

## INTRODUCTION

The Caribou-Poker Creeks watershed was selected in 1969 as a site where agencies and individuals with interests in water and related research could conduct studies within a coordinated framework. Research watersheds are important areas for obtaining basic information on relationships between land, water and climate. This particular research watershed is rather unique because one of the two basins has been set aside for "planned disturbances," while the other basin will be preserved in its natural state as a control. Slaughter (1973) describes these basins in detail and presents the rationale and history of their selection. Figure 1 shows the topography and distribution of the various sub-basins comprising the entire watershed, and lists the stations and their respective numbers. "Planned disturbances" such as oil spills, road construction, forest fires, etc., under controlled and carefully monitored conditions will provide resource managers and regulatory officials with sufficient information to minimize the environmental impact of large-scale disturbances. A recent paper (Slaughter and Helmers, 1974) presents a broader overview and stresses the need for hydrological research in subarctic regions.

The Arctic Environmental Research Station (AERS) has been involved in water quality research in these basins since the basins were established. In 1971, Laboratory personnel sampled all tributaries monthly throughout the summer. Field chemistry and stream discharge measurements (11 in all) were accomplished at the sampling site. Chemical and biological samples were collected for laboratory analyses. Three similar sampling runs were completed in the summer of 1972. Jinkinson et al. (1973) report on the biological findings and present water quality data for the mainstreams of Poker and Caribou Creeks. More complete data for all stations are included in this report.

All data collected before fall 1972, represent summer conditions. To collect the necessary year-round data in 1972, a permanent field site was established as a cooperative venture with the U.S. Forest Service, Institute of Northern Forestry, Fairbanks, Alaska, and the U.S. Army Cold Regions Research and Engineering Laboratory, Ft. Wainwright, Alaska. This field station provides the capability for continuous water quality monitoring of Poker and Caribou Creeks and the collection of some climatological data. This report describes the establishment of the field station; presents some climatological data; discusses the water chemistry data from 1971 and 1972; includes the monitoring data for 1973, the winter data for 1974; and briefly considers future plans and modifications for the field station.