

Unit 1: WATERSHEDS-MY WATER

ACTIVITY 1- DAY 2



WHAT IS OUR IMPACT ON WATERSHEDS?

Below are lists of activities and ways they impact water quantity and quality.

ACTIVITY: WATER USE IMPACT

Soccer An average soccer field requires approximately 8,400 gallons of water per day to maintain, or one million gallons per year.



REDUCTION ACTION

Encourage your local soccer field to reduce water use. Water use can also be reduced through stormwater collection and reuse, on-site wells or—find an artificial turf field to play on!

Snowboarding/Skiing Most ski resorts depend on snow-making to extend their skiable area and improve the attraction of their slopes. Over 109 gallons of water are used for snow-making per person per visit at most resorts. Drawing large amounts of water from local water sources can impact water quality and decrease wildlife habitat.

Visit resorts that don't rely on snow-making or that use it less than others. Consider cross-country skiing, which has fewer negative impacts on the mountain. Ski at resorts that have active environmental programs.



Landscaping An average outdoor hose uses 5 to 10 gallons of water per minute. A household that waters their lawn every day for a half hour could use up to 3,000 gallons of water a day or 21,000 gallons a week!

Minimize use of non-native grass lawns in landscaping. Landscape with plant materials that require little water to maintain (xeriscape). Water your lawn only when and as long as necessary. Set a timer to turn sprinklers off.

Maintaining Your Vehicle Oil tanker accidents represent only 11 percent of all the oil in our oceans. More than 54 percent of the oil results from stormwater runoff (improper disposal of oil or oil spills), leaks from storage facilities and from industrial processes. Four quarts of oil can cause an eight-acre oil slick if spilled or dumped down a storm sewer. Oil slicks kill aquatic life and disturb ecosystems.

Properly dispose of automobile waste, such as oil and antifreeze. Take such waste to a gas station where it is picked up by a waste management company to be recycled or burned. Dumping such waste into landfills, storm drains or backyards will deposit toxic contaminants into ground water, streams and lakes.

Walking Pets In 1996, 38 percent of all Colorado households owned one or more dogs, for a statewide total of 934,000 dogs. Dog waste can contain bacteria. The U.S. EPA ranks bacteria from dog poop as one of the most widespread contaminants in the nation's assessed rivers and streams.

Whether in your backyard or on a trail, scoop the poop. Collect all animal waste and deposit it in the garbage.

Golfing The average amount of water required to maintain a golf course is 312,000 gallons a day. That amount represents over 12 average swimming pools of water a day just to maintain ONE golf course.

Play on courses that use gray water (cleaned wastewater produced from bath/showers/washing machines) to maintain the course. During a drought, only the greens should be watered. Encourage your course to use new grass varieties that use less water or can tolerate poor quality water. Visit golf courses that minimize the grass areas maintained.

Gardening Home gardeners use, on average, more pesticides per square foot in their gardens than farmers do in their fields. The runoff from home gardens goes down storm drains into local water sources affecting water quality and habitat.

Minimize use of fertilizers and pesticides. Keep them off of the driveway and sidewalks. Do not water hard surfaces. The water can carry the pollutants down the storm drain.

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Water, its quality and availability, will be one of the most important environmental issues in your lifetime. Now, more than ever, it is critical to understand water and your interaction with it. Discover how the activities you do every day impact water in a significant way. What actions can you take to reduce this impact? **Let's find out!**

BACKGROUND INFORMATION

Fresh, clean water sustains life on this planet. The water our community depends on for everyday activities, businesses and life comes from the watershed in which we live. Everyone lives in a watershed. We live in the Boulder Creek and St. Vrain watersheds.

As water falls in the mountains as rain, hail or snow, it falls upon an area of land called a watershed. All water that falls in this area drains downslope to the lowest point through a network of drainage pathways. The water travels across the ground and underground into streams, rivers or collects in lakes, reservoirs or underground water aquifers. Water moves downstream. As a result, any activity that affects the water quality, quantity, or rate of movement in one place can affect areas downstream. For this reason, everyone living or working within a watershed needs to cooperate to ensure good watershed conditions.

WHERE DOES COLORADO GET ITS WATER?

Guess what? Very little water flows into Colorado — most flows OUT. Several major river basins, including the North and South Platte, Arkansas, Rio Grande and Colorado rivers, originate in the Colorado Rocky Mountains, giving Colorado the name "Mother of Rivers." Colorado provides water to much of the southwestern U.S. and California.

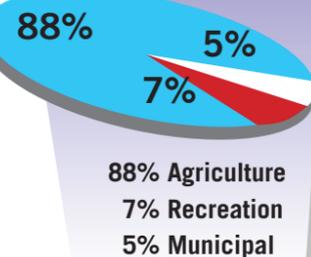


Most of our water comes from one source — PRECIPITATION, which falls in the mountains as rain, hail and snow. Boulder and the surrounding areas receive only 16 to 20 inches of precipitation a year. This means we live in a semi-arid environment. Compare this to Florida, which gets an average of 60 inches a year. About 80 percent of Colorado's annual water supply comes from snow.

Precipitation is stored in one of the five following forms of useable water.

Snowpack provides recreation & water supply	Streamflow provides recreation, habitat, irrigation & water supply	Reservoir Water provides recreation, habitat, irrigation & water supply	Soil Moisture allows for natural vegetation & agriculture	Ground Water provides irrigation & water supply
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Water Use in Colorado



The amount of water provided by a watershed varies from year-to-year and depends on the moisture received from precipitation. Though precipitation adds to soil moisture and snowpack immediately, it can take several days, weeks, or months before it increases water levels in streams, reservoirs or ground water aquifers. During this time, roughly 85 percent of the total precipitation is lost to evaporation and transpiration. Most of Colorado's precipitation arrives in a few big snow storms. The difference between a very wet and a very dry year may come down to a few major snow storms.

Unit 1: WATERSHEDS- MY WATER ACTIVITY 1



MY WATERSHED- MY LIFE

DIRECTIONS:

- Think of places and activities in your life that intersect with water (skiing, snowboarding, swimming, picnics, etc.). Choose a photo of yourself, family members or friends, or a magazine photo that reflects that activity. Paste that photo on the next page.
- Choose a song with water in the title or lyrics that represents what water means to you (a getaway, relaxation, excitement, etc.). Write down the title and artist in the “My Song” box provided on the next page.
- Read through “My Water Facts” below. Choose the water fact that most surprises you, interests you, or relates to your photo or song in some way. Be prepared to discuss this with your class tomorrow. Write the water fact in the “My Water Fact” box provided on the next page.
- You will fill in “My Impact” and “My Action” later, after brainstorming with your class. Leave those boxes blank for now.



MY WATER FACTS

- 1: Less than 1 percent of the Earth’s water is fresh, useable water.
- 2: Producing one typical lunch—hamburger, french fries, and a soft drink—uses 1,500 gallons of water. This includes the water needed to grow the potatoes, the grain for the bun, the grain needed to feed the cattle and the production of the soda.
- 3: Water does not flow *into* Colorado—there are no major rivers that flow *into* the state. But, Colorado provides water to much of the southwestern U.S. via the rivers that flow *out* of the state: North and South Platte, Arkansas, Rio Grande and Colorado Rivers.
- 4: Eighty-nine percent of Colorado’s naturally occurring lakes are found at altitudes above 9,000 feet.
- 5: There are more than 9,000 miles of streams and 2,000 lakes and reservoirs open to fishing in Colorado.
- 6: Over 1,300 miles of streams in Colorado are impacted by metals as a result of acid mine drainage.
- 7: Roughly 80 percent of Colorado’s annual water supply comes from snow.
- 8: Colorado is a semi-arid climate—a region characterized by relatively low annual rainfall (10 to 20 inches per year). Roughly 85 percent of the total precipitation in Colorado is lost to evaporation and transpiration.
- 9: Colorado’s water is used predominately for agriculture (88 percent). The remaining amount is used for municipal use (5 percent) and recreational use (7 percent).
- 10: Barker Reservoir, on Middle Boulder Creek, downstream from the town of Nederland, provides up to 40 percent of the city of Boulder’s drinking water supply.



Unit 1: WATERSHEDS- MY WATER ACTIVITY 1 (CONTINUED)



WATER PROFILE

MY PHOTO

Paste photo here

MY SONG

MY WATER FACT

MY IMPACT

MY ACTION