

by estimating empirically an additional contribution from these sources. However, this background is generally considered to be small in comparison with the regional man-made contribution over the large region which is heavily affected and its impact may thus be expected to be correspondingly small. Nevertheless, further observations and data analysis are needed to determine more precisely what the relative importance of "global" acidity is in the eastern North American context.

6.2.2

North American Variations

Maps of the spatial distribution of pH and the most important (from the effects point of view) chemical species in precipitation over North America have been prepared using data from the major U.S. and Canadian national networks (see Report 2F-I, Figures 4.2 to 4.17). These maps are based on some 90-100 observing stations - a network sufficiently dense to give the major features of the large-scale fields with confidence in the east. Concentrations of the major acid-related ions (hydrogen ion, sulfate, nitrate, and ammonium ion) in precipitation for the year 1980 were prepared separately. Using the more detailed precipitation amount fields for the same year, based on the denser meteorological networks, the deposition field was prepared by multiplying the precipitation concentration field by the precipitation amount field. The resultant pH, the per cent of normal precipitation and the deposition fields are shown in Figures 6.1 to 6.6.

When the sulfate deposition pattern is compared with the sulfur emission data shown in Figure 2.2 a very dramatic spatial concurrence is apparent with the maximum deposition located over and immediately downwind of the region of maximum emissions in eastern North America. The zone of elevated deposition also extends for a considerable