

# Congratulations!

By opening this guidebook, you've taken the first step in helping young people Give Water A Hand. Here you'll find step by step guidelines for helping your youth group or class (ages 9 - 14) make a difference for their community and the environment. This Leader Guidebook is for you, the youth leader, and accompanies the Action Guide, written for youth.

As adults, we know there are environmental problems that need our attention. Unfortunately, we don't always know how to help or take actions to solve the problems. Young people care about the environment, too, but like us, they don't always know how to help. What we can do is support young people as they learn what to do and as they make commitments to act. The steps in Give Water A Hand provide youth with the skills and knowledge to make their own decisions about how to help, using their own unique tal-







ents and interests.

## How can my group make a difference?

Like most things, the answer lies right in your own backyard. Get to know your watershed! That's where you'll really learn what problems exist and devise solutions that will make a difference to your own community. We've included several success stories in the beginning of the Action Guide; they'll show you how others defined a problem, planned a manageable solution, and made a real impact.

Water education can and should be fun! As leader, your primary role is to help your group to act. You don't have to know a lot about water — you can get help from a local water resource expert (we'll tell you how). Information, ideas, resources and equipment are all around you. Help your group tap these resources to Give Water A Hand!

## Why focus on water?\*

Despite over 20 years of the Clean Water Act and great improvements in  water quality, we still face many unsolved problems with our water resources. Runoff from urban and rural lands, and  pollution from both industrial and residential sources threaten water quality. Yet there are many steps we can take to protect our groundwater,  lakes, streams and other aquatic ecosystems, which provide  drinking water, recreational opportunities, and vital  fish and wildlife habitat. Because all life depends on water, we share a responsibility to define and meet these challenges for the sake of individuals, communities, and the organisms that depend on  aquatic habitats. *\*Portions of this section from WQ2000 report.*

# Overview

## What is the Leader Guidebook?

The Give Water A Hand materials consist of a Leader Guidebook, written for you (the youth leader or teacher) and an Action Guide, written for youth. The Leader Guidebook accompanies the Action guide to provide you with:

- The background and research behind the Give Water A Hand project (back cover)
- Background information and goals for each step found in the Action Guide (page 5–21)
- A description of service-learning strategies and useful skills for leaders (pages 22–24)
- A list of project partners, with suggestions on ways they can help your group (pages

## Goals and project benefits of Give Water a Hand

### Goals

- Protect and improve local water quality and quantity
- Involve young people in investigation and action on local water problems
- Support young people in using their existing skills and interests
- Encourage voluntary action
- Focus on watersheds as a unit of study in solving local environmental problems
- Establish and encourage links between youth and community natural resource professionals.

### Project benefits

#### **for young people:**

- learn about family and community water quality and conservation issues
- make a difference to real-world problems
- learn and practice life skills
- gain exposure to natural resource management careers through partners listed on pp 29–33

#### **for organizations:**

- address an issue of concern to youth
- tap the resources of a national network of experienced water professionals
- be recognized for their efforts

#### **for communities and the environment:**

- involve youth in addressing water-related needs through service projects
- gain youth who are active citizens and stewards of the environment

29–33)

- Tips for adapting Give Water A Hand for other audiences (pages 25–27)

## Getting Started

1. Skim the Action Guide to familiarize yourself with the steps and flow
2. Review the project roles for youth, leaders and partners (next page)
3. Develop a timeline for doing a project (see next page)
4. Arrange for your group to work with one or more water experts (partners) (next page)
5. Obtain a topographic map that covers your project area (page 10)

## Project Timeline - Keeping on Track!

This timeline diagram appears throughout the Action Guide to help you keep on track and stick to your schedule and keep on track. In order to complete all the steps in the Action Guide, you'll need a minimum of seven to nine meetings, each an hour or two long:

4 meetings to research and identify a problem, then plan and prepare projects

2 - 3 meetings to carry out your project, depending on what you choose to do.

1 - 2 meetings to wrap up, celebrate success and reflect on the experience.

It may be helpful to think about your last available meeting date, and plan backwards. Always build in a little extra time for unexpected obstacles. Page 16 of the Leader Guidebook has a worksheet with questions that may be useful now in helping you and your group plan your project.

## Project roles

### Role of Youth Participant

A 1993 Louis Harris poll of over 10,000 children in grades 4-12 found that young people prefer after-school activities where they choose what they will do. The survey also found that kids want to work on environmental problems to help improve their communities,

but they want to be in charge of deciding how. Give Water A Hand materials are designed to help young people do this by providing simple steps and basic information about water so they can make their own decisions about how to act and what to act on.

Youth participants in Give Water A Hand will:

- Investigate local water issues
- Talk to experts about issues and possible projects
- Choose a project based on their research that matches their own interests and skills
- Plan how to carry out their project
- Complete the project and celebrate success

### Role of the Leader

The more young people plan and manage their own projects, the more they learn. Your role is not to be an expert on water issues, but to be a coach and mentor of young leaders. Follow your own judgment about when to urge the group on, when to hold them back, and when to comfort them and help pick up the pieces.

In Give Water A Hand, you, as leader, will:

- Link young people to water experts in the community, including project partners
- Manage the project, and keep your group true to its timeline
- Act as a guide who monitors and encourages rather than directs
- Create opportunities that foster an environment for learning
- Empower young people to be active stewards of the environment
- Help participants think through plans, recognize flaws, and make adjustments
- Support young people when they make mistakes
- Applaud young people when they succeed

### Role of Project Partners

Work with a local natural resources expert(s), a "project partner" who can help plan and complete a project. You may already be working with one or more partner organizations. If not, contact one of the organizations listed on

# Leading projects: step by step through the Action Guide

You'll notice that most of the detail and instruction for Give Water A Hand activities are in the Action Guide. We do not repeat that information in this Leader Guidebook. Instead, this guide gives you an overview, with summaries of each step, background information, and instructions that may help in completing some steps, such as reading topographic maps.

The Give Water A Hand Action Guide follows a simple sequence:


- Steps 1 through 4 quickly immerse young people in researching real local needs for specific water management practices
  1. Focus on Water
  2. Research Needs
  3. Map your Watershed
  4. Ask an Expert
- Steps 5 and 6 help them choose and plan a service project for their site in response to an identified need
  5. Choose a Project
  6. Develop a Plan for Action
- Step 7 offers tips to help projects run smoothly and to keep kids going. Some of these tips may be useful right away.
- Step 8 encourages youth to celebrate the success and plan for the future.
- The Skills Bank in the Action Guide (pages 62–64) provides some strategies and skills to help the group with their projects, such as how to conduct interviews, or how to get information over the phone.
- The Get Partner Support section on the back cover is useful early in planning, so you can tap partner resources before starting a project.

Depending on the age and experience of participants — and on the amount of time available — you may adapt, combine, re-order, or eliminate activities as

needed. But be careful — it is natural for a group to get impatient to “just do the project” instead of talking. Stress from the beginning that the group will do a water-related service project, and that research and planning is necessary to make sure that the project meets a real need and is done well.

## Sample activity flow chart

Below is a sample flow chart to help you visualize your time and help you plan your Give Water A Hand project. There are samples for both weekly and monthly group meetings. The weekly schedule assumes 16, each one hour in length. The monthly schedule assumes five meetings, each two or three hours in length. Of course, your actual time may vary depending on the service project chosen by the group.

Step	Activity	Goals	Weekly	Monthly
	<b>Partners</b>	Link up with a natural resources expert for help with project	As needed	As needed
<b>1</b>	<b>Focus on water</b>	Learn about water issues and watersheds; make a commitment to doing a project	Week 1	Month 1
<b>2</b>	<b>Checklist</b>	Make a site map and complete checklist to research needs	Weeks 2–3	Month 1
<b>3</b>	<b>Map your watershed</b>	Map your watershed; understand your project in the context of your own watershed	Weeks 4–5	Month 2
<b>4</b>	<b>Ask an expert</b>	Get input and help from natural resource experts (project partners)	Week 6+	Months 3–5
<b>5</b>	<b>Choose a project</b>	Choose a manageable project that matches interests and skills of group members	Week 7	Month 3
<b>6</b>	<b>Plan your project</b>	Set goals, plan strategies and divide tasks	Week 8	Months 3–5
<b>7</b>	<b>Keep on track</b>	Begin the project, adjust plans, complete the project and collect evidence of success	Week 9+	Months 3–5
<b>8</b>	<b>Celebrate success</b>	Celebrate, reflect on how the project went, and begin planning for the next one	Week 14	Month 5



## Preparation and time

### Preparation

Have an Action Guide for each participant or enough to share comfortably.

You'll need topographic map of the area for Activity 3. Order one using the instructions on page 10.

If group members don't know each other, use the team-building games on page 23.

### Time

45 minutes (90 minutes if you do both team building games)

## Goals

- Group members get to know each other, if necessary.
- Youth gain or reinforce a basic understanding of why water is important
- Youth are introduced to some potential water concerns
- Youth understand the watershed approach and visualize their watershed
- The group commits to doing a project

## Key Points

- All life depends on water.
- Only 1% of water on Earth is liquid fresh water available for human consumption.
- It is important to use water wisely.
- Our personal actions affect water quality and conservation.
- To solve water problems, we need to consider all the uses and impacts on water within our local watershed.
- You can make a difference in water quality today and for the future
- Through research and planning — and with the help of partners — our group can

complete a water-related service project.

## Background\*

### Why Water?

Why focus on water? It's simple: Because water makes all life possible. It connects all living things today and through time. In a never-ending cycle, water is used and reused by animals, plants and people. The water in our environment today is the same water that was available to the dinosaurs millions of years ago.

All living things depend on water — plants need it for photosynthesis; animals need it to drink and to provide for their food. Water is used by animals for habitat, to provide food, shelter, and nesting or breeding sites. Wetlands function as sponges to moderate changes in water level, preventing floods. People use waterways for recreation, transportation and industry. Water in all its forms transports living and non-living ecosystem components over the Earth's surface, in the ground, and as vapor and precipitation. Human bodies are made up of two-thirds water. And water provides us with a place to have fun!

Only a small percentage of the Earth's water is available for human use in agriculture, industry, recreation, and at home. If all of the water used in our country each day were divided by our population, each person would "use" 2,000 gallons each day. It takes 25 gallons of water to grow an ear of corn, and over 100,000 gallons to make a car. If drinking water that comes from a convenient, inexpensive source (such as a well or river) is used up, communities must pipe water in from farther away, increasing costs and creating potential environmental problems (such as changing animal habitat in a river from where water is drawn).

The amount of water available for human use depends not just on quantity, but also on its condition, or quality. With a growing population, whose complex needs often put water

*\*Portions of this section adapted from "Be WaterWise," Virginia Water Resources Research Center, 1983, and Dyckman, 1981.*

quality at risk, maintaining or improving water quality is a challenge. Water pollution can occur from point sources or non-point sources (see the article on water pollution).

We have a responsibility, individually and as a society, to protect water resources for the health of the ecosystem and for ourselves. We may act as individuals by not putting hazardous materials down the drain at home, or we may adopt creative technologies as a society to take care of our natural resources (see the article on Biosolids).

## A Focus on Watersheds

A watershed is the area of land where all water drains, or “sheds,” to the same river, lake, reservoir or other body of water. Larger watersheds — the Mississippi River watershed, for example — encompass many smaller watersheds, such as the Wisconsin River watershed and the Missouri River watershed.

People understand that it's best to manage environmental issues in a coordinated fashion. Since most natural events and human activities affect the quality of water resources within a local watershed's boundaries, watersheds now seem to be the most sensible unit in which to restore and protect water quality. Focusing on watersheds is particularly appropriate in community service-learning projects. Water ties people and the environment together. Human impact on the landscape in one

watershed might well affect aquatic life in a stream, which could change the chemical composition in a lake ecosystem downstream in a second watershed, which might in turn affect the second watershed's local community. Addressing environmental problems using a watershed approach helps young people understand these interconnections between people, communities, and the environment.

The most obvious human interactions with water take place on the surface, yet much of what happens in the watershed is out of sight, in the groundwater. To understand a watershed better, you should know something about the soils, geology and aquifers. See the article on Groundwater. This is especially important when your project deals with wells or groundwater contamination. Give Water A Hand part-

## What are biosolids?

Most communities have a wastewater treatment plant that produces biosolids — nutrient-rich organic material that can be used beneficially as compost or fertilizer in gardens or on farms to produce greater crop yields. It's even used to fertilize the White House lawn. Using biosolids helps conserve water and decrease runoff or soil erosion by adding organic matter to soil, which captures water. Some communities package their biosolids in a compost mixture and sell it in local garden stores.

## Water pollution

We usually speak of two sources of water pollution, “point source” and “nonpoint source.” Point source pollution comes from a specific source, like a discharge pipe at a factory. Because these sources are relatively easy to locate and citizen concern has helped reduce these sources, problems caused by point source pollution have decreased in recent years.

Nonpoint source pollution is associated with sources that aren't so easy to pinpoint — surface water runoff from streets or fields and other sources following rain storms or snow melt. Contaminants that are carried to nearby waterways may include soil sediments, animal wastes, or pesticides. Groundwater may also be affected by nonpoint sources like farms, private sewage systems, improperly capped well pipes and leaky fuel storage tanks. Pollution from nonpoint sources is not only harder to pinpoint, but is more difficult to regulate. One way to reduce this type of pollution is to educate people about when and how to apply fertilizers or pesticides, how to reduce runoff from construction sites, or how to create and protect vegetation buffers along streams.

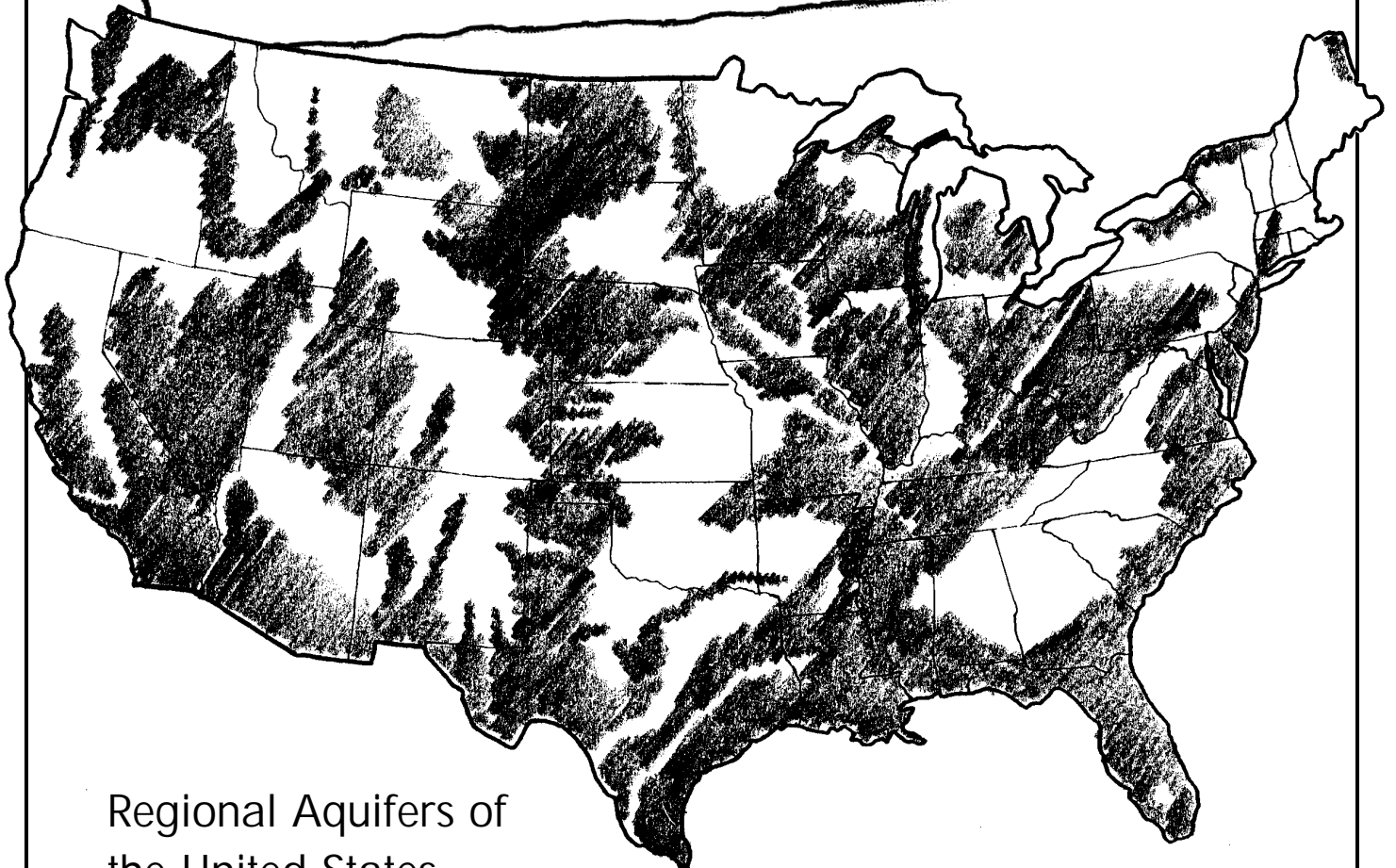
# Groundwater

Does your water come from the surface or groundwater? People in Chicago get their drinking water from Lake Michigan. Bridgeport, Connecticut relies on surface reservoirs for its water supplies. Nearly half the U.S. population, however, including most rural residents, rely on groundwater for their water.

Many people think of groundwater as underground rivers. In fact, groundwater flows very differently from surface water. Groundwater fills the spaces between particles of sand and gravel, or inside the cracks of rocks. Collectively, these spaces make up zones called aquifers, which act like giant sponges that hold large amounts of water.

Groundwater presents special challenges for detecting and eliminating pollution. Because groundwater is out of sight, it's harder to detect contamination. And eliminating groundwater pollution is costly and difficult. When detected, contaminants are impossible to remove completely. And use of groundwater means that recharge of groundwater supplies must take place — a very slow process.

That's why it's so important that we take steps to protect our valuable water sources. Preventing pollution above ground is the first step to clean, safe water underground.



Regional Aquifers of  
the United States

## Preparation and time

### Preparation

Discuss the “Checklist” with the group. Explain how it is used by students to investigate potential water concerns.

With the group, choose a site to focus on (home, school, community or farm). See “Site Focus” below in the Background information.

Read over the questions carefully to be sure you can explain how to answer each question.

The group may need permission from a parent, teacher, farmer or other authority to do the Checklist. Be sure the group understands why it may be important to have permission. In some cases, the group may be visiting private property. Some questions on the checklist need to be answered by the person in charge, such as the maintenance person, head cook, landlord, etc.

Make enough copies of the Checklist for each individual or research team.

### Time

Two hours or more. Some questions require tests or information that take time to gather. You may start the checklist at one meeting and complete it at the beginning of the next.

## Goals

- Youth understand how water management practices result in water conservation and better water quality.
- Youth identify needs for effective practices.
- Youth learn to decide which needs are most important.

## Key Points

- Research can help identify real needs.
- Service-projects selected from research should meet a real, local need.
- Documentation (taking notes) is an important step in research.

## Background

The Checklist is used by youth to investigate potential water concerns at their chosen site. The questions are written so that young people learn while identifying the concerns themselves, with help from the leader, experts and people in charge when needed.

### Site Focus

There are four Checklists included in the Action Guide, each with questions focusing on a different site: Farm/Ranch, School, Community, and Home.

Before you begin, your group will need to decide which site will be the focus of your efforts and use the appropriate checklist. If you are a class with limited ability to leave the school yard, you’ll probably choose a school site. Or your group may have an interest in working with neighborhood businesses, in which case you’ll use the community site checklist. Kids may want to complete investigations at their homes or farms individually, using the appropriate checklists, and share their results as a group. If you are in a camp setting, using the school site checklist is appropriate (see page 27).

If your group hasn’t decided on a site focus, review all four checklists to get a feel for the types of questions and potential issues at each site. Together, you can choose the site that is most interesting and accessible for them.