

The initial design of future research efforts to document the effects of acidic deposition should reflect the data requirements for an economic benefit estimate. Interdisciplinary cooperation at the design stage is the best way to ensure results which are amenable to economic analysis.

1.7 NATURAL AND MATERIAL RESOURCE INVENTORY

1.7.1 Introduction

A natural and material resource inventory is a necessary component of an assessment of the benefits of emission reductions. Consequently, the Work Group attempted to compile an inventory for aquatic, terrestrial and man-made resources.

In all cases, the sectoral inventories are incomplete and sometimes lacking in sufficient detail. For example, not only does the aquatic inventory not include an accurate accounting of lakes and streams with their associated alkalinity, but it also does not include a consideration of the population size and diversity of aquatic organisms depending on the maintenance of a stable aquatic environment. Similarly the terrestrial inventory has been limited to only a consideration of hardwoods and softwoods because a comprehensive inventory at the species level is presently lacking.

The inventory has been established on the basis of sulphate deposition regimes coincident with the location of terrestrial features such as soils and bedrock which have a limited capacity to reduce the impact of acidic deposition on aquatic regimes. In no cases were there sufficient data to indicate which particular resources are being damaged by acidic deposition. Thus, this inventory is a categorization of resources potentially at risk, rather than a list of resources now adversely affected by acidic deposition. The completion of this inventory has served to underline the considerable weakness which exists in our ability to adequately quantify the extent of the resource at risk.

1.7.2 Aquatic - United States

Approximately 36,000 km² of the eastern U.S. surface water area (25%) is located in areas of low and moderate potential to reduce acidity (high and moderate sensitivity) and of deposition greater than 20 kg/ha.yr sulphate in precipitation. Only 24% are located in areas with a high potential to reduce acidity (low sensitivity) and of deposition greater than 20 kg/ha.yr sulphate in precipitation. The actual surface water area would be more restricted if data had been available on surface water chemistry (i.e., alkalinity). Additional refinements on the inventory should include data on this