

Acid Rain

Normal rainfall is slightly acidic because of reactions with atmospheric carbon dioxide, which form carbonic acid. Rainfall with a pH of less than 5.6 is referred to as acid rain.

Acid rain contains sulphuric and nitric acids from both natural and man-made sources. Acid rain can be produced naturally through geothermal emissions and biological processes, but it is our heavy use of fossil fuels that is the most significant contributor.

Exhaust emissions from vehicles and from burning fossil fuels in our industries are the main sources of acid-forming sulphur and nitrogen oxides. These compounds react with water vapour in our atmosphere to form acids, which reach the ground in rain and snow, finding their way into surface and groundwater systems. Regions with limestone rock have a natural ability to neutralise acid rain or other acidity and so are not generally affected as much as some other areas. On the other hand, regions with mostly granite rocks tend to be more sensitive to increases in the acidity of the environment.

Even a slight change in pH of an aquatic habitat can have a significant effect on the small organisms, which form the basis of aquatic food chains. In this way, wildlife can be greatly affected. Additionally, a pH change can change the normal concentrations of nutrients and other chemicals in the water. This too can have significant impacts on wildlife.

What you can do:

- Find out how acidic precipitation can affect water quality.
- Find out what you can about general trends in acid rain in Australia and abroad.
- What effect might prevailing winds have on the effect of acid rain?
- Why are Europe's problems with acid rain worse than ours?
- What are the major sources of acid rain in Australia?
- Search the web for information on acid rain monitoring in Australia and around the world.
- What do you believe to be the best approach for reducing or eliminating acid rain?
- Using a soils map of your region of Australia. Predict the effects of acid rain on areas within the region. Which area(s) is (are) most susceptible?