

Mining

Definition:

Mining is the extraction of useful minerals or other geologic materials from within the earth. Common minerals that are mined include copper, iron ore, zinc, nickel, silver, and gold.

Effects on the environment:

Mining can cause the pollution of soil, vegetation, bodies of water, and the atmosphere.

Mining in the news:**Effects of Mining on Environment**

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Article by Debopriya Bose for buzzle.com

Effect on Land

Deforestation: Mining requires large areas of land to be cleared so that the miners could dig into the earth. For this reason, large-scale deforestation is required to be carried out in the areas where mining has to be done. Besides clearing the mining area, vegetation in the adjoining areas also needs to be cut in order to construct roads and residential facilities for the mineworkers.

Loss of Biodiversity: The forests that are cleared for mining purposes are home to a large number of organisms. Indiscriminate clearing of the forests leads to loss of habitat of a large number of animals. This puts the survival of a large number of animal species at stake. The cutting down of trees in itself is a big threat to a number of plants and trees growing in the forests.

Pollution: Despite measures being taken to release the chemical waste into the nearby rivers through pipes, a large amount of chemicals still leak out onto the land. This changes the chemical composition of the land. Besides this, since the chemicals are poisonous, they make the soil unsuitable for plants to grow. Also, the organisms that live in the soil find the polluted environment hostile for their survival.

Effect on Water

Pollution: Chemicals like mercury, cyanide, sulfuric acid, arsenic and methyl mercury are used in various stages of mining. Many of the chemicals are released into nearby water bodies, and lead to water pollution. In spite of tailings (pipes) being used to dispose these chemicals into the water bodies, possibilities of leakage are always there. When the leaked chemicals slowly percolate through the layers of the earth, they reach the groundwater and pollute it. Surface run-off of just soil and rock debris, although non-toxic, can be harmful for vegetation of the surrounding areas.

Loss of Aquatic Life: Release of toxic chemicals into the water is obviously harmful for the flora and fauna of the water bodies. Besides the pollution, mining processes use water from nearby water sources. The result is that the water content of the river or lake from which water is being used gets reduced. Organisms in these water bodies do not have enough water for their survival.

Spread of Diseases

Sometimes the liquid waste that is generated after the metals or minerals have been extracted is disposed in a mining pit. As the mine tailings fill up the pit, they become a stagnant pool of water. This becomes the breeding ground for water-borne diseases causing insects and organisms like mosquitoes to flourish.

Although the developed countries have tight norms regarding mining, such rules can be easily ignored in countries, which lack strict monitoring of the procedures being followed for mining. The effects in such cases can be devastating for the environment. Be it due to ignorance of the regulations or just a freak accident, incidents like the Guyana spill of 1995 highlights the fact that issues like how does mining affect the environment are worth some serious deliberation.

Deforestation

Definition:

Deforestation is the cutting down and removal of all or most of the trees in a forested area.

Effects on the environment:

Deforestation can erode soils, contribute to desertification and the pollution of waterways, and decrease biodiversity through the destruction of habitat.

Deforestation in the news:

The Causes of Deforestation

February, 2011

Published by greeniacs.com

Forests are disappearing at a rate of about 36 football fields per minute.¹ That equates to an annual loss of 12-15 million hectares of forest, which is an area roughly the size of Costa Rica.² The United States Forest Service defines “**forest**” as land that is at least one acre and at least 10 percent stocked with trees of any size. Forests cover almost a third of the planet,⁴ but they are NOT distributed equally—about half of the forests on Earth are located in the tropics.⁵ The clearing of forests by logging or burning is called “**deforestation.**”

Causes of Deforestation

Agriculture is the leading cause of deforestation. Subsistence farming, in which farmers grow enough food to feed them and their families, utilizes 48% of cleared forest lands, according to the United Nations Framework Convention on Climate Change.⁸ Commercial crops account for 20% of deforestation, and large-scale cattle ranching for 12%. Surprisingly, wood extraction—including legal and illegal logging and charcoal production—accounts for only 19% of deforestation worldwide.

Agriculture: Forests are cleared to produce palm, pulp, soy, coffee, and other commodities. Many common goods contribute to deforestation. For example, palm oil is found in more than half of all consumer products, including soaps, biofuels, and breakfast cereals.⁹ Palm oil production may be increasing... Greenpeace recently warned that the palm industry plans to double Indonesian palm oil production by 2020! Many farmers in the tropics practice slash-and-burn agriculture, an environmentally devastating practice that burns lands to kill parasites and other unwanted organisms.

Cattle Ranching: In Amazonia, cattle raising activities account for more than 75 percent of deforested lands.

Logging: Selective logging may be even more of an environmental burden than **clear cutting**—the practice of cutting down all the trees in an area and growing new, even-aged trees in their place. Selective logging is the practice of just cutting down a very limited number of tree species in area. A research study found that with selective logging, for every tree cut down, 30 more trees will be severely damaged due to the fact that trees are connected by vines, and when one is cut down the surrounding trees are also pulled down. In this case these additional trees are not replanted, and the area becomes dry and susceptible to fires. Logging also often leads to the construction of new roads through the forest, which opens the land to even more development. Logging is outlawed in many forests, but that doesn't necessarily stop it from happening.

Fires: Deforestation isn't always intentional, nor do humans always cause it. Wildfires—some caused by humans and some not—kill trees. Subsequent overgrazing by animals may prevent young trees from developing.

Drilling

Definition:

Drilling is process of using machines to extract natural gas and oil from where it is stored deep below the earth's surface.

Effects on the environment:

Drilling for natural gas and oil can lead to pollution of air, and water supplies. 'Fracking' can contaminate drinking water and increase the greenhouse effect, and offshore oil drilling has led to damaging oil spills that pollute both land and water.

Drilling in the news:

Explaining the Gulf Coast Oil Spill

April 30, 2010

Published by the National Wildlife Federation

What happened?

Hundreds of oil wells have been drilled into the ground beneath the Gulf of Mexico. At each deep-water well, a pipe carries the oil from deep in the Gulf floor up to a platform that floats on the water's surface. Here the oil is collected and shipped to land for us to use.

On April 20, 2010 a new well had just been drilled. Suddenly, some natural gas and oil accidentally escaped from the well and gushed to the surface. Then, right beneath the drilling platform, it exploded in a huge fireball. The damaged platform sank and pulled the pipe leading from the well down with it. The broken pipe leaked oil into the Gulf for more than 80 days. The leaking pipe has finally been capped, but no one is yet sure if it will hold.

Why are people so worried about the leak?

The oil that was coming out of the ocean floor is a dark, thick, sticky liquid with a strong odor. Much of the oil is now floating to the surface and spreading, creating an oil "slick" that covers hundreds of square miles. It coats everything it touches in a layer of sticky oil. The oil also pollutes the water, and air above it, with fumes that are dangerous to breathe. Huge clouds of oil are also spreading beneath the surface, and no one is sure what kind of damage they may do to living things.

Millions of gallons of oil have leaked into the Gulf so far. As more and more oil leaks from the well, the slick spreads farther and farther. It has now washed up onto the coast, and into wetlands in some areas. This presents a serious threat to plants and animals that live there.

What happens to the animals that get covered in oil?

Birds get the oil on their feathers when they dive into the water for food or when they land on the surface to rest. When they try to clean their feathers with their beaks, they can accidentally swallow some of the oil. The oil also hurts their eyes and harms their lungs. People are capturing some of these birds and trying to clean them, but many of the oil-soaked birds still die.

Ocean animals, such as sea turtles and dolphins, also get oil on them when they come to the surface to breathe. They can be harmed by chemicals in the oil, especially if they swallow or breathe some. Hundreds of sea turtles have died from the spill. Smaller creatures aren't safe either. Countless larvae (young) of fish, shrimp, crabs, oysters, and turtle hatchlings, which swim in the open sea, have also been killed by the pollution, scientists believe.

Will the disaster also harm people?

Eleven people died from the explosion on the oil platform. At sea and on land, others may become sick from touching the oil and breathing the fumes. And we don't even know what some of the long-term harm to people might be. Thousands of people make their living by catching the fish, crabs, and shrimp that depend on wetlands. Many of these people are already unable to work because of the spill. And if the oil kills too many fish and other sea creatures, there may be little for the fishermen to catch in the future.