

indirect or special situations. These include working near strong point sources, studying soils treated with acidifying fertilizers, and designing lysimetric experiments incorporating simulated acid rains. From such approaches, a variety of soil effects have been demonstrated, usually of an undesirable nature, but at the present time the problem remains of quantifying the dose-response reactions in the field situations.

#### 1.3.4 Sensitivity Assessment

Regions which may be sensitive to acidic deposition have one or more components (i.e., forests, aquatic life, soil, or water) susceptible to degradation under the influence of acidic deposition. Relative sensitivity of these components is reflected in the rate at which an ecosystem component degrades under a particular acidic deposition loading. Different underlying criteria have to be used to represent sensitivity for the different ecosystem components, such as rate of tree growth, characterization of the soil-base status, or water alkalinity. Because so little is known about the acidic deposition dose-response relationships, the underlying criteria are often imprecise. Therefore, relative sensitivity can only be approximately represented or mapped, and then perhaps for only a few species, ecosystems or theoretical effects.

Attention is focused on the sensitivity of soils and bedrock because results from studies which address vegetation and ecosystem effects are limited and not well understood at this time. In the approach used, the emphasis has been to map a combination of potentially important soil attributes as a best available indicator of relative sensitivity. Soil attributes incorporated include texture, depth to carbonate, pH and cation exchange capacity, as well as glacial and bedrock features. Incompleteness of survey data for certain important properties (e.g., sulphate adsorption capacity, internal proton production, and the role of dry deposition) precludes their use in identifying detailed sensitivities of land or aquatic resources. As far as possible, the eastern parts of the United States and Canada are mapped using a similar conceptual framework which indicates the general extent of areas of different possible sensitivities to the effects of acidic deposition. The significance of these categories will increase as more effects are documented.

### 1.4 HUMAN HEALTH AND VISIBILITY

#### 1.4.1 Health

Available information gives little cause for concern over direct health effects from acidic deposition. The potential indirect health effects associated with transboundary air pollution discussed are: (1) contamination of the food chain with metallic substances,