

# Wisconsin

## Local Projects

[Wisconsin Integrated Assessment of Watershed Health \(PDF\)](#) (111 pp, 9.32 MB, [About PDF](#)) In March 2014, the US EPA, Wisconsin Department of Natural Resources (WDNR), and The Nature Conservancy (TNC) completed the Wisconsin Integrated Assessment of Watershed Health, a statewide report on the status and vulnerability of watershed health. The assessment, developed by EPA's Healthy Watersheds Program in collaboration with WDNR and TNC, integrates the best available data from state and federal agencies to identify relative landscape condition, aquatic ecosystem health, aquatic invasive species prevalence, and watershed vulnerability to climate change, land use change, and water use. The assessment results are intended to help guide Wisconsin's clean water and natural resource programs in its efforts to protect healthy watersheds and the high quality streams, lakes, and wetlands they support. Healthy waters are a vital part of Wisconsin's identity and economy, and this work, made possible through strong partnerships and data sharing, will help to ensure those healthy waters remain healthy. Learn more about [Wisconsin's healthy watersheds assessments](#) .

## Agriculture

The United States has more than 330 million acres of agricultural land that produce an abundant supply of food and other products. American agriculture is noted worldwide for its high productivity, quality and efficiency in delivering goods to the consumer. When improperly managed, however, activities from working farms and ranches can affect water quality.

In the 2000 National Water Quality Inventory, states reported that agricultural nonpoint source (NPS) pollution was the leading source

of water quality impacts on surveyed rivers and lakes, the second largest source of impairments to wetlands, and a major contributor to contamination of surveyed estuaries and ground water.

Agricultural activities that cause NPS pollution include poorly located or managed animal feeding operations; overgrazing; plowing too often or at the wrong time; and improper, excessive or poorly timed application of pesticides, irrigation water and fertilizer.

## Fact Sheets and Reports

- [Protecting Water Quality from Agricultural Runoff](#), March 2005, EPA 841-F-05-001

This is a fact sheet about how agricultural runoff affects water quality.

- [How to Build Better Agricultural Conservation Programs to Protect Water Quality: The National Institute of Food and Agriculture-Conservation Effects Assessment Project Experience](#) (2012)

This book provides a synthesis of 13 projects designed to evaluate the effects of conservation practices on spatial and temporal trends in water quality at the watershed scale. The [lessons learned](#) from this synthesis strengthen the knowledge base for evaluating the impacts of conservation practices on water quality, improving management of agricultural landscapes for improved water resource outcomes, and informing conservation policy.

- [Conservation Buffers to Reduce Pesticide Losses \(PDF\)](#) (25 pp, 1.2MB, [About PDF](#))

This document summarizes recent research investigating the ability of conservation buffers to trap and degrade pesticides carried in field runoff. It is the result of a joint effort between the Natural Resources Conservation Service (NRCS), National Water and Climate Center and EPA's Office of Prevention, Pesticides and Toxic Substances.

## Guidance Documents and Manuals

- [National Management Measures to Control Nonpoint Source Pollution from Agriculture, July 2003](#)  
Technical guidance and reference document for use by State, local, and tribal managers in the implementation of nonpoint source pollution management programs. It contains information on the best available, economically achievable means of reducing pollution of surface and ground water from agriculture.
- [Chesapeake Bay Federal Land Management Guidance – Agriculture, May 2010](#)  
This guidance presents the implementation measures component of Nutrient Management Plans that would maximize nutrient reductions by agriculture. Three types of practices are necessary in agricultural production to control nutrients and sediments. These three types avoid, control, and trap pollutants (ACT), and practices that suit each should be implemented in agricultural production.
- [Techniques for Tracking, Evaluating, and Reporting the Implementation of Nonpoint Source Control Measures - Agriculture](#)  
This guidance from 1997 was written to help state, regional and local environmental professionals track the implementation of best management practices (BMPs) used to control agricultural nonpoint source pollution.
- [Animal Feeding Operations \(AFOs\)](#)  
This page includes general information on AFOs, links to the USDA-EPA Unified National Strategy for Animal Feeding Operations and the Concentrated Animal Feeding Operation proposed rule, and includes guidance documents and compliance guides for Concentrated Animal Feeding Operations (CAFOs).
- [Natural Resources Conservation Service \(NRCS\) Conservation](#)

## [Practice Standards](#)

NRCS conservation practice standards provide guidance for applying conservation technology on the land and set the minimum acceptable level for application of the technology. This site lists current national conservation practices in alphabetical order, with links to the practice standards, conservation practice information sheets and Conservation Practice Physical Effects (CPPE) worksheets (when available).

- [2008 NRCS Farm Bill Conservation Program](#)

The conservation provisions in the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) will provide conservation opportunities for farmers and ranchers for years to come. These provisions build on the conservation gains made by farmers and ranchers through the 1985, 1996 and 2002 Farm Bills. They simplify existing programs and create new programs to address high priority environmental goals.

## Information Resources and Centers

- [Cover Crops](#)

Learn about the water quality benefits of cover crops and organizations involved in expanding cover crop implementation.

- [EPA's National Agriculture Compliance Assistance Center](#)

The National Agriculture Compliance Assistance Center is the "first stop" for information about environmental requirements that affect the agricultural community.

- [Water Quality Information Center at the National Agricultural Library](#)

From the U.S. Department of Agriculture, the WQIC provides electronic access to information on water quality and agriculture. The center collects, organizes and communicates the scientific findings, educational methodologies and public policy issues related to water quality and agriculture.

- [Conservation Technology Information Center \(Core4 Conservation\)](#)

The Conservation Technology Information Center (CTIC) is a national, public-private partnership with a mission to provide reliable, profitable solutions to improve the relationship between agriculture and the environment. The center provides information on agricultural conservation issues.

- [North Carolina State University \(NCSU\) Water Quality Group](#)  
The North Carolina State University (NCSU) Water Quality Group is a multidisciplinary team that analyzes and conducts natural resource management programs with an emphasis on nonpoint source (NPS) pollution policy, assessment and control technologies.
- [Natural Resources Conservation Service \(NRCS\) Photo Gallery](#)  
Approximately 1,500 conservation-related images are available for download from this site. The photos are organized in a database that allows users to search 54 categories from 30 States using key categories like buffers, conservation tillage, water quality and wildlife.

## Special Programs

- [Farm\\*A\\*Syst](#) (from the University of Wisconsin Extension Office)  
Farm\*A\*Syst is a partnership between government agencies and private business that enables you to prevent pollution on farms, ranches and in homes using confidential environmental assessments.

## [USDA's National Water Quality Programs](#)

From the USDA's National Institute of Food and Agriculture.

## Additional Bibliography

This page contains links to publications useful for understanding and protecting healthy watersheds.

- [Background](#)

- [Green Infrastructure](#)
- [Hydroecology](#)
- [Biotic Condition](#)
- [Geomorphology](#)
- [Integrated Assessments](#)
- [Outreach Tools](#)

You will need Adobe Reader to view some of the files on this page.  
See [EPA's PDF page](#) to learn more.

## Background

Baron, J. S., Poff, N. L., Angermeier, P. L., Dahm, C. N., Gleick, P. H., Hairston, N. G., et al. (2003). [Sustaining Healthy Freshwater Ecosystems. Issues in Ecology. Number 10 \(PDF\)](#). (18 pp, 279K)

Doppelt, Robert; Scurlock, Mary; Frissell, Chris; Karr, James. (1993) [Entering the Watershed: A New Approach To Save America's River Ecosystems](#). Island Press. Washington D.C.

Ernst, C., Gullick, R., & Nixon, K. (2004). [Protecting the Source: Conserving Forests to Protect Water. Opflow , 30\(5\) \(PDF\)](#). (5 pp, 484K)

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U.S. Environmental Protection Agency. (2003). [Watershed Analysis and Management \(WAM\) Guide for States and Communities](#). EPA publication 841B03007 (PDF) (357 pp, 6.44MB)

U.S. Environmental Protection Agency. (2006). [Wadeable Streams Assessment A Collaborative Survey of the Nation's Streams](#). Office of Water and Office of Research and Development. EPA 841-B-06-002.

U.S. Environmental Protection Agency. (2008). [Handbook for Developing Watershed Plans to Restore and Protect Our Waters](#). Office of Water. Nonpoint Source Control Branch. Washington, D.C. EPA 841-B-05-005.

Vannote, R.L., G.W. Minshall, K.W. Cummins, J.R. Sedell, and C.E. Cushing. (1980). [The River Continuum Concept](#). *Canadian Journal of Fisheries and Aquatic Sciences* 37:130-137 (PDF). (8 pp, 934K)

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## Green Infrastructure

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Forman, R. T. T. [Land Mosaics: The Ecology of Landscapes and Regions](#). Cambridge, Cambridge University Press, 1995.

The Conservation Fund. (2009) [Green Infrastructure Case Study Series](#) <broken link>

The Heritage Conservancy. (2008). [Growing with Green Infrastructure \(PDF\)](#). <broken link> (20 pp, 4.54MB)

The Nature Conservancy. (2008). [The Active River Area: A Conservation Framework for Protecting Rivers and Streams \(PDF\)](#). <broken link> (64 pp, 4.84MB)

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## Hydroecology

Arthington, Angela H, SE Bunn, NL Poff and RJ Naiman. (2006). [The Challenge of Providing Environmental Flow Rules to Sustain River Ecosystems. Ecological Applications 16\(4\): 1311-1318 \(PDF\)](#). <broken link> (12 pp, 151K)

Ernst, C., Gullick, R., & Nixon, K. (2004). [Protecting the Source: Conserving Forests to Protect Water. Opflow , 30\(5\)](#). (5 pp, 484K)

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[Alteration. Fact Sheet \(PDF\)](#). (4 pp, 228K)

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## Biotic Condition

Association of Fish & Wildlife Agencies. (2006). [National Fish Habitat Action Plan \(PDF\)](#). (28 pp, 2.18 MB).

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Master, Lawrence L., Stephanie R. Flack, and Bruce A. Stein, eds. (1998). [Rivers of Life: Critical Watersheds for Protecting Freshwater Biodiversity. The Nature Conservancy, Arlington, Virginia \(PDF\)](#). (77 pp, 7.26MB).

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## Geomorphology

Montgomery, D. R., & Buffington, J. M. (1998). [Channel Processes, Classification, and Response. River Ecology and Management. 13-42 \(PDF\)](#). (30 pp, 837K).

Vermont Agency of Natural Resources. [Stream Geomorphic](#)

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Vermont Agency of Natural Resources. (2008). [River Corridor Protection Guide \(PDF\)](#). (25 pp, 1.5MB).

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## Integrated Assessments

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## Outreach Tools

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