

Water Use in New Hampshire:

An Activities Guide for Teachers





Water Use in New Hampshire: An Activities Guide for Teachers

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U.S. Department of the Interior
U.S. Geological Survey

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Water Use in New Hampshire 1995

INTRODUCTION

Water-use data are collected and compiled every 5 years by the U.S. Geological Survey (USGS) in cooperation with the State of New Hampshire Department of Environmental Services. This activities guide was created to bring this information to educators of upper elementary and middle school students throughout the State. The activities in this guide book encourage the development of skills that are recommended by the New Hampshire Department of Education curriculum frameworks.

How to Use this Guidebook

The following pages and the accompanying map poster were developed to teach students in New Hampshire about the watershed they live in, how watershed boundaries are determined, and how water is used in the 12 largest watersheds in the state. The watershed map on the poster shows topographic relief and major rivers and lakes. Watersheds are named for the major river draining each watershed. The town map included on the poster shows town boundaries, watershed boundaries, and major rivers and lakes. Using both maps, tables 1 and 2, and activities 1-4, students will learn about water use in their town and State. *Helpful Hints for Educators* on pages 9 and 10 contain answers and suggestions for each activity.

Several of the activities included in this booklet are designed to be used in a classroom setting where more time can be spent on water-use questions and discussions. Activities are suggested as general guidelines to provide the flexibility often needed in classrooms. These activities can be used to supplement an existing water resources curriculum and are not meant to be inclusive on the topic of water use. The data in tables 1 and 2 are from USGS Water-Resources Investigations Report 97-4179, titled "Estimated Water Withdrawals and Use in New Hampshire, 1995.

As a supplement to this booklet, the USGS poster titled "*Water: The Resource that gets Used and Used for Everything*" would be useful in illustrating the various water uses. The colorful poster is drawn with cartoon-like

characters and can be used with the graphics in Activity 2 to illustrate the six water-use categories. Ordering instructions for the poster can be found in the section *U.S. Geological Survey Educational Resources*.

Skills Used by Students

The topics of watershed and water use coincide with the N.H. curriculum framework for 7th and 8th grade in geology/earth science and 6th grade content standards. Skills students will use include

Reading	Problem Solving
Map reading	Independent project
Table reading	Data Collection
Group Discussions	Graphing/models
Use of technology	

Mission of the U.S. Geological Survey

As the Nation's largest water, earth, and biological science, and civilian mapping agency, the U.S. Geological Survey works in cooperation with more than 2,000 organizations across the country to provide reliable, impartial, scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, contribute to the sound conservation, economic, and physical development of the nation's natural resources, and enhance the quality of life by monitoring water, biological, energy, and mineral resources.

Acknowledgments

The authors greatly appreciate the technical and educational reviews of this book and map by Marilee Horn, Water-Use Specialist, USGS; Tim Sullivan, Teacher, Kimball Elementary School, Concord, N.H.; Laura Barone, Middle School Science Teacher, Portsmouth Jr. High School, Portsmouth, N.H., John Girard, Science Teacher, Marion Cross School, Norwich, Vt. and Hervey Scudder, Northeast Center for Social Issue Studies in Vermont. The authors thank Ann Marie Squilacci, Craig Johnston, and Anita Cotton, USGS, for graphics assistance.

WATER USE

About 70 percent of the Earth's surface is covered by water. Water also exists in the air as water vapor and in the ground as soil moisture. Thanks to the water cycle, our planet's water supply is constantly moving from one place to another and from one form to another. Surface water is water naturally open to the atmosphere. Ground water is fresh water found beneath the Earth's surface, usually in aquifers. Water flows from the aquifers to the surface through wells and springs. In 1995, the Nation used about 321 billion gallons per day of surface water and about 77 billion gallons per day of ground water.

In New Hampshire, water is supplied to users in two ways—by public water suppliers or it is self supplied. Public water suppliers provide water to users by withdrawing water from one of several reservoirs, lakes, streams, or wells and delivering it through a network of pipes. The source of water for most large public water suppliers is surface water, such as Lake Winnepesaukee. Water users who do not receive water from a public water supplier are said to be self supplied. Most places that are self supplied withdraw ground water from wells.

The USGS divides water users into six major categories for consistent data analysis--**domestic, commercial, industrial, thermoelectric power, mining, and agriculture**. Hydroelectric power and other instream uses, such as recreation and transportation, are considered a different kind of water use because the water remains in the stream as it is used and, therefore, is not discussed in this guide. Activities 1-4 relate only to users who withdraw water from surface and ground-water sources. Class discussions and further research on other uses could easily be added to the discussion on water use.

Water-use data were collected for each of the 6 categories for 12 large watersheds in New Hampshire. Many of these watersheds extend into the surrounding states of Vermont, Maine, or Massachusetts, although the segments in these other states are not shown on the map found at the end of this guidebook. The water-

use data provided in table 2 only apply to the parts of the watersheds that are in New Hampshire.

In 1995, New Hampshire's total water use was **450 million gallons per day**. Water users from the categories **thermoelectric power, domestic, industrial, and commercial** used the most water. The watershed with the most water use is the *Merrimack River Basin* because of the coal/oil burning power facility in Bow, N.H. that generates electricity. The watershed with the second most water use is the *Upper Androscoggin River Basin* where industries such as paper, electrical equipment, chemical, and machinery in Coos County are located. The watershed with the most domestic use is the *Merrimack River Basin* where the most people live. Refer to table 1 for the State population in 1995 for each watershed. To determine the amount of water use accounted for by category in each watershed, use table 2. Note the correlation between population (table 1) and domestic use (table 2).

PURPOSE OF WATER-USE DATA

Reliable data on water use provide an important tool for town and state managers and water suppliers to help maintain water supplies that meet the needs of all water users. Water resource managers use past and present data on climate, streamflow, ground-water levels, and population to estimate future water needs. The USGS has published a national summary on water use by state every 5 years since 1950. For copies of these summaries contact the USGS by calling **1-888-ASK-USGS**.

WATER-USE DEFINITIONS

Ground Water: fresh water found beneath the Earth's surface, usually in aquifers. Water flows from the aquifers to the surface through wells and springs

Hydroelectric power: electricity produced by turbine generators driven by falling water, usually over dams.

Million gallons per day (Mgal/d): rate at which a volume of water is used. One Mgal/d is equal to a flow of 1.55 cubic feet per second.

Public supply: water withdrawn by public and private suppliers of water that is delivered to domestic, commercial, industrial, and other users through a network of pipes.

Runoff: precipitation that runs off the land into streams, ponds, lakes and reservoirs. Run-off can carry pollutants from air and land into these receiving waters.

Self supply: water withdrawn from wells, rivers, or lakes by households and other users.

Surface water: water naturally open to the atmosphere; includes rivers, lakes, reservoirs, ponds, and streams.

Water cycle: The constant circulation of water from sea to the atmosphere by evaporation, to land as precipitation, and back to the sea.

Watershed: an area of land from which all rainfall and (or) snow melt flows downhill from high elevations to low elevations into a common body of water such as a stream, lake, wetland, estuary, or ocean. Ridges of high ground generally form the boundaries between watersheds. At these boundaries or **watershed divides**, rain falling on one side flows into one watershed, while rain falling on the other side of the boundary flows into the adjacent watershed. In this booklet, **drainage basin** and **basin** are both synonymous with watershed.

WATER-USE CATEGORIES:

Agriculture - water used for irrigation to grow crops and for watering of livestock, such as cows, pigs, sheep, poultry, and horses.

Domestic - water used for household purposes, including water used indoors for drinking, preparing food, flushing toilets, washing clothes, and bathing, and outdoors for watering lawns and washing cars.

Commercial - water used by hotels, restaurants, office buildings, hospitals, schools, and similar facilities and for snow making at ski areas.

Industrial - water used in fabricating, processing, washing, and cooling industrial materials. Examples of industries are food, steel, chemical, paper, and petroleum refining.

Mining - water used in removing, sorting, and washing material from the earth, such as marble, granite, and sand and gravel.

Other - Part of public supplied water that is not measured, including meter errors, leaks, and water used for fire fighting and town parks or swimming pools.

Thermoelectric power - water used in the process of generating electricity from fossil or nuclear fuel. Thermoelectric power plants use uranium or burn coal and oil to produce steam to power turbines that produce electricity.

SELECTED WATER-RESOURCES REFERENCES

Durney, Mike, ed., 1996, Project WET Curriculum and Activity Guide: Bozeman, Mont. and Houston, Tex., The Water-course and Council for Environmental Education, 516 p.

Koffman, S.C., 1994, Water matters, water resources teacher's guide: National Science Teachers Association, v. 1, 31 p., three educational posters and reference list.

Medalie, Laura, 1997, Estimated water withdrawals and use in New Hampshire, 1995: U.S. Geological Survey Water-Resources Investigations Report 97-4177, 18 p.

_____ 1997, Estimated water withdrawals and use in Vermont, 1995: U.S. Geological Survey Water-Resources Investigations Report 97-4178, 18 p.

New England Interstate Water Pollution Control Commission, 1998, That Magnificent Ground Water Connection: A resource book for Grades K-6, 7-12: U.S. Environmental Protection Agency, May.

Solley, W.B., Pierce, R.R., and Perlman, H.A., 1998, Estimated use of water in the United States in 1995: U.S. Geological Survey Circular 1200, 71 p.

U.S. Environmental Protection Agency, 1997, Water on tap, A consumer's guide to the Nation's drinking water: EPA 815-K-97-002, 22 p.

U.S. GEOLOGICAL SURVEY EDUCATIONAL RESOURCES:

GEO CENTER

The **GEO CENTER** (Geoscience Education Outreach Center) was established in 1991 with Educational Initiative Funding from the U.S. Department of the Interior and is a part of the U.S. Geological Survey Library. **GEO CENTER** serves as a special resource area for USGS personnel and teachers involved in earth science instruction for grades K-12.

The **CENTER's** collection contains more than a thousand earth science books, videos, software programs, lesson plans, science fair suggestions, hands-on materials and activity kits. In addition, users have access to the wide range of research material available through the Library and Cartographic Information Center. This would include more advanced educational materials, maps, and the use of other related databases.

GEO CENTER materials may be borrowed directly by schools. Others may borrow items through their school or public libraries using the Interlibrary Loan System. For further information contact the **Library's Reference Desk (703) 648-4302**.

U.S. Geological Survey Library
National Center, MS 950
Reston, VA 20192

POSTERS

Stratified-Drift Aquifers in New Hampshire:

This poster is a 1:250,000-scale relief map showing the location of major sand and gravel aquifers throughout New Hampshire. This sand and gravel aquifer poster summarizes the result of a 10-year study by the USGS, in cooperation with the New Hampshire Department of Environmental Services, to map the location of major sand and gravel aquifers throughout the State. These maps will give N.H. town and state water-resource planners and officials a tool to help in the use and protection of ground-water resources. This poster is a compilation of all those aquifer maps. To order a copy, refer to ordering instructions for this guidebook found on the inside of the front cover.

Water Posters:

The front side of each of the following posters has a colorful cartoon graphic depicting the topic of the poster. The back sides of the posters contain educational activities, definitions, and interpretive questions concerning the poster topic. The educational materials on the back of the poster determine the appropriate grade level and the posters can be joined to create a wall mural. Black-and-white posters are available but do not have activities printed on the back side and can be used as coloring exercises for children in grades K-5. These posters are available from the USGS by calling **1-888-ASK-USGS** or by writing to

USGS Information Services
Box 25286
Denver, CO 80225
Fax: 303-202-4693

- *Water: The Resource that gets used and used and used for everything!*: U.S. Geological Survey, 96-0461 (grade school), 96-0462 (middle school), 96-0460 (black and white version)
- *Watersheds: Where we live*: U.S. Geological Survey, 96-0479 (grade school), 96-0480 (middle school), 96-0478 (black and white version)
- *Water Quality: Potential sources of pollution*: U.S. Geological Survey, 96-0469 (grade school), 96-0470 (middle school)

Water Jeopardy Game

To order a copy of the game (while supplies last), contact the USGS office in Nebraska:

Kathy Wilson
U.S. Geological Survey
Room 406 Federal Building
100 Centennial Mall North
Lincoln, NE 68508

Phone: (402) 437-5663
<http://www-ne.cr.usgs.gov/jeopardy/intro.html> (to view the game)

or

The Groundwater Foundation
P.O. Box 22558
Lincoln, Nebraska 68542-2558

Toll-free Phone: **1-800-858-4844**
Telephone: (402) 434-2740
Fax: (402) 434-2742
E-mail: info@groundwater.org

OTHER WATER-RESOURCES EDUCATIONAL MATERIAL

☛ **National Science Teachers Association**--The following water-resource educational material is available at cost by contacting:

NSTA Publications and Sales
1840 Wilson Boulevard
Arlington, VA 22201-3000
(800) 722-NSTA

web site: <http://www.nsta.org>

Water Matters: Water Resources Teachers Guide, volumes 1, 2, and 3, National Science Teachers Association. Includes booklets and all nine of the USGS water series posters. These volumes can be ordered separately or as a set.

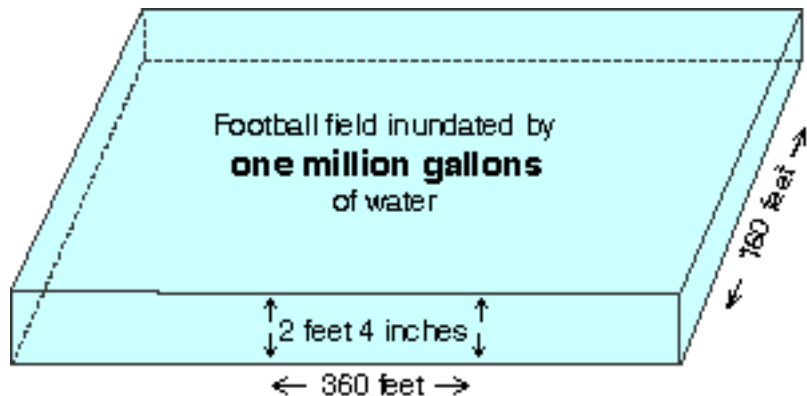
☛ NH Project WET (Water Education for Teachers)

Project WET is an interdisciplinary water education program for kindergarten through 12th grade students designed to facilitate and promote awareness, appreciation, knowledge, and stewardship of New Hampshire's water resources. NH Project WET is available to formal and non formal educators only through workshops conducted by the WET Coordinator and trained facilitators.

web site: <http://www.des.state.nh.us/wet/>

HOW MUCH WATER IS A MILLION GALLONS?

A football field is 360 feet long and 160 feet wide. If it was filled with **1 million gallons** of water (or any liquid, for that matter), the field would be covered with water about 2 feet 4 inches deep. For another example of how much volume is taken up by a million gallons, look at Lake Winnepesaukee, New Hampshire's largest lake. Lake Winnepesaukee contains about **123,000 million gallons** (or 123,000,000,000 gallons) of water.



This means that it would take about **100,000** (one-hundred thousand) football-field blocks shown above to fill the lake with water. That amount of water would cover the entire state of New Hampshire with less than 1 inch of water.

Table 1. Population by Watersheds in New Hampshire, 1995

Watershed	Number of People
Upper Androscoggin River	13,100
Lower Androscoggin River	400
Saco River	24,200
Piscataqua-Salmon Falls River	239,700
Pemigewasset River	34,400
Merrimack River	548,000
Contoocook River	55,300
Nashua River	58,200
Miller River	5,900
Upper Connecticut River	34,500
Upper Connecticut- Mascoma River	88,200
Middle Connecticut River	46,400
Total Population	1,148,300

Table 2. Water Use by Category in Major Watersheds in New Hampshire in 1995

[The “other” column represents the difference between public supply withdrawals and deliveries to domestic, commercial, and industrial users. Negative numbers represent leaks or losses of water]

Watershed Name	Water-Use Category, In Million Gallons per Day								Total water use in watershed, in million gallons per day ¹
	Domestic	Commercial	Industrial	Thermo-electric Power	Mining	Agriculture	Other		
Upper Androscoggin River	1.0	4.7	30	0	0.1	0	0.8		37
Lower Androscoggin River	0	0	0	0	0	0	0		0
Saco River	1.9	2.4	0.1	0.3	0.6	0.3	1.2		6.8
Piscataqua-Salmon Falls River	18	6.4	3.4	0	1.2	1.1	-1.0		29
Pemigewasset River	2.6	4.9	0.5	0.2	0.1	0.3	0.4		9.0
Merrimack River	43	25	11	230	3.3	3.1	6.8		320
Contoocook River	4.1	1.2	1.3	0.5	0.2	0.8	1.2		9.3
Nashua River	4.6	0.1	0.1	0	0.1	0	-3.7		1.2
Miller River	0.5	0.1	0.0	0	0	0	0		0.6
Upper Connecticut River	2.6	1.4	5.7	0.4	0.2	0.6	1.8		13
Upper Connecticut-Mascoma River	6.8	2.9	2.8	0.3	0.9	0.5	0.8		15
Middle Connecticut River	3.6	1.2	0.5	0	0.3	0.3	-0.4		5.5
Total water use in New Hampshire (in million gallons per day)	89	51	56	230	7	7	8		450

¹The total values in this column have been rounded off due to uncertainties with reporting large numbers and, therefore, may differ slightly from the sum of each row.

Helpful Hints for Educators

The following suggestions and answers will be useful for Activities 1-4.

Activity 1. “*Identify your Watershed*” Laminate the surface of the map poster so that students can draw arrows to show paths of runoff and drainage patterns in their watershed. Be sure to use washable markers. The students also could use pre-cut arrows that are attached by double-sided tape to show pathways on the map.

Activity 1 can be used with a three-dimensional watershed model that students or educators build from rocks and paper-mâché (M. Durney, 1996). Waterproof the surface by painting it with latex paint. Rain can be simulated by spraying blue water over the surface. The model shows how rain runs off the land surface from high to low elevations on different sides of a ridge. Students can then locate a watershed boundary along a ridge. The watershed model should be made with mountains and valleys to best illustrate drainage patterns. USGS poster “Watersheds-Where We Live” also would be a useful resource to accompany this activity. *Challenge questions-Pathways in your watershed.* **Answer to no. 11.** - Erosion of land surface forms valleys and ridges and water flows downhill along paths of least resistance. **Answer to the “Extra Project”** question on page 12 can be found on the USGS web page:

[http://nh.water.usgs.gov/current/projects/Dye tracer study of New Hampshire Rivers.](http://nh.water.usgs.gov/current/projects/Dye%20tracer%20study%20of%20New%20Hampshire%20Rivers)

Activity 2. “*Water-Use Categories Word Match*” Water-use category definitions are included in the first part of this guide book.

Answers: Commercial-E; Domestic-F; Industrial-B; Agriculture-C; Mining-A; Thermoelectric Power-D

Activity 3. “*Water use in New Hampshire in 1995*”

- Copy water-use category symbols from Activity 2, cut out, and paste onto oak tag for use in Activity 3. For question 6, students can place within the boundaries of the appropriate watershed the picture of the water-use categories that account for the most water used in that watershed and (or) they can place all the water-use category symbols in each watershed. Use table 2 to determine amounts of water use in a watershed.

- Discuss ways students can reduce the amount of water their family uses every day. The USGS poster “*Water: The Resource That gets Used and Used and Used*” (grade school level) includes a fun activity for estimating

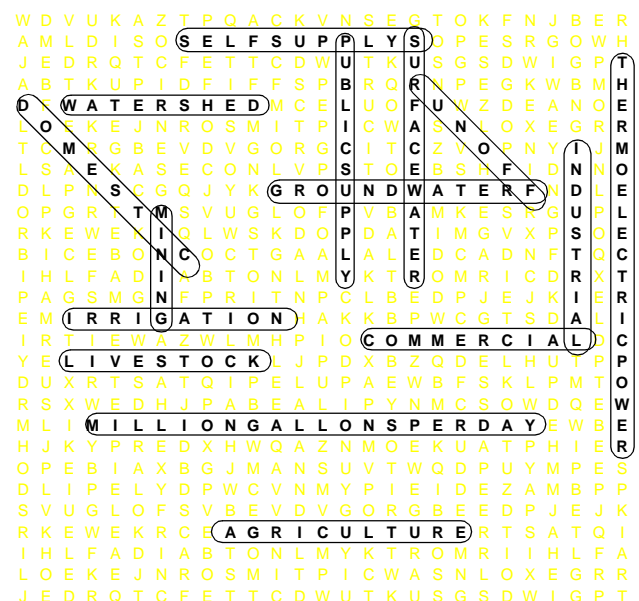
the amount of water used for daily activities. The chart included in the activity is from that poster. Answers will vary with each student.

• **Activity 3 answers:** 1. 450 Mgal/d; 4. Merrimack River; 5. thermoelectric power, 230 Mgal/d; 6a. Merrimack, 3.1 Mgal/d; b. Merrimack, 230 Mgal/d; c. Merrimack, 43 Mgal/d; d. Merrimack, 25 Mgal/d; e. Upper Androscoggin, 30 Mgal/d; f. Merrimack, 3.3 Mgal/d.

- Visit the USGS Water Science for Schools web site for interactive exercises on water use: <http://water.usgs.gov/droplet>

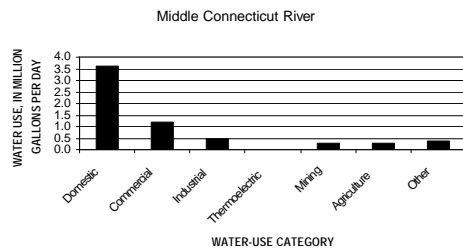
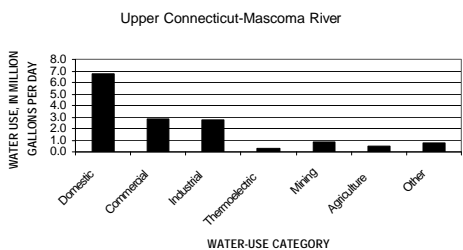
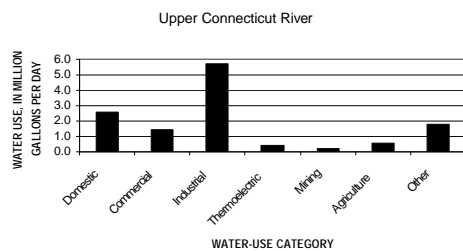
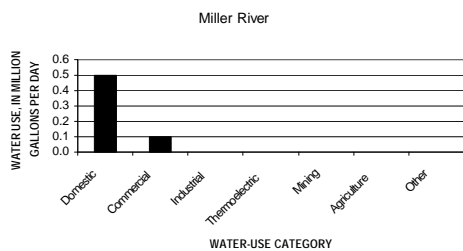
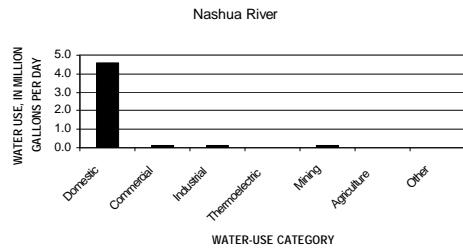
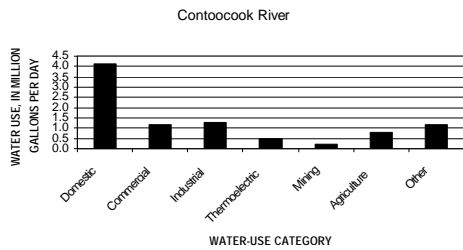
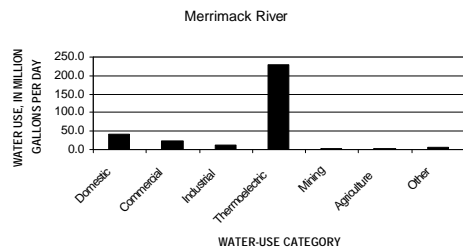
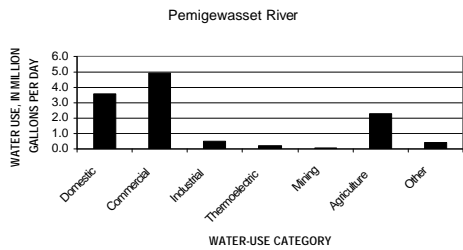
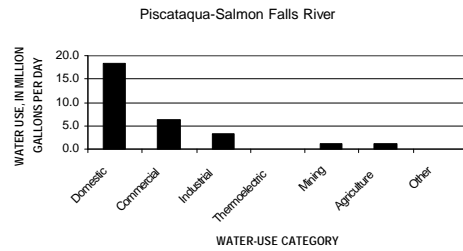
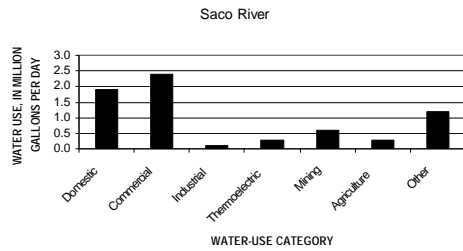
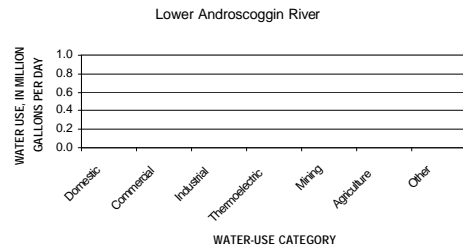
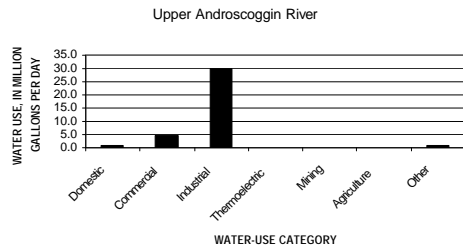
- To practice graphing skills, students can plot water-use values for each watershed as graphs called **histograms**. Values are taken from Table 2. A key showing how the histograms should be drawn is provided on page 10. The graphs give a picture of water use for each watershed and could be used for discussion and placed next to the appropriate watershed on the map poster. These graphs can be produced using a spreadsheet computer software that generates graphs or they can be drawn by hand on graph paper. Notice that the scale for amount of water used will vary from watershed to watershed because of the large volume of water used by some categories but not others. Graphs can all remain about the same size by using different scales for the left axis of the graph as shown in the histograms.

Activity 4. “*Water-Use Word Search*” answers.



Helpful Hints for Educators

Activity 3-Bar graphs or **histograms** showing water use by category in each of the watersheds in New Hampshire. Refer to table 2 for water use data used to create these graphs. Negative numbers are not included in the graphs.



Name:

Activity 1. Identify Your Watershed

Goal of Activity: To identify the (1) watershed you live in, (2) source of water used at home, and (3) pathway of surface runoff in your watershed. Look at the watershed maps of your state to answer the following questions.

1. In what town do you reside?
2. Locate your town on the town map.
3. Locate your watershed on the town map. With your finger, trace the watershed boundaries.
4. What is the name of the watershed in which you live? (Look at the watershed map.)
5. What is a watershed?

6. Is your town contained entirely within one watershed? If no, what is the name of the other watershed in your town?
7. Is there a town near yours that is in more than one watershed? Identify this town on the map and write the town name here.
8. Do watershed boundaries follow political boundaries such as town lines? Why or why not?

9. What is the source of your drinking water at home? (Circle the source)
Private Well River Spring Public water supplier
(reservoir, town well)

Name:

Activity 1. Identify Your Watershed

Challenge Questions: Pathway of Water in Your Watershed: Water flows from high elevations to low elevations. In a stream or river, water flows from upstream to downstream.

10. What path do you think water follows in your watershed? With your finger, trace the pathway of water draining from the high elevations in your watershed. (Use the large map on the poster and place an arrow on the map to show the direction water flows.)

11. What patterns do the rivers and streams create in your watershed? Sketch the pattern of drainage. Explain what causes these patterns?

12. If gasoline spilled into the river upstream from your town, what path do you think the gasoline would take based on your knowledge of river pathways in your watershed? Refer to the watershed map before writing your explanation here.

Extra Project:

Investigate methods used to identify, track, and monitor river pollution and describe a method that scientists would use to determine how long it would take a pollutant in a river to travel downstream to the next town.

Name: _____

Activity 2. Water-Use Categories Word Match

Directions: Match the definitions in the right column with the water-use categories in the left column. Place the corresponding letter of the water-use category definition on the line to the left of the category.

Definitions

____ **Commercial**

____ **Domestic**

____ **Industrial**

____ **Agriculture**

____ **Mining**

____ **Thermoelectric Power**

- A. water used in removing, washing, and sorting earth materials such as marble, granite, and sand and gravel
- B. water used in fabricating, processing, washing, and cooling industrial materials
- C. water provided to cows, pigs, sheep, poultry, and horses and to grow crops
- D. water used in the process of generating power from fossil fuel or nuclear sources
- E. water used by hotels, restaurants, office buildings, hospitals, and schools
- F. water used for bathing, cooking, drinking, and other household purposes



Name: _____

Activity 3. Water Use in New Hampshire in 1995

Goal of the activity: To identify how water is used in major watersheds of New Hampshire.
Directions: Use the watershed map of your state and Table 2 to answer the following questions:

1. What was the **total amount of water used** in New Hampshire in 1995? _____
2. In your watershed, what **water-use category** accounts for the largest amount of water? _____
3. In your watershed, how many **millions of gallons per day** are accounted for by this category? _____
4. In which watershed is the largest amount of water used by a water-use category (**Hint:** look in the “**Total Water Use**” column) _____
5. Identify in the next line which **water-use category** it is and the total millions of gallons per day used by this category?
 Water-use Category _____
 Total millions of gallons per day _____
6. For each category, identify the watershed that accounts for the largest amount of water used and write down that amount of water. Follow the example for agriculture
 - a. Agriculture Merrimack River, 3.1 Mgal/d
 - b. Thermoelectric power _____
 - c. Domestic _____
 - d. Commercial _____
 - e. Industry _____
 - f. Mining _____
7. Investigate why the **water-use category** that used the most water per day in your State uses all that water.
8. Using the following chart, estimate how much water you use in your home on a typical day in June.

Estimated amounts of water used for daily living

Daily Activity	Amount of water used	Your total	Daily Activity	Amount of water used	Your total	Weekly Activity	Amount of water used	Your total
Drinking requirement (8 glasses per day)	3/4 gallon (3 liters)		Washing hands (leave water on for 1 minute)	5 gallons (20 liters)		Washing car for 5 minutes	26 gallons (100 liters)	
Flushing toilet (per flush)	5 gallons (20 liters)		Showering (5-minutes)	26 gallons (100 liters)		Watering lawn (1 inch over 108 square feet)	66 gallons (250 liters)	
Brushing teeth (leave water on for 2 minutes)	10.5 gallons (40 liters)		Washing clothes per load	32 gallons (120 liters)				
Washing dishes	26 gallons (100 liters)							

Name: _____

Activity 4. Water-Use Word Search

Directions: Find and circle the 15 hidden words in the letter grid. The words can appear in any direction-horizontally, vertically, and diagonally. Two or more words do not have spaces between them in the puzzle.

AGRICULTURE

COMMERCIAL

DOMESTIC

THERMOELECTRIC POWER

WATERSHED

LIVESTOCK

MILLION GALLONS PER DAY

MINING

GROUND WATER

INDUSTRIAL

SELF SUPPLY

SURFACE WATER

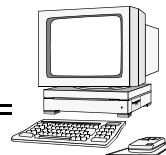
IRRIGATION

PUBLIC SUPPLY

RUNOFF

W D V U K A Z T P Q A C K V N S E G T O K F N J B E R
A M L D I S O S E L F S U P P L Y S O P E S R G O W H
J E D R Q T C F E T T C D W U T K U S G S D W I G P T
A B T K U P I D F I F F S P B R Q R N P E G K W B M H
D F W A T E R S H E D M C E L U O F U W Z D E A N O E
L O E K E J N R O S M I T P I C W A S N L O X E G R R
T C M R G B E V D V G O R G C I T C Z V O P N Y I J M
L S A E K A S E C O N L V P S T O E B S H F I D N N O
D L P N S C G Q J Y K G R O U N D W A T E R F N D L E
O P G R T T M S V U G L O F P V B A M K E S R G U P L
R K E W E K I Q L W S K D O P D A T I M G V X P S O E
B I C E B O N C O C T G A A L A L E D C A D N F T Q C
I H L F A D I A B T O N L M Y K T R O M R I C D R X T
P A G S M G N F P R I T N P C L B E D P J E J K I E R
E M I R R I G A T I O N H A K K B P W C G T S D A L I
I R T I E W A Z W L M H P I O C O M M E R C I A L D C
Y E L I V E S T O C K L J P D X B Z Q D E L H U T P P
D U X R T S A T Q I P E L U P A E W B F S K L P M T O
R S X W E D H J P A B E A L I P Y N M C S O W D Q E W
M L I M I L L I O N G A L L O N S P E R D A Y E W B E
H J K Y P R E D X H W Q A Z N M O E K U A T P H I E R
O P E B I A X B G J M A N S U V T W Q D P U Y M P E S
D L I P E L Y D P W C V N M Y P I E I D E Z A M B P P
S V U G L O F S V B E V D V G O R G B E E D P J E J K
R K E W E K R C E A G R I C U L T U R E R T S A T Q I
I H L F A D I A B T O N L M Y K T R O M R I I H L F A
L O E K E J N R O S M I T P I C W A S N L O X E G R R
J E D R Q T C F E T T C D W U T K U S G S D W I G P T

Useful USGS Web Sites



For information on water, geology, biology, and maps for the Nation and individual states:

<http://www.usgs.gov>

USGS web sites on water resources in New Hampshire and Vermont:

<http://nh.water.usgs.gov>

<http://vt.water.usgs.gov>

Free science lesson plans from the USGS:

<http://www.usgs.gov/education>

For information on many aspects of water, along with water cycle pictures, water data, maps, and an interactive center where you can give opinions and test your water knowledge:

<http://water.usgs.gov/droplet>

This web site also provides a basic description of the Water Cycle. Left click on “**Earth’s Waters**”, then left click on “**The Water Cycle**.” For a copy of the following picture, scroll down to the bottom of the “Water Cycle” page and click on “**View our large graphic showing the water cycle**”

