

Welcome

to the *Natural Inquirer* Freshwater Edition!

Clean water is one of Earth's most important natural resources (**figures 1, 2, and 3**). All the planet's organisms need water. You may know that some small amounts of water can come to Earth from extraterrestrial sources such as meteors. Practically speaking, however, water found today across Earth's environment is also Earth's supply of water for the future. The water you drank today was on Earth even before the dinosaurs lived! Water moves from Earth's atmosphere to its surface and underground, and then back to the atmosphere in a continuous cycle (**figure 4**).

Earth has been called a water planet. Nearly 70 percent of Earth's surface is covered by water. Of this surface area, 97.5 percent is saltwater. Take a look at a globe or a map of Earth. You will see for yourself just how much saltwater is found on our planet.

The remaining 2.5 percent of Earth's water is freshwater. Humans must have clean freshwater to live. Urban and industrialized (in *dās trē ə līz(d)*) societies must provide clean freshwater for a growing human population. Industrialized societies build and operate factories and businesses in a city, region, or country. To provide freshwater, people have developed ways to collect large quantities of freshwater for human use. People have also developed ways to clean polluted freshwater (**figure 5**). Humans unfortunately have also wasted and polluted some of their freshwater resources, and they have neglected to properly protect many of Earth's water resources.



Figures 1, 2, and 3. Water is necessary for all of Earth's organisms.

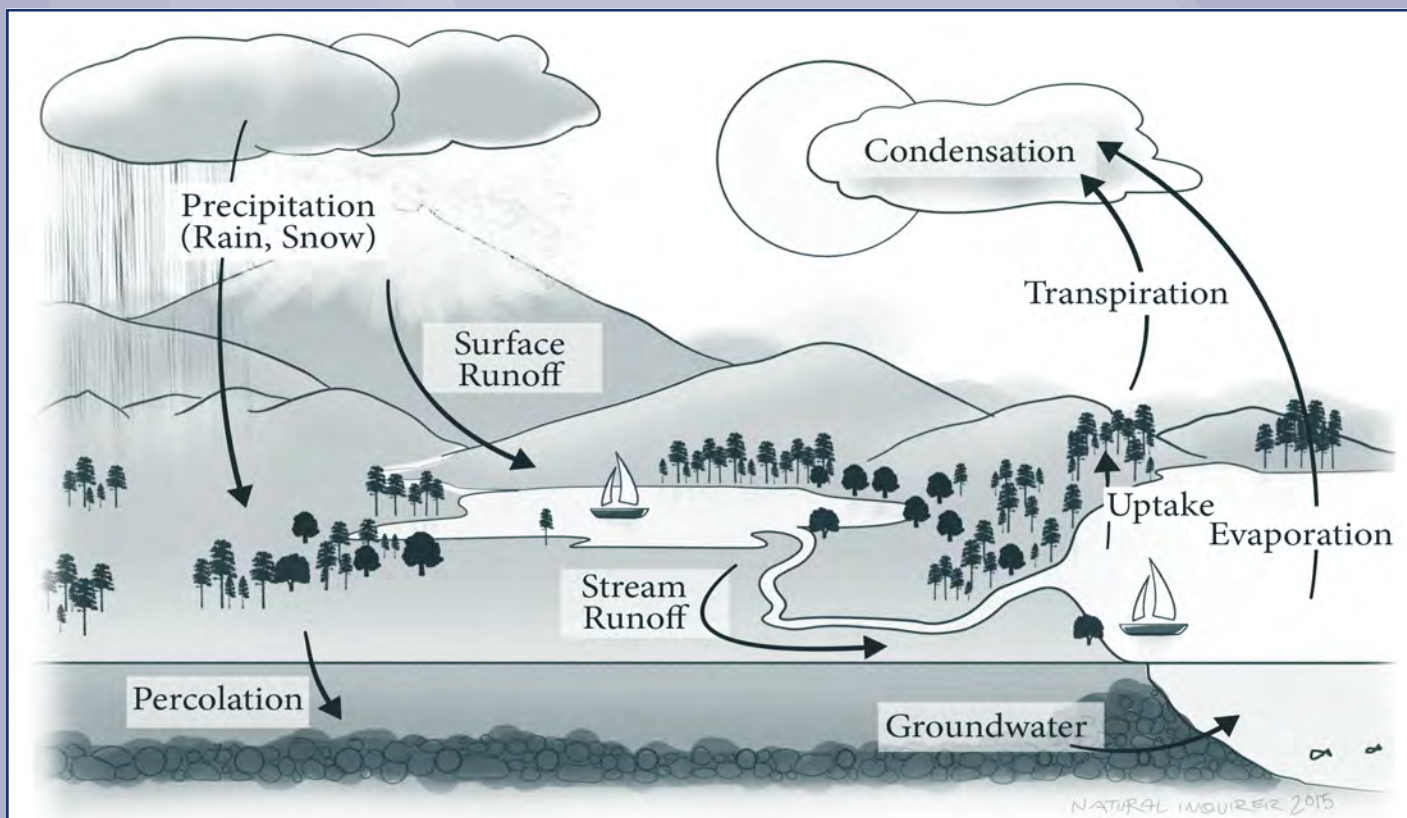


Figure 4. The water cycle. Illustration by Stephanie Pfeiffer.



Figure 5. Wastewater treatment plants clean used water and release it back into waterways. The Middle Oconee Water Reclamation (re klə mā shən) Facility is in Athens-Clarke County, GA. Photo courtesy of Elizabeth Cason.

Human activities are changing rainfall and snowfall patterns, resulting in unexpected droughts and floods. It is important, therefore, to understand how human use of large freshwater quantities fits into the water cycle (**figure 6**).

In this *Natural Inquirer* Freshwater edition, you will learn many new things about Earth's freshwater. In "Green Means Clean," you will learn how scientists and managers are protecting U.S. drinking water supplies using better land management practices. Water pollution that cannot be traced to a particular source is the subject of "What's the Nonpoint?" You will learn how the amount and type of living, or once-living, matter in a waterway changes over time in "Caribbean Cruise." Have you ever wondered whether chemicals flowing into urban waterways are

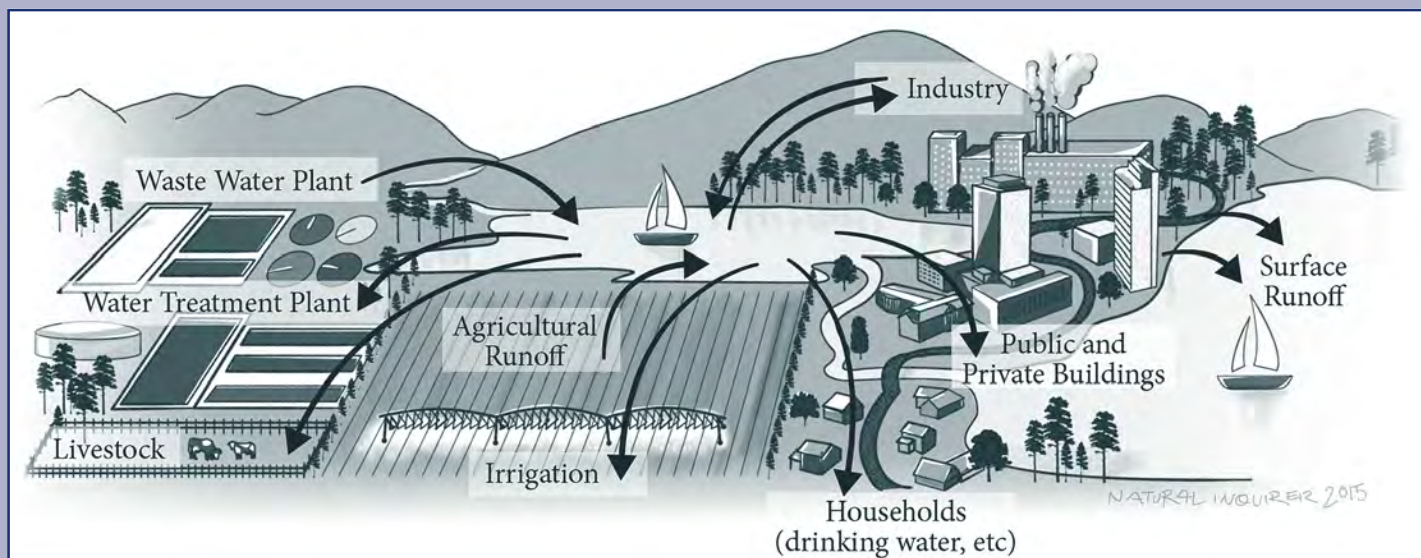


Figure 6. Humans have modified Earth’s natural water cycle by collecting and using large quantities of freshwater for household and industrial use. Illustration by Stephanie Pfeiffer.

dangerous? You will learn whether those chemicals are dangerous in “Sediment-al Journey.” The fascinating world of freshwater mussels and what they tell us about water quality is revealed in “Mussel Mania.” “Timed Travel” will introduce you to the importance of water temperature to young salmon. In “Under Where?” you will explore the unseen but important movement of groundwater below your feet.

As you read each article, think about your daily water use. You use clean freshwater for drinking, bathing, and cooking. Did you know that up to 60 percent of your body weight is water? Water not only keeps you healthy, it keeps the planet healthy!

Be Water Wise!

Here are some tips to help you and your family conserve freshwater:

- ◆ Turn off the faucet when you brush your teeth and only turn it on as you need it.
- ◆ Install low flow toilets and showerheads to reduce the amount of water used.
- ◆ Put a rain barrel outside to collect rainwater. Use this water for your plants.

For more great ideas about what you can do to conserve freshwater, visit <http://www.epa.gov/WaterSense/kids/>.



Are you interested in learning more about freshwater? Check out “FreshWaterLIVE: A Distance Learning Adventure!” FreshWaterLIVE will be available in 2015–2016 at <http://www.freshwaterlive.org/>. Also read the inside back cover of this *Natural Inquirer* for additional information about FreshWaterLIVE.