

GETTING TO KNOW YOUR LOCAL WATERSHED

A GUIDE FOR WATERSHED PARTNERSHIPS



RECYCLED PAPER



GETTING TO KNOW YOUR LOCAL WATERSHED.

LET'S START BASIC:

WHAT IS A WATERSHED?

A watershed is an area of land that drains into a lake or river. As rainwater and melting snow run downhill, they carry sediment and other materials into our streams, lakes, wetlands* and ground water*.

WHY IS YOUR WATERSHED IMPORTANT?

We all live in a watershed. Watersheds are the places we call home, where we work and where we play. Everyone relies on water and other natural resources to exist. What you and others do on the land impacts the quality and quantity of water and our other natural resources.

Healthy watersheds are vital for a healthy environment and economy. Our watersheds provide water for drinking, irrigation and industry. Many people also enjoy lakes and streams for their beauty and for boating, fishing and swimming. Wildlife also need healthy watersheds for food and shelter.

Managing the water and other natural resources is an effective and efficient way to sustain the local economy and environmental health.

Scientists and leaders now recognize the best way to protect the vital natural resources is to understand and manage them on a watershed basis. Everything that is done in a watershed affects the watershed's system.

POLLUTANTS AND WATER QUALITY.

In the past, most water quality problems were traced to the most obvious cause ... point-source pollution.* This means the problem can be traced to a specific location such as a pipe or disposal site.

Technical and regulatory methods have been used to detect and control these problems. Much progress has been made in preventing further water quality problems from point sources.

However, water quality problems from nonpoint-source pollution* are more difficult to isolate and control. These sources are often hard to identify and difficult to measure. This type of pollution results from a wide variety of activities over a wide area.

Nonpoint-source pollutants are in the water that runs off crop or forest land. Others include failing septic systems,

**Wetlands*: Areas that are covered with water during at least part of the year. They have certain distinctive types of soils, plants, and drainage. They provide habitat for fish and wildlife, help filter pollutants, and control floods.

**Ground water*: Water that is trapped underground in an area of porous material. Most wells tap ground water. This water recharges slowly and is difficult to clean if it becomes contaminated.

**Point-source pollution*: This originates from the discharge of pollutants from a single, readily identifiable source such as an industrial or sewage discharge pipe.

**Nonpoint-source pollution*: This occurs from widely dispersed land areas and is carried in runoff water from a field, forest, or urban area into a stream, lake, or groundwater.



parking lots, construction sites, irrigation systems and drainage systems. It can even result from automobile exhaust getting in the atmosphere and falling back to earth in the rain.

A partnership among all who live, work or play in the watershed can help identify concerns, educate those involved and

encourage them to take action. Watershed management plans focus on prevention of pollution. This is easier and cheaper than trying to cleanup a watershed after the fact.

Understanding your watershed is the first step in protecting the water and other natural resources.



UNDERSTANDING YOUR WATERSHED.

The watershed where you live is a dynamic and unique place. It is a complex web of natural resources — soil, water, air, plants and animals. Yet, everyday activities can impact these resources, ultimately impacting our well-being and economic livelihood.

To DO...

- Determine size and boundaries
- Show terrain
- Overlay soils
- Identify and map critical areas
- Map land uses and identify trends
- Identify uses of natural resources
- Determine employment trends
- Study economic trends
- List stakeholders
- Define attitude trends

FEATURES.

Your watershed has many features that make it unique.

Size.

One important feature is the size of the watershed. Some (like the Mississippi River basin) are very large and include many smaller river basins or watersheds. These smaller watersheds can be subdivided into even smaller areas. The ideal size for a voluntary partnership to work with is 50,000 acres or less. At this size your group will likely see water quality improvements sooner than in larger areas. Of course, in regions of the United States where ranchers, foresters and others manage large tracts of land, you may be working with a much larger watershed.

Boundary.

Another important feature is the geographic boundary of the watershed. The boundary is formed by a ridge or high area from which water drains either toward or away from your watershed.

Terrain.

The topography (terrain) is another important feature. How flat or steep the

land is impacts how fast water drains. The faster the drainage, the more potential for flooding and increased soil erosion.

Soil type.

Soil type is also important. For example, sandy soils allow the ground to soak up water faster. This reduces surface runoff, but can affect ground water. Clay soils, on the other hand, are tighter and do not allow as much water infiltration. This can lead to more runoff and soil erosion.

Other features.

Whether your watershed drains into a stream or lake, the area nearest the water greatly affects water quality. This is why filter/buffer strips*, wildlife habitat*, wetlands and riparian areas* are important aspects of your watershed.

Both filter/buffer strips and wetlands utilize nutrients and tie up sediment to help improve water quality. Wetlands also act as natural sponges to absorb peak flows of water and reduce flooding. Many fish and wildlife species rely on wetlands for rearing their young, and for food and shelter.

USES.

To fully understand your watershed, you'll also need to consider how it is used.

Land uses and trends.

All activities within the watershed have an impact on its natural resources. Cities, homes, roads and factories modify the watershed and affect its natural resources. Farming, recreation, mining, construction

**Filter/buffer strips*: Grassy areas located at the borders of fields. They are particularly important on the edge of lakes or streams since they remove sediment and other types of pollution as well as provide a home for wildlife.

**Wildlife habitat*: The area in which animals live. Includes woodland, cropland, rangeland, wetlands etc.

**Riparian area*: Land and vegetation adjacent or near the banks of water (stream, river, bayou, lake, etc.)

**Stakeholders*: Any individuals or groups who have an interest in or will in some way be affected by your watershed management efforts. They include those who will benefit from improved water quality, as well as those who will pay for land management or other changes. Farmers, environmental organizations, government agencies, businesses, developers, and recreational users are examples of stakeholders.

and forestry can also significantly affect a watershed.

One trend you may want to note is whether or not more homes are being built in rural areas. This can lead to conflicts over watershed issues such as livestock odor, pesticide use or septic systems. It can also lead to significant changes in land use which can affect water quality and property values.

Natural resource uses.

You may also find natural resources are used in many different ways in your watershed.

Water can be used by municipalities and local industries. Farms also rely on water for irrigation and livestock. Many people enjoy water for recreational uses like fishing, swimming and boating. So the water quality and quantity are important to the watershed's stakeholders.*

Air quality, wildlife, soil quality and the other natural resources can also be important aspects of watershed management.

Stakeholder uses.

To fully understand your watershed you'll also need to understand how it's used by the people who live, work and play there. These are the stakeholders who need to be involved in the planning and implementing process. For this reason, they'll need to be a part of the watershed partnership.

WATERSHED PARTNERS

- ◆ Landowners
- ◆ Homeowners
- ◆ Local businesses
- ◆ Developers
- ◆ Recreational users
- ◆ Government agencies
- ◆ Elected officials
- ◆ Media
- ◆ Teachers
- ◆ Civic groups
- ◆ Conservation groups
- ◆ Environmentalists
- ◆ Church groups
- ◆ Youth groups
- ◆ Others _____

SOCIAL TRENDS.

Social trends also influence watershed management efforts.

Economic trends.

A sound local economy is also important to everyone with a stake in the watershed. That's why it's important to consider the local economy and ways to sustain or improve it through successful watershed management. Ask your group how the natural resources within the watershed can affect the local economy.

Employment trends.

These trends can be critical. For instance, are people living in one watershed and working in a different one? Are jobs and family incomes dependent on the watershed? Do people understand how various jobs depend on it? Is employment stable? Are jobs transient?

Attitude trends.

Most people rely on their beliefs and experiences, rather than on scientific data, to shape their attitudes. This means that when their perceptions don't match reality, people react to their perceptions, not reality.

Although experts disagree, most people perceive there is more risk today than in the past. In addition, more people are striving for a risk-free world. These people often resist making trade-offs, particularly those between the economy and the environment.

Many people are more concerned about some perceived risks than others (regardless of the potential). For instance, involuntary risks (like secondhand smoke) often bring a higher level of concern than voluntary risks (like smoking).

"Most people rely on their beliefs and experiences, rather than on scientific data, to shape their attitudes."

SUCCESSFUL WATERSHED MANAGEMENT.

A study of watershed management efforts highlights some of the keys to successful watershed management. They are:

- ◆ Include all stakeholders in the local partnership
- ◆ Use sound technical information
- ◆ Set clear objectives and priorities
- ◆ Select effective management alternatives
- ◆ Develop innovative educational and assistance programs
- ◆ Use strong local leadership
- ◆ Use a systems approach that integrates all concerns and challenges.

when you ask.

By using a partnership approach you'll find greater local initiative, responsiveness, and control. Partnerships can build a climate of cooperation and focus on solutions. A plan developed by a local partnership is often more effective and efficient than other methods such as broad-sweeping regulations. The result is the improved environmental and economic health of your watershed.

WATERSHED PARTNERS.

Effective watershed management planning relies on an effective partnership that includes representatives of all stakeholders and works cooperatively toward a common goal.

As you look around your community, you'll find many people who will want to be involved in developing a plan to protect your watershed. The guide *Building Local Partnerships* describes how partners can contribute and outlines strategies for building local watershed partnerships.

Successful partnerships start with partners understanding each others' current beliefs about the issues. What people believe to be real is real in its consequences. Understanding each others' beliefs will help your efforts.

Conflicts among partners can also influence the effectiveness and fairness of the management plan. The *Managing Conflict* guide describes how you can effectively manage conflicts and work toward consensus.

THE WATERSHED PLANNING PROCESS.

GET TO KNOW YOUR WATERSHED

- Determine size, boundaries, soils, terrain and other features
- Understand the people, interests, and institutions
- Determine how the watershed is used

BUILD LOCAL PARTNERSHIPS

- Identify and contact partners/stakeholders
- Divide work and responsibility
- Identify and manage conflicts
- Obtain local funding and other resources

DETERMINE PRIORITIES FOR ACTION

- Assemble maps and data
- Identify and document problems
- Determine goals and objectives
- Evaluate water quality
- Assess land use
- Select critical areas for attention

CONDUCT EDUCATIONAL PROGRAMS

- Identify and understand target audiences
- Develop specific messages
- Combine communication approaches, channels and media

PROVIDE LANDOWNERS WITH ASSISTANCE

- Target technical assistance
- Provide financial assistance
- Build social support and recognition

ENSURE IMPLEMENTATION AND FOLLOW-UP

- Continue with monitoring and evaluation
- Provide continued local funding
- Continue to inform and involve everyone

YOU'RE NOT ALONE.

The good news is that you are not alone in your concern for watershed protection.

Many partnerships have been formed and are successfully managing their watersheds. In your area, you'll find many partners ready to help

SOURCES OF INFORMATION.

To start down the road toward an effective local watershed partnership, you may want to read some of these other guides available through the Conservation Technology Information Center. To order, please call 765-494-9555. A \$2.00 fee is charged to cover postage and handling.

Building Local Partnerships

Leading & Communicating

Managing Conflict

Putting Together a Watershed Management Plan

Reflecting on Lakes

Groundwater & Surface Water: Understanding the Interaction

State and Regional Watershed Contacts

The author acknowledges the following sources of information that were used in developing this guide. You may also find these publications helpful. There may be fees for these publications.

Clean Water in Your Watershed: A Citizen's Guide to Watershed Protection.

Terrene Institute Tel: 202-833-8317

Evaluation of the Experimental Rural Clean Water Program — Project Report.

North Carolina State University. Tel: 919-515-3723.

Managing Nonpoint Pollution: An Action Plan for Puget Sound Watersheds.

Puget Sound Water Quality Authority Tel: 206-464-7320

Public Perception and Communication of Risk.

North Carolina Cooperative Extension Service Tel: 919-515-1676

ABOUT THIS GUIDE....

This guide is one of a series for people who want to organize a local partnership to protect their watershed. This series will not solve all your problems. They were designed to provide guidance for going through the process of building a voluntary partnership, developing a watershed management plan and implementing that plan. Because the characteristics of each watershed are unique; you may wish to select and use the portions of this guide that are applicable to your particular situation.

Although the series is written for watershed-based planning areas, the ideas and process can be used for developing other types of plans (such as wildlife areas) to match the concerns of the partnership. Regardless of the area, remember a long-term, integrated perspective—based on a systematic, scientific assessment—can be used to address more than one concern at a time.

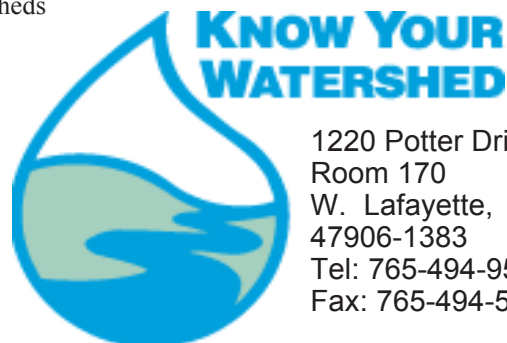
SPECIAL THANKS...

Special thanks to Dr. Thomas J. Hoban, Associate Professor, North Carolina State University, who dedicated long hours to writing this guide. Without his help this guide would not be possible.

Special thanks also go to the following professionals who carefully reviewed this guide. Their experience and thoughtful guidance enriched it. Their time and insight is deeply appreciated.

Tom Davenport
US EPA, Region 5, Water Division
Nancy Garlitz
USDA SCS, Office of Public Affairs
Kathy Minsch
Puget Sound Water Quality Authority
Chris Novak
National Pork Producers Council
Sandy Olsenholler
Planner, Swan Creek Watershed
Frank Phelps
Farmer, Indian Lake Watershed
Frank Sagona
TVA, Middle Fork Holston River Watershed
Ed Sprunger
Coordinator, Eel River Watershed
Joan Warren
US EPA, Office of Wetlands, Oceans and Watersheds

The Know Your Watershed campaign is coordinated by the Conservation Technology Information Center (CTIC), a nonprofit public/private partnership dedicated to the advancement of environmentally beneficial and economically viable natural resource systems. It provides information and data about agricultural and natural resource management systems, practices and technologies. The center was established in 1982 under the charter of the National Association of Conservation Districts.



1220 Potter Drive
Room 170
W. Lafayette, IN
47906-1383
Tel: 765-494-9555
Fax: 765-494-5969