



**Water
Smart
Connections**

TOPIC:
Water Quality

Southwest Florida
Water Management District



A publication of the
Southwest Florida Water Management District
for grades 4–12



Hello!

In order to become a responsible user of Florida's water resources, it is important to first understand the connections between your actions and the environment around you.

This **Water Smart Connections** booklet will help you discover amazing facts about Florida's water resources and the importance of doing your part to protect water quality.

If you have questions about any of the information in this booklet, please feel free to call us at (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4757. For more information, visit our web site at WaterMatters.org.

Southwest Florida
Water Management District



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Water Smart Connections

TOPIC:
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UNIT 1

Why Is Water So Important?



INTRODUCTION

Just as children grow and change as they get older, a drop of water changes. It can become part of a mighty ocean or a clear, quiet pond. It can be absorbed by soil for plants to use. It can travel through your county's water system and right out the end of your garden hose or kitchen faucet.

But not just any water will keep us alive and healthy. We need clean, fresh water. That's why it's important to use our water carefully and protect it from pollution.

As you go through this booklet, you will learn about the many paths water can take.

You will examine the kinds of water that exist on earth and where to find them, what affects the quality of water, how water gets polluted and what you can do in the struggle for clean water. You will discover the quality of our water today and what private organizations and public agencies, such as the Southwest Florida Water Management District, are doing to protect our resources and restore our water bodies for tomorrow. You will learn what you can do to be "water smart."

WHO NEEDS WATER?

Water is important to all living things. Most people can live only

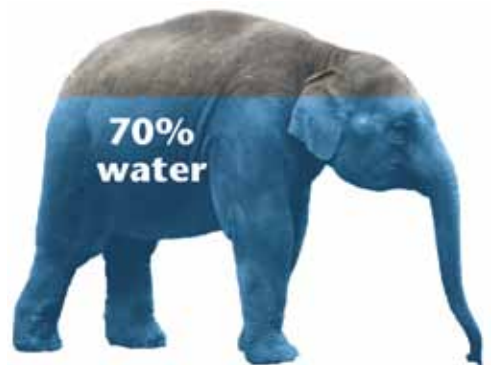
several days without water. Did you know that two-thirds of your body is water? Why do we need so much? Well, water carries oxygen and nutrients through your bloodstream and helps you digest food. The water in your blood also carries chemicals to your brain. These chemicals allow you to think and feel.

And we're not the only ones who need clean water to survive. Plants and animals need it too. Almost every living organism depends on water for more than 50% of its body weight.

For example,

- A living tree is 75% water.
- An elephant is 70% water.
- A tomato is 95% water.
- An ear of corn is 80% water.

In this sense, we are all connected to a similar need for survival: WATER.



WHERE DOES WATER COME FROM?

To protect our water, we must first understand where it comes from. Water travels through the environment in a process known as the **hydrologic cycle**. The cycle begins when the sun's energy warms water bodies on the earth's surface, such as lakes and rivers. This heat leads to water **evaporation**, or change from a liquid to a vapor. The heat of the sun also causes plants to release water vapor in a process called **transpiration**. These vapors then rise into the sky. When enough tiny water drops stick together, they form clouds in a process called **condensation**. The clouds eventually become full of water and release it back to the earth through **precipitation** such as rain, snow, sleet or hail.

After rain falls to the ground, some of it lands in rivers, lakes or other water bodies. Some is absorbed into the ground through **percolation**. Once in the ground, water is used by plants or stored in aquifers. An **aquifer** is a

spongelike underground layer of limestone or rocks that can hold and release water. When we dig wells, we are usually retrieving water from an aquifer.

Water goes around and around, always passing through some stage of the hydrologic cycle. The amount of water on earth today is the same as it was millions of years ago. It simply gets recycled over and over.

TODAY'S WATER

The quality of earth's water is constantly changing. Whatever we do on land may affect the quality of our water. Today there are a number of public and private agencies that work to improve water quality and limit pollution. The Southwest Florida Water Management District is one of the agencies that helps protect the quality of your water. But it takes every one of us to keep our water clean. Let's investigate what causes water pollution and what you can do about it.



1. People are interconnected with other living things and with the water that keeps them alive. Start a water notebook. Search newspapers, magazines and the Internet for water-related articles. Paste the articles in a notebook and decide what impact the water mentioned in the articles would have on people and the environment. How many "connections" can you make?
2. The hydrologic cycle is the movement of water through the environment in a never-ending process, another example of how all of nature is interconnected. Search newspapers, magazines and the Internet for an article that mentions something that happened in a cyclical pattern. Put the article in your notebook and write the events mentioned below the article. How did one event lead to the next?
3. Rainfall is an example of water in liquid form. Search the Internet or look in the newspaper and record the amount of rainfall for the week. Now check other sections. Are there any articles that mention how people and the environment have been affected either by a lot of rainfall or by a lack of it?

UNIT 2

Watersheds & Ecosystems



WATERSHEDS

Everyone lives in a **watershed**, but what is that? A watershed is an area of land that water flows across as it moves toward a common body of water, such as a stream, river, lake or coast. It is important to remember that water always flows downhill. Since watershed boundaries are higher in elevation than surrounding land, rainfall within a watershed drains into a common water body. If you have ever seen a puddle form in your yard after a rainfall, you have seen an example of the way a watershed works. The puddle is a low spot where water has drained from surrounding areas.

In many places, watersheds are altered by people. When large areas are paved over to make room for parking lots, roads and buildings, water cannot soak into the ground as easily and flows quickly off to streams, lakes and rivers. That means all the harmful things on the surface can go directly into our surface waters.

A watershed is an excellent example of how all living things are more connected than we realize. What your friend does in another community can have an impact on your water if you both live in the same watershed. Anything we do on the land within a watershed may have an effect on the water within that watershed. As a result, water management scientists now look at the land and water resources in a watershed as one large unit instead of separate parts.

ECOSYSTEMS

Just as all activities within a watershed affect each other, all activities within an **ecosystem** can affect each other. An ecosystem is the interrelationship between living things and the environment.

You are part of your family, school or neighborhood community. Similarly, ecosystems are communities of plants and animals relating to each other and the environment around them. Other elements like sunlight or air also are part of an ecosystem. In an ecosystem, all the parts must work together to keep it balanced.

Aquatic ecosystems include oceans, gulfs, lakes, rivers, streams, estuaries and wetlands. These systems are very sensitive to changes. Within aquatic ecosystems are fish and plants, as well as microscopic organisms such as bacteria, viruses and protozoans. If the balance of the ecosystem is disturbed by factors such as **contamination**, which involves the introduction of impurities into the system, it may be altered or even destroyed.

Each element within the system directly or indirectly depends on the others for survival. For example, some fish survive by eating organisms in the water. Polluted water may cause many of these organisms to die, leaving some fish without a food source.

SURFACE AND UNDERGROUND WATER CONNECTIONS

Water that flows within a particular watershed will either drain into a surface water body, seep underground or evaporate. **Surface water** is water that can be seen on the earth's surface. Water bodies such as lakes, rivers, streams and wetlands are considered surface water. When rain falls, much of it will drain into one of these water bodies. However, some surface water seeps into the ground to be absorbed by the plants and soil, or it passes through the soil to become part of the underground water system.

Underground water is called **groundwater** and is part of a complex system. Rainwater soaks through the ground by a process called **percolation**. An easy way to understand this concept is to think about what happens when someone brews coffee. The water poured into a coffee filter bubbles down, or percolates, through the coffee grounds and into the bottom of the pot or cup. In nature, rainwater percolates down through the

surface soil and into the aquifer below the ground.

Groundwater sometimes flows into a surface water body. In other words, what enters our groundwater can also get into our surface waters.

For example, a spring is water returning to the surface after being absorbed as groundwater. There are many springs throughout Florida.

Groundwater in our area is held in the Floridan aquifer system, which lies beneath much of Florida's surface. In some areas of Florida, the aquifer is covered by clay, making it difficult for water to seep through. In these places, rainwater will run off more quickly. In other areas of Florida, the aquifer is closer to the surface and is covered with sand, which is more permeable than clay. **Permeability** involves the ability of something to let liquids run through it. Unfortunately, this means pollutants, as well as water, can easily enter the aquifer.

Are you beginning to understand how all of our water is connected in some way? What we do to our water can affect somebody else's water or plant and animal life.



1. A watershed is an area that drains to water bodies, including lakes, rivers, estuaries, wetlands, streams and the surrounding landscape. Look around your schoolyard. Is there an area where water collects? What paths does water take as it flows through the watershed?
2. Water on earth is classified as either surface water or groundwater. Pour a bowl of water on your driveway. What will happen to it? Then pour water on the grass. What happens to that water? Which bowl of water becomes surface water and which becomes groundwater? Search newspapers, magazines and the Internet for articles that mention surface water and groundwater. Include them in your notebook. Do any of these articles mention pollution?
3. There are a lot of things you do that may affect the quality of your water. Search newspapers, magazines and the Internet for articles about activities that may affect your water. Why do you think those activities may harm your water?

UNIT 3

Pollution Sources & Their Effects



POLLUTION SOURCES

If a dab of ink or a speck of dirt is put into a glass of water, the water becomes polluted. Pollution occurs when foreign substances get into soil, water or the atmosphere and contaminate them. Very often these substances are harmful to people and the environment. Therefore, water pollution is any change in water that can hurt the living things that use it.

There are many sources of pollution, but they are divided into two main categories: point and non-point.

Point-source pollution is when a pollutant is discharged at a specific location or, in other words, the source of the pollutant is easy to identify. Examples include polluted water leaving a factory or garbage being dumped into a river. This source of pollution is often easier to prevent because you can see the cause of the pollution and do something about it.

Nonpoint-source pollution is much harder to identify, yet it is also more likely to occur. This source of pollution may come from pesticides, fertilizers or automobile fluids washed off lawns and roadways during a storm. This source of pollution may also come from leaky sewers and septic tanks, sediment from

soil erosion or metals found in some paints.

Even though many pollutants are from natural sources (organics, sediments, bacteria, viruses, etc.), in large quantities they can have a negative effect on the environment or when they get into the water supply.

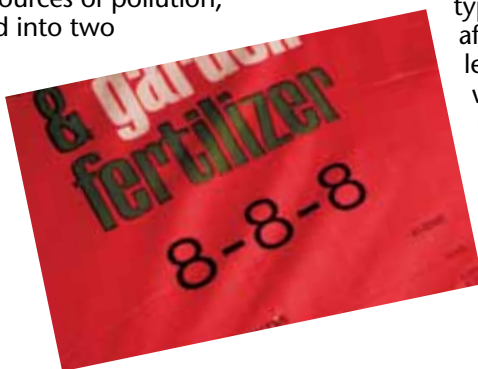
TYPES OF POLLUTION

Many of the following types of pollution affect the oxygen levels in surface waters. Lowered oxygen levels in surface waters affect the life a water body can support. This also makes it harder to clean out impurities from the water.

ORGANIC POLLUTION

Organic pollution comes from the decomposition of living materials and their byproducts. Plant residue, human sewage, animal wastes and food byproducts are examples of this kind of pollution. When dumped in or near water bodies, organics act as nutrients. These nutrients can feed unwanted vegetation, which reduces oxygen in the water.

An example of this type of pollution is red tide. Red tide is a bloom of single-cell marine organisms that kills fish and plant life by consuming



oxygen, often using all available oxygen. It is called red tide because the organisms turn the water a dull, rusty-brown color.

NUTRIENTS

Nutrients are essential to plant development but can be harmful in extreme quantities. A large amount of nutrients are found in lawn fertilizers. **Fertilizers** are natural or synthetic materials that encourage plant growth. The misuse of fertilizers produces similar effects to those of organic pollution. Fertilizers may increase unwanted vegetation, which reduces oxygen in the water and kills fish. Other nutrients include phosphates from laundry detergents.

PESTICIDES AND HERBICIDES

Pesticides and **herbicides** can be found in insect and weed killers. These products kill weeds and insects, but they can also kill plants, birds and fish if not used properly. They also contribute a significant amount of pollution. When more rain falls than the ground can soak up, it runs off into water bodies, carrying pollutants from the land as it travels.

BACTERIA AND VIRUSES

Bacteria and viruses are found in animal and human wastes. They can cause and spread diseases that poison fish and contaminate water.

HEAVY METALS

Heavy metals are found in automobile exhaust, tires, paints and household batteries. Heavy metals are toxic (poisonous) to fish and water supplies.

PETROLEUM PRODUCTS

Petroleum products can cause pollution through automobile leaks and illegal dumping of used oil and gas. Although oil and gas float, the heavy metals contained in them settle to the bottom of water bodies, smothering plants, starving fish and polluting the water.

SEDIMENT

One of the most destructive pollutants is **sediment**, or soil particles. Sediment pollution can be caused by runoff from city streets, parking lots and buildings, construction and agriculture. This loose soil is dangerous because of its ability to carry other

pollutants through runoff. Sediment can clog the gills of fish and decrease the amount of sunlight aquatic plants receive.

SALTWATER INTRUSION

Think about swimming at the beach. When you first get in the water, you accidentally drink a little. It doesn't taste too good, does it? None of us really like to drink salt water.

Salt water can get into our freshwater supply, making it more expensive to clean. Salt water can work its way into our freshwater sources when too much fresh water is taken from the aquifer. This is called **saltwater intrusion**.

How does the salt water get there? Above and below the Floridan aquifer system are layers that may contain fresh or salt water. Fresh water "floats" on top of denser, or thicker, salt water. When too much of the fresh water is taken out, the salt water moves up because it doesn't have as much pressure on it.

Once it moves into the freshwater zone of an aquifer, the damage may be permanent.

EFFECTS OF POLLUTION

We have looked at the different types of pollution and what kinds of problems they can cause. The main problem with water pollution is that it damages the one thing essential to all life — water! Whether the pollution is directly killing fish and plant life or causing health problems to humans, it can be dangerous.

As discussed, nonpoint-source pollution is very significant and can be caused by many of the day-to-day things you or your family do. Using household cleaners, washing your clothes and putting fertilizer on the lawn can all create pollution. A significant type of nonpoint-source pollution is stormwater runoff, which is the topic of the next unit.



1. There are two main categories of pollution sources: point and nonpoint. Point-source pollution is easy to recognize. It comes from some specific place, such as waste dumped into a river. Nonpoint-source pollution is harder to recognize. It could be stormwater carrying a variety of pollutants. Search newspapers, magazines and the Internet for photographs that depict either pollution sources or potential pollution problems. Place them in your notebook. Identify each photograph as being a point or nonpoint source.
2. Can you describe the different types of pollution and give examples of each type? Check newspapers, magazines and the Internet for articles that give examples. How many can you find?
3. Find an article in the newspaper, a magazine or on the Internet that identifies a specific pollution problem. Place the article in your notebook. Underline the word that reveals what the causes of the pollution problem may be. Then write an editorial or a letter to the editor of a newspaper taking a position on the problem and make suggestions as to how to solve it. Share your editorial with the class.

UNIT 4

Stormwater Runoff



In Florida, one of the biggest sources of water pollution is **stormwater runoff**. The next time it rains, think about all the paths a water drop might take. It might be absorbed into the soil or roll off your roof, onto your driveway and down the street. Rainwater that runs off a paved surface and does not soak into the ground is called stormwater runoff. Water drains from lawns, streets, highways, parking lots and other “hardened” surfaces, usually flowing into the nearest body of water.

If this is the case, what do you think happens when you put things like fertilizers on your lawn? They may flow directly into our lakes, streams and other surface waters or soak into the ground.

To understand the problem of runoff, consider the fact that west-central Florida receives about 53 inches of rain each year, much of it during heavy downpours. When rain is falling heavily, the soil cannot soak up all the moisture. This extra rainwater becomes runoff. Untreated stormwater runoff is considered the state’s leading source of water pollution.

What effect does runoff have on human, plant and animal life? It contributes almost all the sediment, or loose soil, in our waters. It carries viruses and bacteria into our water

bodies, shutting down recreational activities and killing aquatic life. Stormwater deposits 80 to 95 percent of the heavy metals that get into Florida waters. Heavy metals are toxic to many aquatic organisms and reduce their ability to reproduce.

How we use our land is important. A large part of the stormwater problem has come about because of urbanization. **Urbanization** is when streets, sidewalks, parking lots and buildings begin to cover the soil. As more and more buildings, roads and parking lots are built, we are left with less and less open space. In open space, stormwater can soak into the ground. When there isn’t enough open space, stormwater runs across these covered surfaces, washing harmful pollutants into our lakes, rivers and bays.

Stormwater runoff can be limited through the use of stormwater ponds, which collect and filter rainwater before it can reach a larger water body. Aquatic plants along the banks and in the shallow areas of ponds use the excess nutrients and prevent erosion. Stormwater ponds also provide habitat for many animals.

WHAT ARE SOME OF THE THINGS THAT RAINWATER MIGHT PICK UP ON ITS WAY TO A WATER BODY?

- Pesticides and fertilizers from lawns and agriculture
- Bacteria from animal wastes
- Top layer of soil from the ground or sediment (loose soil)
- Grease and oil from paved areas
- Metals and chemicals
- Litter



1. When rainwater flows over paved surfaces, it picks up pollutants from the ground. This is called stormwater runoff and accounts for more than half of the state's water pollution. Search newspapers, magazines and the Internet for articles about different types of pollution or environmental problems and arrange them in categories in your notebook. Some categories might include noise pollution, solid waste, air pollution, radiation and water pollution.
2. Fresh water is essential to the environment. It is one of our most important natural resources. Search newspapers, magazines and the Internet for an article that mentions another natural resource. Place the article in your notebook and summarize why you think this resource is important.
3. Check your vocabulary (see page 15). How many of the words can you find in the newspaper or a magazine? What are the topics of the articles that have the words? Who in class can find the most?



Now you've learned about activities that affect water quality and about different kinds of water pollution. What can be done to stop water pollution? A lot! Many things are already being done to protect and improve water quality.

The state's five water management districts are authorized by the Florida Legislature and the Florida Department of Environmental Protection to regulate water quality and stormwater. The Southwest Florida Water Management District (SWFWMD) is your regional water management district.

The SWFWMD's goal for water quality is to prevent further water pollution and enhance water quality wherever possible. The SWFWMD looks at surface water and groundwater as parts of an interconnected system. Some SWFWMD programs include studying and protecting water quality and natural ecosystems.

Since it is expensive to clean water after it has been polluted, the SWFWMD emphasizes the importance of protecting existing water quality. How does the SWFWMD do this?

BUYS LANDS FOR PUBLIC PROTECTION

The SWFWMD buys sensitive lands or lands that offer important resource benefits, such as wetlands or high recharge areas to the Floridan aquifer

system. Most of these lands are open to the public for fishing, bike riding and hiking.

STUDIES WATER QUALITY

The SWFWMD does research to investigate current water quality and determine whether it is possible to improve water quality.

ENHANCES OR RESTORES WATER BODIES

Through programs such as the Surface Water Improvement and Management (SWIM) Program and the National Estuary Program, the SWFWMD improves water quality in surface waters. These programs focus on elimination and treatment of pollutants.

PROMOTES EDUCATION

It is important that people understand how their actions may hurt the water they use. By educating people about what actions hurt our water and giving them choices, nonpoint-source pollution can be reduced. There are also many other local agencies, businesses, environmental groups, community organizations and individuals who are working to improve and protect the quality of your water. Join the fight against water pollution by making good choices and educating your neighbors, friends and family.

WHO HELPS PROTECT YOUR WATER QUALITY?

- Florida Department of Environmental Protection
- Water management districts
- City and county governments
- Environmental/community groups
- Individuals like you!



1. Water management is important for the protection of your water supply. The SWFWMD is the state agency in your region that carries the primary responsibility for managing and protecting water resources. Look for its name in the newspaper. Who can find it the most? What do the articles discuss?
2. There are lots of way to preserve the quality of your water. How many can you imagine? In your notebook, develop your own list of ideas on how you can be water-quality smart. Then share the list with your family. How many of your ideas can you use in your own home?
3. Conservation is important for protecting your water. A non-conserving shower uses about 4 gallons of water per minute. Count all the people in your class. Assume everybody takes a 10-minute shower. Imagine if each of those people put in a showerhead that uses only 2.5 gallons a minute. How much water could be saved every day? Every week? Every month? Every year?

HINT:

Multiply number of gallons used with the number of people for a regular shower. Do the same using the gallons per minute of a low-flow showerhead. Subtract the second number from the first number. The difference is how many gallons of water you would save each day.



YOU AND YOUR FAMILY CAN BE WATER SMART!

Help the water management districts protect your water resources by becoming “water smart!” Recognize the importance of water to all living things. Protect it and don’t waste it. Wasteful water use is as harmful as activities that directly lower the quality of our water. Look at the following tips to guide you in your water quality quest:

Reduce the amount of lawn chemicals you use. If you or your parents are going to use pesticides and herbicides, use them sparingly and always follow the label directions.

Use phosphate-free laundry detergents.

Take used automobile fluids, such as oil, to a gas station that recycles. A single quart of motor oil can pollute 250,000 gallons of water.

Use rechargeable batteries. Household batteries are full of toxic metals and should never be thrown out in the trash. Take them to your county’s hazardous waste disposal site.

Collect old household cleaners and take them to a hazardous waste disposal site. Don’t pour them down the drain.

Don’t pour gasoline on cracks in concrete to get rid of weeds and grass. Manually pull out weeds and other plants.

Support protection and improvement projects in wetland areas. Wetlands help keep our water clean.

If you have a septic system for your home, your parents should have it inspected every two to three years and pumped out as needed.

Use mulch around your plants. It’s attractive, helps prevent runoff from your lawn and holds moisture in the soil.

Drain your pool only when necessary. Don’t add chemicals for a few days before draining.

If your family owns a boat, keep it in top condition. Repair all oil and fuel leaks, because one quart of oil can cause a two-acre oil slick!

Don’t overfill your boat’s fuel tank. This is one of the most frequent causes of fuel leaks.

Storm drains are only for rainwater. They are not containers for grass clippings, tree limbs, used oil, leftover chemicals or other garbage. Always remember these drains carry pollution to nearby lakes or rivers.

Plant, don’t pave! Any type of natural ground cover, such as plants or grasses, reduces runoff and is prettier than concrete.

Educate your friends and neighbors! Working together, you and your neighbors can improve water quality, provide valuable wildlife habitat and maintain an attractive environment for your community.



Since the amount of water on earth is limited and constantly recycled, we must do our part to keep it clean. One way to protect water quality is to practice **water conservation**. Overuse of our groundwater sources can cause salt water to leak into our water supply and limit available drinking water. So follow these conservation tips and you'll be on your way to being water-quality smart!

Stuff it in the wastebasket. Don't toss tissues and other things that go into a wastebasket into the toilet. Every time you flush, that's up to 4 gallons down the drain.



Water lawns and gardens early in the morning (4–7 a.m.).

Don't water your lawn when it's windy. The water will end up watering the sidewalk and street.

Take shorter showers or fill your bathtub only half full. About 4 gallons of water are wasted each minute the water is left running.



Limit water leaks. Check for leaks or drips in faucets and toilets. One small leak can waste thousands of gallons per year.

Don't leave water running while brushing your teeth. Turning the water off while you brush saves 4 gallons a minute!

Concrete doesn't need water. So don't water the street, sidewalk or driveway. Adjust your irrigation system so it waters only what needs water.

When washing the car or watering your lawn, use a hose with a nozzle that automatically shuts off.

Follow any watering rules or restrictions in effect in your community. Look in the newspaper or call your local water department to find out the restrictions in your area.

When washing dishes or clothes, use only full loads in automatic machines.



aquifer: a spongelike underground layer of limestone or rocks that can hold and release water

condensation: the process that changes water from a vapor to a liquid

contamination: the introduction of impurities that makes something unusable or unhealthy

ecosystem: the interrelationship between living things and the environment

evaporation: the process that changes water from a liquid to a vapor

fertilizer: natural or synthetic materials that are put on the ground to make plants and grass grow

groundwater: water that has seeped into the ground and is held in soil and rock

heavy metals: metallic elements that are used to make products

herbicides: chemicals that are used to kill weeds

hydrologic cycle: the movement of water through the environment in a never-ending process

nonpoint-source pollution: a type of pollution that cannot be traced to a single point; it comes from many places

nutrient: a naturally occurring element that is necessary for plant growth, but it may be harmful in large quantities

organic pollution: pollution from the decomposition of living things and their byproducts

percolation: the process of a liquid soaking into the ground

permeability: ability of something to let liquids run through it

pesticides: chemical substances sprayed on plants to protect them from insects

petroleum products: automobile fluids such as oil and gasoline

point-source pollution: a type of pollution that can be traced to a particular point

pollution: any change in water that can hurt the living things that use it

precipitation: water from the atmosphere in the form of rain, snow, sleet or hail

saltwater intrusion: the process of salt water entering groundwater reserves

sediment: particles of soil

stormwater runoff: extra rainwater that does not soak into the ground

surface water: water that can be seen on the earth's surface

transpiration: the release of water vapor from plants

urbanization: the process of development whereby cities and paved areas cover the soil

water conservation: practices that use less water

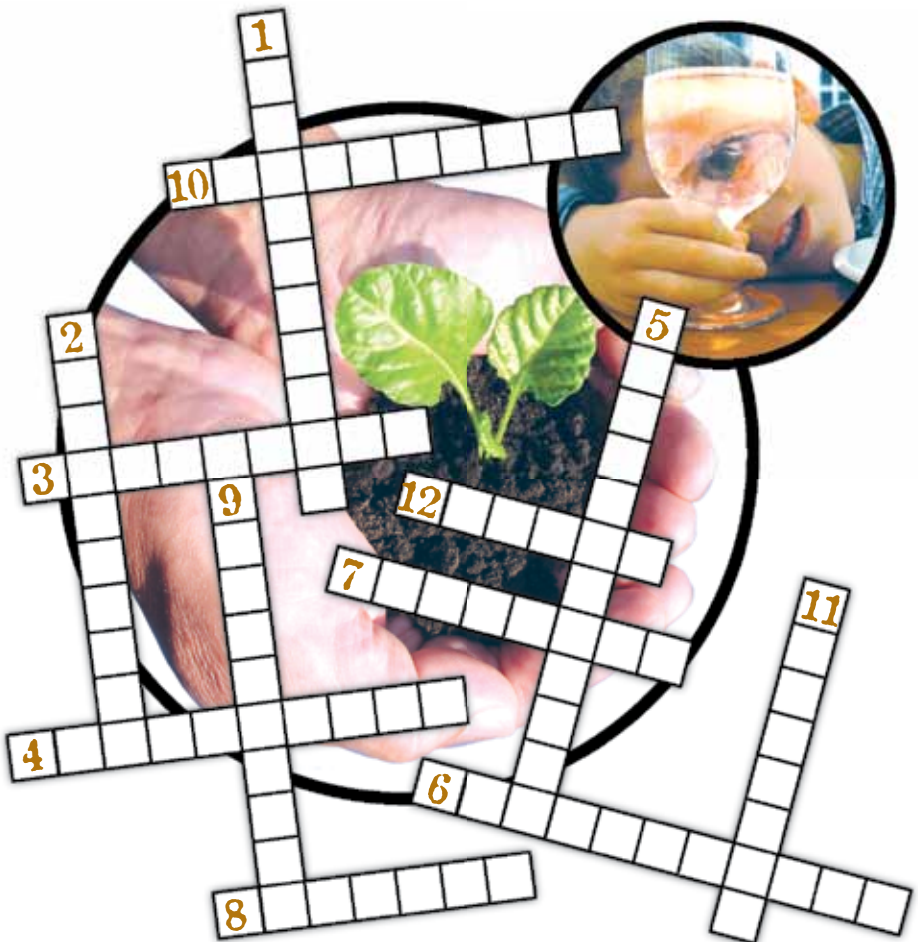
watershed: an area of land that water flows across as it moves toward a common body of water such as a stream, river, lake or coast



Check Your Knowledge

ABOUT WATER POLLUTION
WITH THE FOLLOWING
CROSSWORD PUZZLE

1. Extra rain that doesn't soak into the ground
2. A chemical that is put on plants to kill bugs
3. Soil particles
4. A chemical that is used to kill weeds
5. To make something unusable or unhealthy
6. A chemical that is put on plants to make them grow faster
7. The Southwest _____ Water Management District
8. Point- _____ pollution is easy to recognize
9. These are found in fertilizers
10. Stormwater runoff is a type of _____
11. Food byproducts are a kind of _____ pollution
12. We need _____ water



Find the Hidden Message About Florida's Waters



- | | | |
|-------|--------|--------|
| 1 = A | 10 = J | 19 = S |
| 2 = B | 11 = K | 20 = T |
| 3 = C | 12 = L | 21 = U |
| 4 = D | 13 = M | 22 = V |
| 5 = E | 14 = N | 23 = W |
| 6 = F | 15 = O | 24 = X |
| 7 = G | 16 = P | 25 = Y |
| 8 = H | 17 = Q | 26 = Z |
| 9 = I | 18 = R | |

19 20 15 18 13 23 1 20 5 18

18 21 14 15 6 6 9 19 20 8 5

13 1 10 15 18 19 15 21 18 3 5

15 6 16 15 12 12 21 20 9 15 14

15 6 6 12 15 18 9 4 1

23 1 20 5 18 19 •

Resources List

For more information about water quality and Florida's water resources, contact the Southwest Florida Water Management District at 1-800-423-1476 (FL only) or (352) 796-7211, or view our web site at *WaterMatters.org*. The agencies and organizations listed below can also provide information.

Florida Department of Environmental Protection

Southwest Office
13051 N. Telecom Parkway
Temple Terrace, FL 33637
(813) 632-7665
www.dep.state.fl.us

Sarasota Bay National Estuary Program

111 S. Orange Avenue
Suite 200W
Sarasota, FL 34236
(941) 955-8085
www.sarasotabay.org

Tampa Bay Estuary Program

100 8th Avenue SE
MS I-1/NEP
St. Petersburg, FL 33701
(727) 893-2765
www.tbep.org

U.S. Geological Survey

Tampa Office
10500 University Center Drive
Suite 215
Tampa, FL 33612
(813) 975-8620
www.usgs.gov

Florida Fish and Wildlife Conservation Commission

620 South Meridian Street
Tallahassee, FL 32399-1600
(850) 488-4676
www.floridaconservation.org

Web Sites:

The Water Cycle

www.epa.gov/safewater/kids/flash/flash_watercycle.html

Projects, art and experiments to involve kids and students with environmental protection.

www.epa.gov/water/kids.html

The Learning Web

www.usgs.gov/education/

Tampa Bay Desalination Project

www.tampabaywater.org/watersupply/tbdesal.aspx

Environmental Kids Club

www.epa.gov/kids/

Educating Young People About Water

www.uwex.edu/erc/ey paw/

