ABSTRACT. The Gårdsjön Project is an ecosystem approach in studying acid deposition and its effects on terrestrial parts and lakes within a catchment. The study is an attempt to quantify the processes causing the acidification as well as analyses of the chemical and biological conditions before liming of the lake and manipulations in microcatchments. This paper gives a brief overview of some studies already performed and recently started experiments within the project, such as lake liming, lime application on land, forest fertilization, clearcutting and applications of acid and neutral sulphate on land.

1. Introduction

A geological map of Northern Europe shows that areas underlain by lime-poor bedrock predominate in the Scandinavian countries: while most parts of Central Europe have few areas with low weathering bedrock. The Scandinavian countries have large numbers of lakes predominantly in areas with crystalline bedrock while only few lakes are found in Central Europe. The limited neutralizing capacity of soils and bedrock explains why reports on fish decline and dramatic changes in ecosystem structure due to increased acidity in streams and lakes first appeared in Sweden and Norway (Hultberg and Stenson, 1970; Jensen and Snekvik, 1972; Grahn et al., 1974; Almer et al., 1974; Muniz and Leivestad, 1980).
Fig. 1 pH (laboratory measurements) in epilimnic and bottom water (1 m above bottom at 18.5 m depth) in Lake Gårdsjön during the years 1970 to 1985.