

These pollutants are put into the air, they mix with the water molecules and turn the water acidic. Clouds or rain droplets that are acidic are called **acid rain**.

Acid rain causes many problems in the environment. Acid levels can become similar to the levels of acid in vinegar. This level of acid can kill plants, damage or kill trees, and pollute lakes and rivers enough to kill the fish. Property can be damaged too. In some cities, acid rain has dissolved the stone used in statues. The statues of people, for instance, lose their crisp facial features and begin to look smoothed and worn down.

Canada has passed laws to limit pollution. The government has worked with factory owners to build factories that do not pollute the air. Laws have been passed requiring automobiles to produce less pollution. The government also encourages Canadians to walk, ride bikes, or take the bus instead of driving their cars. Canada cannot solve this problem alone, however. In parts of southern Canada, 50-75 percent of the pollution that causes acid rain comes from the United States. Wind patterns tend to move the pollution from the United States north into Canada.

POLLUTION OF THE GREAT LAKES

Industries and people in Canada depend upon the water from the Great Lakes. They use the water to drink. They also use it in the processes of their factories. Since the Great Lakes are shared between the United States and Canada, it is important for the two countries to work together to keep the lakes' environment clean and healthy.

By the 1970s, the Great Lakes were becoming well known for their water pollution. In some places, fishing was unsafe. In other places, there were no fish alive! The factories around the Great Lakes had been using the lakes as their inexpensive dumping ground. In 1972, the governments of the two countries signed an agreement to begin reduction of **phosphorus**. This chemical is used in fertilizer, pesticides, toothpaste, detergents, and explosives. It is bad for lakes because, in large quantities, it can cause a rapid increase in algae called an **algal bloom**. One result from algal blooms is the eventual death of plant and animal life in the area of the bloom.

The Great Lakes Water Quality Agreement between the United States and Canada was signed in 1971 and renewed in 2002. The goal of the agreement is to restore the lakes' environment and prevent further damage. The countries are working to make sure that chemicals that could poison animals and people are not put into the lakes. The countries are also working to reduce the amount of human waste dumped into the lakes.

EXTRACTION AND USE OF NATURAL RESOURCES ON THE CANADIAN SHIELD

The Canadian Shield is a large area of uplands surrounding Hudson Bay. This region covers most of the eastern half of Canada. The soil in the region is thin and rocky. Beneath the soil is one of Canada's most valuable resources—minerals. The mines in this region produce gold, silver, copper, zinc, lead, iron ore, uranium, and nickel. In fact, the most valuable minerals available in Canada are in the Canadian Shield. About 1.5 million people make their living in the mining industry in Canada—many of them in the Canadian Shield.

Mining can be messy work. The land around mines can be damaged and the environment ruined. Blasting and digging with heavy machinery are common activities in mining areas. **Slag**, or leftover rock from the smelting process, is often dumped in any convenient place. Mining processes can spew sulfur dioxide, SO_2 , into the air, producing acid rain and killing nearby vegetation and lake animals. Chemicals from the mines that are dumped into rivers and streams can poison the water and kill animal and plant life.

The Canadian Shield's minerals are also near the most populated areas of Canada. Pollution related to mining can have an impact on the large metropolitan areas to the south. The government has made new rules about mining. Some of the new rules reduce the amount of pollution allowed in waterways. Canada's government hopes to keep its fish alive and safe to eat without shutting down important mining industries.

THE TIMBER INDUSTRY IN CANADA

Vast forests cover almost half the land in Canada. Canadians have made this natural resource important to the economy. Loggers cut the trees and then send them to mills. These mills use the timber to make a variety of products including lumber, plywood, and wood pulp for making many kinds of paper.

Forests serve an important role in the environment. Animals and plants depend on the forests to live. Forests also serve to provide oxygen to the atmosphere and to filter out pollutants in the air. Forests serve as homes for wildlife and areas for human recreation.

Citizens in Canada are concerned that logging will destroy the forests and the benefits that it brings. A major concern for many Canadians is **clear-cutting**. Most timber companies cut all the trees in a given area, leaving large treeless gaps in the forest. Results of clear-cutting include reduced water quality, erosion, and loss of wildlife habitat. Heavy machinery can leave the forest floor compacted. This makes it hard for new growth to start. Some environmental groups want companies to leave small trees and seedlings. They also want to see smaller groups of trees removed instead of hundreds of acres of trees at a time.

The government and industry are working together to try to manage the use of the forests. Hundreds of millions of seeds and seedlings are planted each year. Billions of dollars are spent managing and protecting the forests. Over \$100 million is spent each year by the logging industry to protect wildlife and their habitats.