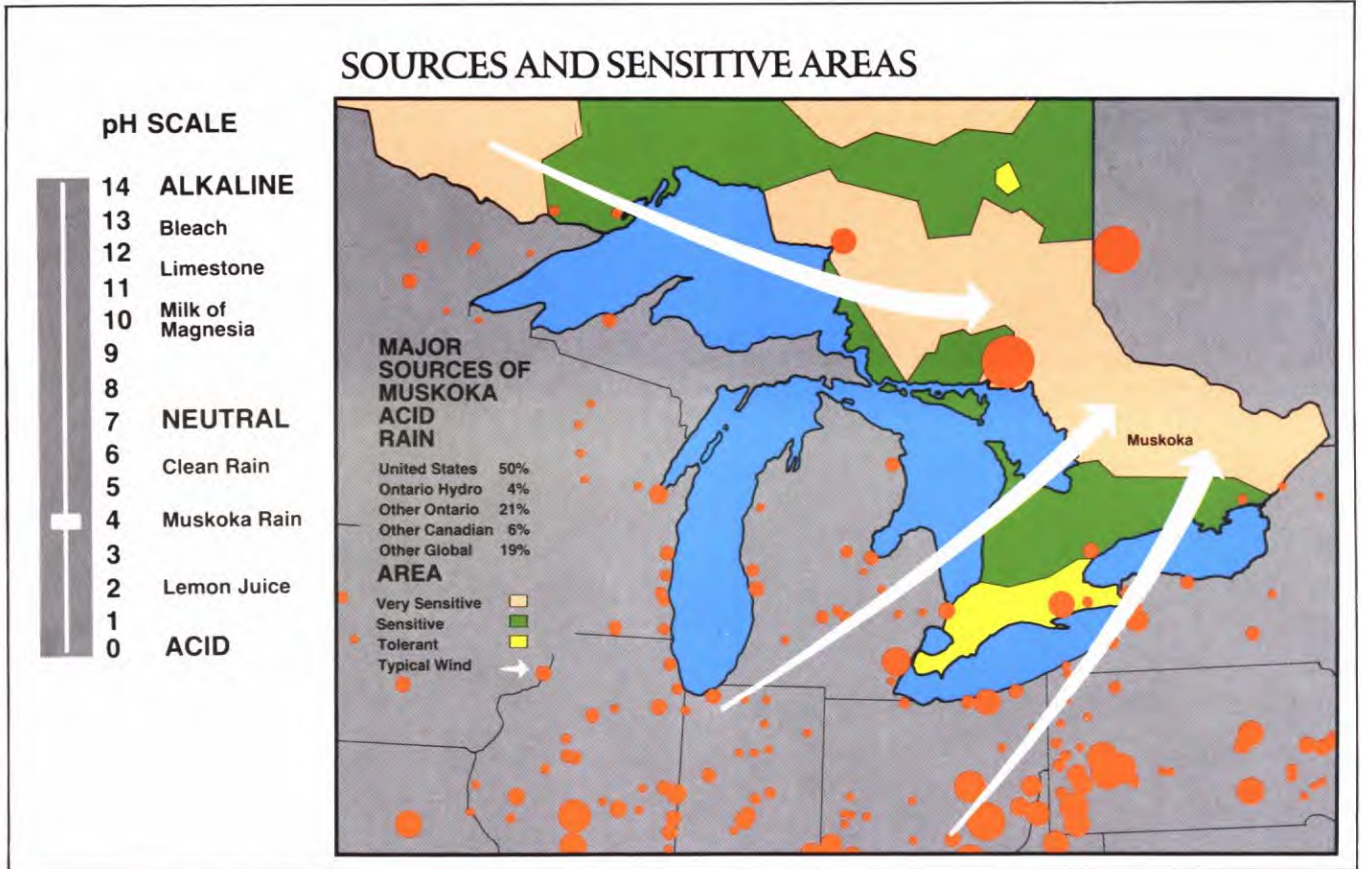




# Curbing Acid Rain



The pH scale is from 0 (strong acid) to 14 (strong alkaline) with 7 being neutral. Normal rain has a pH of 5.6, but rain in Muskoka – because of acid gas emissions – now has a pH of 4. Acid rain

damage depends on the "sensitivity" of the lakes and soils where it falls. Areas where both the bedrock and the soil are alkaline are relatively tolerant of acid rain. A large part of Ontario lacks

this natural alkalinity and is "sensitive" to acid rain. (Orange dots in the drawing indicate sources of acid gas emissions.)

## What is acid rain?

Acid rain is a "catch-all" term for any type of precipitation – rain, snow, sleet, etc. – that is more acidic than normal. It is caused when sulphur oxides and nitrogen oxides are given off when metal ore is smelted, when coal and oil are burned or when gasoline or diesel engines operate. These oxides of sulphur and nitrogen are often called "acid gas."

In the atmosphere, acid gas undergoes chemical changes that form dilute solutions of sulphuric acid and nitric acid. These compounds fall back to earth and can seriously affect the natural and human environment.

## What damage does acid rain cause?

In Ontario, the major concern about acid rain has been its effect on lakes. Acid rain can increase the acidity of lakes so that fish and other aquatic life can no longer survive. Acid rain can also contribute to the destruction of forests as well as increase the corrosion of metal and stonework. Finally, there is evidence that acid rain can be harmful to human health.

## How does Ontario Hydro contribute to acid rain?

Ontario Hydro operates five coal-fired generating stations and one oil-fired station. They cause a little over 20 per

cent of Ontario's acid gas and about one per cent of North America's.

Because acid gas can be carried long distances by winds, emissions from one source can cause acid rain over a broad area. The result is that Ontario Hydro's emissions account for about four per cent of the acid rain that falls in the sensitive areas of Southern Ontario. Emissions from the United States account for about 50 per cent of the acid rain in these sensitive areas. In addition, 21 per cent comes from other sources in Ontario, six per cent comes from other sources in Canada and 19 per cent comes from other sources throughout the world.