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Hydrometeorological Data from the Saqvaqjuac Project N.W.T., 1977 to 1980

J.A. Dalton

Western Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

July 1981

**Canadian Data Report of
Fisheries & Aquatic Sciences
No. 273**



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Canadian Data Report of Fisheries and Aquatic Sciences

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Canadian Data Report of
Fisheries and Aquatic Sciences 273



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PROJECT, N.W.T., 1977 to 1980

by

J.A. Dalton

Western Region
Department of Fisheries and Oceans
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This is the 37th Data Report
from the Western Region, Winnipeg

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Cat. no. FS 97-13/273 ISSN 0706-6465

Correct citation for this publication is:

DALTON, J.A. 1981. Hydrometeorological data from the Saqvaqjuac Project,
N.W.T., 1977 to 1980. Can. Data Rep. Fish. Aquat. Sci. 273: v + 43 p.

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ABSTRACT

DALTON, J.A. 1981. Hydrometeorological data from the Saqvaqjuac Project, N.W.T., 1977 to 1980. Can. Data Rep. Fish. Aquat. Sci. 273: v + 43 p.

From 1977 to 1980, hydrometeorological data were collected at the Saqvaqjuac Project in support of biological and limnological studies. This report summarizes flow data for one small 15.4 ha watershed, three small lakes and one larger 607 km² watershed. Other data include bathymetric and topographic maps, lake levels, lake surface temperature, frost depth surveys, snow surveys, air temperature, precipitation, relative humidity, wind velocity and pan evaporation.

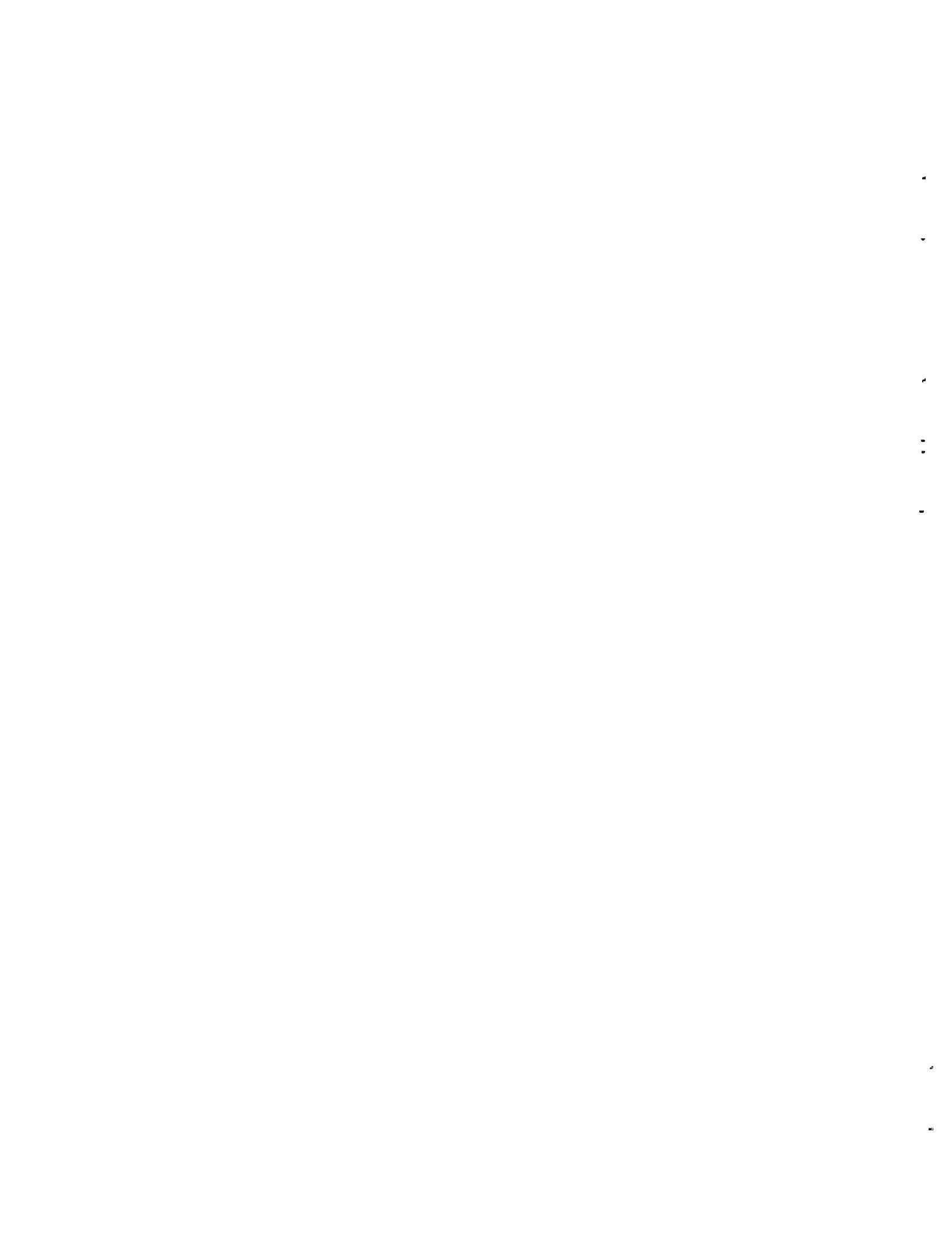
Key words: hydrology; arctic; permafrost; climatology.

RESUME

DALTON, J.A. 1981. Hydrometeorological data from the Saqvaqjuac Project, N.W.T., 1977 to 1980. Can. Data Rep. Fish. Aquat. Sci. 273: v + 43 p.

De 1977 à 1980, on a recueilli des données hydro-météorologiques afin d'étudier la biologie et la limnologie des lieux du projet Saqvaqjuac. Le présent rapport résume les données sur l'écoulement d'un petit bassin hydrologique de 15,4 hectares, de trois petits lacs et d'un bassin hydrologique plus important, soit de 607 kilomètres carrés. Il comprend également des cartes bathymétriques et topographiques, et des données portant sur des études sur la neige et la profondeur du gel, la température de la surface et les niveaux des lacs, les précipitations, la température, l'humidité relative, la vitesse du vent et l'évaporation (à l'aide d'un bassin à évaporation).

Mots-clés: hydrologie; arctique; pergélisol; climatologie.



INTRODUCTION

The Saqvaqjuac Project was established in May 1977 by the Freshwater Institute to conduct research on freshwater systems in the central eastern Arctic in view of possible industrial developments in the region. Hydrometeorological data collection has been an important part of the research since the project began. Hydrologic data are used to develop specific water budgets for biological and chemical research on small lakes selected for studies in the area. In addition, the data are being used to describe the general sources and distribution of surface and subsurface water in the Precambrian Shield lying in the arctic climatic zone. Newbury et al. (1979) includes Saqvaqjuac 1978 data in a preliminary comparison with water budgets for small watersheds in other climatic regions of the Precambrian Shield.

This report summarizes the hydrometeorological data collected at the project from 1977 to 1980. The first summer, 1977, was an exploratory year and fewer data were collected than in the following three years. The data summarized in this report include: mean daily flow data for several small lake basins, a small terrestrial basin and a larger river; climatic data consisting of air temperature, lake surface temperatures, wind speed, relative humidity, precipitation and pan evaporation; and bathymetric maps of the research lakes, topographic maps of the basins and miscellaneous snow survey and frost depth data. All Saqvaqjuac area place names used in this report are unofficial.

SITE DESCRIPTION

The Saqvaqjuac field camp ($63^{\circ}39'N$, $90^{\circ}39'W$) is located on the shore of a small protected inlet on the northwest coast of Hudson Bay (Fig. 1 and 2). The camp is about 10 km from the main body of Hudson Bay. The closest settlement is Chesterfield Inlet (population about 275), 36 km south of the camp on the south side of a large inlet called Chesterfield Inlet (Fig. 2). Although there is a 3-6 m semi-diurnal tide along the coast in this part of Hudson Bay, the small size of the entrance channel into the Saqvaqjuac Inlet dampens this tide to about 0.6 m at the research camp (Fig. 2).

Numerous irregularly shaped small lakes visually dominate the landscape here even more than in other parts of the Precambrian Shield because of the lack of trees. The lakes, which occupy a large portion of the area, are surrounded by exposed boulder-strewn granitic bedrock rising steeply from the water, or by more gently sloped, vegetated areas with shallow overburden of clays, gravels and boulders. Vegetation is typically shrub-heath tundra, including dwarf willow, dwarf birch, perennial vascular plants, grasses, mosses, and lichens. Exposed, lichen-covered bedrock dominates the gently sloping tops of the hills; more abundant and larger plants are found in the meadows and valleys in the sheltered lowland areas near the lakes. Soil development is minimal, attaining a maximum thickness of approximately 20 cm in isolated topographic saddles and depressions. In such low-lying areas where overburden exists, this thin soil layer covers a mixture of clay, sand, gravel, and boulders. The clay occasionally is forced by frost action to the

surface forming small, circular, initially vegetation-free frost boils.

The study area is in the arctic climatic zone and is underlain by continuous permafrost. The mean annual temperature at nearby Chesterfield is -11.6°C .

METHODS AND RESULTS

Where possible, standard hydrometeorological methods used across Canada by the Water Survey of Canada and the Atmospheric Environment Service (A.E.S.) were used.

BATHYMETRIC MAPS

Bathymetric maps (Fig. 3, 4, 5 and 6) are based on depth transects sounded with a Furuno depth sounder on calm days. To improve nearshore accuracy, 0.5, 1.0, and 1.5 m isobaths for Fig. 3, 4 and 5 were plotted from data obtained by wading out from shore with a tape at numerous stations. Lake outlines were derived from enlargements of low-level 1976 aerial photography; scale was determined by on-ground surveys and comparisons with maps of known scale. Planimetered areas within isobaths were used in Hutchinson's (1957, p. 166) formula to obtain lake volume.

TOPOGRAPHIC MAPS

Topographic maps of Far Lake, P & N Lake and Meadow watersheds (Fig. 7, 8 and 9) were redrawn from original 1:1,000 scale contour maps (1:2,000 for P & N Lake), with a contour interval of one m.* Watershed boundaries were derived from on-site surveys when contour lines were inconclusive. Table 1 lists lake areas, drainage areas and lake volumes for the Saqvaqjuac area research basins.

LAKE LEVELS

Tables 2, 3 and 4 summarize lake level data for Far Lake, P & N Lake and Jade Lake. Prior to break-up of the ice, usually about 2 m thick by spring, instantaneous levels were obtained by rod and level surveys using water levels from holes chopped in the ice. When the ice had broken up sufficiently a Stevens Type F float-activated water level recorder was set up either in a sheltered area between rocks or in a proper stilling well which dampens waves. The recorder pen was positioned using the water level reading from a nearby vertical staff gauge which was referenced to a permanent benchmark to check that the ice had not moved the staff gauge. Far Lake and Jade Lake levels (Tables 2 and 4) are based on arbitrary benchmark elevations which are unrelated to sea level; however, P & N Lake levels (Table 3) are actual elevations above mean sea level.

* Original contour maps were prepared from 1976 and 1977 low level air photographs by Cartographics Limited, Winnipeg, now called Prairie Mapping Limited, with ground control measurements supplied by Department of Fisheries and Oceans.

DISCHARGES

Tables 5 through 12 contain mean daily outflow discharge data from Far Lake (Table 5), P & N Lake (Table 6) and Jade Lake (Table 8); from a 15.4 ha terrestrial basin called the Meadow watershed (Table 7); and from the 607 km² Saqvaqjuac River watershed (Tables 9 to 12).

The method of measuring mean daily lake outflow was developed in response to the unequal distribution of outflow throughout the year. In winter, the outflow areas froze down to permafrost and usually became drifted in with snow. In the spring the lake levels rose as snowmelt runoff flowed into the lakes from the surrounding watersheds; the lake levels continued to rise until warm weather and/or rising water levels softened and began to erode the snow and ice-choked outflow areas. Once the first trickle of flow began, channels were rapidly formed and very large volumes of flow occurred for a few days until the lake levels reached equilibrium with inflows to the lakes. Spring hydrographs (discharge vs time) were plotted for each lake for most years based on the following information: frequent spring observations of the condition of the outflow areas, frequent manual flow measurements with a small Ott flowmeter once the flow began, and frequent manual lake level measurements throughout the rising and subsequent falling lake level period. Mean daily outflows were then calculated from these spring hydrographs. When the snow and ice melt from the outflow channels and outflow decreased, it became possible to use lake levels (by this time recorded continuously) to predict outflow using rating curves of level vs flow. Several manual flow measurements of different magnitude plotted against lake levels at the time of the flow measurement produced smooth curves which were then used to predict outflows from lake levels. Later in the summer, outflow channels were modified by vegetation growth again changing the rating curve; however errors are slight because outflows by late summer were usually low or nonexistent. The 1980 lake level and outflow data is not as reliable as in previous years because the outflow was not measured to check the changing rating curves in July and August when outflow continued flowing significantly.

Mean daily discharge from the Meadow watershed (Table 7) was calculated using a 120° V-notch weir installed in August 1977. Thick plastic, buried in an impermeable clay layer, seals the weir and cutoff walls on either side of the valley. A Stevens Type F float-activated water level recorder was used to continuously measure the water level in the small pond behind the notch. A log-log regression ($r = 0.998$, $n = 16$) between water level and discharge (measured volumetrically or with a small Ott flowmeter) was used to compute a rating table. In the spring, before ice was removed from the notch area, frequent manual head readings or actual flow meterings were used to construct a spring hydrograph from which mean daily values could be computed.

Mean daily discharge from the Saqvaqjuac River for 1977 to 1980 (Tables 9-12 and Fig. 10-13) was computed from water level recorded continuously with a Stevens A-71 float-activated level recorder and stilling well located at a relatively slow flow section in the middle of the 300 m long rapids which exit into the Saqvaqjuac Inlet. The log-log regression between eleven ice-free water level and discharge measurements (using a Price-Gurley or Ott current meter) produced a

correlation coefficient (r) of 0.998. Spring values were computed by manual discharge measurements using a current meter suspended from a boat or on a wading rod, visual observations of degree of channel obstruction by ice, and manual staff gauge readings. In the spring of 1978 and 1980 prior to the start of flow, holes were chopped down to bedrock at the usual gauging area near the recorder location to make certain no flow was occurring beneath the ice in the channel.

LAKE SURFACE TEMPERATURES

Tables 13 to 18 summarize the surface temperature data for Far Lake, P & N Lake, Jade Lake, Methane Lake, Spring Lake and the Saqvaqjuac River. Surface temperatures were obtained with field thermometers at deep areas around the shore and from a boat at the lake center, thermister probe (Yellow Springs Instruments Incorporated) surface temperatures from a boat at the center, and continuously recorded surface temperature from a floating Ryan-Peabody recorder. The notes at the bottom of the tables indicate which method was used. After ice-off, differences between surface temperature measured at the lake center and near the shore in >1.0 m deep water did not exceed 1°C. Instrument and reading accuracy is estimated to be ± 1°C. Percent ice cover, estimated visually, is also included in the surface temperature tables.

DEPTH TO FROST SURVEYS

Tables 19 and 20 summarize depth to frost surveys done near the camp and at the Meadow watershed. Survey sites near the camp were chosen to comprise the range of unconsolidated, surficial materials in the vicinity. Sites in the Meadow watershed lie in the low patterned fen region below the 10 m contour. A shallow, (<0.2 m) discontinuous, tussocky mat of sedge peat and moss overlies gravelly-clay and heavy, well-sorted clay with abundant cobbles and boulders. Depths were measured with a steel rod driven into the ground until frozen material was encountered. Frozen material can be distinguished from the numerous boulders in the overburden by the feel of the rod when pounded.

SNOW SURVEYS

Tables 21 and 22 summarize the results of surveys in the spring of 1978 and 1979 to determine the water available for runoff in the snowpack at the Meadow watershed. In 1977 and 1980 no snow surveys were done because the snow pack had already begun to ripen before our arrival at the field station. Areal differences in snow depth are pronounced in the Arctic due to the high wind speeds and lack of tree cover. Huge drifts accumulate on the lee side of cliffs. In 1978, numerous snow depths were measured with a meter stick in the three parts of the basin. A longer metal probe was used to sample transects along the one large snow drift in the Meadow watershed. The transect depth data was plotted on a topographic map enabling isolines of equal snow depth to be drawn and used to compute total water available for runoff in the snow cliff. Snow densities, much more uniform than depths, were measured with a Mount Rose weighing-type snow sampler. The 1978 snow survey actually underestimates water available for runoff because at many depth stations an approximately one cm thick layer of ice

was found on the ground under the snow. Snow depth and density measurements miss this layer, which probably formed during a warmer period earlier in the spring. In 1979, a similar snow survey was done at the Meadow watershed (Table 22) earlier in the spring and no ice layer was observed. That year only one transect was sampled across the snow drift; mean depth was found to be 15% less than at the same transect in 1978. It was assumed that the mean snow depth for the whole drift area was approximately 15% less than in 1978.

AIR TEMPERATURES

Tables 23 to 26 include daily air temperature maximums and minimums along with monthly means. Temperatures were measured with standard A.E.S. Zeal maximum and minimum thermometers housed in a Stevenson screen located about 150 m north of the camp on top of a large hill. In June 1978 a new screen was set up on Radio Tower Hill next to the camp. Two weeks of daily temperatures from both screens were almost identical; therefore the new location closer to camp was used after June 18. Maximum, minimum and observed temperatures were read to $\pm 0.5^{\circ}\text{C}$ and the thermometers reset each morning at about 08:20 in 1978 and 1980; in 1977 and 1979 the thermometers were read and reset twice daily at about 08:20 and 23:00. Daily maximum temperature reported in the tables is the 23:00 maximum in 1977 and 1979; in 1978 and 1980 it is the maximum read at 08:20 the next morning. Daily minimum temperature in 1977 and 1979 is the lower of the two daily minimums; in 1978 and 1980 it is the minimum recorded at 08:20 that day.

PRECIPITATION

Tables 27 to 29 summarize precipitation data for three stations: Far Lake 1978-1980, Meadow watershed 1978-1980 and the Saqvaqjuac camp 1977 to 1980. Standard A.E.S. tipping bucket rain gauges manufactured by Sangamo Limited were located in the Far Lake and Meadow watersheds (Fig. 1, 7 and 9). These gauges record each 0.2 mm of rainfall (or melting snow) on a weekly chart recorder. Chart values were corrected to the weekly total precipitation measured at the time of chart change at an adjacent A.E.S. type B standard metric rain gauge. Occasionally in spring when mixed snow and rain occurred the recorded total was not corrected to the standard gauge because the larger funnel of the recording gauge makes it a more accurate snow collector. In 1980 at the Meadow watershed, four standard gauges were placed at various locations in the lower part of the basin. The recorded weekly values were in this case corrected to the mean precipitation measured at these four gauges.

Precipitation at the camp in 1977 was measured with an A.E.S. standard copper gauge located in a sheltered meadow near the camp. The gauge was checked twice a day; therefore the "precipitation day" ends with the evening reading at 22:30. During the next three years a standard metric gauge, located in a sheltered meadow near the camp, was checked once a day at about 08:30; therefore values are "precipitation days" which end at 08:30 the following day.

Because of high wind speeds, lack of forest cover, number of trace events and low annual total precipitation, gauges tend to underestimate actual precipitation in the arctic. The problem of gauge undercatch is more serious with snow measurements but

does exist for rainfall data. Precipitation data in this report and in A.E.S. climatic summaries is "raw" data, as no corrections have been applied. A detailed account of suitable corrections is contained in Goodison (1978) and Rodda (1971).

RELATIVE HUMIDITY

Mean daily relative humidity at the camp meteorological site (Table 30) was measured with a Richard-Pekly recording thermohygrograph calibrated with a standard sling psychrometer. The instrument, located inside the Stevenson screen, uses a human hair element to measure relative humidity and is accurate to within 5%.

WIND VELOCITY

Table 31 summarizes mean daily wind velocity measured near the camp. In 1977 a Casella cup-type anemometer was mounted 1.8 m above the ground at the original meteorological site on a large hill approximately 150 m north of the camp. In 1978 a Belfort cup-type anemometer was mounted adjacent to the original anemometer for 24 days. The original Casella gave readings which were a mean of $3.1\% \pm 0.32\%$ (95% confidence interval) higher than the Belfort. On May 30, 1979 the Belfort was installed 2.2 m above ground at the new meteorological site on Radio Tower Hill next to the camp. For the next 23 days the anemometers on each hill were read; a linear regression between both anemometers gave the equation:

$$Y = 1.050(X) + 1.829$$

where Y = daily wind at Meteorological Site Hill Casella anemometer

X = daily wind at Radio Tower Hill Belfort anemometer (uncorrected)

and $r = 0.974$, $n = 23$

After June 21, 1979 only the Radio Tower Hill Belfort anemometer was used regularly. Values reported in Table 31 are not adjusted using the above relationships. The time of the daily reading was changed from 23:00 to 08:30 after 1977; therefore all 1978-1980 values refer to a "wind day" ending at 08:30 the following day.

PAN EVAPORATION

Tables 32 and 33 summarize the data obtained from a Class A evaporation pan operated in 1979 and 1980. The pan is circular, 1.21 m in diameter and 25.5 cm deep, mounted on a wooden open frame platform on bedrock on Radio Tower Hill. The pan is filled to within 5 cm of the rim; daily water loss is measured each morning at 08:30 by refilling to a fixed level indicated by a point gauge in a stilling well. Maximum and minimum thermometers in the pan are used to estimate mean water temperature. Mean air temperature is the mean of the maximum and minimum temperature measured in the Stevenson screen for the previous twenty-four hours. If precipitation occurs measured water loss or gain is corrected using camp precipitation data. At a standard Class A pan installation, wind over the pan is measured with an anemometer installed 0.65 m above the ground. However, at this installation the only anemometer is the Belfort which is 2.2 m above the ground; it was used to record the mean wind speed reported in Tables 32 and 33. In late June 1979 shortly after the pan was set up, a coarse wire

mesh screen (approximately 16 gauge, 2.5 cm square net) was installed over the pan to prevent dogs and children from drinking from the pan. Work done in India and Norway indicates that on average, screens lower pan evaporation by 13% and 18% respectively (World Meteorological Organization 1966).

ACKNOWLEDGMENTS

The Water Survey of Canada and Atmospheric Environment Service generously loaned some of the equipment used in this study. The hydrometeorological studies at Saqvaqjuac were enthusiastically supported by Dr. H. Welch and all the people who worked with me at the project over the years. The author is indebted to Sharon Ryland, who typed the report, and to Bob Newbury, Ken Beaty and Greg McCullough who helped set up the research program and subsequently assisted me in many ways.

REFERENCES

- GOODISON, B.E. 1978. Accuracy of Canadian snow gauge measurements. *J.Appl.Meteorol.* 17: 1542-1548.
- HUTCHINSON, G.E. 1957. A treatise on limnology. John Wiley and Sons, New York.
- NEWBURY, R.W., K.G. BEATY, J.A. DALTON, and G.K. MCCULLOUGH. 1979. A preliminary comparison of runoff relationships and water budgets in three experimental lake basins in the continental, sub-arctic and arctic climatic regions of the Precambrian Shield. *Proc. Can. Hydrology Symp.* 79, Vancouver, B.C. 19 p.
- RODDA, J.C. 1971. The precipitation measurement paradox: the instrument accuracy problem. *World Meteorological Organization Rep.* 16, WMO-No. 316: 42 p.
- WORLD METEOROLOGICAL ORGANIZATION. 1966. Measurement and estimation of evaporation and evapotranspiration. Technical Note No. 83, WMO-No. 201. TP. 105: 121 p.

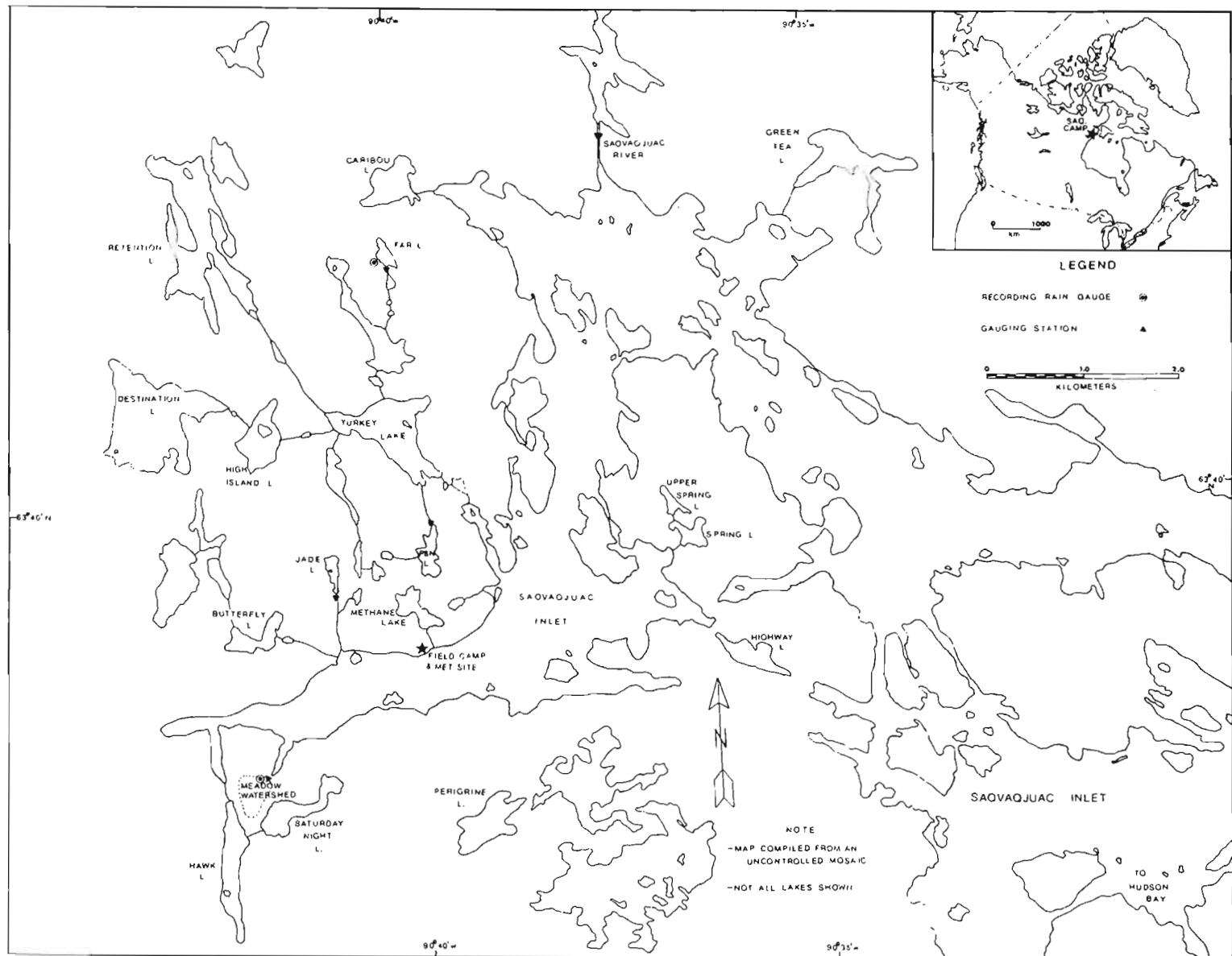


Fig. 1 Location map of the Saqvaqjuac area showing the field camp, gauging stations, research lakes, other larger lakes and the Saqvaqjuac River.

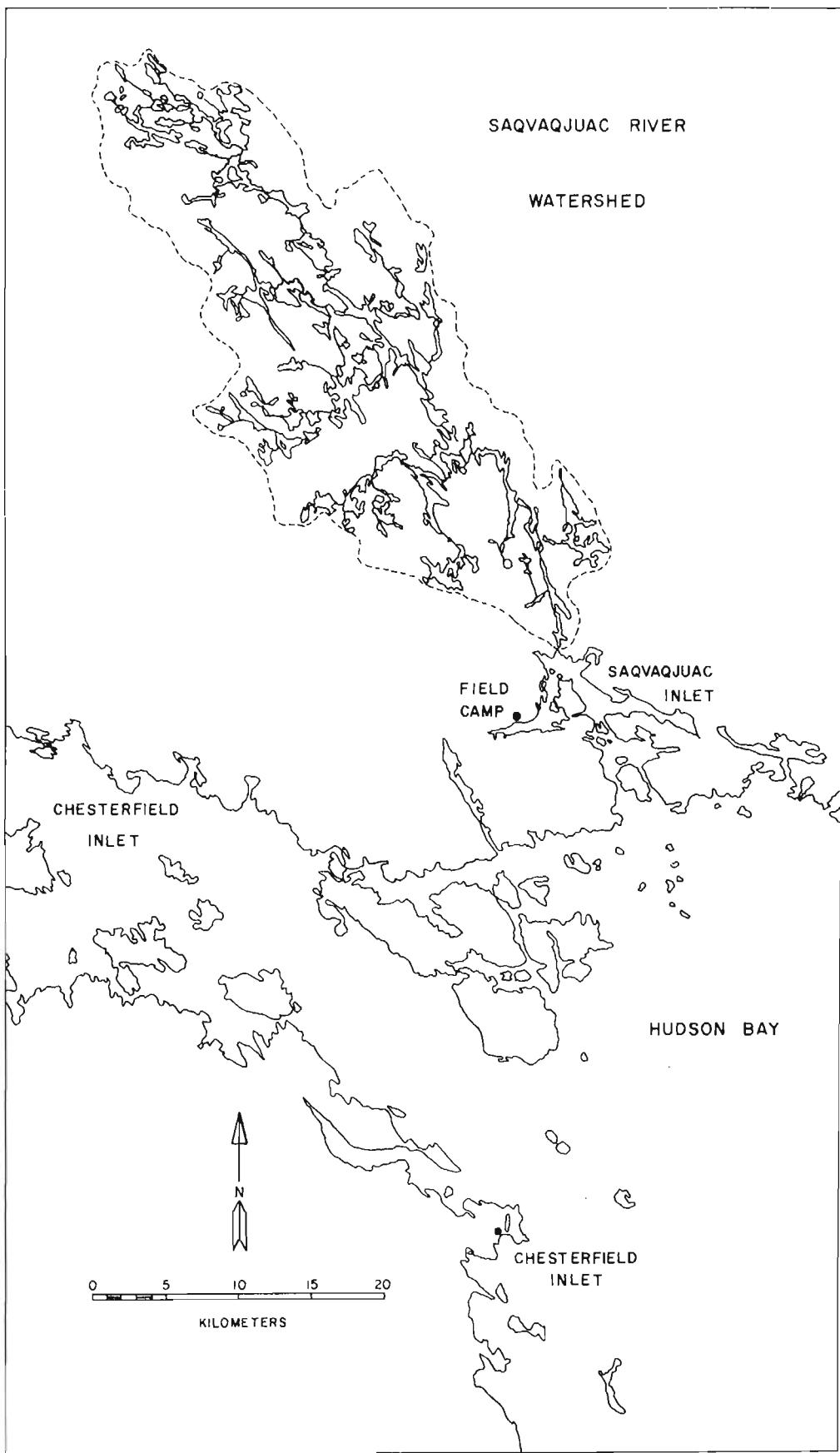


Fig. 2 Map of the Saqvaqjuac River watershed, the field camp and the nearby coast of Hudson Bay.

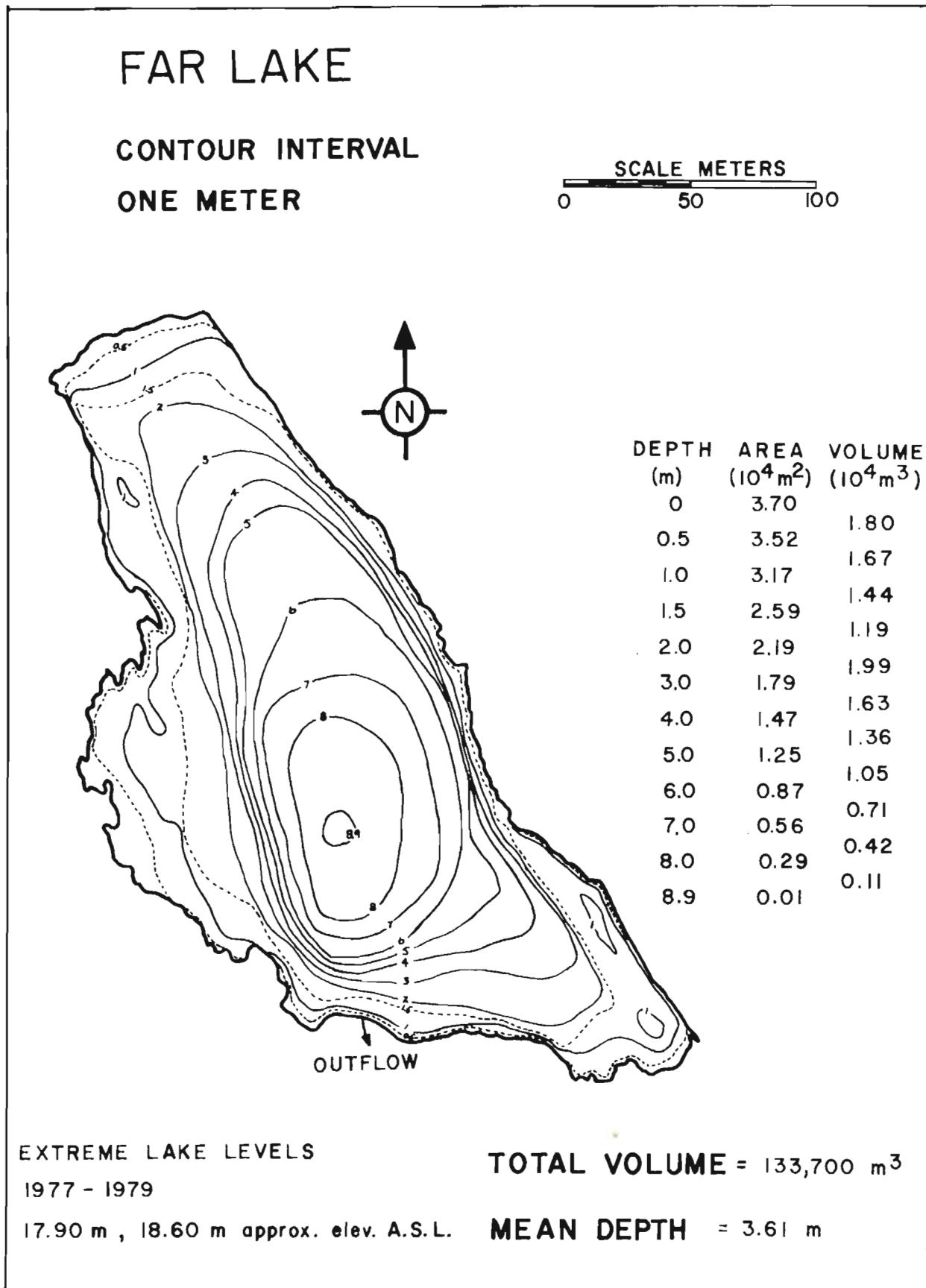


Fig. 3 Bathymetric map of Far Lake.

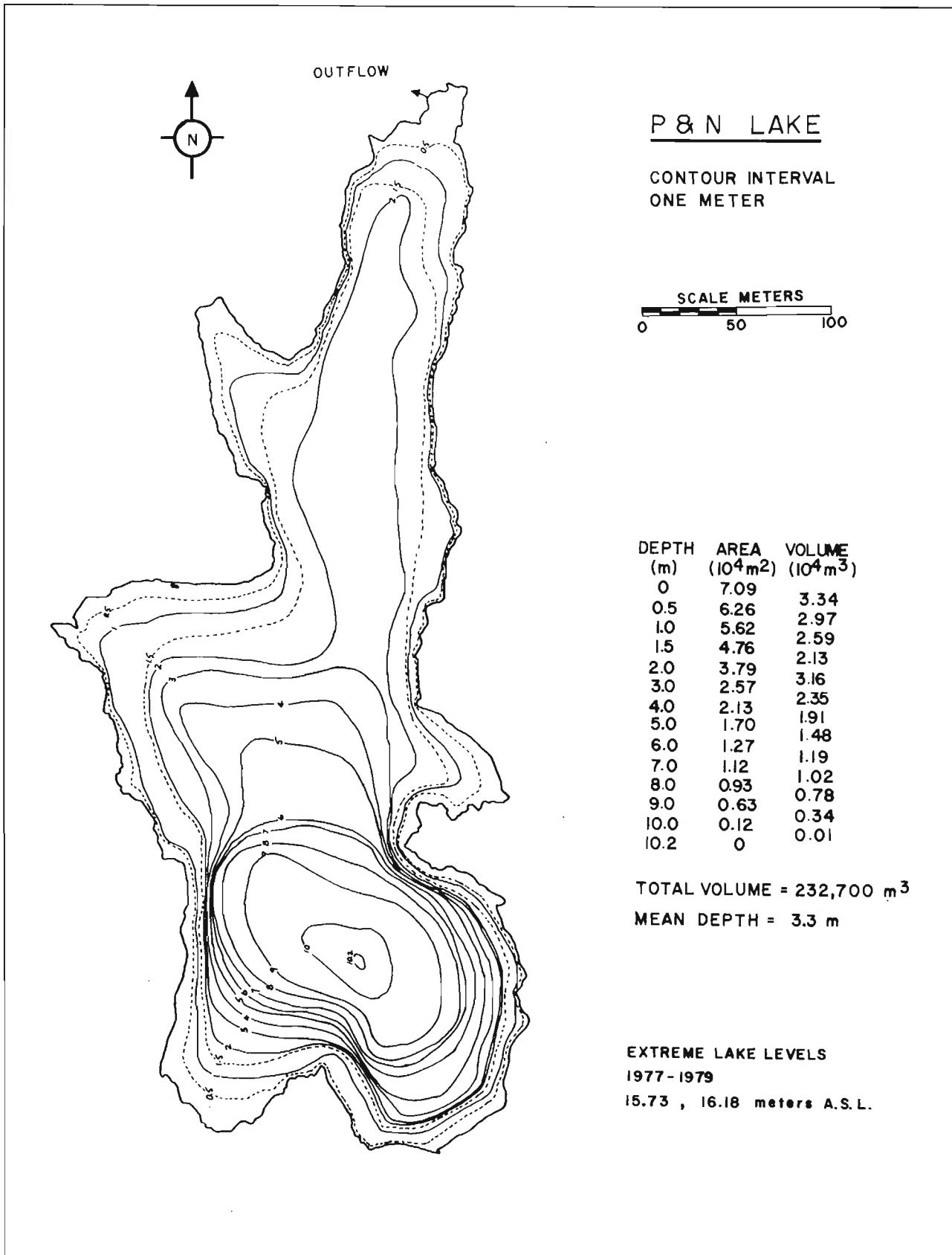


Fig. 4 Bathymetric map of P & N Lake.

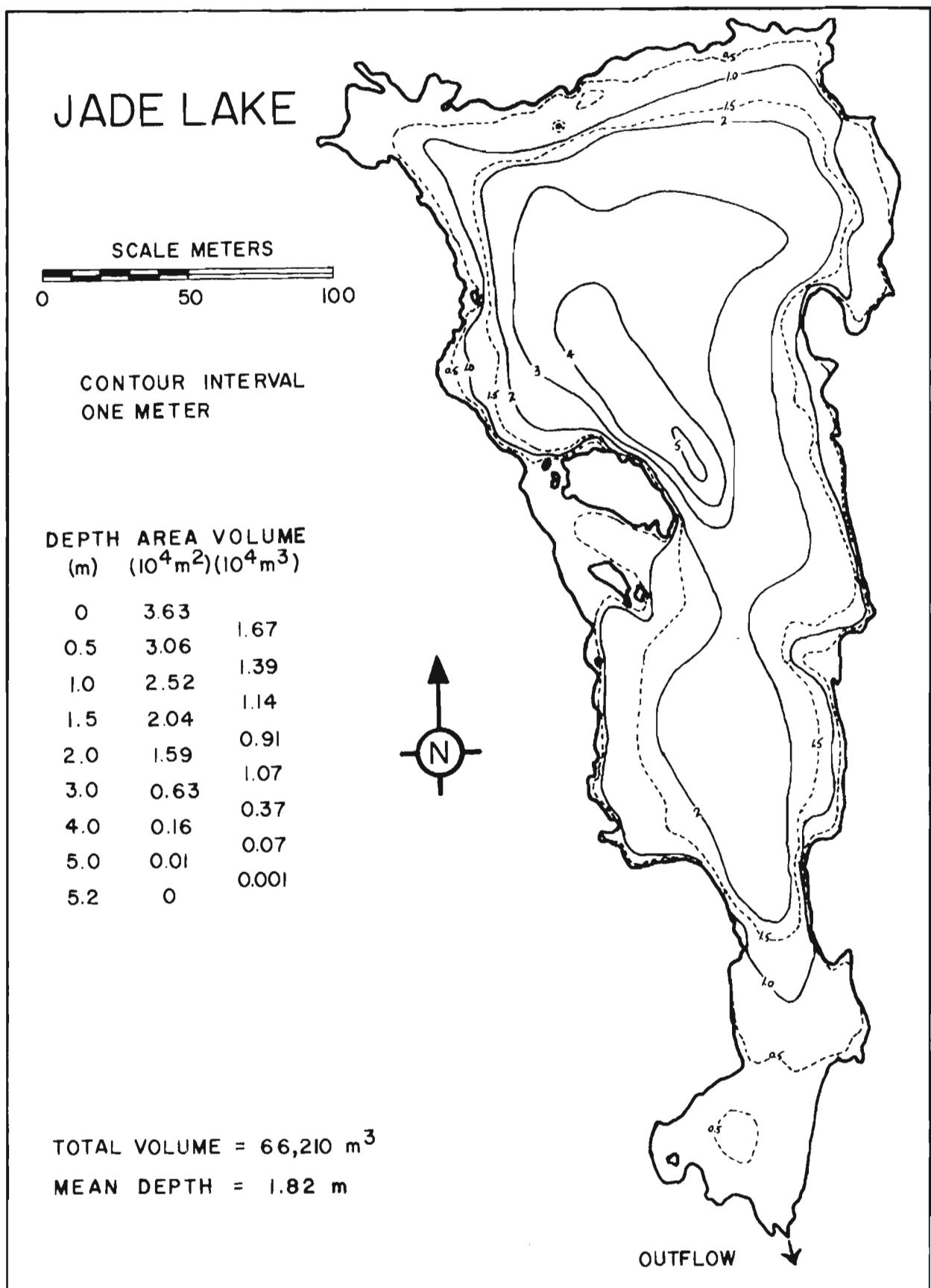


Fig. 5. Bathymetric map of Jade Lake.

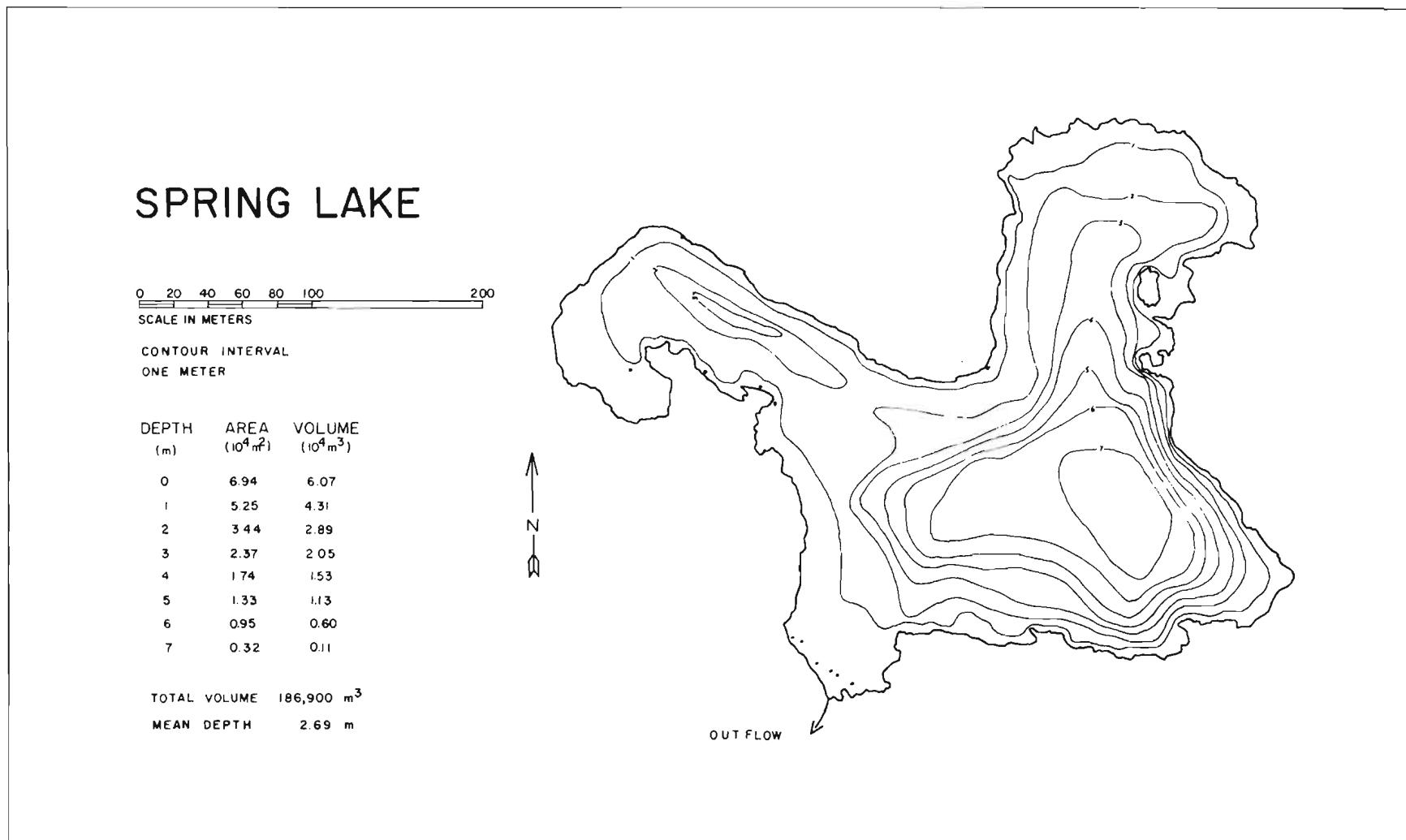


Fig. 6 Bathymetric map of Spring Lake.

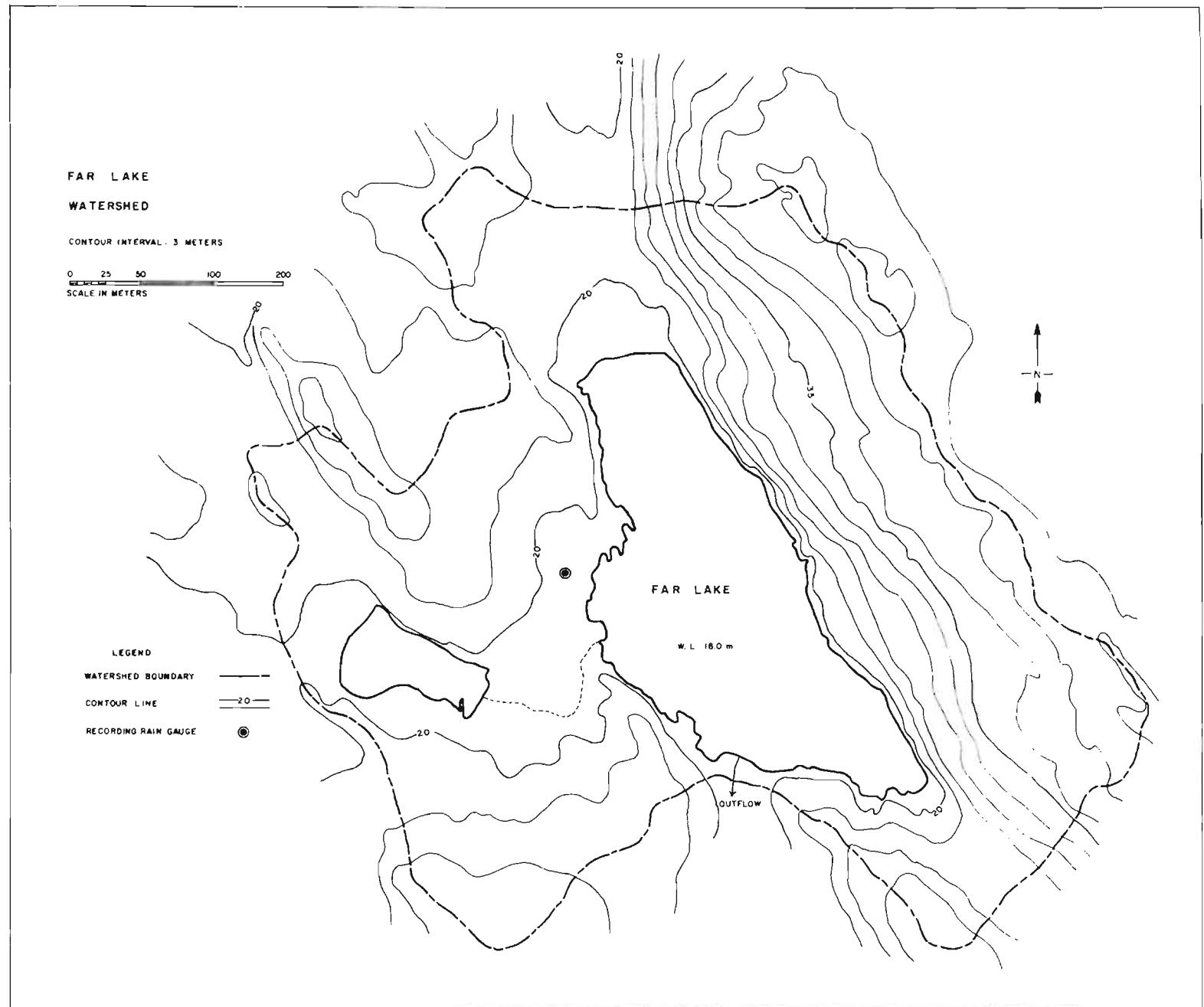


Fig. 7 Topographic map of the Far Lake watershed.

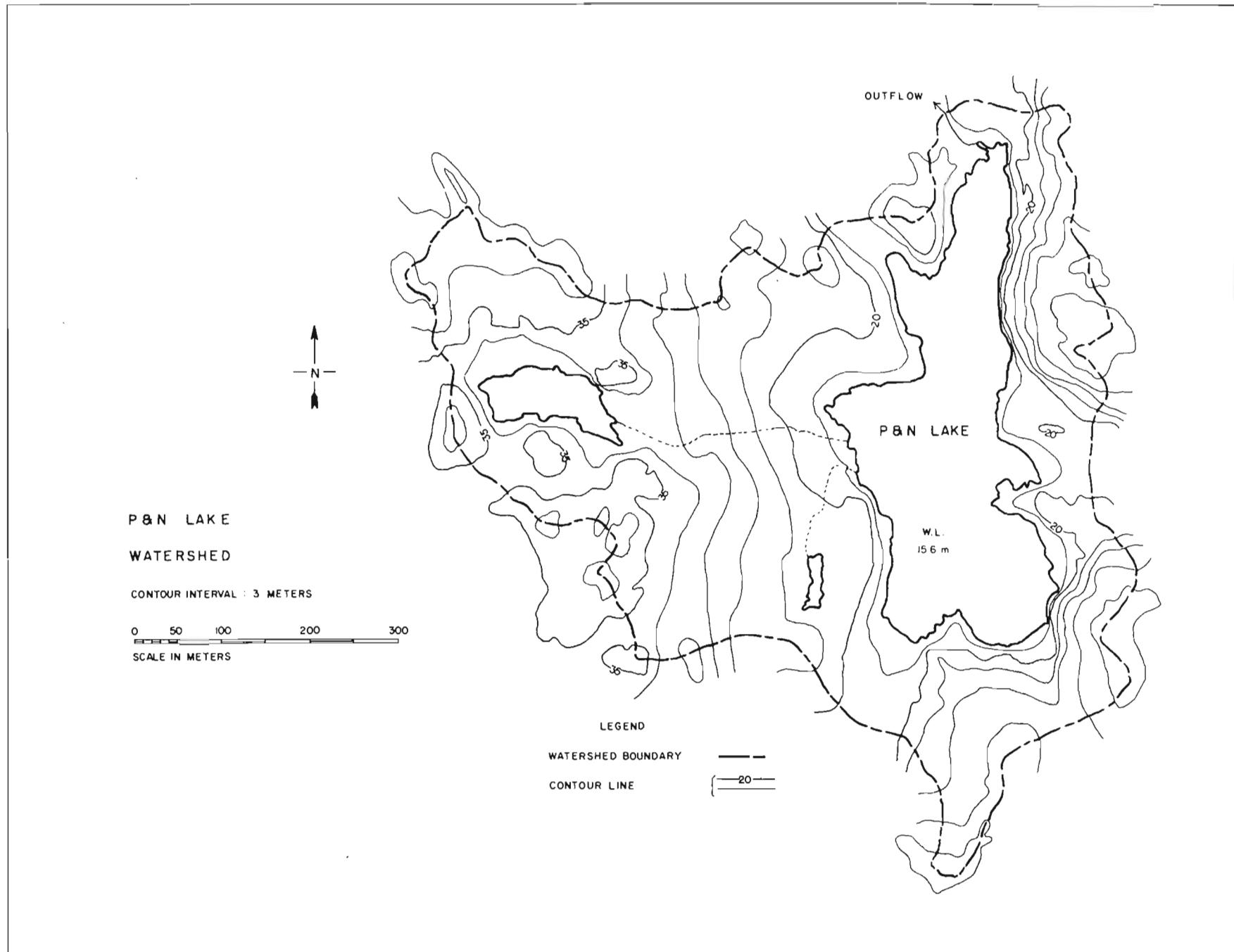


Fig. 8 Topographic map of the P & N Lake watershed.

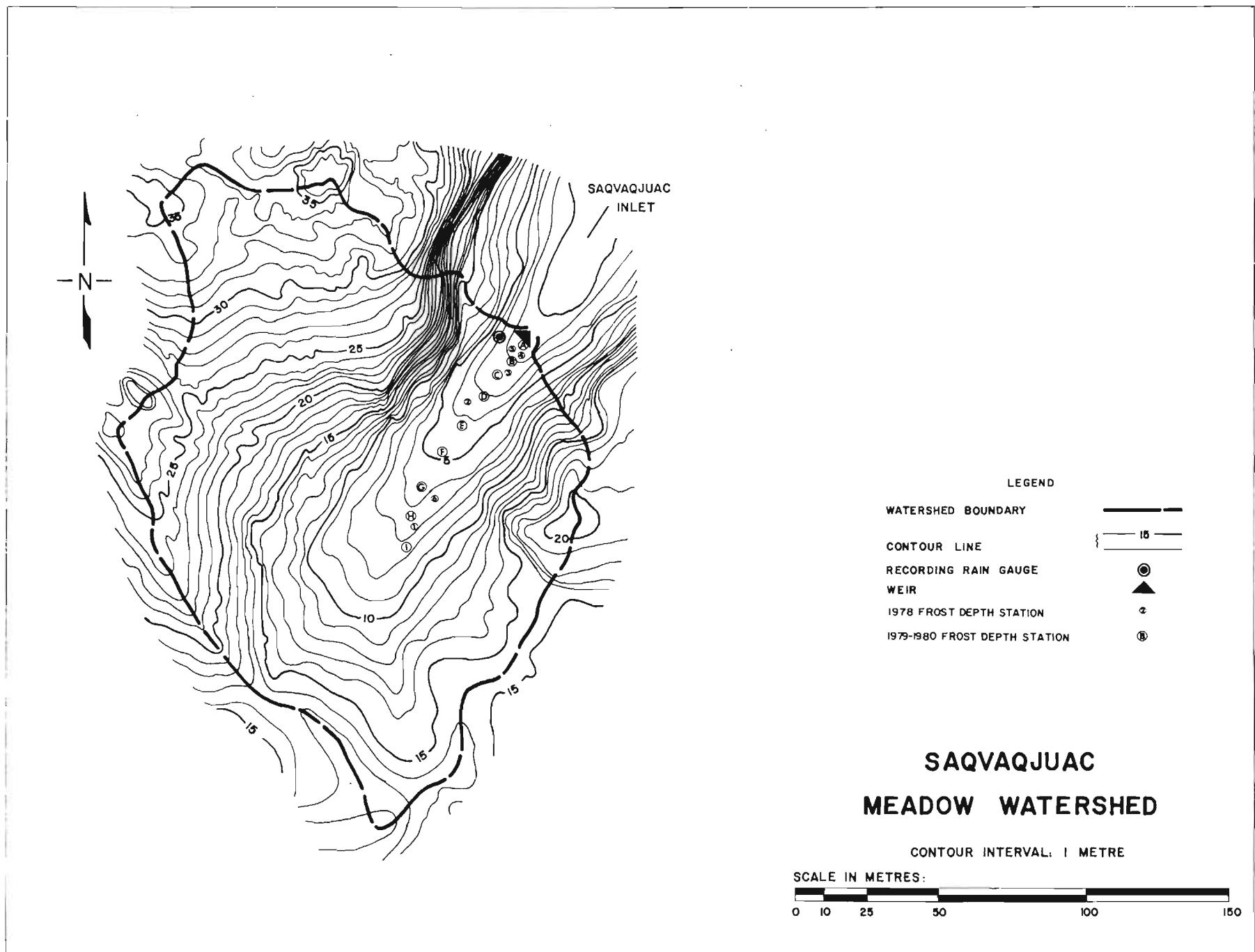


Fig. 9 Topographic map of the Meadow watershed.

Table 1. Drainage areas, lake areas, and lake volumes for several Saqvaqjuac lakes and streams.

	Drainage Area ^a (ha)	Lake Area (ha)	Lake Volume (m ³)
Far Lake	20.3	3.70	133,700
P & N Lake	35.7	7.09	232,700
Methane Lake	28.0	8.65	410,000
Spring Lake	56.0	6.9	187,000
Upper Spring Lake	-	3.4	-
Jade Lake	31.5	3.63	66,210
Meadow Watershed	15.4	-	-
Saqvaqjuac River	60700	-	-

^aDrainage area includes lake areas.

Table 2. Far Lake levels, 1977-1980^d.

1977 ^d												1978 ^a																	
Jun						Jul						Aug						Sep											
Date	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Scp	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)							
1	---	---	29.038	14:45	28.974		---	29.049	15:00	29.156	16:00	28.976		28.945															
2	---	---	28.980		---		---	29.147	15:00	28.976		28.945																	
3	---	---	28.988		28.965 ^b		---	29.140	10:15	28.971		28.945																	
4	---	---	28.986		---		---	29.136	14:00	28.967		28.945																	
5	---	---	28.986		---		---	---	---	28.964		28.945																	
6	---	---	28.986		---		29.060	09:30	29.221	14:15	28.961		28.944																
7	---	---	29.005	13:35	28.986	28.962 ^b	---	29.147	11:15	28.959		28.944																	
8	---	---	28.985		---		---	29.147	11:15	28.956		28.945																	
9	---	---	28.985		---		---	---	---	28.954		28.945																	
10	---	---	28.983		---		29.076	14:00	28.951		28.944																		
11	---	---	28.979		---		---	29.064	13:00	28.950		28.945																	
12	---	---	28.976		---		---	29.028		28.933		28.941																	
13	---	---	28.974		---		---	29.022		28.930		28.939																	
14	---	---	28.971		---		29.064	11:35	28.928		28.933																		
15	---	---	28.970		---		---	29.022		28.930																			
16	---	---	29.035	11:10	28.968		---	29.015		28.927																			
17	---	---	28.965		---		29.011		28.926																				
18	---	---	28.964		---		29.009		28.926																				
19	---	---	28.964		---		29.015		28.926																				
20	---	---	29.008	16:10	28.961		---	29.018		28.922																			
21	---	---	29.003	16:00	28.959		29.540	09:10	29.015		28.918																		
22	29.079	11:30	29.000		28.958		---	29.011		28.915																			
23	29.070	15:15	28.997		28.956		29.604	09:35	29.006		28.912																		
24	---	---	28.991		28.954		---	29.001		28.910																			
25	---	---	28.986		---		29.206	15:30	28.997		28.907																		
26	---	---	28.983		---		29.174	15:00	28.993		28.906																		
27	---	---	28.976		---		29.153	13:15	28.988		28.904																		
28	---	---	28.970		---		---	28.985		28.906																			
29	29.057	11:00	28.968		---		29.156	14:15	28.982		28.930																		
30	---	---	28.974		---	28.941 ^b	29.162	10:30	28.980		28.945																		
31	---	---	28.974		---		29.162		28.980		28.947																		
1979 ^a												1980 ^c																	
May			Jun			Jul			Aug			Sep			May			Jun			Jul			Aug			Sep		
Date	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Scp	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)			
1	---	---	29.150		29.099		28.965		28.999		---	29.215		29.107		29.089		29.108 ^e											
2	---	---	29.145		29.096		28.962		28.999		---	29.233		29.143		29.086		29.110											
3	---	---	29.147		29.096		28.959		29.012		---	29.249		29.133		29.081		29.108											
4	---	---	29.145		29.093		28.956		29.037		---	29.258		29.119		29.078		29.107											
5	---	---	29.139		29.092		28.953		29.044		---	29.188		29.110		29.073		29.105											
6	---	---	29.136		29.087		28.950		29.047		---	29.143		29.102		29.070		29.104											
7	---	---	29.130		29.084		28.951		29.049		---	29.137		29.104		29.070		29.101											
8	---	---	29.124		29.081		28.948		29.050		---	29.134		29.139		29.069		29.185 ^e											
9	---	---	29.121		29.075		28.941		29.134		---	29.134		29.139		29.067		29.215 ^e											
10	---	---	29.122		29.069		28.935		29.154		---	29.154		29.125		29.064 ^e		29.131 ^e											
11	---	---	29.122		29.066		28.933		29.156		---	29.116		29.063 ^e		29.063 ^e													
12	---	---	29.131		29.060		28.932		29.159		---	29.119		29.060 ^e		29.060 ^e													
13	---	---	29.139		29.054		28.926		29.160		---	29.134		29.134		29.057 ^e													
14	---	---	29.137		29.047		28.922		29.165		---	29.131		29.131		29.054 ^e		29.054 ^e											
15	---	---	29.134		29.038		28.922		29.163		---	29.121		29.121		29.050 ^e		29.050 ^e											
16	---	---	29.136		29.029		28.919		29.156		---	29.110		29.047 ^e		29.047 ^e													
17	---	---	29.131		29.023		28.918		29.099		29.143		29.105		29.044 ^e		29.044 ^e												
18	---	---	29.127		29.017		28.918		29.108		29.131		29.107		29.050 ^e		29.050 ^e												
19	---	---	29.121		29.011		28.913		29.118		29.119		29.131		29.050 ^e		29.050 ^e												
20	---	---	29.118		29.005		28.910		29.124		29.114		29.131		29.072 ^e		29.072 ^e												
21	---	---	29.114		28.999		28.907		29.127		29.111		29.119 ^e		29.072 ^e		29.072 ^e												
22	---	---	29.111		28.993		28.907		29.130		29.105		29.121 ^e		29.139 ^e		29.139 ^e												
23	---	---	29.110		28.985		28.904		29.130		29.102		29.122 ^e		29.139 ^e		29.139 ^e												
24	---	---	29.110		28.983		28.932		29.131		29.101		29.111 ^e		29.133 ^e		29.133 ^e												
25	---	---	29.110		28.983		28.951		29.133		29.098		29.102 ^e		29.121 ^e		29.121 ^e												
26	---	---	29.110		28.980		28.947		29.137		29.096		29.095 ^e		29.110 ^b		29.104 ^e												
27	29.191	15:30	29.108		28.979		28.944		29.156		29.098		29.095 ^e		29.104<														

Table 3. P & N Lake levels, 1977-1980^a.

Date	1977a					1978a					1979a					1980c							
	JUN		JUL		AUG	SEP		JUN		JUL		AUG	SEP		May		Jun		Jul	Aug		Sep	
	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)			
1	---	---	---	---	15.874	---	---	---	---	15.924	14:00	15.967	10:45	15.888	---	15.851	---	15.915	15.906	15.935			
2	---	---	---	---	15.874	---	15.880 ^b	---	---	15.924	14:00	15.967	10:45	15.885	---	15.853	---	15.915	15.904	15.933			
3	---	---	15.920	17:00	15.874	---	15.880 ^b	---	---	15.924	14:00	15.967	10:45	15.880	---	15.853	---	15.915	15.903	15.932			
4	---	---	---	---	15.877	---	---	---	---	15.924	14:00	15.952	14:30	15.877	---	15.853	---	15.915	15.902	15.931			
5	---	---	---	---	15.877	---	---	---	---	15.924	14:00	15.952	14:30	15.874	---	15.853	---	15.915	15.901	15.930			
6	---	---	---	---	15.877	---	---	---	15.935	10:15	16.017	11:30	15.872	---	15.851	---	15.915	15.900	15.929				
7	---	---	---	---	15.877	---	15.862 ^b	---	---	15.935	10:15	16.016	11:30	15.876	---	15.851	---	15.915	15.900	15.929			
8	---	---	15.904	10:00	15.877	---	15.862 ^b	---	---	15.935	10:15	16.004	---	15.869	---	15.848	---	15.915	15.900	15.929			
9	---	---	15.904	10:00	15.877	---	---	---	---	15.935	10:15	15.979	---	15.866	---	15.848	---	15.915	15.900	15.929			
10	---	---	---	---	15.874	---	---	---	---	15.935	10:15	15.997	---	15.863	---	15.848	---	15.915	15.900	15.929			
11	---	---	15.901	17:00	15.871	---	---	---	---	15.950	12:30	15.958	---	15.859	---	15.848	---	15.915	15.900	15.929			
12	---	---	---	---	15.868	---	---	---	---	15.950	12:30	15.947	---	15.853	---	15.848	---	15.915	15.900	15.929			
13	---	---	---	---	15.865	---	---	---	---	15.950	12:30	15.940	---	15.848	---	15.848	---	15.915	15.900	15.929			
14	---	---	---	---	15.865	---	15.862 ^b	---	---	15.950	12:30	15.935	---	15.848	---	15.848	---	15.915	15.900	15.929			
15	---	---	15.929	14:00	15.865	---	15.862 ^b	---	---	15.950	12:30	15.930	---	15.845	---	15.845	---	15.915	15.900	15.929			
16	---	---	---	---	15.862	---	---	---	---	15.950	12:30	15.926	---	15.839	---	15.839	---	15.915	15.900	15.929			
17	---	---	---	---	15.859	---	15.844 ^b	---	16.179	10:00	15.921	---	15.833	---	15.833	---	15.915	15.900	15.929				
18	---	---	15.923	14:25	15.859	---	15.844 ^b	---	---	16.179	10:00	15.918	---	15.833	---	15.833	---	15.915	15.900	15.929			
19	---	---	---	---	15.859	---	15.844 ^b	---	---	16.179	10:00	15.927	---	15.825	---	15.825	---	15.915	15.900	15.929			
20	---	---	---	---	15.856	---	15.844 ^b	---	---	16.179	10:00	15.930	---	15.822	---	15.822	---	15.915	15.900	15.929			
21	---	---	---	---	15.856	---	---	---	16.101	13:45	15.927	---	15.821	---	15.821	---	15.915	15.900	15.929				
22	---	---	---	---	15.856	---	---	---	16.089	20:00	15.923	---	15.822	---	15.822	---	15.915	15.900	15.929				
23	---	---	---	---	15.856	---	---	---	---	16.046	09:10	15.914	---	15.819	---	15.819	---	15.915	15.900	15.929			
24	---	---	15.892	11:45	---	---	---	---	---	16.046	09:10	15.909	---	15.818	---	15.818	---	15.915	15.900	15.929			
25	---	---	15.874	18:10	---	---	---	---	---	16.037	10:45	15.903	---	15.816	---	15.816	---	15.915	15.900	15.929			
26	15.956	15:15	---	---	---	---	---	---	---	16.037	10:45	15.903	---	15.816	---	15.816	---	15.915	15.900	15.929			
27	15.953	14:15	---	---	---	---	---	---	---	16.037	10:45	15.900	---	15.819	---	15.819	---	15.915	15.900	15.929			
28	---	---	---	---	---	---	---	---	15.997	11:00	15.897	---	15.842	---	15.842	---	15.915	15.900	15.929				
29	---	---	---	---	---	---	---	---	15.997	11:00	15.894	---	15.851	---	15.851	---	15.915	15.900	15.929				
30	---	---	15.874	18:10	---	---	---	---	15.967	10:00	15.892	---	15.851	---	15.851	---	15.915	15.900	15.929				
31	---	---	15.874	18:10	---	---	---	---	---	15.967	10:00	15.891	---	15.851	---	15.851	---	15.915	15.900	15.929			
1979a										1980c													
Date	May		Jun		Jul		Aug		Sep		May		Jun		Jul		Aug		Sep				
	Elevation (m)	Time	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Time	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)	Elevation (m)				
	1	---	16.010	15.898	15.783	15.787	---	---	---	15.999	15.915	15.906	15.935	---	15.915	15.904	15.930	15.929	15.935				
2	---	---	16.004	15.897	15.779	15.790	---	---	---	16.014	15.941	15.904	15.930	---	15.915	15.904	15.930	15.929	15.935				
3	---	---	15.999	15.894	15.778	15.798	---	---	---	16.022	15.947	15.947	15.929	---	15.915	15.904	15.930	15.929	15.935				
4	---	---	15.990	15.889	15.775	15.819	---	---	---	16.026	15.941	15.897	15.927	---	15.915	15.904	15.930	15.929	15.935				
5	---	---	15.975	15.888	15.773	15.828	---	---	---	16.020	15.935	15.892	15.923	---	15.915	15.904	15.930	15.929	15.935				
6	---	---	15.964	15.885	15.776	15.831	---	---	---	16.007	15.927	15.888	15.918	---	15.915	15.904	15.930	15.929	15.935				
7	---	---	15.956	15.880	15.776	15.834	---	---	---	15.997	15.929	15.885	15.915	---	15.915	15.904	15.930	15.929	15.935				
8	---	---	15.955	15.877	15.770	15.820	---	---	---	15.990	15.962	15.889	15.912	---	15.915	15.904	15.930	15.929	15.935				
9	---	---	15.955	15.872	15.764	15.824	---	---	---	15.999	15.962	15.886	15.932	---	15.915	15.904	15.930	15.929	15.935				
10	---	---	15.953	15.868	15.764	15.824	---	---	---	16.014	15.953	15.886	15.984	---	15.915	15.904	15.930	15.929	15.935				
11	---	---	15.952	15.865	15.761	15.824	---	---	---	16.019	15.943	15.885	15.973	---	15.915	15.904	15.930	15.929	15.935				
12	---	---	15.955	15.859	15.760	15.824	---	---	---	16.011	15.952	15.885	15.967	---	15.915	15.904	15.930	15.929	15.935				
13	---	---	15.958	15.856	15.757	15.824	---	---	---	15.997	15.964	15.883	15.958	---	15.915	15.904	15.930	15.929	15.935				
14	---	---	15.950	15.845	15.754	15.824	---	---	---	15.996	15.959	15.883	15.947	---	15.915	15.904	15.930	15.929	15.935				
15	---	---	15.946	15.836	15.751	15.824	---	---	---	15.982	15.987	15.950	15.938	---	15.915	15.904	15.930	15.929	15.935				
16	---	---	15.946	15.828	15.749	15.824	---	---	---	15.987	15.976	15.943	15.929	---	15.915	15.904	15.930	15.929	15.935				
17	---	---	15.941	15.821	15.746	15.824	---	---	---	15.901	15.967	15.936	15.977	---	15.915	15.904	15.930	15.929	15.935				
18	---	---	15.938	15.815	15.746	15.824	---	---	---	15.904	15.961	15.940	15.877	---	15.915	15.904	15.930	15.929	15.935				
19	---	---	15.933	15.810	15.741	15.824	---	---	---	15.911	15.952	15.961	15.876	---	15.915	15.904	15.930	15.929	15.935				
20	---	---	15.930	15.807	15.738	15.824	---	---	---	15.917	15.946	15.955	15.882	---	15.915	15.904	15.930	15.929	15.935				
21	---	---	15.927	15.802	15.735	15.824	---	---	---	15.920	15.940	15.944	15.883	---	15.915	15.904	15.930	15.929	15.935				
22	---	---	15.923	15.798	15.732	15.824	---	---	---	15.921	15.935	15.941	15.926	---	15.915	15.904	15.930	15.929	15.935				
23	---	---	15.921	15.798	15.732	15.824																	

Table 4. Jade Lake levels, 1979^a.

Date	Jun		Jul		Aug		Sep	
	Elevation (m)	Time	Elevation (m)		Elevation (m)		Elevation (m)	
1	---	---	0.385		0.266 ^e		0.330 ^e	
2	---	---	0.382		0.264		0.336	
3	---	---	0.379		0.262		---	
4	---	---	0.376		0.261 ^e		---	
5	---	---	0.373		0.260 ^e		---	
6	---	---	0.366		0.260 ^e		---	
7	---	---	0.363		0.261		0.388	
8	---	---	0.360		0.257		---	
9	---	---	0.354		0.253		---	
10	---	---	0.349		0.250		---	
11	---	---	0.346		0.247		---	
12	---	---	0.341		0.246		---	
13	0.448	15:20	0.335		0.245		---	
14	---	---	0.328		0.242		---	
15	---	---	0.318		0.241		---	
16	---	---	0.310		0.240		---	
17	---	---	0.303		0.237		---	
18	---	---	0.296		0.237		---	
19	0.418	11:45	0.290		0.232		---	
20	---	---	0.288		0.228		---	
21	0.410	11:10	0.283		0.227		---	
22	---	---	0.279		0.224		---	
23	---	---	0.276		0.223		---	
24	---	---	0.277		0.246		---	
25	0.402	10:00	0.277		0.250		---	
26	---	---	0.276		0.249		---	
27	---	---	0.276		0.253		---	
28	0.390	15:00	0.274 ^e		0.263		---	
29	0.389	16:00	0.272 ^e		0.288		---	
30	0.387	---	0.270 ^e		0.305 ^e		---	
31			0.268		0.325 ^e			

^aValues shown with time are instantaneous water levels measured at the time indicated. All other values are mean daily levels measured with a continuous water level recorder. Elevations are relative to a 1.0 m staff gauge bolted to bedrock.

^eEstimated.

Table 5. Mean daily discharge in liters per second from Far Lake outflow, 1978-1980.

Date	1978				1979				1980				
	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep
1	0	12.8	0.1	0.2	0	14.0	1.8	0.2	0.3	0	2.5	3.0	7.0
2	0	11.0	0.1	0.2	0	13.5	1.5	0.2	0.3	0	15.5	3.0	7.0
3	0	10.0	0.09	0.2	0	13.5	1.5	0.2	0.3	1	10.0	2.5	6.5
4	0	7.8	0.09	0.2	0	13.5	1.3	0.2	0.3	35	5.5	2.0	6.0
5	0	17.0	0.08	0.2	0	11.5	1.2	0.2	0.3	27	3.0	2.0	6.0
6	0	61.0	0.07	0.2	0	10.0	1.0	0.2	0.3	7	2.0	2.0	6.0
7	0	38.0	0.07	0.1	0	7.4	0.9	0.2	0.3	6	2.0	1.5	5.5
8	0	38.0	0.06	0.1	0	5.6	0.8	0.2	0.3	5	13.0	1.5	30 ^e
9	0	30.0	0.06	0.1	0	4.9	0.7	0.2	0.3	5	13.0	1.5	75 ^e
10	0	13.6	0.06	0.1	0	5.2	0.6	0.2	0.3	13	7.0	1.5	45 ^e
11	0	11.0	0.05	0.1	0	5.2	0.5	0.1	0.3	14.5	4.5	1.5	30 ^e
12	0	9.0	0.05	0.1	0	8.0	0.5	0.1	0.3	14.5	5.5	1.5	15 ^e
13	0	7.0	0.04	0	0	11.5	0.4	0.1	0.3	16.5	11.0	1.5	8 ^e
14	0	4.4	0.04	0	0	10.5	0.3	0.1	0.3	20	10.0	1.5	6
15	0	3.5	0.04	0	0	9.2	0.3	0.1	0.3	18	6.0	1.5	5
16	0	2.7	0.04	0	0	10.0	0.3	0.1	0.3	13	3.5	1.0	5
17	0	2.3	0.03	0	0	8.0	0.3	0.1	0.3	11	3.0	1.0	4.5
18	0	1.8	0.03	0	0	6.4	0.3	0.1	0.3	8	3.5	1.0	18
19	0	2.7	0.03	0	0	4.9	0.3	0.1	0.3	6.5	10.0	1.0	
20	0	3.0	0.03	0	0	4.2	0.2	0.1	0.3	5.0	10.0	2.5	
21	1	2.7	0.02	0	0	3.6	0.2	0.1	0.3	3.5	8.0	2.5	
22	2 ^a	2.3	0.02	0	0	3.1	0.2	0.1	0.3	2.5	8.5	15 ^e	
23	30 ^a	1.4	0.01	0	0	2.9	0.2	0.1	0.3	2.0	8.5	15 ^e	
24	112 ^a	1.2	0.01	0	0	2.9	0.2	0.2	0.3	1.5	6.5	13 ^e	
25	69 ^a	0.8	0	0	0	2.9	0.2	0.2	0.3	1.5	5.0	9.5 ^e	
26	25 ^a	0.6	0	0	0	2.9	0.2	0.2	0.3	1.5	4.0	7.0	
27	12.2 ^a	0.4	0	0	17.5	2.7	0.2	0.2	0.3	1.0	4.0	6.0	
28	13.0	0.3	0.05	0	16.0	2.4	0.2	0.2	0.3	1.5	4.0	5.0	
29	14.3	0.2	0.1	0	14.4	2.4	0.2	0.2	0.3	1.5	4.0	9.0	
30	13.5	0.2	0.2	0	14.0	1.8	0.2	0.2	0.3	1.5	4.0	8.0	
31		0.2	0.2	0	13.5		0.2	0.2	0.3	3.5		7.5	

^aEstimate based on manual discharge measurements, change in lake storage, flow at the Meadow weir, and precipitation.^eEstimate based on very poor data.

Table 6. Mean daily discharge in liters per second from P & N Lake outflow, 1977-1980.

Date	1977				1978				1979				1980						
	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	
1	---	---	0.4	---	0	23	1.1	0.1	0	27.0	1.8	0	0	0	0	0	3.9	4.2	7.4
2	---	---	0.4	---	0	18	0.8	0.1	0	25.5	1.7	0	0	0	0	0	8.7	3.9	6.5
3	---	53 ^a	0.4	0.6 ^a	0	12	0.5	0.1	0	24.5	1.4	0	0	0	6.9	10.4	3.7	6.2	
4	---	---	0.5	---	0	9	0.4	0.1	0	22.0	1.2	0	0	0	18.3	8.7	3.5	6.0	
5	---	---	0.5	---	0	17	0.3	0.1	0	18.0	1.1	0	0	0	16.0	7.4	3.3	5.1	
6	---	---	0.5	---	0	82	0.2	0.1	0	14.5	0.8	0	0	0	12.4	6.0	3.1	4.4	
7	---	---	0.5	---	0	73	0.3	0.1	0	13.0	0.6	0	0	0	10.2	6.2	2.9	3.9	
8	---	28 ^a	0.5	0	0	62	0.2	0.1	0	12.5	0.4	0	0	0	9.0	19.7	2.9	3.4	
9	---	28 ^a	0.5	---	0	37	0.1	0.1	0	12.5	0.3	0	0	0	11.0	19.7	2.8	6.8	
10	---	---	0.4	---	0	56	0.1	0.1	0	12.0	0.1	0	0	0	13.4	12.9	2.8	40.8	
11	---	22 ^a	0.25	---	0	15	0.1	0.1	0	11.5	0	0	0	0	14.7	9.0	2.8	30.1	
12	---	---	0.15	---	0	10	0.1	0	0	12.5	0	0	0	0	24.2	12.2	2.8	24.3	
13	---	---	0	---	0	8.7	0	0	0	13.5	0	0	0	0	33.2	21.2	2.8	15.6	
14	---	---	0	---	0	7.8	0	0	0	11.0	0	0	0	0	34.9	16.7	2.9	10.4	
15	---	69 ^a	0	---	0	7.2	0	0	0	9.7	0	0	0	0	35.1	11.6	2.9	8.1	
16	---	---	0	---	0	6.4	0	0	0	9.7	0	0	0	0	30.5	9.0	2.9	6.2	
17	---	---	0	0	0	5.9	0	0	0	8.2	0	0	0	0	19.1	7.8	2.5	5.1	
18	140 ^a	58 ^a	0	0	5	5.3	0	0	0	7.0	0	0	0	0	16.7	8.4	2.4	4.4	
19	---	---	0	0	19	6.7	0	0	0	5.8	0	0	0	0	11.5	18.2	2.3		
20	---	---	0	0	90	7.2	0	0	0	5.2	0	0	0	0	9.3	16.1	2.6		
21	---	---	0	0	80	6.7	0	0	0	4.6	0	0	0	0	7.1	12.0	2.6		
22	137 ^a	---	0	0	51	6.0	0	0	0	4.0	0	0	0	0	5.7	11.8	5.7		
23	---	---	0	0	43	5.3	0	0	0	3.7	0	0	0	0	5.0	11.4	28.7		
24	---	---	0	0	38	4.6	0	0	0	3.6	0	0	0	0	4.6	8.5	16.7		
25	---	7.1 ^a	---	0	39	3.8	0	0	0	3.5	0	0	0	0	4.3	7.5	10.4		
26	---	---	---	0	39	3.2	0	0	0	3.3	0	0	0.5 ^b	4.2	6.9	8.1			
27	115 ^a	---	---	0	33	2.4	0	1.0	0	2.9	0	0	0.2 ^b	4.0	6.4	6.8			
28	110 ^a	---	---	0	28	2.2	0.1	18.0	0	2.8	0	0	0.2 ^b	3.9	5.9	5.7			
29	---	---	---	0	28	1.7	0.1	85.0	0	2.3	0	0	0	3.8	5.4	5.4			
30	---	---	---	0	28	1.5	0.1	43.0	0	2.2	0	0	0	3.6	5.0	8.7			
31	0.4	---	0	0	1.4	0.1	0	27.0	0	0	0	0	0	4.5	8.1				

^aManual discharge measurement sometime on this day.^bVisual estimate of seepage through snow plugged outflow area.

Table 7. Mean daily discharge in liters per second from the Meadow watershed, 1978-1980.

Date	1978				1979				1980						
	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	Oct
1	0	4.9	0.17	1.79	0	6.2	0.12	0	5.9	0	13.0	1.1	1.0	4.2	
2	0	3.4	0.14	1.23	0	7.6	0.11	0	3.6	0	9.4	18.4	0.90	3.0	
3	0	2.1	0.10	0.96	0	9.2	0.08	0	4.2	0	9.9	6.2	0.80	2.4	
4	0	1.7	0.07	0.81	0	5.2	0.04	0	15.8	0	11.0	2.6	0.70	2.0	
5	0	13.7	0.05	0.69	0	4.9	0.03	0	6.9	0	4.6	1.4	0.60	1.7	
6	0	63.8	0.02	0.59	0	3.4	0.02	0	3.9	0	2.2	1.0	0.55	1.5	
7	0	47.2	0.01	0.65	0	1.6	0.01	0	2.7	0	0.9	2.8	0.65	1.3 ^b	
8	0	14.3	0.006	0.92	0	1.5	0.006	0	2.0	0	3.9	34.4	0.75	8.5 ^b	
9	0	7.2	0.005	0.73	0	3.1	0.003	0	1.6	0	11.4	7.5	0.80	68.5 ^b	
10	0	5.6	0.003	0.56	0	4.6	0.002	0	1.2	0	11.9	3.6	0.65	31.0 ^b	0.8
11	0	3.1	0.001	0.46	0	3.5	0	0	1.1	0	9.7	1.9	0.55	8.8	
12	0 ^a	1.87	0.001	0.39	0	4.3	0	0	0.99	0.4 ^a	7.0	14.0	0.55	13.8	
13	1 ^a	1.82	0.001	0.35	0	4.4	0	0	0.90	1.7 ^a	10.8	16.0	0.50	9.3	
14	12 ^a	1.70	0.001		0	2.7	0	0	2.0	2.4 ^a	11.1	6.3	0.50	5.2	
15	44 ^a	1.41	0		0	3.0	0	0		3.9	10.2	3.0	0.45	4.0	0
16	40 ^a	1.04	0		0	2.3	0	0		0.8	6.1	1.9	0.45	3.3 ^b	
17	38 ^a	1.31	0		0	1.4	0	0		0.5	6.7	1.8	0.45	3.8	
18	16.5	1.18	0		0	0.88	0	0.06		0.9	4.1	7.6	0.68		
19	20.9	4.19	0.001		0	0.72	0	0.09		2.2	2.9	19.4	0.75		
20	20.5	3.07	0		0	0.85	0	0.10		1.7	2.2	6.2	1.7		
21	14.2	1.82	0		0 ^a	0.62	0	0.10		1.1	1.4	3.8 ^b	2.0 ^b		
22	12.1	1.36	0		4 ^a	0.37	0	0.09		0.6	1.0	14.6 ^b	18.1 ^b		
23	10.1	1.11	0		17 ^a	0.61	0	0.09		1.4	0.8	5.8 ^b	24.3 ^b		
24	11.4	0.92	0		34 ^a	0.63	0	3.9		1.9	1.4	2.7	11.6 ^b		
25	17.8	0.66	0		62 ^a	0.64	0	2.4		1.2	1.9	2.2	6.6 ^b		
26	6.6	0.76	0		26 ^a	0.35	0	1.6		8.3	1.8	1.6	4.3		
27	7.7	0.55	0		12 ^a	0.51	0	1.4		8.8	2.1	1.4	3.1		
28	8.7	0.42	0.02		16.2	0.25	0	1.9		4.2	1.6	1.6	2.3		
29	7.7	0.26	7.2		13.0	0.27	0	12.5		2.6	0.89	1.5	2.4		
30	7.9	0.30	6.6		6.7	0.19	0	5.5		2.2	0.53	1.2	11.9		
31		0.26	3.3		10.0		0	8.6		1.1		1.1	7.0		

^aEstimate based on frequent manual measurements, supplemented by some recorded data.^bNo recorded or manual data available; estimate based on a reconstructed hydrograph using precipitation data.

Table 8. Mean daily discharge in liters per second from Jade Lake outflow, 1979.

Date	Jun	Jul	Aug	Sep
1	---	1.7	0	0
2	---	1.4	0	0.1 ^a
3	---	1.3	0	---
4	---	1.0	0	---
5	---	0.8	0	---
6	---	0.5	0	---
7	---	0.4	0	---
8	---	0.4	0	3 ^a
9	---	0.2	0	---
10	---	0.1	0	---
11	---	0.1	0	---
12	---	0.1	0	---
13	12 ^a	0.1	0	---
14	---	0	0	---
15	---	0	0	---
16	---	0	0	---
17	---	0	0	---
18	---	0	0	---
19	5.2 ^a	0	0	---
20	---	0	0	---
21	3.6 ^a	0	0	---
22	---	0	0	---
23	---	0	0	---
24	---	0	0	---
25	2.9 ^a	0	0	---
26	---	0	0	---
27	---	0	0	---
28	2.0	0	0	---
29	1.9	0	0	---
30	1.8	0	0	---
31		0	0	

^aManual discharge measurement.

Table 9. Mean daily discharge in cubic meters per second for the Saqvaqjuac River for 1977.

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	---	---	---	---	---	---	22.4	---	2.4 A	---	---	---	1
2	---	---	---	---	---	---	20.4	---	2.5 A	1.8 A	---	---	2
3	---	---	---	---	---	---	18.6	---	2.5 A	---	---	---	3
4	---	---	---	---	---	---	16.8	4.5 A	---	---	---	---	4
5	---	---	---	---	---	0 E	15.5	---	---	---	---	---	5
6	---	---	---	---	---	---	14.2	---	2.4 A	---	---	---	6
7	---	---	---	---	---	---	13.2	---	2.4 A	---	---	---	7
8	---	---	---	---	---	---	12.4	---	---	---	---	---	8
9	---	---	---	---	---	---	11.6	4.8 A	---	---	---	---	9
10	---	---	---	---	---	7 E	10.9	---	2.4 A	---	---	---	10
11	---	---	---	---	---	---	10.6	4.5 A	---	---	---	---	11
12	---	---	---	---	---	---	10.6	---	---	---	---	---	12
13	---	---	---	---	---	14.4 A	10.2	---	---	---	---	---	13
14	---	---	---	---	---	---	11.1	4.0 A	---	---	---	---	14
15	---	---	---	---	---	---	10.9	---	2.0 A	---	---	---	15
16	---	---	---	---	---	28.5 A	11.0	---	2.0 A	---	---	---	16
17	---	---	---	---	---	---	10.8	---	1.9 A	---	---	---	17
18	---	---	---	---	---	---	10.7	---	---	---	---	---	18
19	---	---	---	---	---	---	10.4	---	---	---	---	---	19
20	---	---	---	---	43 E	10.0	---	---	---	---	---	---	20
21	---	---	---	---	---	---	9.5	3.2 A	---	---	---	---	21
22	---	---	---	---	---	---	8.9	---	---	---	---	---	22
23	---	---	---	---	---	---	8.5	2.8 A	1.7 A	---	---	---	23
24	---	---	---	---	---	35.3	8.0	---	1.7 A	---	---	---	24
25	---	---	---	---	---	32.4	7.6	2.8 A	---	---	---	---	25
26	---	---	---	---	---	30.4	7.2	---	---	---	---	---	26
27	---	---	---	---	---	30.0	6.7	2.5 A	---	---	---	---	27
28	---	---	---	---	---	28.9	6.1	---	---	---	---	---	28
29	---	---	---	---	---	27.2	---	2.4 A	---	---	---	---	29
30	---	---	---	---	---	24.4	---	2.4 A	---	---	---	---	30
31	---	---	---	---	---	---	---	---	---	---	---	---	31

TYPE OF GAUGE - RECORDING
 LOCATION - LAT 63 42 02 N
 LONG 90 37 12 W
 DRAINAGE AREA 607 Km²

A-MANUAL
 E-ESTIMATED

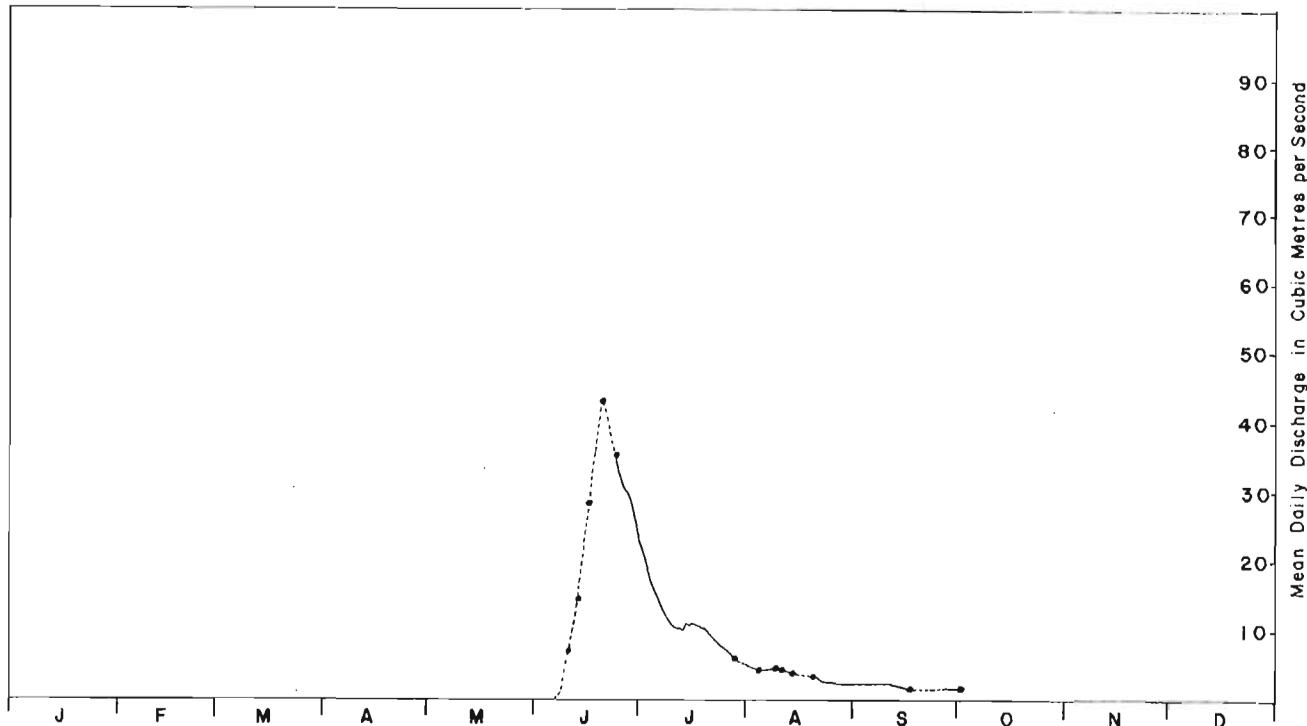


Fig. 10 Annual hydrograph based on mean daily discharges for the Saqvaqjuac River, 1977. Solid line indicates discharge computed from continuous stage records. Dashed line indicates discharge estimated from occasional manual staff gauge readings and discharge measurements. Dots indicate instantaneous discharge measurements.

Table 10. Mean daily discharge in cubic meters per second for the Saqvaqjuac River for 1978.

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL.	AUG	SEP	OCT	NOV	DEC	DAY
1	---	---	---	---	---	---	---	7.6	1.7	---	---	---	1
2	---	---	---	---	---	56.5 A	7.2	1.6	---	---	---	---	2
3	---	---	---	---	---	---	6.7	1.6	---	---	---	---	3
4	---	---	---	---	---	41.7 A	6.2	1.6	---	---	---	---	4
5	---	---	---	---	---	---	5.9	1.5	---	---	---	---	5
6	---	---	---	---	---	48.7 A	5.5	1.5	---	---	---	---	6
7	---	---	---	---	---	---	5.2	1.5	---	---	---	---	7
8	---	---	---	---	---	---	4.8	1.5	---	---	---	---	8
9	---	---	---	---	---	---	4.6	1.5	---	---	---	---	9
10	---	---	---	---	---	58.1 A	4.2	1.4	---	---	---	---	10
11	---	---	---	---	---	---	4.0	1.4	---	---	---	---	11
12	---	---	---	---	0 A	51.1	3.6	---	---	---	---	---	12
13	---	---	---	---	---	43.3	3.3	---	---	---	---	---	13
14	---	---	---	---	0.3 E	37.5	3.1	---	---	---	---	---	14
15	---	---	---	---	---	32.2	2.9	---	---	---	---	---	15
16	---	---	---	---	0.3 E	28.7	2.6	---	---	---	---	---	16
17	---	---	---	---	---	25.4	2.5	---	---	---	---	---	17
18	---	---	---	---	7.8 A	22.7	2.4	---	---	---	---	---	18
19	---	---	---	---	8.6 A	21.3	2.4	---	---	---	---	---	19
20	---	---	---	---	15.6 A	19.7	2.1	---	---	---	---	---	20
21	---	---	---	---	13.4 A	18.1	2.0	---	---	---	---	---	21
22	---	---	---	---	14.0 A	17.0	1.8	---	---	---	---	---	22
23	---	---	---	---	29.5 A	15.5	1.8	---	---	---	---	---	23
24	---	---	---	---	42.5 A	14.2	1.7	---	---	---	---	---	24
25	---	---	---	---	56.5 A	12.9	1.6	---	---	---	---	---	25
26	---	---	---	---	65.3 A	12.0	1.5	---	---	---	---	---	26
27	---	---	---	---	---	11.0	1.4	---	---	---	---	---	27
28	---	---	---	---	88.4 A	10.2	1.4	---	---	---	---	---	28
29	---	---	---	---	81.3 A	9.6	1.9	---	---	---	---	---	29
30	---	---	---	---	---	8.9	2.0	---	---	---	---	---	30
31	---	---	---	---	---	8.1	1.8	---	---	---	---	---	31

TYPE OF GAUGE - RECORDING
 LOCATION - LAT 63 42 02 N
 LONG 90 37 12 W
 DRAINAGE AREA 607 Km²

A-MANUAL
 E-ESTIMATED

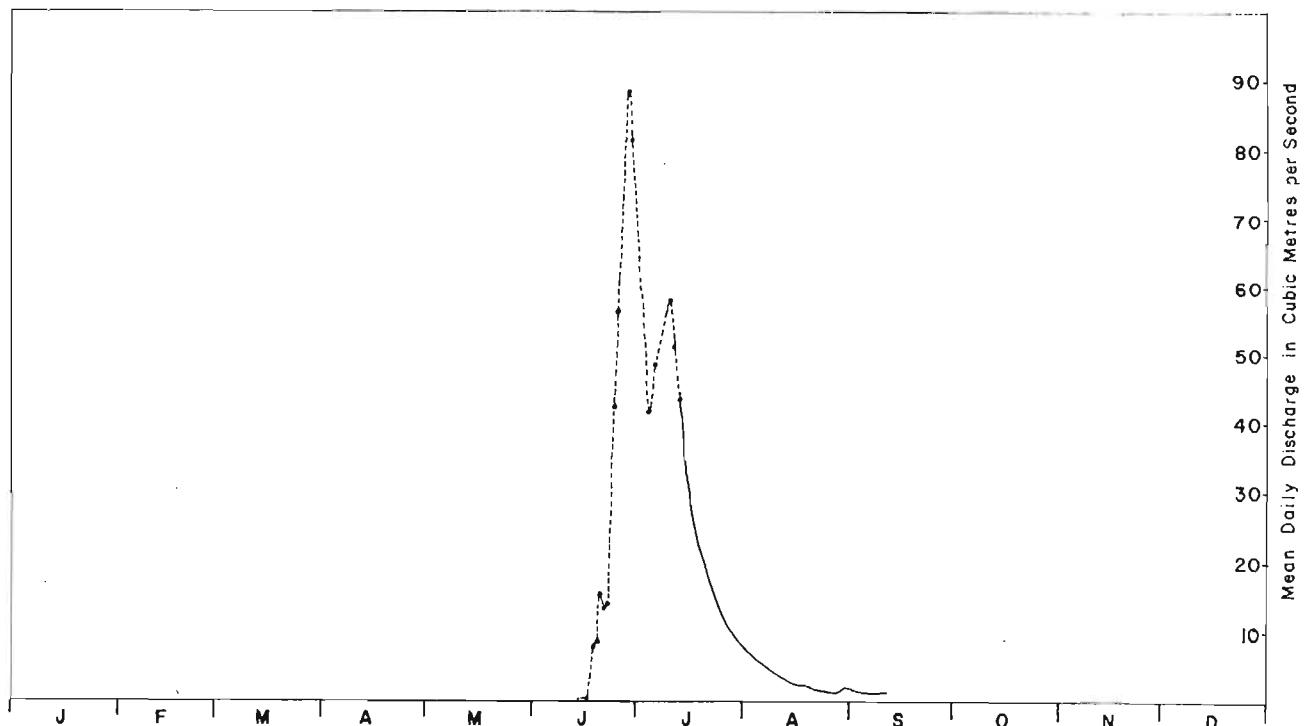


Fig. 11 Annual hydrograph based on mean daily discharges for the Saqvaqjuac River, 1978. Solid line indicates discharge computed from continuous stage records. Dashed line indicates discharge estimated from occasional manual staff gauge readings and discharge measurements.

Table II. Mean daily discharge in cubic meters per second for the Saqvaqjuac River for 1979.

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	---	---	---	---	---	---	8.8	---	1.3 A	---	---	---	1
2	---	---	---	---	---	---	8.2	---	---	---	---	---	2
3	---	---	---	---	---	29.2	7.7	---	---	---	---	---	3
4	---	---	---	---	---	34.4	7.2	---	---	---	---	---	4
5	---	---	---	---	---	35.6	6.8	1.0 E	---	---	---	---	5
6	---	---	---	---	---	37.1	---	---	---	---	---	---	6
7	---	---	---	---	---	34.8	---	---	---	---	---	---	7
8	---	---	---	---	---	33.6	---	---	---	---	---	---	8
9	---	---	---	---	---	30.5	---	1.9 A	---	---	---	---	9
10	---	---	---	---	---	27.5	5.0 E	---	---	---	---	---	10
11	---	---	---	---	---	24.8	---	.85	---	---	---	---	11
12	---	---	---	---	---	22.8	---	.80	---	---	---	---	12
13	---	---	---	---	---	21.5	---	.78	---	---	---	---	13
14	---	---	---	---	---	20.5	---	.74	---	---	---	---	14
15	---	---	---	---	---	20.2	3.8 E	.74	---	---	---	---	15
16	---	---	---	---	---	20.1	---	.69	---	---	---	---	16
17	---	---	---	---	---	20.1	---	.63	---	---	---	---	17
18	---	---	---	---	---	19.4	---	.65	---	---	---	---	18
19	---	---	---	---	---	18.4	---	.57	---	---	---	---	19
20	---	---	---	---	O A	17.6	2.9 E	.52	---	---	---	---	20
21	---	---	---	---	---	16.4	---	.50	---	---	---	---	21
22	---	---	---	---	---	14.8	---	.48	---	---	---	---	22
23	---	---	---	---	---	14.1	---	.44	---	---	---	---	23
24	---	---	---	---	---	13.0	---	.67	---	---	---	---	24
25	---	---	---	---	---	12.2	2.0 E	.71	---	---	---	---	25
26	---	---	---	---	6 A	11.6	---	.63	---	---	---	---	26
27	---	---	---	---	---	11.2	---	.61	---	---	---	---	27
28	---	---	---	---	---	10.4	---	.63	---	---	---	---	28
29	---	---	---	---	---	10.0	---	---	---	---	---	---	29
30	---	---	---	---	---	9.5	1.7 E	---	---	---	---	---	30
31	---	---	---	---	18.1 A	---	1.3	---	---	---	---	---	31

TYPE OF GAUGE - RECORDING
 LOCATION - LAT 63 42 02 N
 LONG 90 37 12 W
 DRAINAGE AREA 607 Km²

A-MANUAL
 E-ESTIMATED

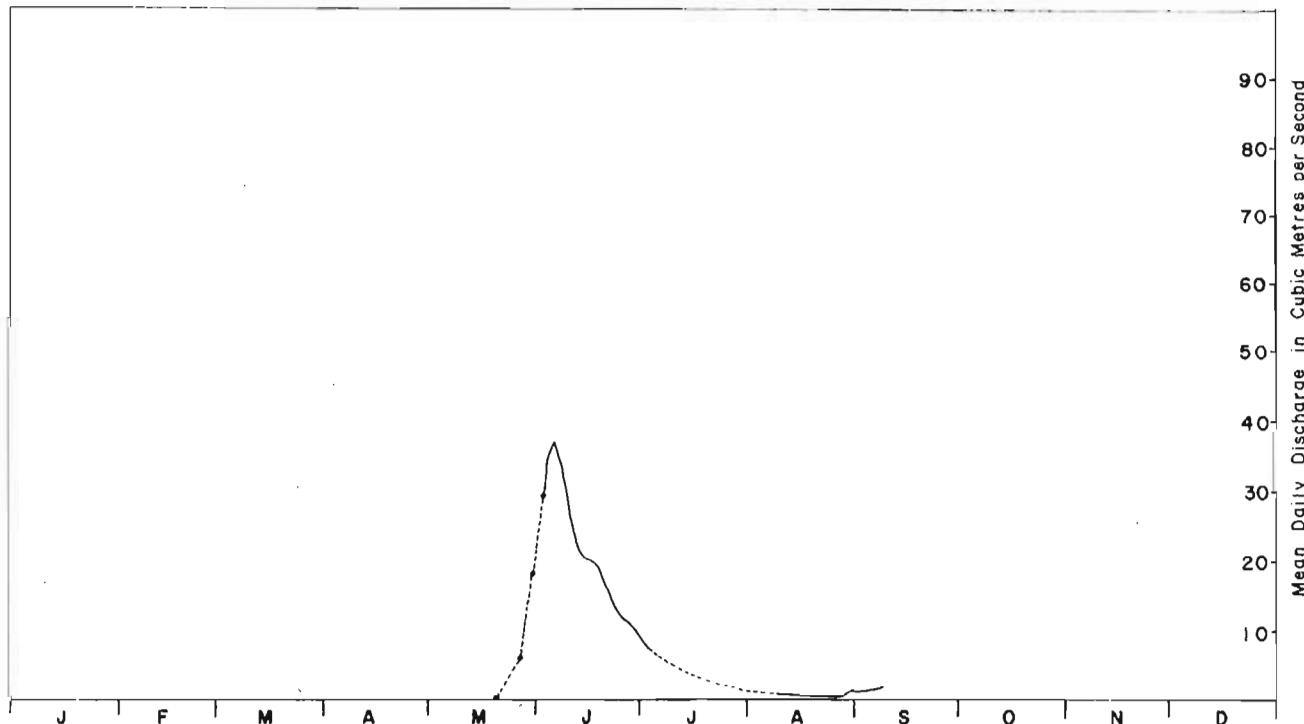


Fig. 12 Annual hydrograph based on mean daily discharges for the Saqvaqjuac River, 1979. Solid line indicates discharge computed from continuous stage records. Dashed line indicates discharge estimated from occasional manual staff gauge readings and discharge measurements. Dots indicate instantaneous discharge measurements.

Table 12. Mean daily discharge in cubic meters per second for the Saqvaqjuac River for 1980.

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	DAY
1	---	---	---	---	---	14.0	9.4	17.0	---	---	---	---	1
2	---	---	---	---	---	16.1	8.8	17.1	---	---	---	---	2
3	---	---	---	---	---	15.9	8.3	17.0	---	---	---	---	3
4	---	---	---	---	---	16.1	7.9	16.4	---	---	---	---	4
5	---	---	---	---	1.1 E	16.1	7.3	15.6	---	---	---	---	5
6	---	---	---	---	---	15.6	6.8	14.8	---	---	---	---	6
7	---	---	---	---	---	15.4	6.6	14.0	---	---	---	---	7
8	---	---	---	---	---	18.1	6.1	14.4	---	---	---	---	8
9	---	---	---	---	0.7 A	19.1	5.9	20.6	---	---	---	---	9
10	---	---	---	---	---	19.9	5.7	29.8	---	---	---	---	10
11	---	---	---	---	---	20.6	5.5	38.3	---	---	---	---	11
12	---	---	---	---	---	21.3	5.2	42.2	---	---	---	---	12
13	---	---	---	---	15.1	21.5	5.0	41.7	---	1.7 E	---	---	13
14	---	---	---	---	17.0	21.1	4.7	39.8	---	---	---	---	14
15	---	---	---	---	16.5	20.9	4.6	36.8	---	---	---	---	15
16	---	---	---	---	19.2	20.4	4.4	33.1	---	---	---	---	16
17	---	---	---	---	25.8	19.4	4.1	29.1	---	---	---	---	17
18	---	---	---	---	34.1	18.9	4.1	26.4	---	---	---	---	18
19	---	---	---	---	37.8	19.4	3.9	23.5	---	---	---	---	19
20	---	---	---	---	36.5	18.4	3.9	21.5	---	---	---	---	20
21	---	---	---	0	33.4	17.5	3.9	19.4	---	---	---	---	21
22	---	---	---	---	30.0	16.8	6.0	17.6	---	---	---	---	22
23	---	---	---	---	26.8	16.5	9.3	---	---	---	---	---	23
24	---	---	0.1 E	---	24.0	15.8	10.6	---	---	---	---	---	24
25	---	---	---	---	21.8	14.9	12.6	---	---	---	---	---	25
26	---	---	---	---	19.9	13.8	14.5	---	---	---	---	---	26
27	---	---	---	---	17.9	12.8	16.1	---	---	---	---	---	27
28	---	---	---	---	16.7	11.9	16.2	---	---	---	---	---	28
29	---	---	---	---	15.8	11.2	15.9	---	---	---	---	---	29
30	---	---	---	---	14.4	10.5	17.0	---	---	---	---	---	30
31	---	---	---	0.2 A	---	10.0	16.8	---	---	---	---	---	31

TYPE OF GAUGE - RECORDING
 LOCATION - LAT 63 42 02 N
 LONG 90 37 12 W
 DRAINAGE AREA 607 Km²

A-MANUAL
 E-ESTIMATED

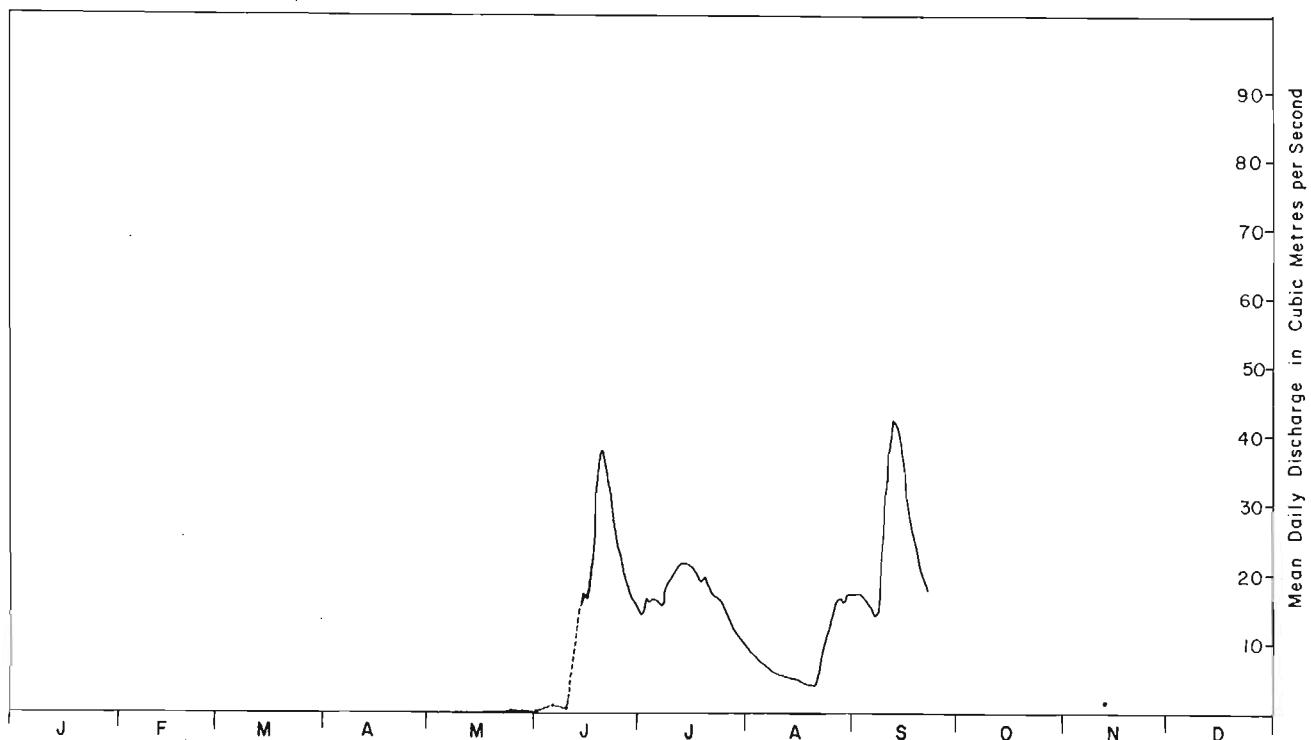


Fig. 13 Annual hydrograph based on mean daily discharges for the Saqvaqjuac River, 1980. Solid line indicates discharge computed from continuous stage records. Dashed line indicates discharge estimated from occasional manual staff gauge readings and discharge measurements. Dots indicate instantaneous discharge measurements.

Table 13. Far Lake surface temperatures, 1977-1980.

1977			1978			1979			1980		
Date	Time	Temperature ^a (°C)	Date	Time	Temperature ^a (°C)	Date	Time	Temperature ^e (°C)	Date	Time	Temperature ^a (°C)
Jun 29	11:00	4.7 (65%) ^b	Jul 20	09:45	(20%)	Jul 13	-	15.5	Jun 19	13:45	4.5 (90%)
Jul 1	11:00	5.0 (0%) ^c	Jul 21	14:00	4.6	Jul 14	-	14.0	Jul 3	-	10.0 ^c
Jul 5	-	9.4	Jul 27	09:15	8.3	Jul 16	11:00	12.0	Jul 8	14:00	9.1
Jul 7	13:35	10.8	Jul 31	09:30	10.0	Jul 20	-	11.4	Jul 9	11:00	9.0
Jul 8	12:30	12.2	Aug 2	09:30	11.0	Jul 24	-	11.1	Jul 15	-	14.0 ^c
Jul 16	11:10	12.2	Aug 9	09:30	11.0	Jul 31	-	10.5	Jul 17	-	12.5 ^d
Jul 18	10:00	13.2	Aug 15	16:00	12.7	Aug 6	10:15	11.5	Jul 23	-	11.0 ^d
Jul 20	16:10	14.0	Aug 16	15:15	11.0	Aug 7	-	11.0	Jul 26	-	10.0 ^d
Jul 21	16:00	15.0	Aug 19	10:30	9.0	Aug 8	-	11.0	Jul 30	-	11.0
Jul 22	-	14.8 ^c	Aug 21	16:30	8.7	Aug 9	-	10.5	Jul 31	-	11.6 ^c
Jul 25	10:30	15.0 ^d	Aug 23	16:00	11.6	Aug 10	-	10.0	Sep 5	-	10.2 ^c
Jul 27	14:10	14.5	Sep 4	16:00	8.3	Aug 11	-	9.5	Sep 12	-	5.5 ^c
Jul 28	11:00	13.5	Sep 6	15:00	8.7	Aug 12	-	9.5	Sep 19	-	2.8 ^c
Aug 3	14:00	11.3 ^c	Sep 13	14:00	8.8	Aug 13	-	10.0	Sep 23	-	(100%)
Aug 4	11:0	10.2	1979 ^e			Aug 14	-	10.5			
Aug 11	10:00	11.8	Jun 18	15:00	(70%)	Aug 15	-	11.0			
Aug 18	10:15	11.4 ^c	Jun 25	15:00	5.5 (65%)	Aug 16	-	11.0			
Aug 18	-	12.0 ^c	Jun 29	15:00	(20%)	Aug 17	-	11.0			
Aug 24	-	11.5 ^c	Jul 1	-	(0%)	Aug 18	-	10.5			
Aug 29	-	10.8 ^c	Jul 2	11:00	7.5	Aug 19	-	10.0			
Sep 3	-	10.0 ^c	Jul 3	-	8.5	Aug 20	-	9.5			
Sep 10	-	7.6 ^c	Jul 4	-	9.0	Aug 21	-	9.5			
Sep 30	-	5.5 ^c	Jul 5	-	11.5	Aug 22	-	9.5			
			Jul 6	-	11.5	Aug 23	-	9.5			
			Jul 7	-	13.0	Aug 24	-	9.0			
			Jul 8	-	15.5	Aug 25	-	8.0			
			Jul 9	-	14.0	Aug 26	-	7.0			
			Jul 10	-	13.5	Aug 27	-	7.0			
			Jul 11	-	13.5	Aug 28	-	7.0			
			Jul 12	-	14.5	Aug 29	-	7.0			
						Aug 30	-	6.5			
						Aug 31	-	6.0			
						Sep 1	-	5.5			
						Sep 8	14:00	6.7			

^aMeasured with a field thermometer, usually near shore at a deep area, unless otherwise indicated.^bPercent of lake ice covered, estimated visually.^cMeasured with a thermister at lake center.^dMeasured with a field thermometer at lake center.^eValues for July 3 to July 14 and August 7 to September 1, 1979, are mean daily temperatures obtained from a continuous water temperature recorder.

Table 14. P & N Lake surface temperatures, 1977-1980^a.

1977			1978			1979			1980		
Date	Time	Temperature (°C)	Date	Time	Temperature (°C)	Date	Time	Temperature (°C)	Date	Time	Temperature (°C)
Jun 28	14:00	8.3 (45%) ^b	Jul 18	10:15	5.0	Jun 22	-	(60%)	Jun 28	-	4.6 (15%)
Jul 4	-	9.0	Jul 20	09:00	(20%)	Jun 28	-	(40%)	Jun 30	15:35	7.8
Jul 5	14:00	11.1	Jul 21	14:30	(1%)	Jun 29	-	(10%)	Jul 2	-	7.8 ^c
Jul 8	10:00	10.4	Jul 22	20:00	5.6	Jul 1	-	(0%)	Jul 3	09:25	8.0
Jul 9	10:00	12.4	Jul 25	10:30	8.0	Jul 3	16:30	11.1 ^d	Jul 4	-	10.9 ^c
Jul 11	17:00	12.0	Jul 27	13:45	10.2	Jul 4	14:56	11.6 ^c	Jul 5	09:25	10.5
Jul 15	14:00	12.3	Jul 28	14:00	10.0	Jul 7	-	15.1 ^d	Jul 8	-	9.3 ^c
Jul 18	-	13.8 ^c	Aug 1	10:30	10.5	Jul 9	09:00	18.0 ^c	Jul 8	09:50	9.0
Jul 18	14:25	14.6	Aug 1	16:30	12.0	Jul 9	13:00	16.6 ^c	Jul 9	-	8.7
Jul 20	12:00	15.0 ^d	Aug 4	09:40	9.5	Jul 10	11:30	16.6 ^d	Jul 12	-	9.5
Jul 25	11:45	14.8 ^d	Aug 7	11:30	11.5	Jul 11	10:00	16.6 ^d	Jul 13	-	9.5
Jul 28	17:00	13.7	Aug 11	09:25	10.0	Jul 12	-	16.6 ^c	Jul 15	-	13.1 ^c
Jul 31	18:10	12.3	Aug 11	15:00	10.8	Jul 14	-	16.4 ^d	Jul 18	-	12.0
Aug 1	12:00	11.3	Aug 12	09:00	9.8	Jul 16	-	12.0 ^c	Jul 21	-	12.5
Aug 1	-	12.4 ^c	Aug 16	09:10	10.0	Jul 20	-	11.0 ^c	Jul 22	-	12.5
Aug 2	15:40	10.8 ^d	Aug 18	09:00	9.3	Jul 24	-	11.4	Jul 24	-	9.5
Aug 5	10:45	10.8	Aug 22	08:45	7.8	Aug 7	11:45	10.8 ^d	Jul 28	-	10.0
Aug 5	16:30	10.8	Aug 25	09:50	9.0	Aug 10	10:00	9.4 ^d	Jul 31	-	12.6 ^c
Aug 6	15:00	11.5	Sep 6	11:45	7.6	Aug 10	13:45	9.7	Aug 5	-	12.7
Aug 9	10:30	11.8	Sep 12	09:20	7.3	Aug 11	14:00	9.7 ^d	Aug 14	-	14.0 ^c
Aug 10	-	13.1 ^c				Aug 16	16:00	11.2	Aug 15	-	15.7 ^c
Aug 17	-	12.2 ^c				Aug 17	14:35	11.8	Aug 16	-	15.6 ^c
Aug 18	10:00	11.2				Aug 20	15:30	9.5	Aug 27	10:30	10.0
Aug 23	20:00	11.0				Aug 31	15:30	5.7	Aug 31	-	10.5 ^c
Aug 29	-	10.7 ^d							Sep 5	-	11.2 ^c
Aug 30	-	10.0 ^d							Sep 12	-	6.0
Sep 8	-	8.5 ^d							Sep 14	-	5.4 ^c
Sep 10	-	7.6 ^c							Sep 19	-	2.5 ^c
Sep 17	-	4.5 ^d							Sep 23-24	-	(80%)
									Sep 26	-	(100%)
									Oct 3		9 cm ice

^aMeasured with a field thermometer, usually near shore at a deep area, unless otherwise indicated.^bPercent of lake ice covered, estimated visually.^cMeasured with a thermister at lake center.^dMeasured with a field thermometer at lake center.

Table 15. Jade Lake surface temperatures, 1979-1980^a.

1979			1980		
Date	Time	Temperature (°C)	Date	Time	Temperature (°C)
Jun 19	-	(75%) ^b	Jul 3	-	10.1
Jun 25	-	(70%)	Jul 15	-	12.9
Jun 27	-	(40%)	Jul 17	-	13.5
Jun 28	-	(10%)	Jul 21	-	13.0
Jun 29	-	(5%)	Jul 22	-	12.0
Jul 1	-	(0%)	Jul 30	-	12.0
Jul 3	14:30	13.5	Jul 31	-	12.7
Jul 4	14:05	13.6	Aug 27	14:30	10.5
Jul 7	-	17.0	Sep 5	-	10.8
Jul 9	09:00	17.5	Sep 12	-	6.0
Jul 9	14:00	17.8	Sep 19	-	2.0
Jul 12	-	17.2	Sep 22	-	(100%)
Jul 20	-	11.6			
Jul 24	-	11.5			
Aug 7	11:15	10.5			
Aug 10	11:30	8.7			
Aug 11	15:00	9.0			
Aug 16	15:00	11.5			
Aug 17	14:00	11.8			
Aug 30	10:00	5.0			
Aug 31	16:00	5.0			
Sep 7	11:30	5.5			

^aMeasured at lake center with a field thermometer or thermister.^bPercent of lake ice covered, estimated visually.

Table 16. Methane Lake surface temperatures, 1977-1978^a.

1977			1978		
Date	Time	Temperature (°C)	Date	Time	Temperature (°C)
Jun 28	11:40	4.8 (85%) ^b	Jul 17	12:00	4.0 (55%)
Jul 2	12:00	6.0 (1%)	Jul 20	08:30	(60%)
Jul 4	15:00	7.2 (0%)	Jul 21	18:00	(30%)
Jul 4	-	6.8 ^c	Jul 22	08:40	(5%)
Jul 5	-	7.6 ^c	Jul 23	08:30	(1%)
Jul 8	10:30	9.7	Jul 25	11:00	5.0
Jul 9	16:45	11.0	Aug 1	16:00	9.0
Jul 11	17:30	10.5	Aug 4	09:20	8.5
Jul 15	10:00	11.4	Aug 7	11:00	10.8
Jul 16	19:00	12.0	Aug 7	20:00	10.0
Jul 18	14:45	15.9	Aug 8	09:00	10.0
Jul 18	-	13.4 ^c	Aug 10	08:50	10.6
Jul 19	10:30	12.2 ^d	Aug 11	08:50	9.0
Jul 20	12:20	14.1 ^d	Aug 11	15:00	10.5
Jul 22	10:50	14.3 ^c	Aug 12	08:40	9.8
Jul 25	12:00	14.6	Aug 14	08:40	9.0
Jul 28	22:00	12.0	Aug 16	08:40	9.8
Aug 1	12:00	11.1 ^c	Aug 17	08:40	10.0
Aug 1	-	11.9 ^c	Aug 18	08:50	9.5
Aug 2	09:15	10.5	Aug 21	08:55	8.2
Aug 3	-	10.9 ^c	Aug 22	08:30	8.0
Aug 5	17:00	10.9	Aug 23	11:50	9.3
Aug 8	11:15	10.8	Aug 25	09:35	9.1
Aug 10	-	12.8 ^c	Aug 28	08:40	9.2
Aug 17	09:10	11.0	Sep 4	11:00	8.0
Aug 17	-	12.0 ^c	Sep 6	11:45	7.8
Aug 18	12:30	11.3	Sep 12	09:00	7.8
Aug 18	-	11.5 ^c			
Aug 21	21:00	11.0			
Aug 29	-	10.9 ^c			
Sep 10	-	8.2 ^c			
Sep 22	-	6.0 ^c			
Oct 8	-	4.0 ^c			

Table 17. Spring Lake surface temperatures, 1979-1980^a.

1979			1980		
Date	Time	Temperature (°C)	Date	Time	Temperature (°C)
Jun 12	-	(95%) ^b	Jul 4	-	11.0
Jul 1	-	(0%)	Jul 9	-	9.0
Jul 3	14:00	10.0	Jul 15	-	14.0
Jul 7	-	14.1	Jul 17	-	12.0
Jul 9	09:00	16.0	Jul 21	-	13.0
Jul 9	11:05	16.0	Jul 24	-	9.8
Jul 12	-	18.2	Jul 25	-	9.5
Jul 18	-	11.0	Jul 31	-	12.2
Jul 20	-	12.0	Aug 4	-	13.0
Jul 24	-	11.5	Sep 5	-	10.6
Jul 31	-	10.5	Sep 12	-	5.5
Aug 7	-	11.0	Sep 19	-	2.0
Aug 13	-	10.0	Sep 23	-	(100%)
Aug 20	11:30	9.2			

^aMeasured at lake center with a field thermometer or thermister.^bPercent of lake ice covered, estimated visually.^aMeasured with a field thermometer, usually near shore at a deep area, unless otherwise indicated.^bPercent of lake ice covered, estimated visually.^cMeasured with a thermister at lake center.^dMeasured with a field thermometer at lake center.

Table 18. Saqvaqjuac River temperatures, 1977-1980^a.

1977			1978			1979			1979		
Date	Time	Temperature (°C)									
Jul 23	11:15	14.2	Aug 21	10:00	8.0	Aug 2	10:30	11.1	Aug 30	09:00	5.6
Jul 28	12:00	13.8	Aug 21	15:00	8.0	Aug 3	10:00	11.1	Aug 30	19:00	6.0
Aug 9	16:00	12.3	Aug 22	11:00	9.0	Aug 3	21:00	10.0	Aug 31	09:00	5.5
Aug 11	11:00	11.5	Aug 22	16:00	9.0	Aug 4	09:30	10.6	Aug 31	-	6.1
Aug 30	-	10.0	Aug 23	09:00	9.5	Aug 4	21:00	11.0	Sep 1	09:00	5.0
Sep 10	-	7.5	Aug 23	14:00	9.8	Aug 5	11:30	11.5	Sep 2	-	5.5
Sep 23	-	6.0	Aug 24	10:00	9.0	Aug 5	18:30	12.0			
Oct 2	-	5.5	Aug 24	12:00	9.0	Aug 6	09:00	11.0			
			Aug 24	15:30	10.0	Aug 7	12:00	11.0			1980
			Aug 25	10:00	9.0	Aug 10	10:30	10.5	Jun 13	16:00	1.0
Jun 29	15:30	1.0	Aug 25	14:00	10.0	Aug 11	11:00	9.7	Jun 23	19:30	3.7
Jul 12	16:30	4.0	Aug 25	16:00	10.0	Aug 12	12:00	9.5	Jul 4	19:45	10.7
Aug 2	11:00	11.0	Aug 26	15:30	9.5	Aug 13	19:20	11.0			
Aug 3	-	11.0	Aug 27	10:30	9.6	Aug 14	10:40	11.0			
Aug 4	15:00	10.0	Aug 28	09:00	9.0	Aug 15	10:45	10.0			
Aug 7	10:30	10.0	Aug 28	14:00	9.0	Aug 16	-	11.0			
Aug 8	11:30	11.5	Aug 30	10:00	8.0	Aug 17	-	11.0			
Aug 9	11:15	11.6	Aug 30	13:30	8.0	Aug 18	-	10.0			
Aug 10	14:00	11.5	Aug 31	10:30	8.0	Aug 19	12:00	10.5			
Aug 11	10:20	10.0	Aug 31	20:30	7.7	Aug 20	10:00	9.4			
Aug 11	15:30	10.5	Sep 1	09:00	7.6	Aug 20	19:30	10.0			
Aug 12	11:30	10.5	Sep 2	10:00	7.2	Aug 21	10:30	10.0			
Aug 13	11:00	9.8	Sep 3	10:00	7.0	Aug 21	19:00	9.5			
Aug 14	10:00	9.8	Sep 4	09:00	7.0	Aug 22	09:00	10.0			
Aug 14	15:15	10.5	Sep 4	17:00	7.3	Aug 22	21:00	9.0			
Aug 14	20:00	10.0	Sep 5	08:30	8.0	Aug 24	09:00	8.6			
Aug 15	10:00	10.5	Sep 6	08:15	7.0	Aug 24	19:00	9.0			
Aug 15	16:30	11.0	Sep 6	11:40	7.0	Aug 25	09:00	7.2			
Aug 16	10:30	10.0	Sep 7	09:30	7.0	Aug 25	19:00	6.1			
Aug 16	15:30	11.0	Sep 8	19:30	7.4	Aug 26	10:40	5.8			
Aug 16	20:00	10.0	Sep 9	15:45	7.6	Aug 26	17:40	6.1			
Aug 17	09:00	10.0	Sep 11	14:00	7.8	Aug 27	09:30	6.5			
Aug 18	10:10	9.5	Sep 12	19:00	7.7	Aug 27	18:50	7.0			
Aug 18	15:00	9.5	Sep 13	18:30	7.6	Aug 28	09:30	7.0			
Aug 19	10:00	9.0	Sep 19	12:10	6.0	Aug 28	15:30	7.0			
Aug 20	14:00	9.0	Sep 20	16:50	5.0	Aug 29	09:30	7.8			

^aAll temperatures taken with a small field thermometer.

Table 19. Depth to frost at various locations near Saqvaqjuac camp, 1977-1979.

Location ^a	<u>1977, depth(cm)</u>		
	Jul 2	Jul 20	Aug 12
1	49	73	82
2	21	-	-
3	21	73	94
4	46	-	94
5	54	76	-
6	-	64	76

Location ^b	<u>1978, depth(cm)</u>					
	Jul 3	Jul 11	Jul 25	Aug 5	Aug 17	Sep 4
A	49	51	55	79	73	97
B	51	51	41	53	119	>152
C	31	-	57	62	74	90
D	32	-	50	60	74	88

Location ^b	<u>1979, depth(cm)</u>		
	Jun 5	Jun 30	Aug 10
A	21	-	78
B	34	57	-
C	30	45	91
D	26	50	91

^aLocations (all within 200 m of camp) are in different types of overburden, comprising the range of unconsolidated materials in the vicinity.

^bSame locations 1978, 1979:

A: clayey, sandy gravel and cobbles under shallow organic cover.

B: 1.5m of clayey, sandy gravel over bedrock, shallow organic cover, water-saturated in spring.

C: silty-clay in frost-boil, no organic cover.

D: gravel and clay under moss cover.



Table 20. Depth to frost at various locations near Meadow, 1978-1980.

Location ^a	<u>1978, depth(cm)</u>			
	Jul 25	Aug 5	Aug 17	Sep 1
1	-	81	81	87
2	-	-	42	50
3	-	75	-	85
4	75	112	119	>130
5	36	-	-	127
6	58	90	98	>130

Location	<u>1979, depth(cm)</u>			
	Jun 7	Jun 19	Jul 11	Aug 17
A	17	28	55	69
B	23	53	74	96
C	51	63	56	>100
D	40	57	91	101
E	24	-	57	-
F	27	35	73	95
G	48	67	55	>110
H	27	59	-	-
I	18	36	73	105

Location	<u>1980, depth(cm)</u>			
	Jun 7	Jun 18	Jul 2	Jul 30
A	24	34	55	>115
B	17	44	73	103
C	37	39	106	>115
D	29	58	98	-
E	27	61	-	84
F	20	40	86	-
G	37	75	106	>115
H	26	56	98	-
I	20	40	85	-

^aSee Figure 9 for locations. Sites in gravelly-clay or clay with cobbles under shallow (<0.2 m) organic cover (fen-peat and moss), comprising the range of unconsolidated materials and degrees of near-surface water saturation.

Table 21. Meadow snow survey results, 1978.

Part of basin ^c	Area (ha)	Snow depth (cm)			Snow density (g cm ⁻³)			Snowpack water equivalent (m ³)	Date of Survey
		Mean	n ^a	SD	Mean	n	SD		
Upper	5.03	21.5	145	12.7	0.40	18	0.05	4330	May 18
Sloping sides	5.03	35.8	89	21.4	0.40	35	0.09	7200	May 19
Lower	5.03	36.7	115	12.1	0.39	53	0.06	7200	May 19
Snow cliff	0.31	206 ^b	41	-	0.48	6	0.05	3070	June 7
Total	15.4		390			112		21800	

^aNumber of sample points.^bSample depth transects were plotted on a topographic map; isolines of equal snow depth were drawn and used to compute mean snow depth.^cDetermined approximately from a topographic map of the basin.

Table 22. Meadow snow survey results, 1979.

Part of basin	Area (ha)	Snow depth (cm)			Snow density (g cm ⁻³)			Snowpack water equivalent (m ³)	Date of Survey
		Mean	n ^a	SD	Mean	n	SD		
Main area	15.1	28.3	663	21.8	0.31	17	0.04	13250	April 4
Snow cliff	0.3	175 ^b	13	-	0.31 ^c	-	-	1630	April 5
Total	15.4		676			17		14880	

^aNumber of sample points.^bThe mean depth for one transect was 15% less than the 1978 mean for the same transect, therefore the mean for the whole snow cliff was assumed to be 15% less than the 1978 mean of 206 cm.^cMean snow cliff density was assumed to be equal to the mean for the rest of the basin.

Table 23. Saqvaqjuac air temperature data ($^{\circ}\text{C}$) for 1977.

DATE	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1 Max	---	---	---	16.5	14.0	---	---	---
1 Min	---	---	---	6.0	5.5	---	---	---
2 Max	---	---	---	15.0	11.0	---	---	---
2 Min	---	---	---	7.0	5.5	---	---	---
3 Max	---	---	---	13.0	14.0	---	---	---
3 Min	---	---	---	7.0	5.5	---	---	---
4 Max	---	---	---	11.0	10.5	---	---	---
4 Min	---	---	---	7.0	6.0	---	---	---
5 Max	---	---	---	13.0	9.5	---	---	---
5 Min	---	---	---	5.0	4.5	---	---	---
6 Max	---	---	---	10.0	9.0	---	---	---
6 Min	---	---	---	6.0	4.0	---	---	---
7 Max	---	---	---	11.0	13.0	---	---	---
7 Min	---	---	---	6.5	3.0	---	---	---
8 Max	---	---	---	14.0	16.0	---	---	---
8 Min	---	---	---	9.0	8.0	---	---	---
9 Max	---	---	---	16.5	20.0	---	---	---
9 Min	---	---	---	8.0	9.0	---	---	---
10 Max	---	---	---	17.0	19.0	---	---	---
10 Min	---	---	---	7.0	9.0	---	---	---
11 Max	---	---	---	13.0	10.5	---	---	---
11 Min	---	---	---	5.5	8.0	---	---	---
12 Max	---	---	---	8.5	14.5	---	---	---
12 Min	---	---	---	5.0	8.5	---	---	---
13 Max	---	---	---	11.5	14.5	---	---	---
13 Min	---	---	---	6.5	8.5	---	---	---
14 Max	---	---	13.0	13.0	15.0	---	---	---
14 Min	---	---	0.0	8.5	8.0	---	---	---
15 Max	---	---	18.0	15.5	10.5	---	---	---
15 Min	---	---	7.0	8.0	5.5	---	---	---
16 Max	---	---	18.0	14.0	13.5	---	---	---
16 Min	---	---	5.5	9.0	5.5	---	---	---
17 Max	---	---	10.5	18.5	10.5	---	---	---
17 Min	---	---	4.5	9.5	6.5	---	---	---
18 Max	---	---	10.5	16.5	12.0	---	---	---
18 Min	---	---	4.0	9.5	6.0	---	---	---
19 Max	---	---	9.5	12.0	11.0	---	---	---
19 Min	---	---	1.5	8.5	5.0	---	---	---
20 Max	---	---	8.5	16.0	9.5	---	---	---
20 Min	---	---	1.5	8.5	6.0	---	---	---
21 Max	---	---	3.5	18.0	10.5	---	---	---
21 Min	---	---	2.0	12.0	3.5	---	---	---
22 Max	---	---	11.0	16.0	11.5	---	---	---
22 Min	---	---	1.5	9.0	5.0	---	---	---
23 Max	---	---	18.5	17.0	14.0	---	---	---
23 Min	---	---	5.5	10.0	6.5	---	---	---
24 Max	---	---	18.0	19.0	13.5	---	---	---
24 Min	---	---	6.5	9.5	6.0	---	---	---
25 Max	---	---	18.0	21.5	13.0	---	---	---
25 Min	---	---	6.0	10.5	6.5	---	---	---
26 Max	---	---	9.5	22.0	---	---	---	---
26 Min	---	---	2.0	11.5	---	---	---	---
27 Max	---	---	10.5	15.0	---	---	---	---
27 Min	---	---	6.0	8.5	---	---	---	---
28 Max	---	---	12.0	16.0	---	---	---	---
28 Min	---	---	4.0	8.5	---	---	---	---
29 Max	---	---	9.0	20.0	---	---	---	---
29 Min	---	---	3.0	7.0	---	---	---	---
30 Max	---	---	10.5	11.0	---	---	---	---
30 Min	---	---	3.5	6.5	---	---	---	---
31 Max	---	---	---	11.0	---	---	---	---
31 Min	---	---	3.5	---	---	---	---	---
Monthly								
Mean	---	---	---	11.4	---	---	---	---
Mean Max	---	---	---	14.9	---	---	---	---
Mean Min	---	---	---	7.9	---	---	---	---

Table 24. Saqvaqjuac air temperature data ($^{\circ}\text{C}$) for 1978.

DATE	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 Max.		-22	-23	-10	0	13.0	10.0	8.0				
1 Min.		-36	-33	-16	-7.5	3.5	4.0	1.5				
2 Max.		-27	-13	-6	0.5	7.0	9.0	6.0				
2 Min.		-33	-29.5	-13	-4.0	1.5	4.0	3.0				
3 Max.		-22	-9	-6.5	-1.0	5.0	11.0	6.0				
3 Min.		-33	-29.5	-17.5	-5.5	1.0	6.0	1.5				
4 Max.		-24	-25	-6.5	0.5	5.5	12.0	8.0				
4 Min.		-31	-32	-17.5	-5.0	1.0	6.5	4.0				
5 Max.		-23	-25	-3	-2.5	4.0	10.5	9.5				
5 Min.		-31	-33	-11.5	-7.0	1.0	8.5	4.5				
6 Max.		-27	-18	-4.5	-2.5	2.0	15.0	7.5				
6 Min.		-36	-29	-8.5	-10.0	0.0	7.5	3.0				
7 Max.		-28	-21.5	-1.5	0	3.5	17.5	6.0				
7 Min.		-36	-31	-4.5	-9.0	0.5	6.0	4.0				
8 Max.		-28	-23.5	-2.5	-1.5	3.5	11.5	5.0				
8 Min.		-35	-32	-17	-8.5	2.0	5.0	2.5				
9 Max.		-34	-23	-12	-2.0	11.5	12.5	8.5				
9 Min.		-36	-30.5	-22	-7.5	2.5	7.5	2.0				
10 Max.		-29	-9	-11	0	17.0	13.5	7.0				
10 Min.		-36	-11.5	-18	-3.5	5.5	6.5	0.5				
11 Max.		-29	-8.5	-11	0.5	12.0	13.5	7.0				
11 Min.		-36	-11.5	-23	-7.5	3.0	3.0	1.0				
12 Max.		-28	-5.5	-15	-2.0	10.0	10.0	12.0				
12 Min.		-34	-10.5	-24.5	-5.5	4.5	3.5	2.5				
13 Max.		-26	-6	-12.5	1.5	10.0	9.0	10.5				
13 Min.		-29	-14	-23	-2.5	5.0	2.0	4.0				
14 Max.		-26	-9	-9.5	4.5	11.5	10.5	10.0				
14 Min.		0	-18	-17.5	0.5	3.0	5.0	0.5				
15 Max.		-25	-15	-2.0	5.0	11.5	17.5					
15 Min.		-33	-25	-11.0	0.5	3.0	6.0					
16 Max.		-30	-15.5	-0.5	4.0	11.0	11.5					
16 Min.		-34	-21.5	-15.0	1.0	2.0	7.0					
17 Max.		-25.5	M	-10.0	3.0	15.0	12.5					
17 Min.		-35.5	-21	-19.0	0.5	4.0	5.5					
18 Max.		-28	M	-9.0	4.0	12.0	9.0					
18 Min.		-34	-25	-19.0	-2.0	3.5	4.0					
19 Max.		-27.5	-16	-8.0	4.0	10.0	8.5					
19 Min.		-36.5	-24	-16.5	-1.0	4.5	4.0					
20 Max.		-30.5	-13	-5.0	3.0	10.0	10.0					
20 Min.		-37	-22.5	-16.0	0.0	4.5	3.5					
21 Max.		-31.5	-13	-2.5	4.5	11.0	8.0					
21 Min.		-37.5	-20	-16.0	-0.5	4.0	1.0					
22 Max.		-29	-10.5	-6.5	6.0	10.5	10.5					
22 Min.		-36.5	-27	-14.0	0.5	4.5	2.5					
23 Max.		-28.5	-16	-2.5	5.0	12.5	10.0					
23 Min.		-34.5	-25	-10.5	0.5	4.0	5.0					
24 Max.		-27	-11	-6.0	6.0	12.5	18.0					
24 Min.		-37.5	-25	-14.5	1.0	4.5	2.5					
25 Max.		-29	-11	-5.5	5.0	16.0	6.5					
25 Min.		-36	-21	-10.5	1.0	6.0	2.5					
26 Max.		-27	-8	-2.5	8.5	11.0	10.0					
26 Min.		-33	-20	-6.0	0.5	6.0	4.5					
27 Max.		-25	-13.5	-2.0	3.0	12.1	10.0					
27 Min.		-32.7	-23.5	-3.5	0.0	4.5	6.0					
28 Max.		-22.5	-14	-2.0	5.0	14.0	9.0					
28 Min.		-30.8	-24.5	-5.0	0.0	6.5	5.5					
29 Max.		-15.4	-14	0.3	6.5	12.5	8.5					
29 Min.		-27.8	-24	M	1.0	6.0	5.0					
30 Max.		-15.4	-12	1.5	11.5	15.5	5.5					
30 Min.		-27	-19.5	-10.0	2.5	7.0	1.5					
31 Max.		-23		-3.5		13.5	4.5					
31 Min.		-32.5		-8.5		4.0	0.0					
NonDaily Mean		-30.1	-18.8	-9.8	0.3	7.0	7.6					
Mean Max.		-26.3	-19.9	-5.4	3.2	10.4	10.7					
Mean Min.		-33.9	-23.8	-14.3	-2.6	3.6	4.5					

Table 25 Saqqaqjuae air temperature data ($^{\circ}\text{C}$) for 1979.

DATE	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	Max. ---	---	5.0	15.0	12.5	7.5	---	---
	Min. ---	---	1.0	4.5	6.0	2.0	---	---
2	Max. ---	---	3.0	18.0	9.0	8.0	---	---
	Min. ---	---	0.0	5.0	7.5	2.0	---	---
3	Max. ---	---	7.5	23.0	12.5	5.0	---	---
	Min. ---	---	0.0	8.5	6.0	3.5	---	---
4	Max. ---	---	9.5	15.0	16.0	7.0	---	---
	Min. ---	---	0.5	6.5	6.5	2.0	---	---
5	Max. ---	---	4.5	28.0	17.5	7.0	---	---
	Min. ---	---	1.0	10.0	7.5	1.5	---	---
6	Max. ---	---	2.0	22.0	10.5	10.0	---	---
	Min. ---	---	-1.0	8.0	5.5	2.0	---	---
7	Max. ---	---	0.5	28.5	14.0	12.5	---	---
	Min. ---	---	-1.5	6.0	6.0	2.0	---	---
8	Max. ---	---	0.5	24.5	12.5	---	---	---
	Min. ---	---	-1.5	14.5	5.5	---	---	---
9	Max. ---	---	1.5	17.0	12.5	---	---	---
	Min. ---	---	-0.0	9.5	4.5	---	---	---
10	Max. ---	---	6.0	14.5	10.5	---	---	---
	Min. ---	---	-1.5	8.0	6.0	---	---	---
11	Max. ---	---	5.5	16.0	9.0	---	---	---
	Min. ---	---	-3.0	8.0	4.5	---	---	---
12	Max. ---	---	15.0	24.5	12.5	---	---	---
	Min. ---	---	-1.5	10.0	5.0	---	---	---
13	Max. ---	---	11.0	20.0	16.0	---	---	---
	Min. ---	---	2.0	12.0	6.5	---	---	---
14	Max. ---	---	9.0	16.5	16.5	---	---	---
	Min. ---	---	0.5	8.0	6.0	---	---	---
15	Max. ---	---	16.5	11.5	11.5	---	---	---
	Min. ---	---	1.5	6.0	7.0	---	---	---
16	Max. ---	---	9.0	14.0	10.0	---	---	---
	Min. ---	---	3.0	5.0	6.5	---	---	---
17	Max. ---	---	8.5	15.0	15.5	---	---	---
	Min. ---	---	2.5	7.5	6.0	---	---	---
18	Max. ---	---	6.5	13.0	9.5	---	---	---
	Min. ---	---	0.0	4.5	1.0	---	---	---
19	Max. ---	---	6.5	14.0	11.0	---	---	---
	Min. ---	---	0.0	7.0	1.0	---	---	---
20	Max. ---	---	10.0	14.0	11.0	---	---	---
	Min. ---	---	1.5	7.5	6.5	---	---	---
21	Max. ---	---	8.5	14.0	10.0	---	---	---
	Min. ---	---	3.0	6.0	5.0	---	---	---
22	Max. ---	---	8.5	12.0	11.0	---	---	---
	Min. ---	---	0.0	5.5	5.0	---	---	---
23	Max. ---	---	6.0	11.5	13.5	---	---	---
	Min. ---	---	1.5	7.0	5.5	---	---	---
24	Max. ---	---	8.0	11.5	8.5	---	---	---
	Min. ---	---	1.5	6.0	5.0	---	---	---
25	Max. ---	---	10.5	12.0	5.0	---	---	---
	Min. ---	---	1.5	7.5	1.5	---	---	---
26	Max. ---	---	11.0	12.5	6.0	---	---	---
	Min. ---	---	4.0	8.0	0.5	---	---	---
27	Max. ---	---	8.5	11.0	3.5	---	---	---
	Min. ---	---	2.0	7.0	1.0	---	---	---
28	Max. ---	1.0	13.0	12.0	5.0	---	---	---
	Min. ---	0.0	3.0	6.5	1.5	---	---	---
29	Max. ---	3.0	16.5	12.5	5.0	---	---	---
	Min. ---	0.0	4.5	5.0	1.0	---	---	---
30	Max. ---	2.5	16.0	12.0	3.0	---	---	---
	Min. ---	0.5	5.5	7.5	0.0	---	---	---
31	Max. ---	9.5		14.0	5.5	---	---	---
	Min. ---	-2.5		6.0	0.0	---	---	---
Monthly								
Mean	---	---	4.4	11.8	7.4	---	---	---
Mean Max.	---	---	8.0	16.1	10.5	---	---	---
Mean Min.	---	---	0.9	7.4	4.4	---	---	---

Table 26. Saqvaqjuac air temperature data ($^{\circ}\text{C}$) for 1980.

DATE	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1 Max	---	---	7.0	12.0	16.0	14.5	-6.0	-16.5
1 Min	---	---	-4.0	3.5	8.0	6.5	-12.0	-23.0
2 Max	---	---	2.0	14.5	12.5	12.5	-3.0	-14.5
2 Min	---	---	-1.0	3.0	8.0	6.0	-9.5	-24.0
3 Max	---	---	5.0	18.0	15.0	10.5	-2.0	-7.5
3 Min	---	---	-4.0	5.0	8.5	6.0	-7.5	-24.5
4 Max	---	---	2.5	10.0	15.0	11.5	0.0	-17.0
4 Min	---	---	-1.0	6.5	9.5	9.0	-6.0	-20.0
5 Max	---	---	0	14.0	13.5	15.0	1.0	-8.0
5 Min	---	---	-4.5	6.5	8.5	2.0	-3.5	-24.0
6 Max	---	---	-1.0	10.0	16.0	11.0	0.5	-7.5
6 Min	---	---	-5.5	5.0	8.0	4.5	-1.0	-23.0
7 Max	---	---	1.5	7.5	11.0	8.0	-1.5	-14.0
7 Min	---	---	-4.0	4.0	9.0	4.0	-2.5	-18.0
8 Max	---	---	3.0	5.5	10.0	8.0	-4.0	-19.5
8 Min	---	---	-3.5	3.5	6.0	6.5	-9.0	-19.0
9 Max	---	---	7.0	10.0	14.0	3.0	-3.0	-17.0
9 Min	---	---	0	2.5	7.0	2.5	-12.0	-25.0
10 Max	---	---	5.0	14.5	12.5	4.5	-3.0	-8.0
10 Min	---	---	1.0	4.0	8.5	0.5	-11.5	-21.5
11 Max	---	---	7.5	10.5	17.5	5.0	-3.5	-8.5
11 Min	---	---	-1.5	5.0	10.5	0.5	-9.0	-18.5
12 Max	---	---	6.0	5.0	17.5	4.5	-4.0	-3.0
12 Min	---	---	0.5	3.0	9.5	0.5	-11.0	-11.0
13 Max	---	---	11.0	9.0	18.5	3.0	-9.5	-3.0
13 Min	---	---	1.5	3.0	8.0	-1.5	-16.0	-8.0
14 Max	---	---	14.5	8.0	19.0	2.0	-4.5	-3.5
14 Min	---	---	2.0	4.5	9.0	-2.5	-17.0	-12.0
15 Max	---	---	12.5	11.5	23.5	2.0	-3.5	-8.0
15 Min	---	---	4.0	7.5	10.5	-2.5	-16.5	-11.0
16 Max	---	-4.0	9.0	13.5	23.0	-0.5	-2.0	-18.0
16 Min	---	-12.0	2.5	9.5	8.0	-2.0	-8.0	-20.0
17 Max	---	2.5	17.0	16.5	16.0	2.0	-2.0	-3.0
17 Min	---	-10.5	2.0	8.0	9.0	-5.5	-4.5	-32.0
18 Max	---	1.0	13.0	13.0 ^E	19.5	3.0	-7.0	-9.5
18 Min	---	-5.5	3.5	9.5	11.0	-4.0	-6.5	-23.0
19 Max	---	-1.0	12.0	14.0 ^E	10.0	5.0	-2.0	-23.0
19 Min	---	-4.5	1.5	9.0	9.0	-3.0	-1.0	-25.5
20 Max	---	-1.5	7.0	15.0 ^E	9.5	4.0	-1.0	-26.5
20 Min	---	-4.0	1.5	9.0	7.5	0.0	-5.0	-30.5
21 Max	---	0	6.0	15.0 ^E	10.5 ^E	-1.0	-2.0	-31.0
21 Min	---	-3.5	-0.5	8.0	7.0	-3.5	-4.0	-32.5
22 Max	---	1.5	3.5	11.5	10.5 ^E	-3.0	-9.5	-33.0
22 Min	---	-2.5	0	5.5	7.0	-6.5	-11.5	-38.0
23 Max	---	2.5	6.5	11.0	8.0 ^E	-3.5	-8.0	-33.0
23 Min	---	-5.0	-1.0	4.0	7.0	-5.5	-15.0	-37.0
24 Max	---	0.5	9.5	11.5	11.0 ^E	-2.0	-9.5	-32.5
24 Min	---	-7.0	2.0	4.0	7.0	-7.0	-14.0	-37.0
25 Max	---	2.0	13.0	13.0	9.0 ^E	-2.0	-10.0	-33.0
25 Min	---	-5.0	4.0	5.5	8.0	-8.0	-17.0	-37.0
26 Max	---	3.5	17.5	14.0	13.5 ^E	0.0	-6.0	-30.0
26 Min	---	-1.0	4.0	4.5	6.0	-9.0	-16.5	-37.0
27 Max	---	1.5	15.5	12.5	11.5	-2.0	-9.0	-6.0
27 Min	---	-3.5	6.0	5.5	5.5	-3.0	-11.0	-35.5
28 Max	---	-0.5	13.5	14.5	16.0	-1.5	-9.0	-5.0
28 Min	---	-3.0	4.0	5.0	5.0	-6.5	-17.0	-34.0
29 Max	---	0.5	13.5	12.5	10.0	-7.0	-3.0	---
29 Min	---	-3.0	4.5	7.0	8.0	-12.5	-18.5	---
30 Max	---	-2.0	11.5	10.0	10.0	-6.5	-7.0	---
30 Min	---	-5.0	4.0	8.0	6.5	-15.0	-15.0	---
31 Max	---	0.5		14.0	11.5		-17.0	
31 Min	---	-8.5		7.0	6.5		-19.5	
<i>Monthly</i>								
Mean	---	---	4.5	8.8	10.9	3.3	-4.8	---
Mean Max	---	---	8.4	12.0	13.9	-1.6	-10.6	---
Mean Min	---	---	0.6	5.7	8.0	1.7	-7.7	---

^EEstimated from recording thermograph.

Table 27. Precipitation (mm) at Far Lake, 1978-1980.

Date ^a	1978			1979				1980				
	Jul ^b	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug
1	—	—	—		0.2	—	—	—		—	10.4	—
2	—	—	—		4.2	—	1.4	—		—	18.4	—
3	—	—	—		0.2	—	1.0	12.8		—	—	—
4	—	—	—		—	—	—	3.8		—	—	—
5	—	—	—		—	—	1.4	0.2		—	—	—
	↓											
6	24.4 ^{*s}	—	0.6		—	—	5.2	—		—	1.0	—
7	16.8	—	2.4		—	—	—	—		2.2 ^s	12.8	4.8
8	1.2	—	—		5.6 ^s	—	—	1.4		—	15.0	0.8
9	—	—	—		0.6 ^s	—	2.0	—		—	—	0.2
10	—	—	0.2		0.2	—	0.6	—		—	—	—
11	—	0.2	— ^c		—	—	—	—		—	0.6	—
12	—	0.4	— ^c		—	—	—	—		—	13.2	0.6
13	—	—	—		—	—	—	—		—	4.6	—
14	—	0.8	—		—	—	0.2	—		—	—	—
15	—	—	—		—	—	2.2	—		—	—	—
16	—	—	—		0.6	—	—	—		—	0.4	—
17	—	1.2	—		—	—	0.2	—		—	—	1.0
18	1.6	0.6	—		0.8 ^s	0.2	3.4	—		—	18.0	1.4
19	8.2	2.8	—		—	—	—	—		—	2.6	2.2
20	—	—	—		—	—	—	—		—	—	5.6
21	—	—	—		—	—	—	—		—	—	—
22	0.6	1.0	—		0.4	0.4	—	—		—	7.8	35.2
23	—	0.6	—		—	0.8	4.2	—		—	—	5.0
24	—	—	—		—	0.4	14.2	—		—	0.6	—
25	—	—	—		—	—	—	—		—	—	0.2
26	—	—	—		0.2	—	—	—		—	—	0.2
27	—	0.8	— ^c		—	0.4	1.6 ^s	—		—	—	3.0
28	—	7.4	— ^s		—	1.0	7.4	—		↓	1.8	3.2
29	—	14.0	—		—	0.4	4.0 ^s	—		6.8 ^{*s}	0.2	—
30	3.0	0.8	—		—	—	—	4.6 ^s		—	0.2	—
31	—	—	—		—	0.2	3.6	—		—	—	—
Total	55.8	30.6			13.0	3.8	57.2			4.4	112.0	

^aDays are calendar days which end at midnight.^bDate gauge set up.^cDate gauge taken down.

* Total for number of days indicated by arrow.

^sWater equivalent of snow or mixed rain and snow.

Table 28. Precipitation (mm) at the Meadow watershed, 1978-1980.

Date ^a	1978				1979				1980				
	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug
1	-	-	-	-			-	1.0	-	-	6.8	-	-
2	-	-	-	-	↓	-	-	1.2	-	-	16.8	-	-
3	-	-	-	-	5.6*	-	-	0.2	9.6	-	-	-	-
4	-	0.4	-	-	-	-	-	-	3.0	-	-	-	-
5	19.0 ^s	-	-	-	-	-	-	1.8	0.2	-	-	-	-
6	13.8	-	0.2	-	-	-	-	7.0	-	-	1.4	-	-
7	18.4	-	4.4	-	-	-	-	-	—	2.3 ^s	13.2	3.4	-
8	0.8	-	-	-	6.6 ^s	-	-	-	-	-	12.4	0.2	-
9	-	0.2	-	-	0.8 ^s	-	-	1.6	-	-	-	0.2	↓
10	-	-	0.2	-	-	-	-	-	-	-	-	-	63.0*
11	-	-	-	-	-	-	-	-	-	-	0.2	-	-
12	-	-	—c	-	-	-	-	0.2	-	-	16.6	0.6	-
13	-	-	-	-	-	-	-	-	-	-	5.4	-	-
14	-	0.4	-	-	-	-	-	-	-	—	-	-	-
15	-	-	-	-	-	-	-	0.6	—	0.8 ^s	-	-	-
16	-	-	-	-	0.4	-	-	-	-	-	1.0	-	-
17	-	1.4	-	-	-	-	-	0.2	-	-	0.2	0.2	-
18	2.6	0.6	-	-	2.0 ^s	0.2	3.8	-	-	-	17.0	2.6	-
19	—b	8.4	3.2	-	-	-	-	-	-	-	2.2	1.8	-
20	-	-	-	-	-	-	-	-	-	-	-	5.0	38
21	-	-	-	-	-	-	-	-	-	-	-	-	-
22	2.6	-	1.2	-	-	0.2	-	-	-	-	8.8	33.6	-
23	-	0.4	1.0	-	-	1.2	5.4	-	-	-	-	-	-
24	3.0	-	-	-	-	1.6	11.8	-	-	-	0.2	-	-
25	0.4	0.2	-	-	0.6	2.2	-	-	-	-	-	-	↓
26	3.0	-	-	-	0.4	-	-	-	-	-	-	-	7.2*
27	3.2	-	2.8	-	—	0.2	2.2 ^s	-	-	-	3.0	-	-
28	-	-	8.0	-	-	0.6	10.2	-	-	↓	1.4	2.6	-
29	-	-	13.4	-	-	-	4.2 ^s	-	-	12.4* ^s	-	-	7.8
30	-	2.4	0.8	-	12.8* ^s	-	0.8	4.4 ^s	-	-	1.4	-	7.4
31	-	-	-	-	-	-	-	4.2	-	-	-	-	-
Total	66.0	33.4			16.4	7.0	60.0			5.1	107.8	70.0	

^aDays are calendar days which end at midnight.^bDate gauge set up.^cDate gauge taken down.^{*}Total for number of days indicated by arrow.^sWater equivalent of snow or mixed rain and snow.

Table 29. Precipitation (mm) at Saqvaqqiac camp, 1977-1980.

Date ^a	1977			1978				1979				1980					
	Jun	Jul	Aug	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep
1	-	7.6	-	-	-	-	-	0.8	-	-	-	-	-	21.5	-	-	
2	-	1.8	-	-	T	0.2	-	7.6	-	1.0	-	0.2 ^s	1.2	-	-	-	
3	-	1.8	-	-	-	T	-	T	-	0.3	-	-	T	-	-	-	
4	T	2.5	-	2.2	0.4	-	-	T	-	-	-	-	-	-	-	-	
5	T	1.0	-	27.1	-	T	-	-	-	1.4	-	-	-	-	-	-	
6	T	-	-	13.6	-	0.2	-	-	6.8	15.4*	-	T ^s	5.2	2.2	-	-	
7	0.2	1.5	-	13.3	-	2.8	-	5.3es	-	-	1.4	1.8 ^s	23.4	2.8	7.4	-	
8	-	-	-	T	T	-	-	T	-	-	-	-	1.4	-	30.0 ^e	-	
9	-	-	-	-	0.2	-	-	0.8e	-	2.3	-	-	-	-	-	27.3es	
10	1.0	-	-	T	0.3	-	-	-	-	0.2	-	T	-	-	-	T	
11	5.3	0.5	-	-	T	-	-	-	-	-	-	-	6.2	-	-	9.2	
12	5.3	-	-	T	0.2	-	-	-	-	-	-	-	14.4	1.6	-	2.0 ^e	
13	—c	11.9	-	0.9	T	0.4	-	-	T	-	-	-	-	-	-	-	
14	-	0.5	-	2.1	T	-	-	-	-	0.7	-	-	-	-	-	-	
15	-	6.1	-	T	-	-	-	0.5	-	-	-	0.8e	-	-	-	-	
16	-	0.2	T	7.3	T	-	-	-	-	-	-	-	-	2.0	T	-	
17	0.8	-	T	1.8	-	1.4	-	1.8s	T	4.0	-	-	-	-	-	2.8	
18	-	-	1.3	-	6.2	4.0	-	-	-	-	-	-	-	-	-	-	
19	-	-	-	-	6.0	-	-	-	-	-	-	T ^s	-	-	8.0	0.8s	
20	1.5	-	0.5	T	1.0	0.2	-	-	-	-	-	T	-	20.6	-	-	
21	11.4	-	-	T	-	T	-	-	-	-	-	-	-	-	4.2	-	
22	-	-	0.2	2.7	0.7	2.0	-	-	0.8	-	-	T ^s	-	4.0	-	-	
23	-	0.5	—d	0.4	-	-	-	-	0.4	15.2	-	-	-	T	-	-	
24	-	-	-	2.6	-	-	-	-	1.0 ^e	0.2	-	-	-	T	-	-	
25	T ^f	-	-	-	1.0	-	-	0.6	0.3	-	-	-	-	-	45.4*	-	
26	17.8	-	-	4.6	-	T	-	T	T ^s	-	-	-	-	-	-	1.4	
27	-	2.5	-	0.1	0.2	2.6	-	-	0.6	3.8	-	-	-	T	-	-	
28	0.2	-	-	-	-	18.2	-	2.3	-	1.4	9.8	-	1.6	6.6	-	-	
29	0.8	3.8	-	0.3	6.5	-	-	T	-	-	1.3s	4.8*	T	-	-	16.3	
30	0.2	3.3	-	2.2	0.2	-	-	-	-	0.5	8.0s	-	5.1	-	-	1.8	
31	-	-	-	-	-	-	-	-	T	0.4	-	-	-	-	-	-	
Total ^b	(32.8)	40.9	(18.9)	(22.8)	74.4	37.1	(3.4)	(2.4)	17.8	5.4	55.5	(16.8)	(5.9)	9.0	111.1	82.4	(76.8)

^aIn 1977, precipitation day ends at 22:30; in 1978, '79 and '80 precipitation days ends at 08:30 the following day.^bTrace amount assumed to be 0.1 mm; value in brackets is for partial month.^cDate gauge set up.^dDate gauge taken down.^eEstimated from other nearby gauges.^fTrace amount, <0.2 mm.

*Total for number of days indicated by arrow.

^sMeasured water equivalent of snow or mixed rain and snow.

Table 30. Mean daily relative humidity (%) at Saqvaqjuac camp, 1978-1980.

Date	1978					1979					1980				
	Jun	Jul	Aug	Sep		May	Jun	Jul	Aug	Sep		May	Jun	Jul	Aug
1		66	80	73	-	81	78	84	75	-	75	80	77	77	74
2	75	77	80	86	-	89	55	89	81	-	85	76	77	77	75
3	86	76	72	79	-	84	62	84	90	-	70	66	72	78	
4	75	78	78	75	-	84	77	71	86	-	76	80	69	89	
5	78	93	61	88	-	79	75	84	84	-	75	73	81	69	
6	78	91	67	88	-	90	76	93	77	-	68	86	76	72	
7	77	90	78	93	-	91	73	72	79	-	79	91	88	81	
8	75	83	75	81	-	90	64	71	-	-	86	93	91	90	
9	77	60	73	83	-	80	88	75	-	-	71	85	76	89	
10	75	70	65	85	-	75	87	82	-	-	72	76	76	87	
11	79	73	68	66	-	67	71	76	-	-	67	85	72	86	
12	82	68	68	76	-	68	57	77	-	-	65	92	76	89	
13	86	72	70	78	-	73	64	63	-	-	66	84	69	67	
14	88	75	66	-	-	82	71	70	-	-	62	72	71	71	
15	87	81	84	-	-	67	61	89	-	-	72	64	67	71	
16	91	64	75	-	-	72	65	94	-	-	74	80	68	71	
17	86	74	86	-	-	72	74	70	-	-	65	72	82	77	
18	82	83	84	-	-	82	73	69	-	-	73	87	82	72	
19	80	79	70	-	-	71	72	66	-	-	74	81	92	76	
20	79	75	75	-	-	60	69	85	-	89	82	65	94	76	
21	75	74	72	-	-	61	71	73	-	72	84	65	89	69	
22	81	72	78	-	-	76	75	69	-	72	87	86	91	58	
23	68	68	83	-	-	86	83	86	-	78	80	64	92	-	
24	85	66	96	-	-	82	89	94	-	73	68	78	88	-	
25	73	78	89	-	-	87	86	69	-	74	58	67	88	-	
26	84	80	85	-	-	77	88	61	-	82	54	66	78	-	
27	87	65	94	-	-	70	79	93	-	88	62	71	71	-	
28	73	68	96	-	-	72	82	95	-	93	83	76	71	-	
29	58	70	93	-	-	58	74	80	-	90	66	84	84	-	
30	62	80	80	-	-	59	80	94	-	80	75	80	93	-	
31		77	67		74		78	85		76		73	71		
Mean	78.7	75.0	77.7	-	-	76.2	74.1	79.5	-	-	72.5	77.4	79.7		

Table 31. Mean daily wind velocity (km/h) at the Saqvaqjuac camp, 1977-1980^a.

Date ^b	1977			1978						1979					1980								
	Jun	Jul	Aug	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep	May	Jun	Jul	Aug	Sep		
1		23.5	33.9		24.1	9.3	11.7	24.7	15.3	16.0	9.4		23.1	14.0*	10.8	-		9.3	23.9	26.8	9.8		
2		28.7	42.9		15.7	24.7	6.4	13.4	-	35.4	10.7		33.8	12.3	12.3	-		25.8	27.6	16.1	6.1		
3		27.4	38.5		5.1	20.3	7.5	28.2	15.2*	36.3	12.9		19.0	15.7	20.9	-		25.3	11.4	18.5	13.1		
4		24.6	28.2		10.3	13.4	11.7	32.0	25.4	35.6	11.2		7.9	13.6	22.0	-		11.2	11.9	27.1	8.0		
5		15.7	13.2		4.0	29.9	7.7	37.7	41.7	19.3	11.4		13.0	16.3	16.5	-		15.5	16.9	24.9	13.3		
6		17.9	12.6		3.3	15.2	14.7	31.0	24.9	16.5	23.9		28.6	12.8	27.6	23.3*		18.4	30.2	26.1	14.4		
7		17.6	14.6		29.8	14.8	23.4	35.4	34.5	16.3	24.5		20.3	12.7	27.3	12.5		18.2	30.7	34.0	30.9		
8		15.0	-		46.5	10.7	16.1	24.7	16.6	15.0	12.2		37.4	15.2	31.5			12.3	23.3	19.0	34.3		
9		14.0	20.1*		18.4	36.0	26.5	6.7	16.0	22.2	14.9	10.0		15.2	14.2	33.1			16.8	22.9	14.4	39.3	
10		13.0	19.6		16.8	21.4	27.6	18.4	15.3	30.9	21.9	10.6		27.9	8.6	20.8			21.1	10.5	9.3	20.1	
11		21.5	36.7		22.0	26.2	45.4	20.7	18.5	26.3	26.8	13.9		24.5	14.1	-			18.4	21.6	11.0	17.4	
12		22.2	39.8		17.1	45.6	39.5	17.0	20.2	22.8	33.6	25.9		16.0	16.2	11.0*			18.5	11.8	8.5	21.2	
13		9.8	18.3		16.4	22.8	39.1	13.2	13.6	26.7	26.1			10.9	21.4	13.5			15.4	8.0	12.7	13.2	
14		13.8	10.3		14.6	27.4	21.4	20.1	12.6	22.6	26.7			7.6	24.0	14.1			14.5	9.9	21.3	13.6	
15		15.7	-		7.8	21.1	12.0	15.3	16.6	10.4	12.8			18.1	24.4	17.8			18.1	10.8	17.4	21.8	
16		13.1	22.6	15.6*	10.0	18.4	11.5	12.1	14.0	11.3	29.3			20.8	31.8	18.9			19.6	22.5	34.7	31.2	
17		21.1	28.2	23.7	8.0	24.0	21.6	22.1	18.6	11.3	16.6			20.1	40.4	26.8			20.4	24.9	14.4	35.4	19.3
18		10.5	12.1	22.5	4.2	42.8	23.6	14.1	22.6	28.3	27.2			10.6	29.4	21.4			8.5	12.5	-	12.6	14.8
19		11.6	14.8	22.2	12.9	35.9	12.2	14.7	31.2	29.3	31.5			11.1	17.4	27.3			20.1	12.1	-	24.0	23.1
20		14.1	14.0	10.9	14.3	16.1	22.0	25.3	29.1	31.4	26.7			13.3	19.7	21.5			24.0	12.7	14.5*	20.5	12.8
21		24.8	18.1	13.1	34.8	4.5	26.0	12.1	21.3	28.7	17.5			12.5	22.5	16.9			7.9	13.5	36.4	-	19.7
22		22.7	13.2	20.8	27.6	22.7	24.9	12.5	17.6	32.1	12.7			11.2	14.7	15.6			8.2	10.0	34.9	-	
23		12.2	25.2	19.9	23.2	33.8	29.9	31.3	19.0	28.9	14.3			13.4	10.6	33.7			21.6	10.3	32.0	-	
24		18.9	23.1	10.3	16.8	38.5	14.2	10.7	31.5	6.3	17.6			24.0	15.1	26.1			9.4	12.3	29.5	-	
25		12.2	16.2	18.0	28.0	34.5	29.9	20.0	23.2	25.7	18.0			10.6	12.0	13.4			12.3	12.1	23.9	30.7*	
26		13.5	26.4		24.6	19.5	16.9	30.0	26.7	20.3	16.3			33.1	14.4	17.1			14.7	17.1	19.6	24.8	
27		27.8	28.8		20.1	9.3	12.9	42.5	30.3	16.0	13.9			33.2	17.6	27.2			18.2	25.9	18.1	24.8	
28		15.6	37.8		21.1	15.3	8.4	19.5	31.0	15.4	-			14.4	15.7	24.8			25.2	13.9	15.2	25.4	
29		22.3	30.6			27.6	9.3	26.2	20.6	10.4	24.4*			11.3	16.0	10.9			35.8	12.2	15.8	36.9	
30		19.7	-			26.5	30.5	29.4	11.4	18.1	21.8			33.1	-	23.7	23.7		38.9	11.7	22.6	28.5	
31		15.4*				20.1		20.7		12.1	14.5			18.0		15.4	33.4		19.4		25.2	14.7	
Mean		20.1			23.5	21.5	17.9	22.9	21.8	21.9			18.6	17.8	20.9			16.0	20.2	23.3			

^a1977 and 1978 anemometer location was 1.8 m above ground on a large hill ~150 m north of camp. 1979 and 1980 location was 2.2 m above ground on a smaller hill next to camp called "radio tower hill".

^bIn 1977, date refers to a "wind day" which ends at 23:00 on the day indicated. In 1978, 1979 and 1980, "wind day" ends at 08:30 the following day. Except for July 9 to August 18, 1980, all data is calculated using exact time between readings.

* Mean for this day and previous day(s).

Table 32. Summary of evaporation pan data for 1979, Saqvaqjuac camp.

Date	MAY				JUNE				JULY			
	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)
1									(10.2)	(13.8)	(12.8)	9.8
2									6.9	12.4	13.0	13.2
3					{ - }	M	M	4.0	7.4	15.6	14.5	14.8
4					{ 5.3 }	12.8	M	3.2	4.3	13.6	13.2	11.8
5					4.1	12.9	8.8	1.8	7.1	16.2	17.5	18.0
6					3.3	28.7	4.2	0.2	5.8	12.9	16.2	14.0
7					0 *P	20.6	{ - }	-0.5	7.4	13.3	17.2	19.2
8					3.6 ^w	37.4	{ - }	-1.8	8.4	14.4	19.2	17.8
9					1.8 P	15.8	{ 4.0 }	0.2	2.8	14.1	13.5	12.5
10					6.6	26.4	4.2	1.5	4.8	8.6	15.8	11.2
11					4.6	24.5	5.2	2.0	4.6	14.2	16.0	13.5
12					6.1	16.0	9.2	8.2	7.4	16.2	19.8	18.2
13					5.6	10.8	11.2	5.8	8.4	21.2	15.2	14.0
14					4.8	7.7	12.0	5.2	7.1	25.7	10.0	11.2
15					7.2 P	18.5	12.8	9.8	7.6	22.8	7.2	8.2
16	Pan set up June 3, 1979				5.3	21.6	8.0	5.8	7.4	31.8	10.8	10.0
17					5.0 P	18.8	6.2	4.2	6.4	40.5	8.8	9.8
18					2.5	10.6	6.8	3.2	8.1	29.4	9.5	9.2
19					5.1	11.1	9.5	4.0	4.8	17.4	10.8	10.5
20					6.1	13.3	9.5	6.5	5.8	19.7	10.2	10.0
21					4.3	12.5	6.0	4.2	5.6	24.2	9.8	9.8
22					3.0	11.5	8.2	5.0	3.4	13.5	10.0	9.5
23					4.6	13.9	10.0	3.8	3.6	10.7	13.5	8.8
24					4.1	22.5	7.2	4.8	1.4 P	15.0	10.2	9.5
25					3.0 P	10.5	7.5	5.8	2.2	12.0	10.5	10.0
26					6.4	33.5	6.2	6.2	2.0	14.5	10.8	9.8
27					5.8	33.7	6.0	5.2	2.9	17.7	15.8	8.8
28					4.6	14.0	10.5	8.8	2.0 P	16.6	9.2	8.5
29					6.9	11.6	13.2	11.0	4.8	14.9	10.0	10.0
30					(-)	(-)	(-)	10.2	3.3 P	23.5	10.0	9.0
31									4.1	15.6	10.5	10.0
AUGUST				SEPTEMBER				OCTOBER				
Date	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (k/hr)	Mean Water Temp. (°C)	Mean Air Temp. (°C)
1	3.0	10.7	7.8	9.8	{ - }	{ - }	{ - }	{ 4.8 }	{ - }	{ - }	{ - }	{ - }
2	2.2 P	12.3	10.2	7.5	{ - }	{ - }	{ - }	{ 5.0 }	{ - }	{ - }	{ - }	{ - }
3	3.4	21.7	9.8	9.5	{ - }	{ - }	{ - }	{ 4.5 }	{ - }	{ - }	{ - }	{ - }
4	6.4	23.1	11.2	11.8	{ - }	{ - }	{ - }	{ 4.2 }	{ - }	{ - }	{ - }	{ - }
5	2.7 P	15.2	13.2	13.8	{ - }	{ - }	{ - }	{ 4.2 }	{ - }	{ - }	{ - }	{ - }
6	2.5 P	27.8	8.2	8.0	{ 9.1 } P	{ 23.4 }	{ 5.8 }	{ 6.0 }	{ - }	{ - }	{ - }	{ - }
7	5.8	27.2	9.2	9.8								
8	6.1	31.5	8.0	8.5								
9	5.1 P	33.1	8.8	9.2								
10	3.3	21.1	7.5	7.5								
11	2.9	{ - }	8.8	7.5								
12	2.5	{ 10.9 }	10.0	9.5								
13	5.8	13.5	12.0	11.0								
14	3.6 P	14.0	12.2	13.0								
15	2.8	18.0	11.8	9.0								
16	2.3	18.8	9.2	8.0								
17	6.6 P	28.0	8.8	8.2								
18	5.1	22.5	5.8	5.2								
19	5.1	24.5	8.2	8.8								
20	1.5	21.5	7.8	8.0								
21	4.1	16.6	7.8	7.5								
22	3.8	15.8	9.5	8.2								
23	0 P	34.2	8.5	9.2								
24	2.3	25.9	5.8	5.2								
25	4.3 *	14.2	3.2	2.8								
26	2.4	15.9	4.5	3.8								
27	0 P	27.4	3.8	2.2								
28	0 P	24.8	3.8	3.0								
29	1.9 P	11.0	5.8	2.5								
30	2.4 P	23.5	2.0	1.5								
31	2.3	33.1	3.2	3.5								
Pan shut down September 7, 1979												

Notes: 1. { } multiple brackets indicate total for more than one day.
 2. * ice on pan.
 3. M missing data.
 4. P-days with more than trace precipitation.
 5. When computed net water loss results in a "negative", zero is used.

Table 33. Summary of evaporation pan data for 1980, Saqvaqjuac camp.

Date	MAY				JUNE				JULY			
	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)
1									6.4 P	23.9	10.0	7.5
2									3.9 P	27.6	8.8	9.8
3									5.3	11.4	15.5	12.2
4									4.1	11.9	13.2	8.2
5									5.8	16.9	13.0	9.5
6									3.3 P	30.2	9.0	7.0
7									3.5 P	30.7	6.5	5.5
8									0.3 P	23.3	4.8	4.0
9					3.6	16.8	6.2	4.0		0.8	22.9	6.2
10					3.8	21.1	4.8	1.8		4.1	10.5	13.2
11					5.1	18.4	6.8	4.0		2.5 P	21.6	8.8
12					4.3	18.5	6.0	3.8		0 P	11.8	5.5
13					5.1	15.4	9.5	6.5		2.5	8.0	8.5
14					5.8	14.5	12.2	9.2		3.8	9.9	12.0
15					4.6	18.1	9.5	7.5		5.8	10.8	16.5
16	Pan set up June 8, 1980				3.8	19.6	8.0	5.5		4.6 P	22.5	13.3
17					7.9	24.9	10.5	10.2		3.8	14.4	13.8
18					4.3	12.5	10.5	7.2	{ } { }	{ } { }	{ } { }	{ } { }
19					4.8	12.1	10.8	6.8	{ } { }	{ } { }	{ } { }	{ } { }
20					3.0	12.7	7.2	3.2	10.4 P	14.5	12.8	10.8
21					3.0	13.5	7.2	3.0	6.6 P	36.4	10.5	10.2
22					1.8	10.0	7.5	1.2	0 P	34.9	7.0	7.8
23					2.5	10.3	8.2	4.2	8.6	32.0	7.2	7.5
24					4.6	12.3	11.5	6.8	2.0	29.5	7.0	8.5
25					4.6	12.1	11.8	8.5	6.4	23.9	8.8	8.8
26					6.9	17.1	13.0	11.8	5.6	19.6	11.0	9.8
27					6.9	25.9	12.0	9.8	0	18.1	9.3	8.8
28					2.0 P	13.9	8.5	9.0	4.1 P	15.2	10.5	10.8
29					5.1	12.2	11.8	8.8	3.6	15.8	13.8	10.2
30					3.3 P	11.7	12.0	7.5	5.3	22.6	9.8	8.5
31									3.3	25.2	12.5	11.0

Date	AUGUST				SEPTEMBER				OCTOBER			
	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)	Net Water Loss (mm)	Mean Wind Speed (km/h)	Mean Water Temp. (°C)	Mean Air Temp. (°C)
1	7.6	26.8	13.0	12.0	2.3	9.8	10.2	10.2				
2	3.0	16.1	12.0	10.5	1.3	6.1	11.0	9.2				
3	5.8	18.5	13.5	12.2	2.3	13.1	10.0	9.8				
4	5.6	27.1	12.8	11.8	1.8	8.0	8.0	4.2				
5	3.6	24.9	10.5	10.8	2.5	13.3	9.5	9.8				
6	4.8 P	26.1	11.8	12.5	4.3	14.4	9.5	7.5				
7	2.0 P	34.0	8.2	8.5	1.6 P	30.9	8.3	7.2				
8	0.8	19.0	8.2	8.5	9.2 P	34.3	5.0	5.2				
9	5.8	14.4	12.5	11.2	10.6 P	39.3	1.2	1.8				
10	1.8	9.3	14.2	11.5	0 P	20.1	2.8	2.5				
11	3.6	11.0	13.5	13.5	0.3 P	17.4	3.2	2.8				
12	2.8 P	8.5	14.5	12.8								
13	5.6	12.7	15.0	13.8								
14	5.8	21.3	15.0	14.8								
15	5.3	17.4	16.5	15.8								
16	7.6	34.7	15.0	16.0	Pan shut down September 12, 1980							
17	4.5 P	35.4	13.5	13.5								
18	3.0	12.6	14.2	14.2								
19	1.3 P	24.0	9.2	8.8								
20	0.8	20.5	8.5	8.1								
21	{ }P { } { } { }											
22	{ } { } { } { }											
23	{ } { } { } { }											
24	{ } { } { } { }											
25	22.9 P	30.7	10.0	7.2								
26	1.6 P	24.8	9.5	9.5								
27	5.6	24.8	8.5	8.2								
28	6.4	25.4	11.5	12.0								
29	1.9 P	36.9	7.8	8.2								
30	0.5 P	28.5	8.0	8.2								
31	3.0	14.7	9.8	9.0								

Notes: 1. { } multiple brackets indicate total for more than one day.

2. P-days with more than trace precipitation.

3. When computed net water loss results in a "negative", zero is used.

