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# WATER QUALITY

*Watershed*

No matter where you are on land, you are in a watershed.

Natural Resources Conservation Service • Hawaii

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## *What is a watershed?*

A watershed is the land area which drains all the streams and rainfall into a common outlet, such as the outflow of a reservoir, the mouth of a bay, or any point along a stream channel. A drop of water falling in a watershed that does not evaporate or is not used by plants, will leave the watershed at this outlet. The ridges and hills define the watershed boundary, also known as the drainage divide.

An easy way to visualize a watershed is to think of a bathtub. The bathtub rim is the watershed boundary and the drain is the outlet.

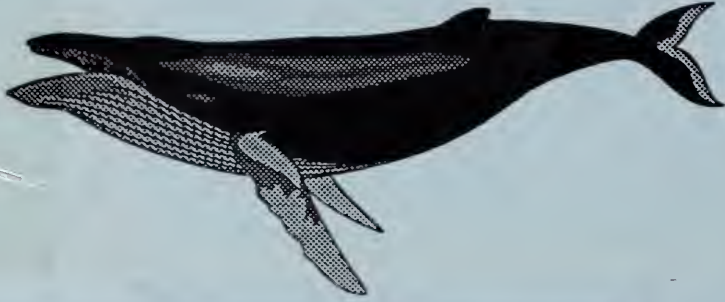
## *Water Facts*

- A typical U.S. toilet uses between 3.5 to 7 gallons per flush, low-flow toilets use about 1.6 gallons.
- The average shower takes up to 50 gallons. A low-flow shower head can save up to 50% of the water you're using to take a shower. Low-flow toilets and faucet aerators can save another 25 gallons a day.
- 1% of the earth's water is available as a source of drinking water, 97% is salt, and 2% is frozen in the polar ice caps.



## What are parts of a watershed?

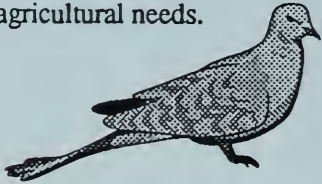
Watersheds consist of surface waters - lakes, rivers, reservoirs, wetlands, man-made channels and storm drains, and the underlying groundwater. At any place in the watershed, precipitation runs off the land's surface and collects in these natural and man-made drainage pathways, following the land's contours. Some precipitation seeps into the ground where it moves through the soil for plant use or recharges the groundwater aquifer.



*Ground and surface water are essential resources of a watershed.*

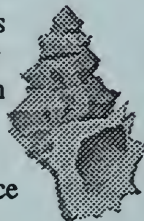
Bays are valuable recreational resources for Hawaii and are used for fishing, swimming, surfing, and boating. Soil erosion and sedimentation deposit in the bays have focused attention on the potential degradation of the coastal habitats and the area's fishing and recreational resources.

Watersheds contain significant groundwater resources which serve as the primary source of water for municipal, domestic, and agricultural needs.



## What can you do?

1. Properly maintain your septic system.
2. Use proper lawn maintenance practices. Water only when needed, do not allow water to run off, and do not water streets or sidewalks.
3. Have your soil tested before applying fertilizers, which will help you determine the proper fertilizer requirements for your lawn or garden.
4. Use pesticides as directed on the label. Use only what is required. More is not better. Properly dispose of empty containers. Try alternatives to chemical pesticides when practical.
5. Establish or maintain a waterfront buffer of vegetation along streams, coastal waters, wetlands, and other surface waters.



## How does water become



Land use activities affect the quality of ground and surface water within that watershed. A pollution source, whether it is a point or a nonpoint source of pollution, located in one area of the watershed, can affect water quality in other parts of the watershed. For example, sediment eroded from higher elevations within the watershed can be carried in runoff waters and be deposited in drainage ways or coastal bays. In this case, it is important to establish management practices which minimize soil loss to surface waters within a watershed.

Contaminant movement varies depending on the type of contaminant and on the environmental conditions which are present. Although general statements can be made, each case needs to be assessed individually.

*Watershed Protection involves total resource management.*

When we talk about protecting water resources, we must look at the whole picture - the entire watershed. Watershed protection involves managing land use activities and water use to assure water quality protection.

Ground and surface waters within a watershed can be protected by a combination of federal, state, county, local, and individual efforts. On an individual level, there are many things each one of us can do to ensure watershed protection. The first step is to recognize that each of us has an effect on water quality and then to take actions to ensure water resource protection.



6. Protect soil from erosion by planting bare areas.
7. Keep animal wastes out of streams and drainage areas.
8. Learn to recognize what is considered a household hazardous waste—batteries, motor oil, gasoline, paint thinner, car wax, furniture polish and oven, drain, and toilet cleaners. Read the label and use only as directed. Buy only what you need and avoid leftovers. Use non-toxic alternatives whenever possible. Properly dispose of wastes.
9. Learn how water resources are being protected in your community and support local, state, and federal efforts to protect water quality.
10. Become involved in water resource issues in your community.