

## Watersheds and Polluted Runoff

A watershed is an area of land where rainwater flows over the land and into streams and channels before entering a common body of water, the ocean. We all live, work and play in the watershed.

Polluted runoff, or *nonpoint source pollution*, results when stormwater or irrigation water washes pollutants off the land, farms, urban areas and construction sites, into our streams and coastal waters. As water flows through your watershed, pollutants are carried along too.

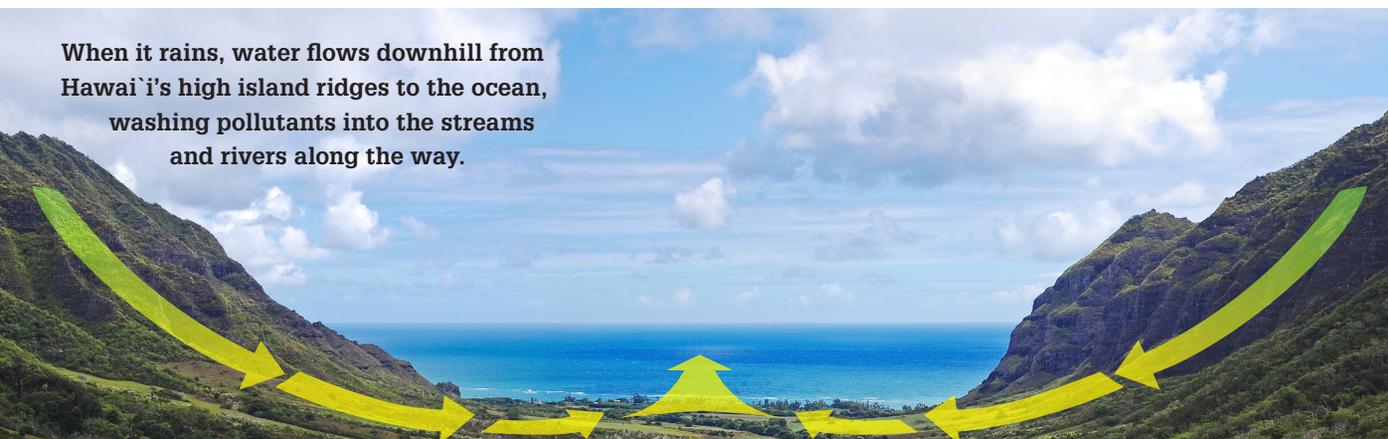
More than 90 streams in Hawai'i are too polluted to meet state water quality standards. Sediment and nutrients (nitrogen and phosphorous) are the leading pollutants.

—2006 HI Integrated Water Quality Rpt

## Why Should You Care About Polluted Runoff?

Polluted runoff is the greatest threat to Hawai'i's surface and ground waters, making them unsafe for drinking, swimming, fishing, wildlife and other recreational uses. Some polluted runoff is from natural sources; however, most polluted runoff results from human activities on the land and in the water. Each individual has the ability and the responsibility to protect our waters.

**When it rains, water flows downhill from Hawai'i's high island ridges to the ocean, washing pollutants into the streams and rivers along the way.**



Rainfall in Hawai'i is often localized and heavy and causes streams to frequently flood. These flow spikes, often lasting only a couple of days, contribute to the *flashy* (as in flash flood) characteristic of Hawai'ian streams. —Hawai'i DLNR, DAR

## Learn More About Polluted Runoff!

### Hawai'i's Polluted Runoff Control Program

Hawai'i Department of Health, Clean Water Branch  
919 Ala Moana Boulevard, Room 301  
Honolulu, HI 96814-4912

Phone: (808) 586-4309

Toll free from neighboring islands: (808) 468-4644, ext 64309

Web: [www.hawaii.gov/health/environmental/water/cleanwater/prc/index.html](http://www.hawaii.gov/health/environmental/water/cleanwater/prc/index.html)

E-mail: [CleanWaterBranch@doh.hawaii.gov](mailto:CleanWaterBranch@doh.hawaii.gov)

## For More Information on Polluted Runoff:

- Hawai'i Association of Conservation Districts: [www.hacd.hawaii.org](http://www.hacd.hawaii.org)
- Honolulu Department of Environmental Services: [www.cleanwaterhonolulu.com/storm](http://www.cleanwaterhonolulu.com/storm)
- U.S. Environmental Agency, Region 9 office: [www.epa.gov/region09](http://www.epa.gov/region09)

## Recycling Used Motor Oil and Other Household Toxins:

- County of Hawai'i: <http://www.hawaiizerowaste.org/>
- Honolulu: [www.opala.org/solid\\_waste/Household\\_Hazardous\\_Waste.html](http://www.opala.org/solid_waste/Household_Hazardous_Waste.html)
- County of Kaua'i: [www.kauai.gov](http://www.kauai.gov)
- County of Maui: [www.co.maui.hi.us](http://www.co.maui.hi.us)

# What's Going Down with the Rain?



*By making good choices, we can ALL reduce polluted runoff!*



*Please print double-sided and on recycled paper!*

Hawai'i Department of Health, Clean Water Branch  
—Polluted Runoff Control Program  
and U.S. Environmental Protection Agency

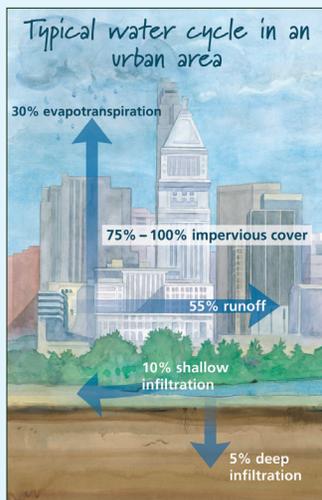
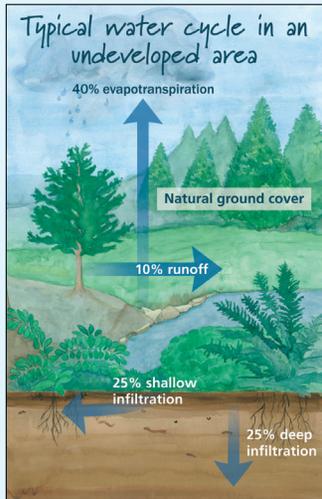
## How Does Polluted Runoff Occur?

Dirt, oil, trash, fertilizers and animal waste left on the ground are some of the pollutants that are picked up and washed away by rainwater, becoming polluted runoff. When people replace natural landscape and vegetation with roads, buildings and parking lots, or agricultural activities, more pollutants are generated and can be carried into our streams.

During light to moderate rainfall events, rainwater has a chance to soak into the ground, where pollutants can be removed by the plants and soil. In volcanic rock or areas with very little soil, and during heavy rainfall events, large amounts of rainwater cannot soak into the ground. Instead, rainwater runs over the ground, causing erosion and washing pollutants into our streams harming fish and other aquatic life and smothering our coral reefs with sediment.

Wastewater from cesspools is released into the ground water, through porous soil or volcanic rock, and in some cases, can reach our streams and coastal waters. The bacteria and nutrients in the wastewater do not have time to decompose naturally and are not treated, adding to the polluted runoff problem. All the water and polluted runoff that enters a storm drain flows directly into a stream or ocean; the majority of the stormwater is not treated, though some catch basins are being fitted with oil and grit separators and trash screens to keep some pollutants out.

There are many actions that we can take to prevent runoff and erosion in our communities.



## What Can Be Done to Prevent Polluted Runoff?

### Prevent Toxins and Bacteria from Entering Waterbodies

The products we use and how we dispose of waste affect the health of our waterbodies.

- Prevent bacteria from entering waterbodies by picking up after your pet. Take a plastic bag with you when walking your pet and dispose of the waste in a trash receptacle.

A single gram of dog feces can contain 23 million fecal coliform bacteria.  
—City & County of Honolulu Pollution Solution Fact Sheet #5

- Take pesticides, paint, cleaners and other chemicals to disposal centers. Never pour them down a storm drain.
- Conduct a soil test before applying fertilizers to determine the nutrient needs, and use organic alternatives if possible. Fertilizer runoff contributes to toxic algal blooms in the ocean, making the water unsafe for wildlife and humans. For more information on soil tests in Hawai'i, visit [www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-9.pdf](http://www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-9.pdf).

- Regularly maintain vehicles and machinery. Check for leaks and properly dispose of used oil and other automotive fluids.

EPA estimates that American households generate 193 million gallons of used oil every year and improperly dump roughly 184 million gallons. That is enough to fill 20,400 large tanker trucks. —EPA

- Use biodegradable, nontoxic, recycled and recyclable products whenever possible. Use low- or no-phosphate dishwashing and laundry detergent.

### Prevent Runoff and Erosion

Install methods that will help water soak into the ground instead of running off of your property.

- Plant appropriate vegetation next to streams or rivers. Do not mow up to the water's edge.
- Water in the early morning to conserve water and prevent evaporation. Mulching and drip irrigation methods will help conserve water, too.

- Do not leave dirt exposed on your property.
- Plan ahead! Fertilize your lawn when rain is not forecasted and apply only the recommended amount of fertilizer.
- Use a commercial car wash or wash your car on an unpaved surface to minimize the amount of dirty, soapy water that enters a storm drain or waterbody.

The typical single-family suburban household uses at least 30 percent of its water outdoors for irrigation. Some experts estimate that more than 50 percent of landscape water use goes to waste because of evaporation or runoff caused by overwatering. —EPA WaterSense

Some commercial car washes use only 3 gallons of fresh water to rinse each car.  
—City & County of Honolulu

### Maintain Septic and Cesspool Systems

Improperly maintained septic systems and cesspools can cause sewage-containing bacteria, nitrogen and phosphorus to enter nearby waterbodies or aquifers.

- If you have a cesspool, replace it with a septic system. Note: As of April 2005, federal laws require that all large-capacity cesspools be replaced with septic systems.
- If you have a cesspool, reduce your water usage to minimize sewage movement into ground water or surface waters.
- Garbage disposals increase water usage and increase the need for septic tanks to be pumped. Compost or throw away your food waste instead of using a garbage disposal.
- Maintain your septic system. Have it inspected by a professional every 3 years and pumped every 5 to 7 years or as necessary.
- Do not dispose of trash, cleaners, poisons or other chemicals in the septic system or cesspool. Take them to a disposal center.

For more suggestions of how you can prevent polluted runoff, visit [www.protectingwater.com](http://www.protectingwater.com)