock production suffers impairments from *E. coli* and ammonia. Through the course of implementing the plan, they expect to reduce *E. coli* and ammonia by 25% by the end of 2010. Two automated samplers have been added to the implementation projects along with a pair watershed design to measure water quality changes before and after implementation. Implementation efforts should be complete by 2014 and delisting possible by 2016.

Eagle Creek – The Eagle Creek Watershed Alliance is currently implementing the management plan for the Eagle Creek watershed. The Eagle Creek Reservoir is an important drinking water source for the City of Indianapolis. Critical milestones for phase I implementation efforts are a 40% reduction in *E. coli*, 8% reduction in sediment, 3% reduction in total P, and a 2% reduction in Total N by February 2008. Implementation efforts are expected to be finished by 2016 with delisting by 2019. Eagle Creek has implemented one BMP and has identified and is setting the groundwork for several more, all locations are in the critical areas.

Dunes Creek – Save the Dunes Conservation Fund will implement the Dunes Creek Watershed Management Plan to address *E. coli* impairment and reduce other NPS pollutants. The watershed management goal is to improve the water quality and habitat of Dunes Creek by reducing and preventing pollutant loads in the watershed such that, at a minimum, the Creek meets Indiana water quality standards. Milestones include reducing nutrients (N&P) and sediment 15%, *E. coli* to meet the state standard, improve biotic communities to partially supporting and reducing TDS and chloride concentrations to meet water quality standards by the end of 2012. The needed implementation efforts are estimated to be complete in 2016 and delisting is expected to take place during 2018.

Clifty Creek – The Bartholomew County SWCD and partners are implementing the Clifty Creek Watershed Management Plan by implementing a cost-share program and providing education and outreach. The education, outreach, and partnership-building activities include workshops, public meetings, newsletters, news releases, informational displays for use at events, and educational road signs within the watershed. The District will develop, promote, and implement a cost-share program that is consistent with the sediment, nutrient, and *E. coli* load reduction goals outlined in the Plan. Milestones include reduction of sedimentation by 92%, reduction of nitrogen loads by 50%, and reduction of Phosphorus loads by 89% all by 2011. *E. coli* spikes will be reduced 20% by 2012 and to the state standard by 2018. Most implementation is expected to be complete by 2012 with *E. coli* delisting occurring by 2020. Presently, Clifty Creek, through several BMP installations, has reduced sediments loads at 245 tons per year and phosphorous reduction of 67,625 pounds per year. This year's 2007 annual percent reduction values reported to EPA are - nitrogen at 0.02%, phosphorous at 14.5%, and sediment at 0.7%

Total Maximum Daily Load Program

Under the federal Clean Water Act (CWA) Section 303(d), development of TMDLs is required for all the impaired waterbodies that do not meet the water quality standards (WQS) for the

designated uses to protect aquatic life, wildlife, and human health. The NPS Program and the TMDL Program continue to work together to facilitate the integration of watershed management planning and implementation with the development of TMDLs and their implementation. The Section 319(h) Program priorities are developed in cooperation with the TMDL program in order to achieve the goals of both programs in the most efficient and cost-effective manner.

TMDL staff and Section 319(h) staff attend watershed meetings together and match watershed groups to grant funding and data resources. Section 319(h)-funded projects are often key stakeholders in the development of TMDLs and provide data, meeting spaces, and stakeholder lists which have greatly improved the quality of TMDL reports. The development of TMDLs has, in some cases, spurred the development of new watershed groups - 10 new watershed groups have been formed as the result of a TMDL (and were funded with 319 grants to continue the work started by the TMDL) and fourteen watersheds where TMDLs were completed had 319-funded watershed groups already established. TMDL staff has even worked with watershed groups to assist in the development of implementation projects designed to help meet load reductions stated in the TMDL report.

Indiana is divided into 2426 fourteen digit watersheds and 530 of these watersheds have TMDLs developed or scheduled to be developed by the end of 2008. This translates to 711 TMDLs and of these, 65% are in various stages of implementation. IDEM currently produces over 100 TMDLs each year, a significant improvement over previous years. TMDLs have primarily focused on *E. coli*, but recent TMDLs have been developed that quantify the impacts of nutrients on waters with impaired biotic communities.

Watershed Specialists

The five IDEM Watershed Specialists are charged with fostering, assisting, and building the capacity of local efforts to improve water quality using the watershed approach, which encompasses coordination of information, programs, policies, funding, planning, technical assistance, and training at the local, state, regional, and federal levels. The IDEM Watershed Specialists work as liaisons in assigned watersheds of the state and participate in state or regional work-related committees to promote the watershed approach.

Accomplishments of the Watershed Specialists in 2006/2007 include:

- Re-formed the Watershed Specialist team with 3 new Watershed Specialists, a new Watershed Planning Branch Chief, and a new Indiana Association of Soil and Water Conservation Districts (IASWCD) Watershed Information Specialist
- Realigned the Watershed Specialist service areas to reflect five specialists working by watershed basin rather than by county
- Developed a Watershed Specialist orientation/ cross-training matrix
- Continued working with the IASWCD Watershed Information Specialist to develop website resource information, to develop and conduct the Watershed Coordinator Networking Sessions, to develop a watershed group tracking database and to update the Watershed Specialist Strategic Plan

- Developed and conducted three Watershed Coordinator Networking Sessions in Indianapolis, Goshen, and Jasonville which focused on building local partnerships and a volunteer base. Two additional rounds of Watershed Coordinator Networking Sessions have been developed for 2007-2008 that will focus on watershed group funding, and local capacity and sustainability
- Updated the Watershed Specialists Strategic Plan, which will be a component of the Indiana State NPS Management Plan
- Assisted approximately 82 active and 4 developing watershed groups on many levels including: meeting facilitation, reviewing draft and final watershed management plans, reviewing grant proposals, obtaining water quality data and watershed maps, connecting them with other local organizations and agencies to complement planning efforts, and assisting watershed coordinators with the overall watershed planning and implementation processes
- Attended TMDL public meetings to provide information on watershed planning and generate interest in forming local watershed groups
- Continued working with local watershed groups on regional strategic planning for their larger, 8-digit HUC basins (Upper White River Basin, Wildcat River Basin, Little Calumet-Galien Basin, Lower Eel River Basin, Patoka River Basin, Pigeon Highland Basin, Whitewater River Basin)
- Conducted a needs assessment of local watershed groups
- Commenced development of a toolkit of resources for local watershed groups
- Worked with the IDEM NPS/TMDL Section Chief to identify and improve programmatic issues affecting staff resources and local watershed activities
- Assisted in developing and conducting the Indiana Watershed Leadership Academy sessions
- Participated in the Social and Environmental Indicators development workshops with Purdue

Capacity Building to Reduce NPS Pollution

IDEM is continually seeking ways to build capacity around the state in an effort to strengthen the effectiveness of groups working to achieve water quality goals and show measurable results. The objective is to promote the organizational development and growth of local watershed partnerships and stakeholders committed to improving and maintaining the natural and economic resources of their watersheds; and to provide training and technical assistance to these groups so they can better address watershed-based problems and help develop sustainable solutions. IDEM is currently partnering with the following organizations to build this capacity statewide through efforts such as training watershed coordinators and other water resource professionals, providing needed tools to help groups fulfill their mission and achieve their goals, and educating citizens and professionals on reducing NPS pollution and documenting the success of their efforts.

Conservation Technology Information Center

The Conservation Technology Information Center (CTIC) is working with IDEM and using Section 319(h) funds to survey water resource professionals on training needs and to develop and conduct four workshops across the state to provide needed tools for watershed coordinators, environmental managers, and others in water quality planning and implementation. Participants will be given the necessary tools and materials to implement management programs that will lead to pollutant load reductions in their watershed.

The survey results indicated a strong need across the state for information on streambank stabilization techniques and water quality monitoring. Through collaboration with Tetra Tech, CTIC successfully held a streambank stabilization workshop in northern Indiana on May 15, 2007. Over 50 water resource professionals attended. The second workshop, which will focus on water quality monitoring, is tentatively scheduled for early November 2007 at a site to be announced in southern Indiana.

CTIC developed a survey to determine participants' long-term retention of skills and knowledge. The survey is being conducted at the end of each training session and online three to six months after each workshop. Results of the evaluations will be used to assess the value of the training and identify any future training needs. Survey results will also be used to fine-tune the final two workshops, which will be repeats of the first two; but held in different parts of the state in an attempt to reach a broader audience. Survey results from the first streambank stabilization workshop have been reviewed by CTIC and IDEM and early plans to modify the agenda based on attendee comments are being made.

In addition to the four workshops, CTIC will advertise, provide scholarships, and manage travel arrangements for IDEM watershed professionals to attend a NPS meeting or conference. IDEM is currently looking for a meeting or conference that focuses on identifying, building, and maintaining watershed partnerships allowing participants to build self-awareness skills, learn personal skills to better deal with interpersonal and group conflict; and to recognize who needs to be involved in watershed decision making and when and how decisions are made. These are essential skills when working with watershed groups to identify and address water quality problems in their watershed.

Purdue University

IDEM is partnering with Purdue University and using Section 319(h) funds to conduct The Indiana Watershed Leadership Program to meet the needs of watershed coordinators, agency staff, and others that want to become more effective watershed leaders. Leading the development of a scientifically-sound watershed management plan that actively involves, engages, and is supported by the community requires people who have broad skills, and know how to employ diverse tools and strategies related to watershed management. Purdue University, together with a Steering Committee of watershed professionals throughout Indiana, created the Indiana Watershed Leadership Academy to increase the capacity of watershed leaders to lead community-based watershed groups in accomplishing the task. Begun in 2006, 74 people have participated in the Academy, through which they have learned skills in

organization and communication, watershed technology, GIS, policy, watershed science, and leadership.

The Indiana Watershed Leadership Program also helped initiate and coordinate the first-ever Indiana Rivers Rally, which was a resounding success in June 2007. More than 180 participants from throughout the state and beyond came together on the Purdue University campus and surrounding rivers for three days, creating a unique forum where participants joined together to increase their collective capacity for water resource protection, improvement, and recreational opportunities. Collaborative opportunities abounded - professional conservationists networked with citizen volunteers, water scientists made connections with grassroots organizations, and recreational enthusiasts celebrated with agency representatives. The evaluation showed that 97% of the respondents felt their expectations were met by the conference, and fully 100% of respondents said they would participate in a future Indiana Rivers Rally and would also recommend attendance to others. Long-term impacts of the conference are expected to include stronger networking among diverse groups with an interest in and commitment to watershed protection.

Because of the Academy's success and its objectives that support the 319 program, Purdue will be considered strongly for an additional three years of funding. The Academy is focusing its efforts into becoming self sustainable and will become a permanent program at Purdue.

Education and Outreach by grant-funded watershed groups

An important element of capacity of building in Indiana is accomplished through groups funded by IDEM's Section 319(h) program. Local watershed groups have a unique ability to identify important and relevant issues to water quality in their watershed or section of the state. The outreach and education programs conducted by these groups disseminate valuable information and training to watershed professionals, who in many cases carry this experience to their own watershed. A group that leads others in this arena is the Save the Dunes Conservation fund and we have chosen to highlight some of their work in this reporting period to illustrate this point.

Rain garden workshops/installations

In the spring and summer of 2007, Save the Dune Conservation Fund (SDCF) held two rain garden workshops and associated field days in the Dunes Creek watershed. To generate interest in rain gardens and reach potential workshop participants, SDCF presented information on rain gardens to target groups such as Master Gardeners, watershed groups, National Park Service employees, and a church environmental committee. SDCF also partnered with Northwest Indiana Regional Planning Commission (NIRPC) and Indiana Department of Natural Resources (IDNR) to maximize resources and reach a broad audience.

Master Gardeners, Master Naturalists, and IDNR, park, municipal, county, and Soil and Water Conservation District employees, were among the over 80 in attendance at the workshops. Participants were provided with materials and tools to help them educate others within their organizations on rain gardens. This "train-the-trainer" approach helped SDCF to maximize the impact of outreach efforts. After attending a workshop on rain gardens, participants were encouraged to stay and get hands-on experience planting the rain gardens. Many participants

in both workshops provided verbal feedback to SDCF and NIRPC that they were enthusiastic about practicing what they learned. Municipal employees later mentioned that they had been contacted by workshop attendees regarding the possibility of promoting and installing rain gardens in their communities.

The rain gardens provide excellent opportunities to educate the public on ways they can help reduce stormwater runoff and non-point source pollution. The rain gardens were installed at the Indiana Dunes State Park and the Dorothy Buell Memorial Porter County Visitor Center, both of which are highly visible sites that attract many visitors. Interpretive signs will be placed at each rain garden to educate visitors on rain gardens, watershed management, and practices that protect water quality.

IDEM Section 319(h) funds were used to pay SDCF to conduct outreach and coordinate events, purchase materials, and design signs. Match for these events was provided by volunteer assistance in review of design and installation of rain gardens, State Park employee labor to excavate site, donate mulch, and install signs as well as donations of compost from the Town of Chesterton.



Participants in the Rain Garden workshop received hands-on training

Improving Development by Design: A close look at low impact development (LID) practices

SDCF conducted a workshop entitled *Improving Development by Design: A close look at low impact development (LID) practices* in the spring of 2007. This event served as a follow-up to SDCF's 2005 LID conference entitled *Developing and Planning Sustainable Communities*. The first conference successfully promoted understanding of the benefits of LID and interest in implementing appropriate BMPs to over 100 attendees. *Developing and Planning Sustainable Communities* conference attendees indicated great interest in LID and more specific information on BMPs. The 2007 follow-up workshop was designed based on that feedback and provided technical guidance and specific information on design, soil specifications, siting, efficacy, operation/maintenance, and cost effectiveness of LID post-construction BMPs.

The workshop was held at the new the Dorothy Buell Memorial Visitor Center in Porter, where SDCF demonstrated LID practices to minimize the negative impact of the development on Dunes Creek water quality. Outreach flyers, emails, and web postings were followed up with phone calls. Announcements were made at meetings where members of the target audience would be present such as NIRPC Environmental Management Policy Committee, North American Lakes Management, and watershed meetings.

Nearly 60 participants, including engineers, developers, planners, natural resource managers, and local government employees attended the workshop. Participants were welcomed by SDCF Water Program Director Christine Livingston, who presented a case study of BMPs implemented at the Dorothy Buell Memorial Visitor Center site with Lorelei Weimer, Executive Director of the Porter County Convention, Recreation, and Visitor Commission (PCCRVC). Barry Toning of Tetra Tech overviewed key LID concepts, principles, and practices. Participants learned about soil considerations for LID practices, such as infiltration properties from John McQuestion of Soil Solutions. Rich Claytor, of the Horsley Witten Group discussed LID principles, siting, sizing, design, and construction with emphasis on rain gardens, bioretention swales, pervious pavement, and riparian buffers. After lunch, Randy Braun, IDEM Stormwater Program Manager described the scope and use of IDEM's new BMP manual. Attendees participated in a charette on LID design, which included outlining and designing a project. Barry Toning concluded the workshop with a presentation on long-term operation and maintenance of LID practices and integrating stormwater, wastewater, and watershed management. Surveys indicated that the information presented at the workshop was very useful and would be applied by participants going forward.

IDEM Section 319(h) funds were used to pay SDCF staff to conduct outreach and coordinate event. Match for the event was provided by Tetra Tech, Inc in the form of speakers, staff travel, and workshop materials. IDNR provided materials and assisted with registration.

IDEM OUTREACH ON URBAN NPS ISSUES

In January of 2007 IDEM's Section 319(h) Program used funds to create a display dedicated to educating the public on urban stormwater issues. The display was rolled out at the annual Indiana Association of Soil and Water Conservation Districts statewide conference. The display featured a public service (PSA) style video on urban stormwater issues, which was adapted from a Minnesota PSA obtained from USEPA's Outreach Toolbox. The video can be viewed at the following website:

<http://www.in.gov/idem/watershed/index.html>



A foam duck with a tag containing information on IDEM's watershed programs was given away as a take home item from the display. A number of Soil and Water Conservation Districts, as well as stormwater managers, have requested and been given copies of the video for reuse in their education programs. IDEM plans to explore other items in the Toolbox, with the goal of creating a repository of outreach materials that can be used by watershed groups across the state.

Lessons Learned/Adaptive Management

Part of improvement and program development is taking time to evaluate existing processes and identifying ways to do things better. A number of program improvements and needed actions have been outlined in this report, but additionally, in preparation for this report, staff were asked to identify some lessons learned from the past year. Items that require future improvements or programs changes include –

- Creating a more consistent method for evaluation of watershed management plans against the “Nine Elements” checklist.
- Working more proactively with watershed groups on the development of watershed management plans to identify possible problems or roadblocks to success

- Create additional guidance on IDEM Section 319(h) program requirements, fundable activities, and policy that affects grant recipients.
- Update and rethink the existing website to better deploy information on grants and NPS pollution topics.
- Develop stronger relationships with IDEM permitting programs to ensure implementation activities detailed in grant agreements can obtain any needed permits.
- Work more closely with grant applicants during the application development process to ensure that potential grant recipients have adequate human resources to manage effectively Section 319(h) grant funds.
- Ensure that grant sponsors are always actively involved with grant activities.
- Integrate the Section 319(h) program with other state and federal programs.
- Build sustainable watershed groups that can continue to work on NPS issues and not be reliant solely on Section 319(h) grant funds.
- Actively work to bring in information and lessons learned from other state Section 319(h) programs, as well as national workshops.

To begin the process of addressing monitoring of NPS pollution and projects designed to reduce this pollution, IDEM received assistance from USEPA Region V and Tetra Tech to hold a “Monitoring 101” workshop. This two-day training, attended by staff from IDEM’s NPS Program, TMDL Program, and the Assessment Branch, provided a broad overview of water quality monitoring techniques, project planning information, and a number of approaches to designing protocols for monitoring BMP efficacy and changes in water quality on a watershed level.

PARTNERS IN WATER QUALITY

The work that IDEM's many partners do to help assess and reduce NPS pollution is a vital component of how Indiana addresses this environmental challenge. Increased communication and partnership building will help assure that these efforts are complementary and that the resources available in Indiana are deployed in a manner that allows for maximum returns.

Natural Resources Conservation Service

The NRCS mission statement is "Helping People Help the Land." Through financial and technical assistance, NRCS works toward a landscape with productive agriculture and a high-quality environment. The guiding principles of NRCS work are service, partnership, and technical excellence. NRCS' primary customers are people who make decisions about natural resource use and management on non-federal land. This includes governments with a responsibility for natural resource use and management.

NRCS assists landowners in Indiana to develop conservation plans and provides technical assistance and advice about natural resource management. NRCS helps install practices and systems that meet technical standards and specifications. NRCS also provides financial assistance through cost-share/incentive programs, easement programs, grants, and stewardship payments. NRCS' standards and specifications are utilized for many of the cost-share practices implemented through 319 grants. NRCS Farm Bill conservation programs are utilized as one funding source for implementing local watershed management plans.

NRCS' strategic plan is focused on NPS pollution issues in several areas. For example, one of the national goals for NRCS is "Clean & Abundant Water." The national objective is that agricultural producers will reduce potential delivery of sediment and nutrients from their operations by more than 70 million tons by 2010. Another goal is "High-Quality Productive Soils," and the national objective is that farmers will manage 70 percent of cropland under systems that maintain or improve soil condition and increase soil carbon by 2010.

In Indiana, NRCS is spearheading a partnership effort to conduct a statewide natural resources assessment broken down by 8-digit watersheds, following the national Rapid Watershed Assessment framework. This work will be completed early in FFY 2008, and should be a useful tool for local watershed groups working on planning and implementation projects.

For 2007, NRCS programs in Indiana that support NPS pollution efforts included*:

Wildlife Habitat Incentive Program –

Approximately \$416,000 received and 32 contracts funded. There were 97 applications in backlog for approximately \$1,000,000.

Environmental Quality Incentive Program –

Approximately \$11,000,000 received and 650 contracts funded. All applications with planning and cost estimates completed were funded.

Wetlands Reserve Program –

Received \$9,119,448.00 and 41 contracts funded for 4,216 acres.

Conservation Security Program –

There was no signup for 2007 and is none planned for 2008. There are no new funds available. Payments were made on past-year contracts.

Ground and Surface Water Program –

Received approximately \$235,000 and 15 contracts were approved.

* Note: program numbers are as of July 31. Final program numbers not available until October

Indiana State Revolving Fund Loan Program

The Indiana State Revolving Fund (SRF) Loan Program finances projects that abate or prevent NPS pollution of Indiana's waters. The SRF Program has traditionally provided low interest loans to Indiana communities for projects that improve wastewater and drinking water infrastructure. The Program has been expanded to fund projects that meet the objectives in the Indiana NPS Management Plan. The money loaned to these NPS projects is also documented as match, when applicable, for the state Section 319(h) Grant Program. Eligible NPS projects must provide water quality benefits to their respective communities and may include one or more of the following:

- Wetland restoration/protection;
- Erosion control measures;
- Groundwater remediation;
- Failing septic system repair, replacement or connection to sewer;
- Storm water BMPs;
- Source water and wellhead protection;
- Conservation easements; and
- Agricultural and waste management BMPs.

This fiscal year, the SRF Program loaned \$32.6 million to three communities on projects to reduce NPS pollution, primarily by extending sanitary sewers to areas with septic systems, thereby eliminating this potential source of pollution. Throughout the life of the SRF NPS program, \$91 million has been loaned and over 6,000 septic systems have been removed from service.

Indiana Department of Natural Resources Division of Fish and Wildlife Lake and River Enhancement Program

The goal of the IDNR Division of Fish and Wildlife's Lake and River Enhancement Program is to protect and enhance aquatic habitat for fish and wildlife to insure the continued viability of Indiana's publicly accessible lakes and streams for multiple uses, including recreational opportunities. This is accomplished through measures that reduce non-point sediment and

nutrient pollution of surface waters to a level that meets or surpasses state water quality standards.

To accomplish this goal, grants are made available for technical and financial assistance for qualifying projects. By state statute, a portion of LARE funds must be dedicated to the management of invasive exotic aquatic species and sediment removal from publicly accessible lakes. In March of 2007, grants amounting to \$1.37 million were awarded to address invasive exotic aquatic vegetation and dredging of sediment from lakes.

In July of 2007, the IDNR awarded just over one million dollars in Lake and River Enhancement grants to protect the water quality of Indiana lakes and streams and to reduce soil erosion through, among other actions, the installation of grass cover, filter strips, and streambank or shoreline stabilization structures to reduce sedimentation and nutrient runoff. Some grants are being used to develop scientific studies to diagnose and document water-related problems as well as the implementation of solutions. The 14 grants announced in July will benefit citizens and resources in 32 counties throughout the state. The projects funded by the grants will enhance and improve water quality in several watershed land treatment projects as well as addressing concerns on several lakes. One project will evaluate remote imaging technology for diagnostic studies. Another grant was awarded for the development of a watershed plan for the Upper West Fork of the White River which will involve portions of 16 different counties. The LARE projects, when completed, should result in improved water quality, boating, fishing, and other recreational opportunities as well as providing increased economic value for businesses, communities, and persons who utilize the water bodies.

Several Section 319(h) Projects have used LARE funds as part of their efforts for watershed planning and implementation. These funds may be used as match for the project. In addition, the Section 319(h) Program uses LARE funds expended on NPS pollution reduction efforts as match for the Program.

Indiana State Department of Agriculture, Division of Soil Conservation

The Division of Soil Conservation, formerly a part of the Indiana Department of Natural Resources, transitioned to the Indiana State Department of Agriculture in April 2005 to ensure that agriculture had a vehicle to carry out increasingly important conservation initiatives. The Division of Soil Conservation focuses on strengthening the capacity of local Soil and Water Conservation Districts to ensure that constituents have a local resource for conservation assistance and providing conservation assistance to implement the federal Farm Bill, capitalizing on federal dollars that Indiana has lost in the past.

The Division of Soil Conservation is a member of the Indiana Conservation Partnership. Working together, the Partnership provides technical, educational, and financial assistance to landowners to reduce erosion and sediment-related problems on the land or in public waters. IDEM partners with the Partnership on many projects and programs.

The Division of Soil Conservation employs 30 Resource Specialists to assist directly landowners' implementation of conservation practices addressing specific soil and water

resource problems. Resource Specialists work in regional Conservation Implementation Teams with staff from the other Indiana Conservation Partnership members. On average the ISDA Resource Specialists annually will assist with the planning, survey, design, and construction of over 100 practices. The common practices that these professionals work on include but are not limited to - filter strips, grassed waterways, water and sediment control basins, wetland restorations, and livestock watering systems. The average grassed waterway in Indiana conservatively will typically save over 26 tons of soil/year and staff collectively will assist with the installation of over 500 of these per year.

The Division also employs eight District Support Specialists to work directly with the local Soil and Water Conservation Districts (SWCD) to develop conservation priorities, goals, and plans for their respective territories. The District Support Specialists prepare and conduct trainings for SWCD supervisors and staff. They are also a resource for SWCDs in carrying out their legal and operational responsibilities.

Indiana's First CREP:

Indiana's first CREP agreement was signed with USDA-Farm Service Agency (FSA) in July of 2005. Since that time, protocols have been established for payments and contracts, staffing has been trained and targeted toward promotion and technical application, funding has been allocated to landowners and following up tracking and accountability for easements and maintenance have been put in place.

To date, over 500 landowners have begun the process of contracting and over 3000 acres have been committed to meaningful conservation practices along Indiana's rivers, lakes, and streams. The ISDA cash contribution to date exceeds \$800,000 with USDA-FSA's portion to Indiana landowners being over \$5,000,000. ISDA-DSC technical assistance has exceeded \$1.5 M with Clean Water Indiana CREP marketing funds exceeding \$30,000. Landowners in Indiana have never experienced such a program and early adoption has been slow. Currently, ISDA is working with USDA-FSA to augment the current program to offer additional state funding and grow the number of watersheds and acres eligible for CREP payments.

Clean Water Indiana Grants:

In 2007 ISDA along with the State Soil Conservation Board allocated over \$500,000 toward soil and water quality grants to fund SWCD activities at the local level. These grants focused on the following four areas: education, technical assistance, coordination of conservation programs, and cost share for landowners.

Indiana Lake Michigan Coastal Program

The purpose of the Indiana Lake Michigan Coastal Program (LMCP) is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region and to support partnerships between federal, state and local agencies and organizations. The Indiana Department of Natural Resources is the lead agency implementing the LMCP.

As part of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Congress created a stand-alone provision, Section 6217, which requires that states and territories with approved coastal management programs to develop a coastal NPS pollution control program to

address water quality impairment of coastal waters. The purpose of the program is to develop and implement management measures for NPS pollution to restore and protect coastal waters.

The Indiana Clean Marina Program, a collaborative effort between the IDEM and DNR, will be ready to roll out in Indiana's coastal area during the fall of 2007 after extensive work and planning over the past year. The Indiana Clean Marina program is a voluntary, incentive based program that encourages marinas and recreational boaters to implement environmentally sound practices to protect Indiana's inland and coastal waterways. The Indiana Clean Marina Program was in part developed to meet the Marina and Recreational Boating requirements of Section 6217.

The LMCP is partnering with the Lake, Porter and LaPorte County Soil and Water Conservation Districts (SWCD) and Northwest Territory RC&D to fund an 18-month position entitled "Coastal Conservationist." This project is targeting technical and financial assistance for underutilized USDA and related natural resources programs to landowners in the Little Calumet-Galien Watershed. The Coastal Conservationist serves as a liaison between subwatershed coordinators, land users, and USDA personnel providing targeted USDA financial and technical assistance services to clients. Work products for this position include 1250+ identified rural land users, 250+ onsite visits to review resource conditions, 100+ completed conservation plans meeting NRCS FOTG criteria, and 50+ land tracts under obligation for installing practices with USDA and other funding assistance.

The LMCP continues to partner with local subwatershed groups by provide technical assistance in the development and implementation of watershed management plans within the Little Calumet-Galien River Watershed. The LMCP has funded a variety of projects identified as an implementation goal within these plans (ex. Dunes Creek Daylighting Project). The LMCP's Coastal Nonpoint Coordinator works closely with IDEM staff and other stakeholders to assure consistency with Section 6217 guidance in the development and implementation of these watershed management plans. Nearly 40% of the land area that comprises the Little Calumet-Galien Watershed is currently developing or implementing a watershed management plan. For those areas in which no watershed management plan is in place, LMCP and IDEM staff work with stakeholders to encourage them to develop a plan.

Indiana Association of Soil and Water Conservation Districts (IASWCD)

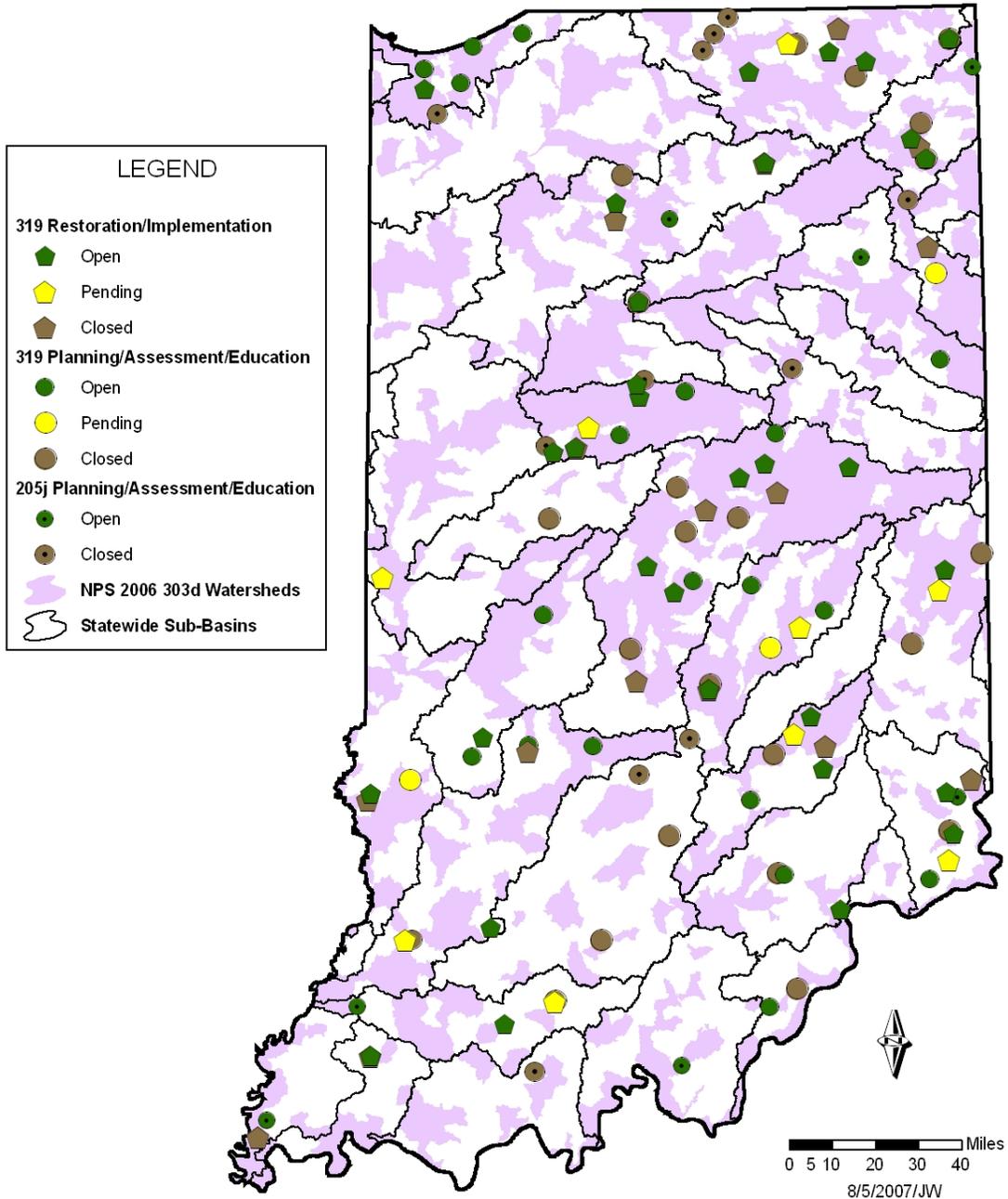
The mission of the IASWCD is to represent Soil and Water Conservation Districts as one voice, and to assist the leadership of local SWCDs through coordination and education for the wise use and management of our natural resources.

One of the many ways the IASWCD promotes the wise use of Indiana's natural resources is by providing information and outreach in support of statewide efforts to develop and enhance Indiana's watershed program and help address NPS pollution. Section 319(h) funds are used to staff a Watershed Information Specialist position at the IASWCD that serves as a liaison with IDEM Office of Water Quality staff to help promote watershed management efforts throughout the state.

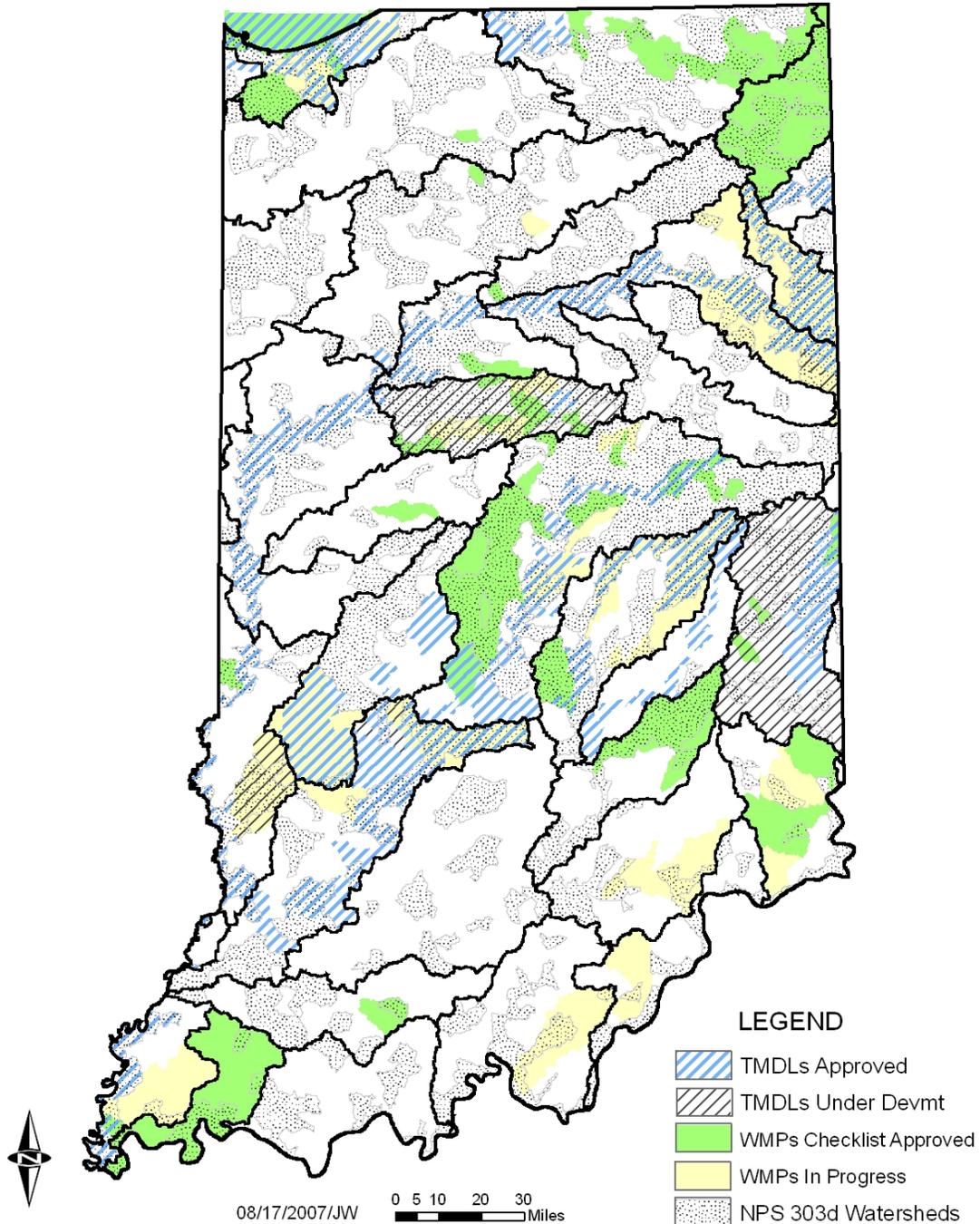
Following are the accomplishments for the 2007 reporting period:

- Served as a key contact for SWCDs via the IASWCD Weekly Update, developed under this contract and instrumental in regularly communicating issues, events, and resources in watershed management statewide. Update can be found at www.iaswcd.org. This position also contributed significantly to the development of the Watershed Networking Sessions, statewide events that were replicated regionally to maximize participation and contact between the Watershed Team and local groups.
- Met regularly with IDEM Watershed Specialists and Watershed Planning Branch Chief for communication and planning purposes. This included initiating, coordinating, and facilitating a reoccurring Watershed “Team” Meeting, inviting members of NPS/TMDL and Wetlands/Rules Sections to participate, as well as representatives from NRCS, ISDA, IDNR, and the IASWCD. These meetings served as an opportunity to update, network, and discuss current work in watershed management and water quality.
- Participated in the strategic planning process for the Watershed Specialists, facilitating document development. This position has served to aid the process by locating a facilitator and coordinating details for the Watershed Specialists strategic plan revision.
- Two types of Annual Lists have been developed. The first is a list of local contacts, including SWCD supervisors, staff, and technical partners, watershed coordinators, and agency staff. This has been created and maintained throughout the contract term. The second list has been referred to as an ‘inventory’. Identifying past and current efforts in watershed management is a comprehensive and very necessary element for increasing program delivery efficiency and maximizing partner / public dollars. Discussion was initiated with Purdue University, CTIC (Conservation Technology Information Center), IDNR, NRCS, and IDEM to determine existing inventories of activities across the state. To date there is no comprehensive watershed inventory. Coinciding with this activity, the Watershed Specialist staff identified the need for an internal database, designed to track watershed groups and group process. Working with IDEM staff, this position participated in meetings and worked with NPS/TMDL staff members to devise an MS Access database framework that is spatially referenced in ArcGIS.
- Attended the following events: (Jan. 2006) 2006 Annual Conference of Indiana Soil and Water Conservation Districts; (January 2007) Annual Conference of Indiana Soil and Water Conservation Districts; (January 2007) Indiana Watershed Leadership Academy Facilitator; (March 2007) Indiana Lakes Management Society Annual Conference; (March 2007) American Society of Agricultural and Biological Engineers; (May 07) National River Rally Conference; (June 07) Indiana River Rally Conference
- Redesigned website (www.iaswcd.org), which will include a new special “Watershed Moment” callout.

APPENDIX A: Geographic Location of
FFY 2002 - 2006 Section 319 & 205j Projects
(Does not include statewide Projects)



APPENDIX B: Location of Watershed Planning/TMDL Activities and 303(d) Listed Waterbodies by Watershed Area



Appendix B illustrates the distribution of TMDL development activities over watershed planning activities. The grayed areas are representative of the watersheds that include at least one listing of a NPS impaired water body. As evident by the areas with solid green or yellow and blue or gray stripes, these watersheds have receive much attention for their level of impairments and interest from local entities to improve water quality through comprehensive planning and subsequent implementation activities.

Appendix C: Open 319 Projects 9/1/06 - 8/31/07

FFY	ARN	Contractor	Project	Status	Start	End	Type
2001							
	6-71	Save the Dunes Conservation Fund	Dunes Creek WMP Implementation Phase I	Open	7/26/2006	9/30/2008	Restoration/Impl
2002							
	4-78	Indiana Association of Soil and	Watershed and TMDL Support	Closed	5/12/2004	5/11/2007	ProgramSupport
	6-152	Purdue University	Watershed Enhancement of Indiana Map Model	Open	8/1/2006	10/31/2007	Education
	6-162	Indiana Lakes Management Society	NALMS Conference 2006	Closed	6/14/2006	12/13/2006	Education
	6-173	The Nature Conservancy	Rivers Institute NPS Conference	Closed	10/1/2006	3/31/2007	Education
	6-64	St. Joseph River Watershed Initiative	Cedar Creek WMP Implementation Phase I	Open	11/14/2005	11/13/2008	Restoration/Impl
	6-70	Save the Dunes Conservation Fund	Salt Creek Watershed Management Plan	Open	1/3/2006	7/2/2008	Planning
	7-172	St. Joseph River Watershed Initiative	St. Joseph River Water Quality Database	Pending			Education
	N02-30	Indiana Department of	2005 Statewide Color Infrared Imagery	Closed	3/29/2005	3/28/2007	ProgramSupport
2003							
	3-735	Indiana University	Ag BMP Application to Remediate Nitrate Contaminat	Open	10/14/2003	10/13/2007	Assessment
	3-738	Indiana Lakes Management Society	Small Grants for Indiana Lakes Water Quality Impro	Open	2/13/2004	2/12/2008	Restoration/Impl
	3-739	Four Rivers RC&D	Remediation of Historically Damaged Brine Disposal	Closed	10/1/2003	9/30/2006	Restoration/Impl
	3-740	Sycamore Trails RC & D Council	Partners for Reclamation	Open	9/26/2003	9/25/2007	Restoration/Impl
	3-745	Lincoln Hills RC & D	Nutrient Management Specialist Phase II	Closed	9/19/2003	2/18/2007	Education
	3-746	Owen County SWCD	CORE 4 Initiative	Closed	9/26/2003	9/25/2006	Restoration/Impl
	3-750	Save the Dunes Conservation Fund	Dunes Creek Watershed Plan	Open	11/5/2003	11/4/2007	Planning
	3-754	Johnson County SWCD	Youngs Creek Watershed Plan Implementation Project	Closed	12/10/2003	9/9/2006	Restoration/Impl
	5-102	Hoosier Heartland	Riparian Forested Buffer Project	Open	5/6/2005	8/5/2007	Restoration/Impl
	5-115	Friends of the Limberlost	Limberlost/Loblolly WMP	Open	6/7/2005	9/6/2007	Planning
	6-155	Hamilton County SWCD	Duck Creek WMP	Open	7/26/2006	3/31/2009	Restoration/Impl
	6-165	Wildcat Creek Watershed Alliance	Implementation of Wildcat Creek WMP	Open	8/29/2006	3/31/2009	Restoration/Impl
	6-178	Historic Hoosier Hills	Grazing Land Water Quality Improvement (Con't)	Closed	6/1/2006	5/31/2007	Restoration/Impl
	7-161	Briljent	NPS Management Plan	Open	5/29/2007	5/28/2008	ProgramSupport
	7-9	Steuben County Commissioners	Pigeon Creek WMP Implementation	Open	11/17/2006	11/16/2008	Restoration/Impl
2004							
	4-127	Gibson County SWCD	Pigeon Ck Restoration Cost-Share & Watershd Coord	Closed	10/7/2004	12/6/2006	Restoration/Impl
	4-128	Four Rivers RC&D	Livestock Management Improvement Project	Open	12/21/2004	10/1/2007	Restoration/Impl
	4-129	Dubois County SWCD	Patoka River Watershed Management Plan	Closed	10/7/2004	12/6/2006	Planning
	4-140	Hamilton County Surveyors Office	Little Cicero Watershed Management Plan	Closed	12/29/2004	12/28/2006	Planning
	4-141	U. S. Geological Survey	Effects of Nutrients on Algal Biomass/Gr Lks, Ohio	Closed	2/28/2005	11/27/2007	Assessment
	4-142	LaGrange County SWCD	Little Elkhart River Watershed Management Plan	Closed	10/13/2004	4/12/2007	Planning
	4-144	Switzerland County SWCD	Indian Creek Watershed Project	Open	11/4/2004	5/3/2007	Planning
	4-145	Wildcat Creek Watershed Alliance	Wildcat Ck-Stahl Di-Kitty Run WMP	Open	11/28/2004	5/27/2007	Planning

4-150	Hoosier Environmental Council	Planning for Restoration of Bean Blossom Ck Watshd	Open	3/11/2005	6/10/2007	Planning
4-151	Sullivan County SWCD	Partnership for Turtle Creek	Open	2/24/2005	2/23/2008	Restoration/Impl
4-152	Daviess County SWCD	Livestock Waste Management for Prairie Creek Wtsh	Open	6/13/2006	6/12/2008	Restoration/Impl
4-154	Purdue University	Indiana Watershed Leadership Program	Open	2/25/2005	2/24/2008	Education
4-155	Sanitary District of Michigan City	Trail Creek Watershed Management Plan Update	Closed	2/25/2005	2/24/2007	Planning
5-06	U.S. Dept of Agriculture	Conservation Tillage Initiative	Closed	3/29/2005	3/28/2007	Education
5-112	Madison County SWCD	Lilly & Little Duck Creek Planning Project	Open	4/4/2005	12/3/2007	Planning
5-113	Madison County SWCD	Swanfelt Watershed Implementation Project	Open	3/2/2006	3/1/2008	Restoration/Impl
5-133	Indiana University	Assessment of Indiana Lakes	Open	8/5/2005	1/4/2009	Assessment
5-44	Delaware Co. SWCD	White River Watershed Plan Implementation	Open	3/11/2005	3/10/2008	Restoration/Impl
5-64	Wayne County SWCD	Whitewater River Implementation Plan	Open	12/29/2004	12/28/2008	Restoration/Impl
6-108	St. Joseph River Watershed Initiative	Sediment, Pesticide & Nutrient Reduction Phase II	Open	3/20/2006	3/31/2009	Restoration/Impl
6-65	Indiana University	Integration of WQ Tools/Information to Reduce NPS	Open	12/21/2006	3/31/2009	ProgramSupport
6-663	Indiana University	Eagle Creek WMP Implementation Phase I	Open	3/2/2006	3/1/2009	Restoration/Impl
7-8	Cass County SWCD	Eel River-Tick Creek	Open	9/15/2006	3/14/2009	Restoration/Impl

2005

5-134	Clay County SWCD	Lower Eel River WMP	Open	9/9/2005	3/8/2008	Planning
5-160	Clinton County SWCD	South Fork Wildcat Creek-Kilmore Creek WMP	Open	10/25/2005	4/24/2008	Planning
5-161	Hamilton County Surveyors Office	Stony Creek WMP	Closed	11/21/2005	2/20/2007	Planning
5-162	Sullivan County SWCD	Partnership for Turtle Creek	Open	2/24/2006	2/23/2008	Restoration/Impl
5-163	Purdue University	Develop/Demo of Evaluation Framework for NPS Prog	Open	12/22/2005	12/21/2007	ProgramSupport
5-164	Rush County SWCD	Little Blue River Watershed Project	Open	9/28/2005	9/27/2007	Planning
5-165	Jennings County SWCD	Lower Sand Creek Watershed	Open	10/12/2005	10/11/2008	Restoration/Impl
5-172	Pheasants Forever	Prairie Grass/Tree Planting & Wetland Restor	Open	1/5/2006	1/4/2009	Restoration/Impl
5-175	City of Hobart	Lake George Shoreline Stabilization and WMP Implem	Open	12/7/2005	12/6/2007	Restoration/Impl
6-01	Gary Storm Water Management Dist.	Little Calument River WMP	Open	4/6/2006	4/5/2008	Planning
6-05	Bartholomew County SWCD	Clifty Creek Watershed Project	Open	10/25/2005	4/24/2008	Restoration/Impl
6-111	Clinton County SWCD	Spring Creek-Lick Run Watershed BMP Implementation	Open	6/1/2006	5/31/2008	Restoration/Impl
6-128	Dearborn County SWCD	Tanners Creek Watershed Implementation	Open	4/6/2006	10/5/2008	Restoration/Impl
6-150	U. S. Geological Survey	Report on E. coli for Dunes Creek	Open	5/29/2007	8/28/2008	ProgramSupport
6-156	Conservation Technology	Training Program for NPS Pollution/Seminars	Open	8/28/2006	11/27/2008	Education
6-164	Historic Hoosier Hills	Southern Laughery Creek Watershed Implementation	Open	12/6/2006	3/31/2010	Restoration/Impl
6-166	Tippecanoe County Surveyor	Implementation of Lauramie Creek WMP	Open	9/15/2006	9/14/2009	Restoration/Impl
6-75	The Nature Conservancy	Tippecanoe River 2-Stage Ditch Demonstration	Open	5/4/2006	5/3/2009	Restoration/Impl
8-69	Indiana Department of	WQ Assessment Information Accessibility System	Pending			ProgramSupport

2006

6-170	Indiana Association of Soil and	Indiana Watershed Promotion/TMDL Support	Open	5/12/2007	5/11/2010	ProgramSupport
6-171	Owen County SWCD	Owen County Watershed Initiative	Open	11/22/2006	2/21/2009	Planning
6-172	Clark County SWCD	Silver Creek Watershed Improvement	Open	1/8/2007	4/7/2009	Planning
6-176	Putnam County SWCD	Big Walnut/Deer Creek WMP	Open	11/3/2006	2/2/2009	Planning
6-177	Elkhart River Restoration Association,	Elkhart River WMP	Open	11/22/2006	2/21/2010	Restoration/Impl
7-103	Johnson County SWCD	Youngs Creek WMP Phase III	Open	1/2/2007	4/1/2009	Restoration/Impl
7-135	Gibson County SWCD	Pigeon Creek Headwaters - Contract#2	Open	2/2/2007	2/1/2009	Restoration/Impl

7-157	Patoka Lake Regional Water & Marion County SWCD	Patoka Lake Source Water Protection Plan	Open	8/20/2007	8/19/2010	Restoration/Impl
7-3	Marion County SWCD	Lower Fall Creek Watershed Improvement Project	Open	11/22/2006	5/21/2009	Planning
7-7	Howard County SWCD	Pete's Run and Little Deer Ck. Implementation	Open	11/22/2006	5/21/2009	Restoration/Impl
7-79	LaGrange County SWCD	LaGrange WQ Improvement	Open	3/8/2007	3/31/2011	Restoration/Impl
7-80	Tippecanoe Environmental Lake & Hancock County SWCD	Upper Tippecanoe/Grassy Ck. Implementation	Open	3/8/2007	6/7/2009	Restoration/Impl
7-81	Hancock County SWCD	Sugar Creek WMP	Open	1/3/2007	7/2/2009	Planning
7-87	Historic Hoosier Hills	Central Muscatatuck WMP	Open	2/15/2007	8/14/2009	Planning
8-75	Save the Dunes Conservation Fund	Salt Creek Implementation Demonstration	Pending			Restoration/Impl

2007

09	Dearborn County SWCD	Hogan Creek Watershed Project	Pending			Restoration/Impl
10	Rush County SWCD	Little Blue River Watershed Project	Pending			Restoration/Impl
17	Henry County SWCD	Big Blue River WMP	Pending			Planning
21	Bartholomew County SWCD	EF White River/Clifty Creek	Pending			Restoration/Impl
7-182	LaGrange County SWCD	Little Elkhart River WMP Update	Pending			Restoration/Impl
7-183	Knox County SWCD	Kessinger Ditch WMP Implementation	Pending			Restoration/Impl
7-184	Allen County SWCD	St. Marys WMP Planning and Implementation	Pending			Planning
7-186	Purdue University	Development/Demo of Evaluation Framework	Pending			ProgramSupport
7-187	Sullivan County SWCD	Busseron Watershed Planning & Implementation	Pending			Planning
8-54	Clinton County SWCD	SF Wildcat Creek/Blinn Ditch/Kilmore Ck	Pending			Restoration/Impl
8-55	Vermillion County SWCD	Little Vermillion Watershed Project	Pending			Restoration/Impl
8-56	Wayne County SWCD	Whitewater River Initiative	Pending			Restoration/Impl

Appendix D: Open 205(j) Projects 9/1/06 - 8/31/07

FFY	ARN	Contractor	Project	Status	Start	End	Type
2000							
	4-153	Limno-Tech, Inc.	Spatial Data Analysis for Dev. Lake Nutrient Stds	Closed	10/21/2005	1/31/2007	ProgramSupport
2003							
	4-51	Cordry Sweetwater Conservancy	N. Fork Salt/ Sweetwater- Mud/Prince Creek WMPs	Closed	3/9/2004	9/8/2006	Planning
	6-02	U. S. Geological Survey	Occurrence & Distribution of Algal Biomass for IN	Closed	10/29/2005	12/28/2006	Assessment
	6-109	Indiana Rural Community Assistance	Regional Sewer District Citizens' Guide	Closed	1/3/2006	9/30/2006	Education
	N03-1	Indiana Department of Environmental	Wetland Tracking Database	Cancelled	10/4/2006	3/31/2008	ProgramSupport
2004							
	5-71	Dearborn County SWCD	Hogan Creek WMP	Open	3/11/2005	9/30/2007	Planning
	5-72	City of Rochester	Lake Manitou WMP	Open	8/30/2005	8/29/2007	Planning
	5-73	City of Fort Wayne	Lower St. Joseph River-Bear Creek WMP	Open	6/2/2005	9/30/2007	Planning
	5-74	Upper Wabash River Basin Commission	Upper Wabash River WMP	Open	4/14/2005	8/13/2007	Planning
	5-75	Knox County SWCD	Kessinger Ditch WMP	Closed	2/25/2005	2/24/2007	Planning
	5-76	Indiana 15 Regional Planning Commission	Upper Anderson River WMP	Closed			3/29/2005
	3/28/2007	Planning					
2005							
	6-106	Harrison County SWCD	Indian Creek Watershed Management Plan	Open	3/2/2006	3/1/2008	Planning
	6-107	Gibson County Commissioners	Gibson Co. Watershed and Wastewater Project	Open	5/4/2006	5/3/2008	Planning
	6-110	Indiana Biological Survey	Evaluation of 303(d) listed waterbodies in Indiana	Closed	1/23/2006	7/22/2007	Assessment
2006							
	7-111	U. S. Geological Survey	Algal Biomass Report on 2001-2005 Data	Open	5/2/2007	2/1/2009	ProgramSupport
	7-6	Posey County SWCD	Big Creek WMP	Open	11/21/2006	2/20/2009	Planning

APPENDIX E: List of Final Reports for Section 319(h) Projects

ARN	FFY	Project Name
4-78	2002	Watershed and TMDL Support
6-162	2002	NALMS Conference 2006
6-173	2002	Rivers Institute NPS Conference
N02-30	2002	2005 Statewide Color Infrared Imagery
3-739	2003	Remediation of Historically Damaged Brine Disposal
3-745	2003	Nutrient Management Specialist Phase II
3-746	2003	CORE 4 Initiative
3-754	2003	Youngs Creek Watershed Plan Implementation
3-742/6-178	2003	Grazing Land Water Quality Improvement
4-127	2004	Pigeon Creek Restoration Cost-Share & Watershed Coord.
4-129	2004	Patoka River Watershed Management Plan
4-140	2004	Little Cicero Watershed Management Plan
4-141	2004	Effects of Nutrients on Algal Biomass/Great Lakes, Ohio Basins
4-142	2004	Little Elkhart River Watershed Management Plan
4-145	2004	Wildcat Creek-Stahl Ditch-Kitty Run WMP
4-155	2004	Trail Creek Watershed Management Plan
5-06	2004	Conservation Tillage Initiative
5-161	2005	Stony Creek WMP

The following projects have not yet been closed-out, and the final report will be submitted once it is received:

5-102	2003	Riparian Forested Buffer Project
4-144	2004	Indian Creek Watershed Project
4-150	2004	Planning for Restoration of Bean Blossom Creek Watershed

The following project closed in 2005 and the final report is expected to be received soon. It will be forwarded at that time.

00-227	2001	Stormwater Principles & Practices Manual
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The contractor has completed the Manual. This document is being reviewed by IDEM's Office of Media and Communication Services. Once this document is approved and printed, it will be submitted with the final report.



Indiana's FFY 2007 NPS Program

Summary of Cumulative Environmental Benefits from Project Activities

Section 319(h)(h) NPS projects funded under the FFY 2007 grant cycle were highly successful in achieving important water quality benefits to Indiana's surface waters. The following is a summary of BMPs (BMPs) installed during these projects along with the associated estimated load reductions for sediment, phosphorus, and nitrogen:

Agricultural Management Practices

- Implemented 8 nitrogen reduction practices on 2,073.4 acres of farmlands within targeted watersheds and 13 sites incorporated Nutrient and Pest Management (590) plans/practices on 3,110 acres of producing farmland.
- Installed more than 1,400 linear feet of Fencing (382) to exclude livestock from waterways, 1 Diversion (362) and 3 Spring Developments (574).
- Established 5 Prescribed Grazing (528A) areas on 261.6 acres and 7 Pasture and Hay Planting (512) areas on 152 acres.
- Load reductions resulting from these practices: 10,627 tons/year of sediment, 12,944 lbs/year of phosphorus, and 25,246 lbs/year of nitrogen.

Water Quality and Riparian Zone Restoration

- 5 Heavy Use Protection (561) areas totaling 42.2 acres were completed for the reduction of 195 tons/year of sediment, 492 lbs/year of phosphorus, and 1,345 lbs/year of nitrogen in annual load reduction.
- 5 Filter Strip (393)/Buffer Strip (741) plantings were also installed along 14,300 linear feet of riparian zone, as well as another 1,250 feet of Streambank and Shoreline Protection (580), to provide for an additional 848 tons/year of sediment, 1,041 lbs/year of phosphorus, and 2,847 lbs/year of nitrogen.

Habitat Restoration

- Established 10 Upland Wildlife Habitat Management (645) area totaling 78.5 acres and 1 Use Exclusion (472) was designated in a critical area along 1,700 feet of habitat acreage. Additionally, 5 Critical Area Plantings were installed on 736 acres and 5 Tree/Shrub Establishments planted on 33 acres.
- Load Reductions resulting from these practices: 820 tons/year of sediment, 778 lbs/year of phosphorus, and 1,558 lbs/year of nitrogen.

Waste Management

- Successfully completed the installation of 2 Waste Storage/Utilization Facilities (313) and 1 Trough/Tank (614) practice for a total load reduction estimated to be 32 tons/years sediment, 7,814 lbs/year of phosphorus and 34,986 lbs/year of nitrogen.

ANNUAL LOAD REDUCTION SUMMARY

Total FFY 2007 Pollutant Load Reductions

Reduced Sediment loadings by 12,522 tons/year

Reduced Phosphorus loadings by 23,069 pounds/year

Reduced Nitrogen loadings by 65,982 pounds/year

Project Name (closed in 2007)	Sediment (tons)	Phosphorus (lbs)	Nitrogen (lbs)
Small Grants for IN Lakes Water Quality Improvement	0	0	1
Remediation of Historically Damaged Brine Disposal	5	5	9
Nutrient Management Specialist - Phase II	78	71	145
CORE 4 Initiative	757	1442	6120
Pigeon Ck. Restoration Cost-Share & Watershed Coord.	762	772	1545
Livestock Management Improvement Project	1748	1617	3240
Livestock Waste Management for Prairie Ck. Watershed	0	7779	34916
Prairie Grass/Tree Planting & Wetland Restoration	618	602	1205
White River Watershed Plan Implementation	24	34	68
Clifty Creek Watershed Project	6109	7796	11708
Sediment, Pesticide & Nutrient Reduction - Phase II	266	359	718
Tanners Creek Watershed Implementation	1541	1784	3927
Pigeon Creek WMP Implementation (Steuben Co.)	609	802	2368
Grazing Land Water Quality Improvement	5	6	12

This table shows the load reductions by project.

Total from Project BMPs installed during FFY 2001 through FFY 2006

Sediment load reduction calculations: 104,698 tons/year

Phosphorus load reduction calculations: 129,152 pounds/year

Nitrogen load reduction calculations: 267,038 pounds/year
