Effects:

Acid rain has been shown to have adverse impacts on forests, freshwaters and soils, killing insect and aquatic life-forms as well as causing damage to buildings and having impacts on human health.

i. Surface waters and aquatic animals:

Both the lower pH and higher aluminium concentrations in surface water that occur as a result of acid rain can cause damage to fish and other aquatic animals. At pH lower than 5 most fish eggs will not hatch and lower pH can kill adult fish. As lakes and rivers become more acidic biodiversity is reduced. Acid rain has eliminated insect life and some fish species, including the brook trout in some lakes, streams, and creeks in geographically sensitive areas, such as the Adirondack Mountains of the United States. However, the extent to which acid rain contributes directly or indirectly via runoff from the catchment of lake and river acidity (i.e., depending on characteristics of the sprotneous watershed) is variable. The United States Environmental Pretorion Agency's (EPA) website states: "Of the lakes and streams surveyed acidic three acidic three lakes hosted by silicate basement rocks are there acidic three lakes within limestone or other basement rocks are there acidic three lakes within limestone or other basement rocks are there acidic three lakes amount of acid rain.

ii. Soils:

Soil biology and chemistry can be seriously damaged by acid rain. Some microbes are unable to tolerate changes to low pH and are killed. The enzymes of these microbes are denatured (changed in shape so they no longer function) by the acid. The hydronium ions of acid rain also mobilize toxins, such as aluminium, and leach away essential nutrients and minerals such as magnesium.

$$2 \operatorname{H}^{+}(\operatorname{aq}) + \operatorname{Mg}^{2+}(\operatorname{clay}) \rightleftharpoons 2 \operatorname{H}^{+}(\operatorname{clay}) + \operatorname{Mg}^{2+}(\operatorname{aq})$$

Soil chemistry can be dramatically changed when base cations, such as calcium and magnesium, are leached by acid rain, thereby affecting sensitive species, such as sugar maple (Acer saccarum). the EPA. This can be done by restricting the use of fossil fuels and focusing on more sustainable energy sources such as solar and wind power.

Also, each person can do their part by reducing their vehicle use. Using public transportation, walking, riding a bike or carpooling is a good start, according to the EPA. People can also reduce their use of electricity, which is widely created with fossil fuels, or switch to a solar plan. Many electricity companies offer solar packages to their customers that require no installation and low costs.

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