



Earth Gauge™ Portland – Water Quality

Environmental Information for Broadcast Meteorologists

This fact sheet is part of a series on key weather-environment topics for the Portland area. The Earth Gauge™ Healthy Communities project is designed to provide basic background information on environmental impacts in major U.S. urban areas, as well as simple messages meteorologists can deliver to their viewers.

The Willamette River Basin provides services to 70 percent of Oregon's population. As the amount of urban area increases, the water quality in the Basin decreases – it is generally accepted that water quality declines sharply when the amount of paved surface in an urban area is greater than 10 percent. This is because rain water cannot soak through paved surfaces, and instead runs into storm drains, carrying with it any pollutants encountered on the way to local streams and rivers.

What's in the Water?



Rain water running over yards, driveways, and streets can transport many pollutants into storm drains and directly to local waters – fertilizers, pesticides, pet waste, oil, and trash are common pollutants that can harm wildlife, cause algal blooms, and close recreation areas.



Soil that erodes away from yards, sloping land, and stream banks can smother wildlife habitat and vegetation on the river bottom, clog drainage ditches and stream channels, and impact recreation areas.



In areas with combined sewers, which are designed to carry both sewage and rain water, heavy rain events can cause overflows that discharge a combination of rain water and sewage into local streams and rivers.



Old or leaking septic systems can contribute pollutants to groundwater supplies, which feed surface rivers and streams during dry weather. If the soil around a septic tank becomes soggy or flooded with rain water, it can be less effective at treating wastewater.

Learn More about Watersheds and Water Quality

Oregon Department of Environmental Quality: Water Quality Division provides information and education resources on the quality of Oregon's water resources. www.oregon.gov/DEQ/WQ/index.shtml

Effects of Urbanization on Water Quality is part of the U.S. Geological Survey's *Water Science for Schools* site. It provides an excellent primer on water quality issues related to urban development. www.ga.water.usgs.gov/edu/urbanquality.html

Watersheds: Connecting Weather to the Environment is a free online course designed to provide understanding of a watershed as the local environment in which people's actions and decisions play against the background of daily and seasonal weather. meted.comet.ucar.edu/broadcastmet/watershed/

Flip this page over to find simple messages and tips about water quality you can use during your on-air weather report.



Earth Gauge

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Making the Connection: What You Can Say On-Air

Here are some simple facts and tips you can provide to your viewers to help make the connection between wet weather events and water quality. Help your viewers understand how pollutants enter our water supply and how they can take simple steps to reduce their own impact on Portland's water quality.

Disconnect Your Downspouts

Portland receives between three and four feet of rainfall annually. During a gentle rain, a typical Oregon downspout sheds several gallons per minute, and a twelve hundred square foot roof captures on average 3,600 cubic feet (27,000 gallons) of water per year! During rainstorms, this extra water can flow through downspouts, into the sewer, and force the sewers to overflow into our rivers. The good news is that each and every one of us can easily be part of the solution and help reduce our impact on Oregon's waterways.

Viewer tip: Disconnect your downspouts on your home's rain gutters so they don't run into the sewer. Leave the gutters on, but direct the downspout into a grassy area in your yard – or better yet, into a plastic rain barrel so that you can capture the water to use in your garden or to water your lawn in the summertime.



Septic Smarts

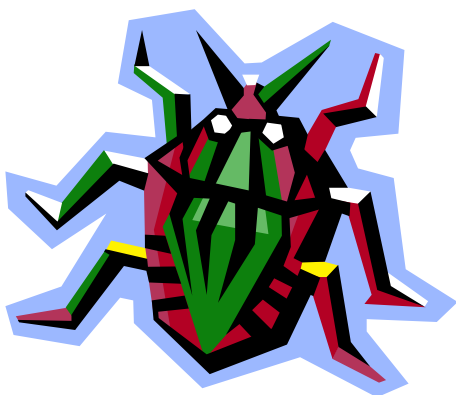
Did you know that more than 25 percent of Americans rely on a septic system for wastewater disposal? Septic systems function by collecting waste in an underground tank for treatment, and then allowing liquids to slowly soak through surrounding soil, which filters out bacteria and nutrients before reaching groundwater supplies.

Viewer Tip: If you have a septic system, it is important to make sure house gutters, sump pump drains, and other outdoor drainage systems for rainwater do not drain onto the soil absorption area. If the soil around your tank becomes soggy or flooded, it can be less effective at treating wastewater, putting groundwater quality at risk.

Runoff Rundown

Every year, Portland receives 37 inches of rain, a tremendous amount that can overwhelm the city's sewer system, flood streets and buildings, degrade water quality, and erode stream banks.

Viewer Tip: Anything dumped on your driveway, in the street, or in a storm drain or ditch can be carried away with rain water, into storm drains, streams and rivers, and eventually to the Pacific Ocean! Please dispose of all household wastes properly - take paints, used motor oil, yard chemicals, and other hazardous substances to a local collection facility instead of dumping. Find a collection site near you by visiting www.cleanup.org or calling 1-800-CLEANUP.



What's Bugging You?

In the U.S., homeowners apply more pesticides per acre of lawn than farmers do on agricultural land! Of the 36 most common lawn pesticides, many are toxic to birds, fish, and other animals, and research shows that pesticides can be detected in streams and groundwater in many areas with high urban or agricultural use.

Viewer Tip: The spring season marks the emergence of many garden pests. Before you apply pesticides in your yard, make sure you know what pest you are fighting, and how to best manage them. Your local garden center or University Cooperative Extension Service can help you identify pests and choose the proper treatment. If you do decide to apply pesticides, please wait for dry weather - rain water will wash pesticides from your yard, into storm drains, and directly to local rivers and streams, wasting product and putting wildlife and water quality at risk.