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Long-Term Experiments with Acid Rain in Norwegian Forest Ecosystems

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Preface

Since the 1970s there has been a considerable interest in the effects of atmospheric deposition on the environment. The earliest studies were mostly concerned with the acidity of the precipitation, while later experiments included most components of atmospheric deposition. Much information has been gained from these studies.

A few studies are long-term and based on a detailed experimental design. Among these are the Norwegian field experiments with artificial acid rain. These experiments were established as early as 1972 to 1975 in different forest stands which were watered with artificial rain for five to eight years. After the watering was stopped all experiments were run until 1990 to study the long-term effects and possible recovery. The field plot experiments were supplemented with field lysimeter studies.

As in all long-term experiments it is easy today, 20 years later, to see that other treatments might have been included. However, it was the knowledge available in the beginning of the 1970s and what was technically and economically possible that determined those experimental designs. In spite of limitations in the treatments included, the long-term experiments in Norwegian forest ecosystems have significantly contributed to the knowledge of effects of acidic rain in forest ecosystems.

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