

# How People Modify the Environment

Just as people are affected by their environment, people can also affect their environment. Here are some of the ways that people have modified (or changed) their environment, and the positive and negative consequences that have resulted from these changes.

## Agriculture

**Agriculture** (farming) is the growing of food and raising of livestock. Civilizations first arose after the Neolithic Revolution, when people discovered that they could plant seeds to grow crops they could eat. Gradually, civilizations turned forests, grasslands, and marshes into farmland.

People often modify, or change, their environments in order to grow food. In **slash-and-burn** agriculture, people burn down forests and grow crops in the ashes. In hilly or mountainous areas, people use **terraced** farming, cutting the hillsides into stair-step shapes in order to have flat places to plant seeds. Many farmers today use techniques like leaving the land without crops for one season to replenish its nutrients, rotating crops from field to field, or adding fertilizer.



Cutting down forests and planting fields have greatly increased our food supply. This has permitted rapid population growth. However, it has also led to pollution of Earth's land, air, and water. In some places, agriculture has also contributed to deforestation and desertification.

[Photo source: [www.inspirationgreen.com](http://www.inspirationgreen.com)]

## Dam Building

A **dam** is a wall built across a river to control the flow of water. People sometimes build dams to drain swamps, to prevent floods, to generate energy, and to store water for drinking and irrigation. (Irrigation means bringing water to farmland.)

The building of a dam can save thousands of lives by preventing floods and making water available when it is needed. At the same time, a dam can take away water from other areas, and the reservoir of water that builds up behind a dam floods that area.



[Photo source: [www.wvencyclopedia.org](http://www.wvencyclopedia.org)]

## Deforestation

Human settlement in an area often leads to deforestation. **Deforestation** is the widespread cutting down of trees in an area. Deforestation has been practiced by humans for thousands of years. Much of Europe and many parts of North America were once covered by forests that were cut down for farmland.



Cutting down trees has both positive and negative effects. The cleared land can be used for farming or for building new homes and businesses. The trees can be turned into useful products like furniture or paper. However, since trees provide oxygen to the atmosphere, there is serious concern about cutting down the world's remaining forests. Also, tree roots help to hold soil in place and protect it from erosion. With fewer trees, valuable topsoil could be blown or washed away by erosion.

[Photo source: [news.softpedia.co](http://news.softpedia.co)]

## Desertification

Desertification is the process by which a fertile area turns into a desert. In some places, more people have settled in an area than its water supplies and other resources can support. In these situations, human settlement has helped turn an area into a desert.



Human activities such as cutting down forests, using lake and groundwater supplies for irrigation, and overgrazing with animal herds dries out the topsoil and removes plants holding the soil together. Without enough water or plant life, land in warm areas can easily become a desert.

[Photo source: [www.rtcc.org](http://www.rtcc.org)]

## Mining

Mining is the removal of valuable minerals and ores from the earth. Materials that are acquired through mining include metals, coal, oil, natural gas, gemstones, limestone, clay, and even more. People use these natural resources to produce energy that makes our modern lifestyle possible; to construct roads, bridges, homes, and buildings; and to create beautiful jewelry and other decorations.



However, mining can lead to a number of environmental issues. When mining strips an area of its trees and other vegetation, it can lead to erosion and the loss of animal habitats and biodiversity. Digging into the earth can sometimes cause sinkholes to form. In addition, the chemicals used in some mining processes can contaminate soil, groundwater, and surface water. This can affect the health of people and wildlife in the area.

[Photo source: [www.allposters.com](http://www.allposters.com)]

## Urbanization

**Urbanization** is the movement of people into cities. The first cities arose in the Middle East. By 7,000 B.C., the city of Jericho had 3,000 residents. Sumer (SOO-mer), the world's oldest known civilization, began on the plains of Mesopotamia (in modern-day Iraq) in 3,500 B.C. Later ancient cities like Rome had as many as a million people! Agricultural improvements in the 1700s, increased overseas trade, and the rise of manufacturing and factories during the Industrial Revolution led to the rapid growth of cities.



Today, most people in industrialized countries like the United States and Japan live in cities. Urbanization changes the environment by squeezing thousands, even millions, of people into small, treeless areas. For example, Cleveland was once a forest area. Today, it is home to skyscrapers and concrete streets.

Urbanization has many effects. Many people flourish, or thrive, in urban environments. They interact with other people, sharing their common interests and ideas. However, urban centers pollute the environment and use up large amounts of natural resources. The crowding and congestion of modern cities can make life for some people uncomfortable and even dangerous. There is a tendency for these negative effects to increase as urban centers grow larger.

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