

# Environmental Issues Canada



**Standard:** SS6G6 Explain the impact of environmental issues in Canada.

**Element:** a. Explain the causes and effects of pollution and acid rain in Canada to include the Great Lakes.



# Causes of Acid Rain

The Great Lakes / St. Lawrence region of southeastern Canada is the site of most of the nation's industrial **factories**, commercial shipping, **hydroelectric** and coal-burning **power** plants, etc. While this boom in business is great for the economy, it has its negative effects on the environment with **pollution**.

Power plants like this one create thousands of jobs which helps the economy by increasing GDP, but also creates pollution and is bad for the environment.

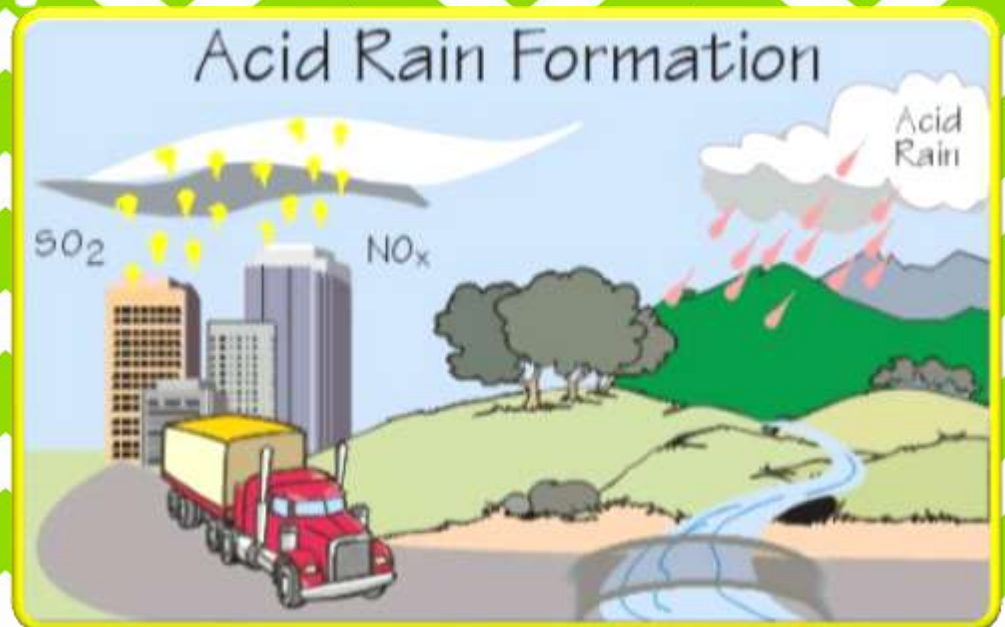




# Causes of Acid Rain

Vehicle exhaust and the smoke released from burning coal has created an ecological phenomenon known as **acid rain**. **Acid Rain** is toxic rain which results when noxious gases are released into the atmosphere and mix with water molecules. **Acid rain** results when noxious gases – such as **carbon** dioxide, sulfur **dioxide**, and **nitrogen** oxide – combine with water molecules in clouds.

It is important to remember pollution doesn't disappear because you can't see it. The pollution from cars, and factories forms acid rain clouds





# Effects of Acid Rain

When these clouds filled with pollution get too heavy the rain that is released is **toxic**. Through the water cycle toxic water flows over the ground and into **fisheries**. **Fisheries** are manmade lakes that are used to farm fish.

Could you imagine eating these fish that been swimming in toxic water?





# Effects of Acid Rain

Sometimes the acid rain falls onto Canada's many **forest**. When this happens it slowly kills all trees starting from the top down. Since **lumber** is a large part of Canada's GDP this hurts their exports because dead or dying lumber cannot be used for lumber exports.

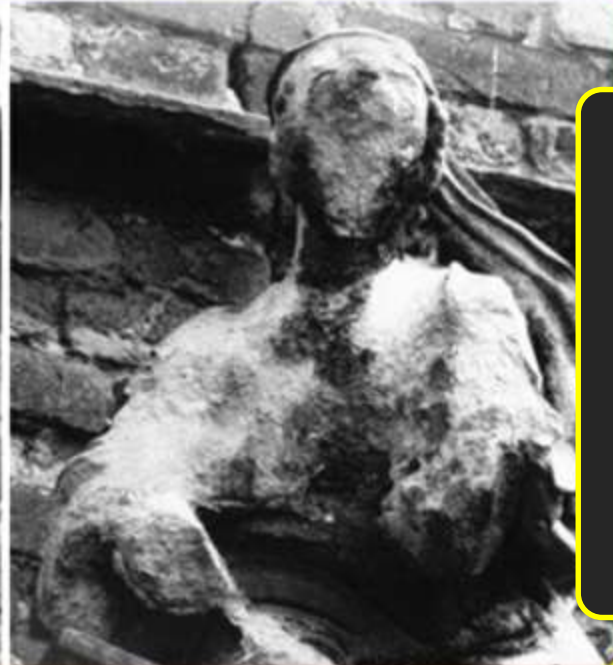


Canada has one of the largest timber industries in the world.

# Effects of Acid Rain

When acid rain falls on monuments, statues, and buildings it **chemically** breaks down the **rock**. While this may take a long period of time, its presence is known from before and after pictures of statues, buildings, and monuments.

Picture taken in 1908

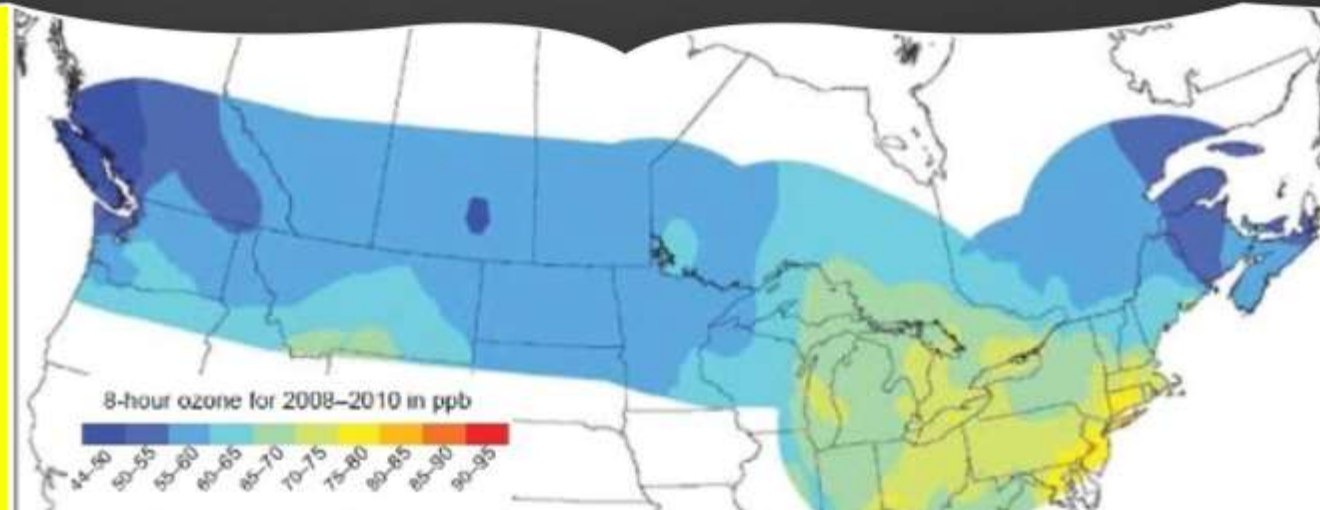


Picture taken in 1968



# Who is to blame?

While some of Canada's pollution problems come from within the country between **50-75%** of the pollution which causes acid rain is actually coming from **vehicles** and **factories** on the **U.S.** side of the border.



The picture above shows the amount of pollution in the U.S. that drifts up to Canada. The **yellow** areas are most concentrated and flow upward to the Great Lakes and beyond.



# Solution

The Canadian government has passed laws calling for stronger **regulation** of **factory** and **vehicle** exhaust **emissions**. Factories are required to have filters and new vehicles are required to get better gas mileage. It has also encouraged its citizens to use mass **transit**. U.S.-Canadian cooperation will be required to fully eliminate this ecological threat though.



Smoke filters stop some of the harmful chemicals before they are released in the air.



Newer cars are getting better gas mileage with less harmful vehicle exhaust.



**Standard:** SS6G6 Explain the impact of environmental issues in Canada.

**Element:** b. Explain the causes and effects of the extraction of natural resources on the Canadian Shield (e.g., mining and logging).



# Cause of Mineral Extraction

Canada's mining industry is concentrated in the **Canadian Shield** region which surrounds Hudson Bay. This area contains large deposits of gold, silver, copper, zinc, lead, iron ore, uranium, and nickel. Although the mining industry is very lucrative, the processes used to extract Canada's mineral wealth (i.e., **blasting** and **digging**) are bad for the **environment**.

Blasting minerals for extraction on the Canadian shield.





# Effects of Extraction

**Sulfur dioxide** released from mining equipment reduces the air **quality**, and **chemical** runoff from mining processes often contaminates water supplies.





## *Solution for Extraction*

The Canadian government has passed **legislation** to limit the amount of mining-related pollution allowed in its waterways, namely in an effort to protect **fisheries** and **seafood** safety. By limiting the amount of mining in and around water ways, pollution from the mines have declined.



**Before**

**After**



## Cause of Timber Extraction

Canada's forests are a source of **lumber**, **plywood**, and **wood pulp**. Like mining and account for a large part of Canada's exports. However, there is an environmental downside to the timber industry.





## Effects of Timber Extraction

The destruction of natural habitats caused by **clear-cutting** is critical. **Clear-cutting** is the cutting down and completely removing all trees in a given area. Additionally, the heavy machinery used for logging frequently **compacts** the soil of the forest floor such that new growth is **hindered**.

It is  
estimated  
humans  
clear 150  
acres per  
minute  
world  
wide!





## Effects of Timber Extraction

The Canadian **government** has done quite a bit in recent years to limit the damage associated with **deforestation**. As a result, Canada's deforestation rate is currently the **lowest** in the world.

The Canadian government requires all timber companies to replace all trees cut with seedlings. Some companies even plant 2 trees in place of every tree they cut!

