

While the mechanisms are not fully understood, available data indicate that fish in poorly buffered lakes contain elevated mercury levels, some in excess of Canadian and United States action levels (0.5 mg/kg and 1.0 mg/kg respectively). Unrestricted consumption of fish containing mercury in excess of these action levels can lead to brain damage and neurological disorders in humans. No clear evidence exists, however, that such effects have resulted as a direct consequence of acidic precipitation.

A number of drinking water supplies have apparently become contaminated with metals as a result of acidic deposition, but no clear evidence of health effects from drinking these contaminated waters was reported. The elements most frequently detected were lead, cadmium, copper and zinc. In one Pennsylvania county, 16 per cent of cistern waters contained lead in excess of the United States and Canadian drinking water standards (50 mg/l). Populations at high risk include those obtaining drinking water from poorly buffered lakes and streams (or eating fish from such areas), and those using acidified groundwater or cisterns as a source of drinking water.

Visibility Effects

Effects of transboundary air pollution on visibility are related to air quality, not to acidic deposition. Acid precursors which can significantly affect visibility are sulphuric acid and various ammonium sulphate aerosols. Available data do not suggest that nitrates (predominantly in the vapour phase) play a significant role, but visible brown plumes from NO_2 have been reported at a distance of 100 km from isolated point sources.

From available information on background and incremental pollutant loadings and relative humidity, estimates of visibility impacts (reduction in visual range and contrast, discolouration from haze or plumes) can be made. Analysis of airport data indicate a substantial decline in regional summertime visibility, in eastern North America, between 1950 and 1974. This change may be associated with changes in the level and distribution patterns of sulphur oxide emissions.

Clean areas, such as those found in western North America are the most sensitive to visibility degradation. Usually, good visibility is valued most highly in natural settings such as parks and wilderness areas. Any area however, with normal viewing distances of a mile or more may be affected by episodic regional haze carrying acid precursor substances.

Man-made Effects

Acid deposition, oxidants, gases and particulates collectively contribute to the accelerated degradation of materials. Many metallic construction materials are adversely affected by acid deposition through increased dissolution of protective surface oxides, or of the metal itself. Masonry materials containing carbonate, such as limestone or marble, are very susceptible to attack by acid deposition. Plastics, elastomers, and organic paints and coatings are degraded by oxidants,