# RUNNING WATER

Rivers and streams are important sources of fresh water. Many cities and towns were built near rivers and streams. The water is used for irrigating crops, generating electricity, drinking, and other household uses. Rivers and streams are also used for recreational purposes, such as fishing, swimming, and boating. Industry and commerce depend on rivers for transporting supplies and equipment and for shipping finished products. River and stream water is also used to cool certain industrial processes. In the past, industries and towns used rivers and streams as natural sewers to carry away waste products. Today, although pollution is still a problem, strict controls regulate the kinds and amounts of wastes that can be dumped into rivers and streams.

Rain and melted snow that do not evaporate or soak into the soil flow into rivers and streams. The water that enters a river or stream after a heavy rain or during a spring thaw of snow or ice is called surface runoff.

The amount of surface runoff is affected by several factors. One factor is the type of soil the precipitation falls on. Some soils soak up more water than others. These soils have more spaces between their particles. The space between particles of soil is called pore space. The more pore space a soil has, the more water it will hold. The condition of the soil also affects the amount of runoff. If the soil is dry, it will soak up a great deal of water and reduce the surface runoff. If the soil is wet, it will not soak up much water. Surface runoff will increase.

The number of plants growing in an area also affects the amount of surface runoff. Plant roots absorb water from the soil. In areas where there are many plants, large amounts of water are absorbed. There is less surface runoff. The season of the year is another factor that affects the amount of surface runoff. There will be more runoff during rainy seasons and during the spring in areas where large amounts of snow are melting.

A land area in which surface runoff drains into a river or a system of rivers and streams is called a watershed. Watersheds vary in size. Especially large watersheds can cover millions of acres and drain their water into the oceans. Watersheds prevent floods and water shortages by controlling the amount of water that flows into streams and rivers. Watersheds also help to

provide a steady flow of fresh water into the oceans. How do you think the construction of roads in a watershed area might affect nearby rivers and streams?

Many rivers are sources of fresh water. The amount of water in a river and the speed at which the water flows affect the usefulness of a river as a source of fresh water. Rivers that move quickly carry a lot of water. But because the water is moving rapidly, fast-moving rivers also carry a large amount of soil, pebbles, and other sediments. The water in these rivers often looks cloudy. Slow-moving rivers do not churn up as much sediment. Their water is clearer. These rivers are better sources of fresh water.

In recent years, pollution has had an effect on the usefulness of rivers and streams as sources of fresh water. If a river or stream has many factories along its banks that discharge wastes into the water, the water becomes polluted. Water in a polluted river or stream must be cleaned before it can be used. Some rivers are so heavily polluted that they cannot be used as a source of fresh water.