

Snow-Depth and Water-Equivalent Data for the Fairbanks Area, Alaska, Spring 1995

By Edward W. Plumb and Michael R. Lilly

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CONTENTS

Abstract	1
Introduction	1
Background	1
Purpose and scope	2
Location and description of the study area	3
Climate	3
Previous investigations	4
Data-collection sites	4
Site selection	4
Site classification	5
Data-collection methods	5
Snow depths	5
Water equivalents	11
Error analysis	11
Supplemental data	11
Snow depths and water equivalents	11
Summary	15
References cited	15
Appendix A: Measured snow depths	A-1
Appendix B: Measured snow depths and water equivalents	B-1

FIGURES

1. Map showing location of Fairbanks area study sites	2
2. Map showing snow-depth and water-equivalent data-collection sites, Fairbanks, Alaska	6
3. Photographs of examples of data-collection sites: a) open, b) boggy, c) wooded, and d) brushy	8
4. Snowpack depth change at open, boggy, wooded, and brushy sites	14
5. Snowpack depth and water-equivalent change at open and wooded sites	14

TABLES

1. Mean monthly temperature, precipitation, and snowfall data for Fairbanks, Alaska, for the period 1961-1994.	3
2. Average snow depths measured with yardstick, Fairbanks, Alaska, spring 1995	9
3. Average snow depths and water equivalents measured with Adirondack snow sampling tube at selected sites, Fairbanks, Alaska, spring 1995	12
4. Supplemental snow-depth measurements in the Fairbanks area, Alaska, spring 1995. .	13

CONVERSION FACTORS AND HORIZONTAL DATUM

	Multiply	By	To obtain
	inch (in.)	25.4	millimeter
	inch (in.)	2.54	centimeter
	foot (ft)	0.3048	meter
	mile (mi)	1.609	kilometer

In this report, temperature is reported in degrees Fahrenheit (°F), which can be converted to degrees Celsius (°C) by the following equation: $^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$

Horizontal Datum:

The horizontal datum for all locations in this report is the North American datum of 1927.

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Abstract

Snow depths at 34 sites and snow-water equivalents at 13 sites in the Fairbanks area were monitored during the 1995 snowmelt period (March 30 to April 26) in the spring of 1995. The U.S. Geological Survey conducted this study in cooperation with the Fairbanks International Airport, the University of Alaska Fairbanks, the Alaska Department of Natural Resources—Division of Mining and Water Management, the U.S. Army, Alaska, and the U.S. Army Corps of Engineers—Alaska District. These data were collected to provide information about potential recharge of the ground-and surface-water systems during the snowmelt period in the Fairbanks area. This information is needed by companion geohydrologic studies of areas with known or suspected contaminants in the subsurface. Data-collection sites selected had open, boggy, wooded, or brushy vegetation cover and had different slope aspects.

The deepest snow at any site, 27.1 inches, was recorded on April 1, 1995; the shallowest snow measured that day was 19.1 inches. The snow-water equivalents at these two sites were 5.9 inches and 4.5 inches, respectively. Snow depths and water equivalents were comparatively greater at open and bog sites than at wooded or brushy sites. Snow depths and water equivalents at all sites decreased throughout the measuring period. The decrease was more rapid at open and boggy sites than at wooded and brushy sites. Snow had completely disappeared from all sites by April 26, 1995.

INTRODUCTION

Background

The U.S. Geological Survey (USGS) is conducting geohydrologic investigations in the Fairbanks area to assist other government agencies in understanding the movement of ground water at sites of known and suspected subsurface contamination. The timing and amount of recharge may affect the distribution of contaminants in unsaturated soils and their transport to the shallow water-table aquifer in the alluvial plain. In order to better understand the contribution of snowmelt to the ground-water system, snow depth and water content of the snowpack were measured. Data were collected by the USGS under cooperative programs with the Fairbanks International Airport, the University of Alaska Fairbanks (UAF), the Alaska Department of Natural Resources—Division of Mining and Water Management, the U.S. Army, Alaska, and the U.S. Army Corps of Engineers—Alaska District.

Purpose and Scope

The purpose of this study was to characterize—by the vegetation cover—the snow depth, water content, and melting rate of the snowpacks at four study areas in the vicinity of Fairbanks, Alaska (fig. 1). Snow depths were repeatedly measured at 34 sites, and water equivalents at 13 of these sites, during spring 1995 to document the degradation of the snowpack through the melting period. Water-equivalent measurements may be integrated with area to estimate the changing volume of water stored on the land surface. Water available at the soil surface may recharge the ground- and surface-water systems through infiltration or runoff. This information may be used in future efforts to model the timing and distribution of aquifer recharge and to track possible distribution of contaminants in the ground- and surface-water systems in the Fairbanks area. This report presents the snow-depth and water-equivalent data that were collected during this investigation. Data cover the period from maximum winter snowpack until the completion of melting at all collection sites except at nine sites at which data collection started after the onset of melting. This resulted in a less than maximum snow depth at these sites, but no loss of water equivalent.

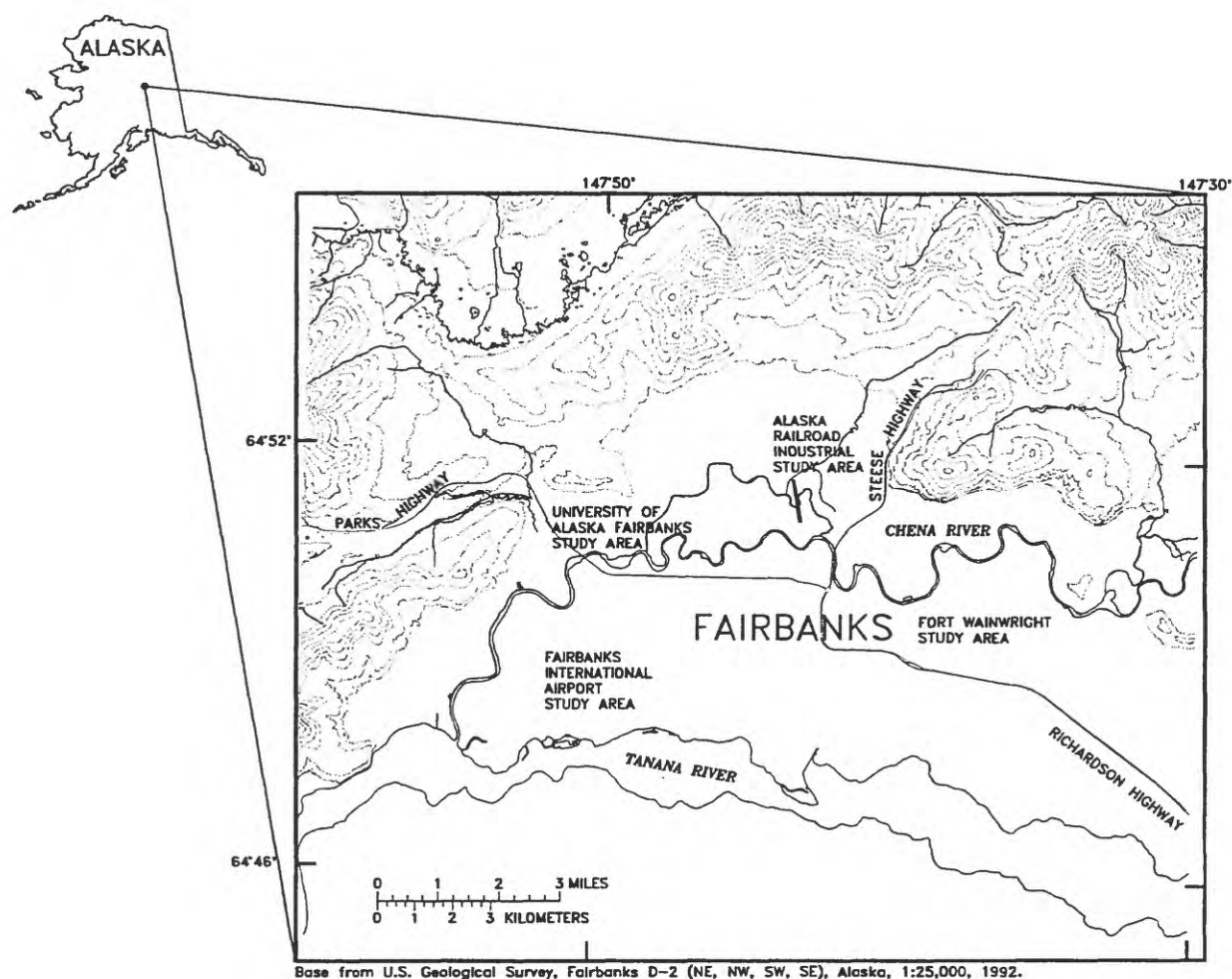


Figure 1. Location of Fairbanks area study sites.

Location and Description of the Study Area

Fairbanks (fig. 1) is located in the interior of Alaska, approximately 100 miles south of the Arctic Circle and 55 miles north of the Alaska Range. It is situated on the Chena River, upstream from its confluence with the Tanana River. The city is bounded by hills of the Yukon-Tanana Upland (Anderson, 1970) to the west, north, and east, and by the broad alluvial plain of the Tanana River to the south. The data-collection area extends from the Fairbanks International Airport to Fort Wainwright, including Fairbanks and Birch Hill, and includes the hills northeast of the city (fig.1). The area is dominated by coniferous and deciduous trees of the northern boreal forest, except in areas that have been developed and stripped of native vegetation.

Climate

Fairbanks has a distinctly continental climate characterized by large seasonal temperature variations. For example, the 1961-94 mean monthly temperature for January at the Fairbanks International Airport is -9.3°F , in contrast with the mean monthly temperature for July of 62.6°F (table 1). These variations are caused by fluctuations in solar radiation received by the region throughout the year. The mountain ranges that lie to the south and north serve as climate barriers, sheltering Fairbanks from maritime influences and severe winds (National Oceanic and Atmospheric Administration (NOAA), 1978).

Table 1. Mean monthly temperature, precipitation, and snowfall data for Fairbanks, Alaska, for the period 1961-1994

[Temperature in degrees Fahrenheit; precipitation in equivalent inches of water; snowfall values in inches of snow. All data recorded at Fairbanks International Airport for the period 1961-1994. Data from NOAA (1994)]

Month	Average Temperature	Average Precipitation	Average Snowfall
January	-9.3	0.56	10.4
February	-3.6	0.39	8.4
March	11.3	0.41	6.9
April	31.1	0.30	3.7
May	48.7	0.60	0.9
June	60.0	1.39	0.0
July	62.6	1.79	0.0
August	56.7	1.87	0.0
September	45.1	1.01	1.8
October	25.2	0.96	11.8
November	2.9	0.82	15.7
December	-6.3	0.85	15.1
Annual	27.0	10.95	74.7

Annual precipitation in the Fairbanks area is relatively light compared with conterminous United States standards, averaging 10.95 inches (table 1) during the 1961-94 period (NOAA, 1994). The dominant form of precipitation from October through April is snow. The seasonal average snowfall is 74.7 inches (table 1) for the 1961-94 period (NOAA, 1994). The variability of the seasonal snowfall can be extreme. For example, during the 1969-1970 snowfall season, 36.4 inches of snow fell at the Fairbanks International Airport compared with the 145.7 inches that fell during the following season (NOAA, 1978). The snowpack builds through the winter months and generally reaches a maximum depth during March. Accumulating snow tends to remain stationary due to the lack of strong winds during the winter. The snowpack generally persists for 6 to 7 months and has an average water content of 4 inches in the lowlands and from 6 to 8 inches in the uplands and mountains (U.S. Soil Conservation Service, 1983). For the remainder of the year, rain is the dominant form of precipitation (table 1).

In interior Alaska, including Fairbanks, the snow cover has been characterized as taiga snow by the U.S. Soil Conservation Service (1983). The most notable characteristic of taiga snow is the low-density, loosely consolidated depth hoar that makes up a significant part of the snowpack (U.S. Soil Conservation Service, 1983).

Previous Investigations

Previous measurements of snow depths, water-equivalent contents, and other snow-related studies in the Fairbanks area have been conducted by Trabant (1970), Trabant and Benson (1972), Benson and Trabant (1973), Friedman and others (1991), and Sturm (1989, 1991). Furthermore, the USDA's Natural Resources Conservation Service (NRCS--formerly SCS) issues monthly publications of Alaska snow surveys for February through June of each year. These reports contain snow-depth and water-equivalent measurements, streamflow forecasts, and regional snowpack summaries.

DATA-COLLECTION SITES

The data-collection sites were selected to characterize the depth and water-content distribution of the snowpack at geohydrologic study sites in the Fairbanks area (fig. 2). Sampling density increases from west to east in the study area. The highest concentration of sites is located in the vicinity of Birch Hill and Fort Wainwright to aid USGS geohydrologic studies in that area.

Site Selection

Sampling sites were selected at each geohydrologic study area to obtain representative samples over different vegetation and slope aspects. Surface vegetation plays a major role in the evolution of the snowpack throughout the season. Open fields and boggy areas have greater snow accumulation on the ground than densely wooded and brushy areas which are more likely to suspend snow above the ground on branches. The contribution of this suspended snow to the total snowmelt volume is not addressed in this report. Slope aspect is also an important factor affecting the snowpack throughout the season. South-facing slopes are exposed to more solar radiation than north-facing slopes. At high latitudes, this radiation effect is exaggerated by the sun's low incidence angle, resulting in much higher rates of sublimation, evaporation, and melting on south-fac-

ing slopes. While slope aspect is not considered in the discussion of the data, the slope aspects of the data-collection sites are included with the site information in appendixes A and B.

Twenty-one of the 34 sites were adjacent to USGS ground-water monitoring wells where horizontal state plane coordinates are available. The remaining 13 sites were near the USGS Fairbanks field office, UAF meteorological stations on Birch Hill, and other locales on and north of Birch Hill. Coordinates for these 13 sites, estimated from the Fairbanks D-2SE quadrangle maps, are adequate for the purposes of this report.

Site Classification

Data-collection sites were subdivided by vegetation cover into four groups; open, boggy, wooded, or brushy (fig. 3). Sites where forest vegetation has been removed are classified as open (fig. 3a). Boggy areas are distinguished by muskeg and open black spruce forest (fig. 3b). Spruce or birch and aspen forest are characteristic of wooded sites (fig. 3c). Alder and willow thickets are classified as brushy sites (fig. 3d). This classification system has been implemented in order to give simplified descriptive categories to the types of vegetation found in the data-collection area.

DATA-COLLECTION METHODS

Snow depths and, at some sites, water equivalents were measured in a 20 by 20-foot-square area. Measurements were made on random traverses across the site to obtain a representative sample. Sites were visited one to 11 times during the 28-day melt period (March 30 - April 26, 1995). Measurements were made until the snow cover had completely melted from the most frequently visited sites. All data in this report are listed in inch-pound units. A digital version of the data in both inch-pound and metric (SI) units is available from the District Chief, U.S. Geological Survey, 4230 University Drive, Suite 201, Anchorage, AK 99508-4664.

At each of the 13 water-equivalent data-collection sites a total of 30 snow-depth measurements were collected on a given day: 20 with a yardstick and 10 with an Adirondack¹ snow sampler. The snow depths recorded with these two devices were not averaged together and are listed as separate measurements. The recorded individual measurements from the yardstick and the Adirondack snow sampler are presented in appendixes A and B, respectively. Yardstick measurements were recorded to 0.10 inch and Adirondack snow sampler measurements to the nearest inch. In general, snow-depth measurements made with the yardstick averaged slightly greater than those made with the Adirondack snow sampler.

Snow Depths

During every visit to each of the 34 data-collection sites, snow depth was measured with a yardstick at 20 locations (Appendix A). The average snow depth for each visit was calculated from the 20 individual measurements. Average snow depths for each site on a particular date are summarized in table 2.

¹The use of brand, firm, or product names in this report is for identification purposes only, and does not constitute endorsement by the U.S. Geological Survey.

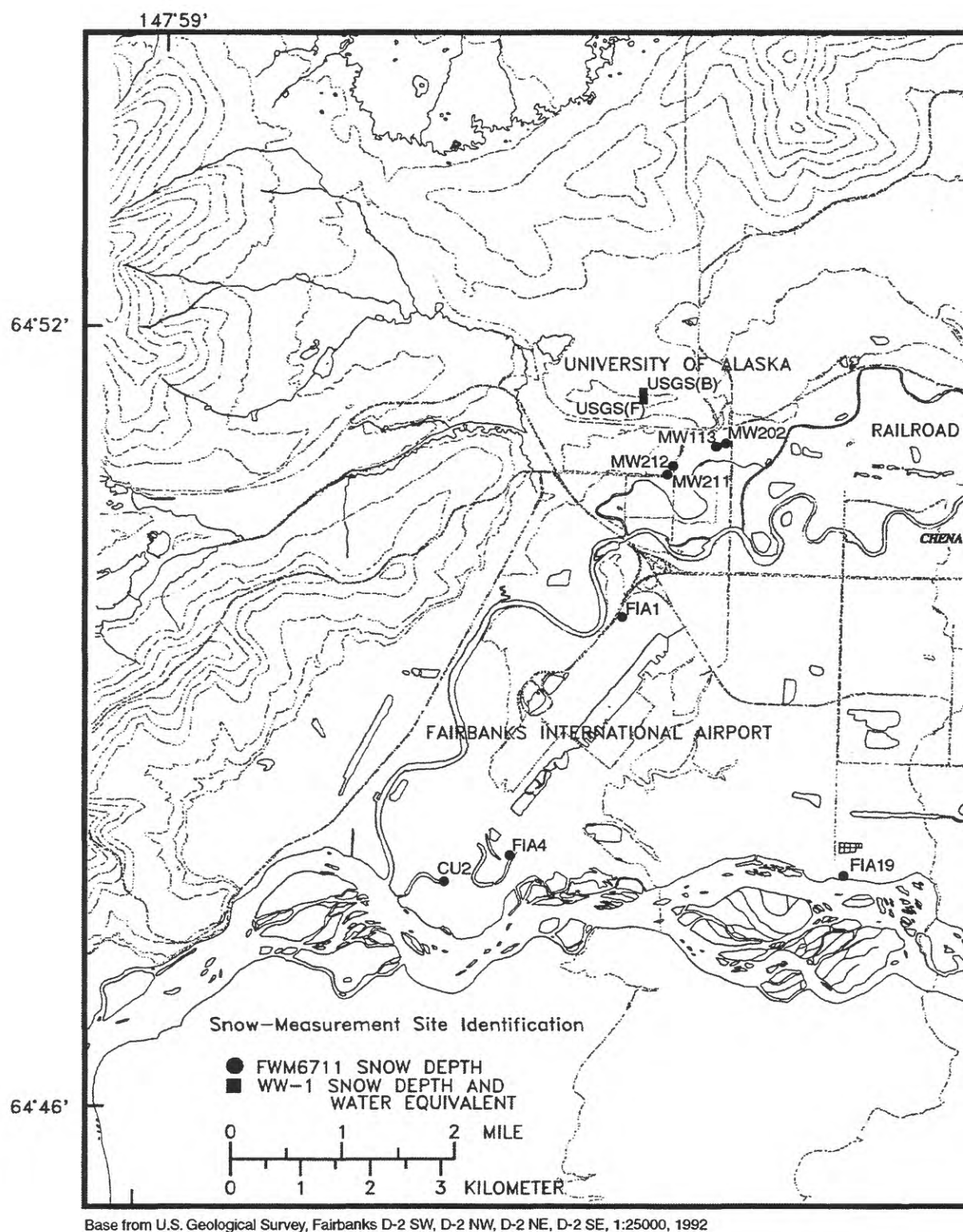


Figure 2. Snow depth and water-equivalent data-collection sites, Fairbanks, Alaska.

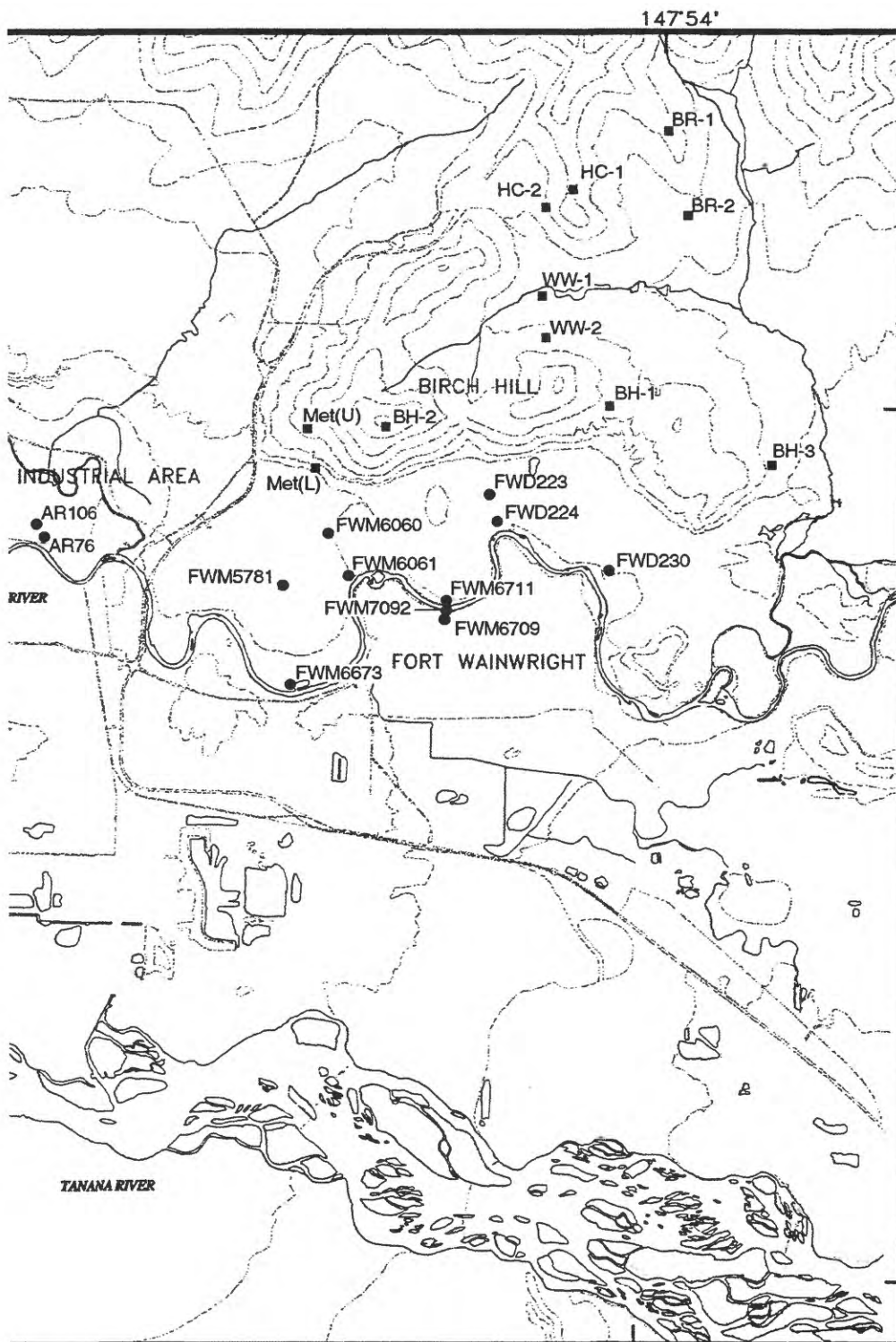




Figure 3. Examples of data collection sites: (a) open, (b) boggy, (c) wooded, and (d) brushy.

Table 2. Average snow depths measured with yardstick, Fairbanks, Alaska, spring 1995

[State plane coordinate location method: M, coordinates estimated from map; S, surveyed. Vegetation cover: W, wooded; O, open field; B, bog; BR, brush. A measurement of 0.0 indicates bare ground; --, no data. See Appendix A for the full data set]

Site identification	State plane coordinate		Location method	Vegetation cover	Average snow depths, in inches									
	X (east)	Y (north)			30-Mar	31-Mar	1-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	8-Apr	10-Apr
FIA1	213270	3962636	S	O	--	24.4	--	--	--	--	--	--	--	--
FIA4	207976	3951492	S	O	--	22.4	--	--	--	--	--	--	--	--
FIA13	215837	3959392	S	W	--	21.5	--	--	--	--	--	--	--	--
FIA19	223518	3950499	S	W	--	23.6	--	--	--	--	--	--	--	--
CU2	204913	3950224	S	W	--	24.6	--	--	--	--	--	--	--	--
MW113	217637	3970589	S	O	--	21.7	--	--	--	--	--	--	--	--
MW202	218029	3970679	S	O	--	22.3	--	--	--	--	--	--	--	--
MW211	215357	3969265	S	O	--	22.2	--	--	--	--	--	--	--	--
MW212	215571	3969644	S	O	--	22.8	--	--	--	--	--	--	--	--
USGS (F)	214241	3972817	M	O	--	23.7	--	--	22.0	--	17.6	--	--	13.2
USGS (B)	214248	3972994	M	W	--	--	--	--	19.1	--	16.9	--	--	15.9
AR76	230774	3968789	S	O	--	--	--	--	--	--	12.8	--	--	--
AR106	230445	3969315	S	O	--	--	--	--	--	--	--	--	--	5.7
FWD223	249377	3970571	S	B	--	26.2	--	--	--	--	--	17.2	--	14.2
FWD224	249687	3969491	S	O	--	--	--	--	20.4	--	--	14.1	--	9.9
FWD230	254408	3967405	S	O	--	--	--	--	24.0	--	--	19.3	--	18.1
FWM5781	240745	3966778	S	O	--	--	--	22.6	--	--	--	18.1	--	14.9
FWM6060	242654	3968944	S	B	--	24.1	--	19.9	--	16.5	--	20.4	--	17.0
FWM6061	243489	3967173	S	W	--	--	--	--	--	--	--	14.3	--	12.8
FWM6673	241087	3962628	S	BR	--	23.9	--	--	--	--	--	14.6	--	11.9
FWM6709	247546	3965347	S	O	25.9	--	--	--	--	13.7	--	--	--	6.5
FWM6711	247536	3966174	S	W	23.7	--	--	--	--	18.0	--	--	--	--
Met (U)	241751	3973363	M	W	--	--	--	--	--	--	--	--	--	14.4
Met (L)	242101	3971674	M	BR	--	--	--	--	--	--	18.7	--	--	19.9
FWM7092	247562	3965329	M	O	20.9	--	--	--	--	--	20.3	--	--	--
BH-1	254359	3974281	M	W	--	--	25.7	--	24.2	--	22.1	--	21.0	--
BH-2	245079	3973471	M	W	--	--	25.7	--	25.0	--	22.0	--	23.3	--
BH-3	261123	3971767	M	W	--	--	--	--	22.2	--	21.2	--	21.1	--
BR-1	256856	3985813	M	O	--	--	27.1	--	26.2	--	24.5	--	22.5	--
BR-2	257682	3982305	M	BR	--	--	23.2	--	22.9	--	21.5	--	20.8	--
HC-1	252802	3983385	M	W	--	--	19.1	--	17.6	--	15.2	--	14.9	--
HC-2	251726	3982617	M	W	--	--	22.6	--	21.2	--	18.7	--	17.1	--
WW-1	251592	3978918	M	B	--	--	--	--	25.0	--	20.9	--	19.7	--
WW-2	251717	3977179	M	W	--	--	--	--	19.2	--	15.9	--	16.5	--

Table 2. Average snow depths measured with yardstick, Fairbanks, Alaska, spring 1995--Continued

[State plane coordinate location method: M, coordinates estimated from map; S, surveyed. Vegetation cover: W, wooded; O, open field; B, bog; BR, brush. A measurement of 0.0 indicates bare ground; --, no data. See Appendix A for the full data set]

Site identification	State plane coordinate		Location Method	Vegetation Cover	Average snow depths, in inches									
	X (east)	Y (north)			11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	17-Apr	18-Apr	20-Apr	25-Apr	26-Apr
FIA1	213270	3962636	S	O	--	--	10.9	--	--	--	--	--	--	--
FIA4	207976	3951492	S	O	--	--	4.4	--	--	--	--	--	--	--
FIA13	215837	3959392	S	W	--	--	1.7	--	--	--	--	--	--	--
FIA19	223518	3950499	M	W	--	--	12.7	--	--	--	--	--	--	--
CU2	204913	3950224	S	W	--	--	16.1	--	--	--	--	--	--	--
MW113	217637	3970589	M	O	--	--	--	--	--	--	--	--	--	--
MW202	218029	3970679	M	O	--	--	--	--	--	--	--	--	--	--
MW211	215357	3969265	M	O	--	--	--	--	--	--	--	--	--	--
MW212	215571	3969644	M	O	--	--	--	--	--	--	--	--	--	--
USGS (F)	214241	3972817	M	O	--	10.1	--	--	6.4	4.2	--	0.0	--	--
USGS (B)	214248	3972994	M	W	--	14.5	--	--	12.6	8.7	--	0.0	--	--
AR76	230774	3968789	S	O	5.9	--	--	--	0.0	0.0	--	--	--	--
AR106	230445	3969315	S	O	--	--	--	--	--	--	--	--	--	--
FWD223	249377	3970571	M	B	--	--	--	--	--	--	--	--	--	--
FWD224	249687	3969491	M	O	--	--	--	--	--	--	--	--	--	--
FWD230	254408	3967405	M	O	--	--	--	--	--	--	--	--	--	--
FWM5781	240745	3966778	S	O	--	--	--	--	--	--	--	--	--	--
FWM6060	242654	3968944	S	B	--	--	--	--	--	--	--	--	--	--
FWM6061	243489	3967173	S	W	--	--	7.4	--	--	--	--	--	--	--
FWM6673	241087	3962628	S	BR	--	--	--	--	--	--	--	--	--	--
FWM6709	247546	3965347	S	O	--	--	--	0.0	--	--	--	--	--	--
FWM6711	247536	3966174	S	W	--	--	--	--	--	--	--	--	--	--
Met (U)	241751	3973363	M	W	--	--	--	--	--	--	--	--	0.0	--
Met (L)	242101	3971674	M	BR	--	--	--	--	--	--	--	--	0.0	--
FWM7092	247562	3965329	M	O	--	--	--	--	--	--	--	--	--	--
BH-1	254359	3974281	M	W	20.9	--	15.1	--	--	12.6	12.2	5.0	0.0	--
BH-2	245079	3973471	M	W	20.1	--	18.7	--	--	12.7	12.6	7.7	0.0	--
BH-3	261123	3971767	M	W	17.5	--	15.0	--	--	13.9	10.6	4.8	0.0	--
BR-1	256856	3985813	M	O	18.4	--	15.8	--	--	--	11.6	7.8	--	0.0
BR-2	257682	3982305	M	BR	18.9	--	17.9	--	--	--	12.0	7.1	--	0.0
HC-1	252802	3983385	M	W	13.2	--	10.2	--	--	--	7.0	3.9	--	0.0
HC-2	251726	3982617	M	W	14.4	--	12.0	--	--	--	5.5	1.5	--	0.0
WW-1	251592	3978918	M	B	18.1	--	15.0	--	--	--	8.5	0.0	--	0.0
WW-2	251717	3977179	M	W	13.3	--	10.3	--	--	--	2.6	0.6	--	0.0

Water Equivalents

Snowpack water equivalents were measured at 13 of the 34 data-collection sites. Ten measurements at each site were made with an Adirondack snow-sampling tube marked in one-inch increments and recorded (Appendix B). The snow depth was read from the tube and the column of snow in the tube was weighed with a water-equivalent scale suspended from a tripod (fig. 3b). Average snow depths and water equivalents calculated from the 10 measurements (Appendix B) are summarized in table 3. The water equivalent is the equivalent depth of water at the measurement point. A water volume can be evaluated by extrapolating this value to a given area.

Error Analysis

Standard deviations have been calculated for the daily recorded individual measurements from the yardstick (Appendix A) and Adirondack snow-sampling tube (Appendix B). The standard deviation varied significantly between the four distinct site groups. Open sites tend to have less error, or a smaller standard deviation, among individual measurements. This occurs because open sites are characterized by a more continuous underlying ground surface and are not obstructed by vegetation compared with the boggy, wooded, and brushy sites. For the snow depths measured with the yardstick, the standard deviation ranged from an error of 0.4 inch at several open sites to 5.5 inches at a wooded site. Similar comparisons are present in the measurements made with the Adirondack snow sampler.

Supplemental Data

Other sources of snow-depth data collected during this period include the Fairbanks International Airport, the USGS College Observatory, the Fort Wainwright Airport, and the home of Carl Benson. These data are included in this report (table 4) as supplemental data, and have not been incorporated into the summary of this report.

SNOW DEPTHS AND WATER EQUIVALENTS

The greatest average snow depth of 27.1 inches was recorded at BR-1 on April 1, 1995, and the lowest average snow depth for the same day was 19.1 inches, at HC-1 (tables 2 and 3). The snow-water equivalents at these two sites were 5.9 inches and 4.5 inches, respectively. BR-1 is located in an open field along a ridge north of Birch Hill and HC-1 is on a wooded, southwest-facing slope (fig. 2).

Rates of snowpack degradation for selected open, boggy, wooded, and brushy sites are shown in figure 4. The open site USGS(F) and the boggy site WW-1 have the greatest snow depths and the highest melting rates. HC-2 and BR-2 are wooded and brushy sites, respectively, and have relatively lower snow depths and melting rates than the open and boggy sites. The HC-2 and BR-2 snowpack degradation trends were estimated with a dashed line after April 20, 1995, because the snowpack had melted before the last site visit on April 26, 1995.

Average snow depths and water equivalents gradually decreased throughout the measuring period with the faster rates at open sites. USGS sites (F) and (B) provide good examples of the different snowpack melting conditions for vegetated versus non-vegetated areas (fig. 5). Site

Table 3. Average snow depths and water equivalents measured with Adirondack snow-sampling tube at selected sites, Fairbanks, Alaska, spring 1995

[Location method: M, coordinates estimated from map; S, surveyed. Vegetation cover: W, wooded; O, open field; B, bog; BR, brush. Average snow depth and water equivalent (H₂O Eq.) in inches; a measurement of 0.0 indicates bare ground; --, no data. See Appendix B for the full data set]

Site	State plane coordinate		Location method	Vegetation cover	1-Apr		4-Apr		6-Apr		12-Apr		13-Apr	
	Identification	X (east)	Y (north)		Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq
USGS (F)	214241	3972817	M	O	--	--	21.7	5.7	18.6	5.8	10.9	3.6	--	--
USGS (B)	214248	3972994	M	W	--	--	19.7	4.9	17.8	4.6	14.8	4.3	--	--
Met (U)	241751	3973363	M	W	--	--	--	--	18.3	5.2	--	--	12.6	4.1
Met (L)	242101	3971674	M	BR	--	--	--	--	21.9	4.1	--	--	14.7	4.6
BH-1	254359	3974281	M	W	23.9	5.0	23.0	5.6	--	--	--	--	--	--
BH-2	245079	3973471	M	W	25.8	5.5	25.0	5.6	22.5	5.4	--	--	--	--
BH-3	261123	3971767	M	W	--	--	21.3	5.2	--	--	--	--	--	--
BR-1	256856	3985813	M	O	27.1	5.9	25.3	5.7	--	--	--	--	--	--
BR-2	257682	3982305	M	BR	19.8	4.5	21.0	5.0	--	--	--	--	--	--
HC-1	252802	3983385	M	W	19.1	4.5	17.1	4.3	--	--	--	--	--	--
HC-2	251726	3982617	M	W	22.1	5.4	19.7	4.9	--	--	--	--	--	--
WW-1	251592	3978918	M	B	--	--	23.7	5.3	--	--	--	--	--	--
WW-2	251717	3977179	M	W	--	--	19.2	4.6	17.4	4.8	--	--	--	--

Site	State plane coordinate		Location method	Vegetation cover	15-Apr		17-Apr		18-Apr		20-Apr		25-Apr	
	Identification	X (east)	Y (north)		Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq	Depth	H ₂ O Eq
USGS (F)	214241	3972817	M	O	6.8	2.0	3.3	0.7	--	--	0.0	0.0	--	--
USGS (B)	214248	3972994	M	W	12.0	3.5	9.6	2.7	--	--	--	--	0.0	0.0
Met (U)	241751	3973363	M	W	--	--	--	--	7.7	2.6	--	--	--	--
Met (L)	242101	3971674	M	BR	--	--	--	--	4.1	1.3	--	--	--	--
BH-1	254359	3974281	M	W	--	--	10.3	3.1	--	--	--	--	--	--
BH-2	245079	3973471	M	W	--	--	13.8	4.2	--	--	--	--	0.6	0.2
BH-3	261123	3971767	M	W	--	--	10.3	3.1	--	--	--	--	--	--
BR-1	256856	3985813	M	O	--	--	--	--	8.9	2.4	--	--	--	--
BR-2	257682	3982305	M	BR	--	--	--	--	11.0	3.3	--	--	--	--
HC-1	252802	3983385	M	W	--	--	--	--	6.6	2.2	--	--	--	--
HC-2	251726	3982617	M	W	--	--	--	--	5.6	1.8	--	--	--	--
WW-1	251592	3978918	M	B	--	--	--	--	0.0	0.0	--	--	--	--
WW-2	251717	3977179	M	W	--	--	--	--	3.2	0.9	--	--	--	--

Table 4. Supplemental snow-depth measurements in the Fairbanks area, Alaska, spring 1995

[FIA, Fairbanks International Airport; College, U.S. Geological Survey College Observatory; Benson, Carl Benson home; FTWW, Fort Wainwright Airport. A measurement of T indicates discontinuous or less than 0.5 inch of snow cover; --, no data. Data in parentheses () are snow-depth water equivalents in inches of water]

Measurement date	Snow depth, in inches			
	FIA	College	Benson	FTWW
3/27	26 (5.0)	25	26.8	--
3/28	26 (5.9)	25	--	23.0
3/29	26 (5.9)	25	--	23.0
3/30	26 (5.9)	25	--	22.0
3/31	26 (5.3)	24	--	21.0
4/1	25 (5.5)	24	23.2	--
4/2	23 (5.0)	23	21.3	--
4/3	20 (4.0)	22	--	19.0
4/4	19 (5.8)	22	--	16.0
4/5	16 (5.0)	21	--	12.0
4/6	14 (6.0)	20	15.4	10.0
4/7	14 (5.5)	20	13.8	--
4/8	14 (5.5)	19	--	--
4/9	14 (6.2)	19	--	8.0
4/10	13 (6.0)	19	--	7.0
4/11	10 (5.2)	16	9.1	5.0
4/12	9 (4.5)	16	--	3.0
4/13	8 (4.2)	15	--	2.0
4/14	8 (4.1)	14	--	1.0
4/15	7 (4.3)	12	--	T
4/16	6 (1.8)	11	--	T
4/17	6 (1.9)	11	--	T
4/18	4 (1.1)	9	--	T
4/19	T (T)	8	--	T
4/20	--	7	--	T
4/21	--	6	--	T
4/22	--	3	--	T
4/23	--	T	--	T
4/24	--	T	--	T
4/25	--	T	--	T
4/26	--	T	--	T
4/27	--	T	--	--
4/28	--	T	--	--

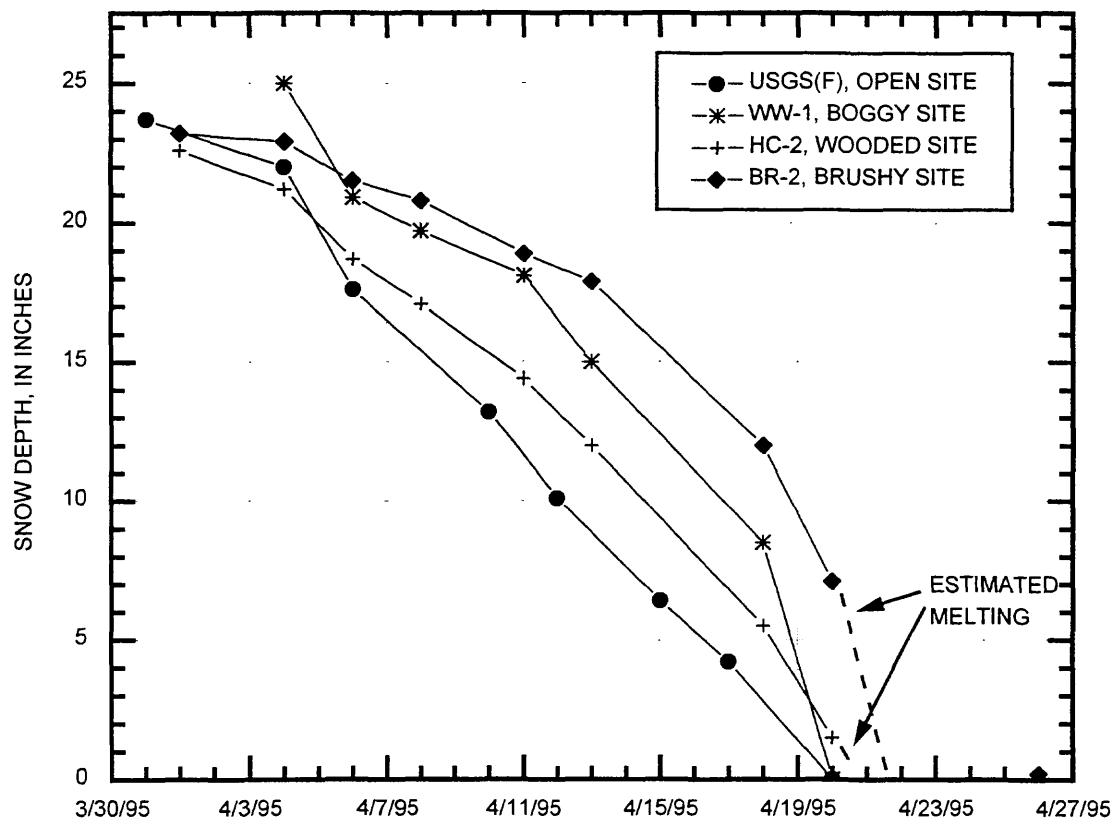


Figure 4. Snowpack depth change at open, boggy, wooded, and brushy sites.

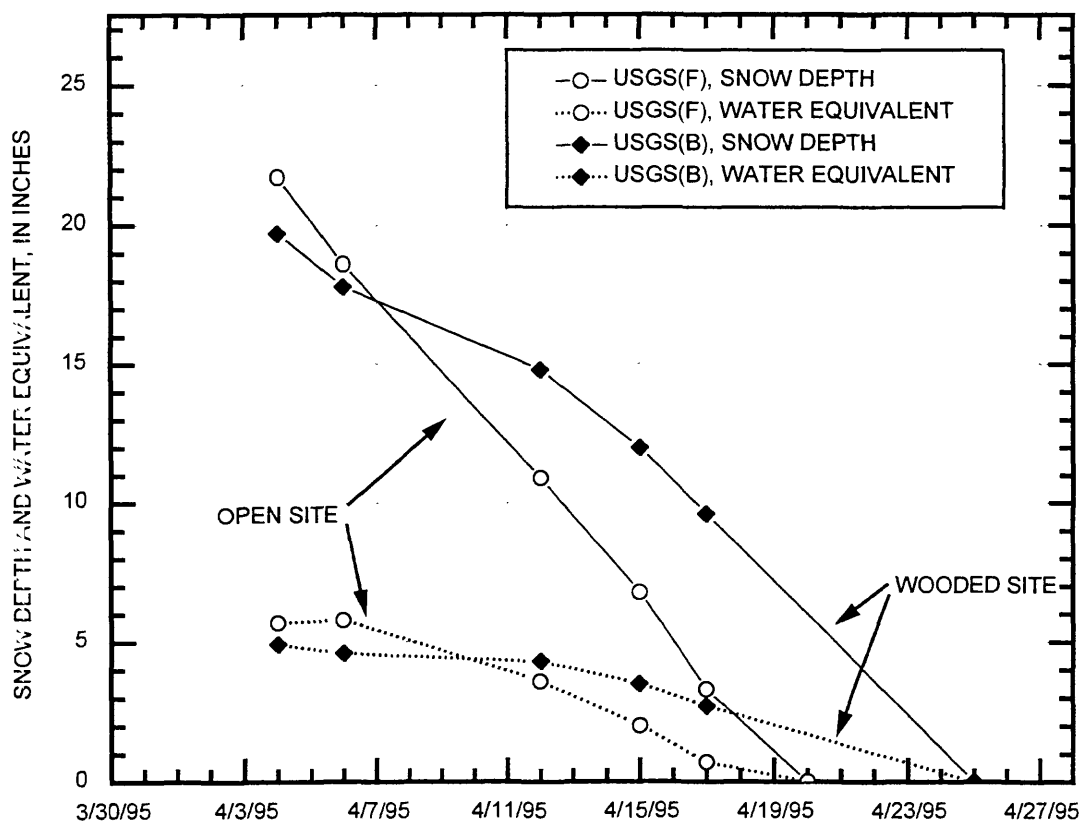


Figure 5. Snowpack depth and water-equivalent change at open and wooded sites.

USGS(F) is an open site. Site USGS(B) is a wooded site. The two sites are located within about 330 feet of each other near the USGS Fairbanks field office. For the April 6 through April 12 period, snow depth decreased by 7.7 inches at the open site but decreased by only 3.0 inches at the wooded site. Similar results were recorded for water equivalents. At the open USGS(F) site, water equivalent decreased by 2.2 inches, while at the wooded USGS(B) site, water equivalent decreased by only 0.3 inch (fig. 5).

SUMMARY

The USGS, in cooperation with other government agencies, collected snow depths at 34 sites, and snow water-equivalent data at 13 of these sites, in the vicinity of Fairbanks, Alaska, during the spring of 1995. Measurements were made from the beginning of the snowmelt period (March 30) until snow had completely melted at all sites (April 26). Data collection sites were classified by vegetation cover as either open, boggy, wooded, or brushy. Snow depths and water equivalents were comparatively greater at open and boggy sites than at wooded or brushy sites; however, snow-pack melting rates at the open and boggy sites were also significantly higher than at the wooded or brushy sites. The timing and amount of recharge from the land surface may affect the distribution of contaminants in unsaturated soils and their transport to the shallow water-table aquifer in the alluvial plain. This information may be used in future efforts to model the timing and distribution of aquifer recharge and to track possible distribution of contaminants in the ground- and surface-water systems in the Fairbanks area, and, in particular, at four study areas with known or suspected subsurface contaminants.

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APPENDIX A

Measured snow depths

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		FIA1		FIA4		FIA13		FIA19		CU2	
Date:		31-Mar 1221	13-Apr 1035	31-Mar 1250	13-Apr 1122	31-Mar 1300	13-Apr 1136	31-Mar 1311	13-Apr 1007	31-Mar 1236	13-Apr 1104
Start Time:		Open	Open	Open	Open	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded
Description:		Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Slope Aspect:		Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Measurement											
1		24.2	11.0	19.3	3.3	22.2	2.4	25.0	13.6	25.8	17.1
2		24.1	10.8	22.4	3.5	22.0	2.6	25.2	14.8	25.4	18.7
3		23.9	10.0	21.2	4.3	21.3	0.0	26.0	9.4	25.0	18.5
4		23.9	12.2	20.0	4.3	21.5	0.0	22.4	13.0	24.8	18.5
5		23.8	11.8	20.9	4.5	22.0	0.0	25.2	11.2	25.4	18.5
6		24.2	11.4	21.9	4.7	21.9	3.0	27.2	14.6	23.6	16.7
7		24.3	11.0	21.9	4.9	22.0	3.0	23.4	13.4	25.0	15.9
8		24.6	10.4	23.3	5.3	21.7	0.0	23.4	12.0	26.5	15.9
9		24.5	9.8	23.5	5.3	22.0	0.0	24.4	11.4	25.5	12.4
10		24.5	10.4	23.2	4.7	21.5	5.5	23.2	11.2	24.4	16.1
11		25.0	10.2	23.0	4.3	21.1	0.0	22.4	11.8	23.3	16.9
12		24.8	11.0	21.0	3.3	21.1	3.5	21.1	12.0	23.4	16.9
13		24.6	10.6	23.1	3.3	20.9	3.5	25.0	12.4	24.7	15.6
14		24.3	10.0	23.8	3.5	21.9	0.0	20.1	15.7	23.3	16.7
15		24.5	9.4	23.0	3.7	21.9	0.0	24.0	12.8	25.1	15.0
16		24.6	12.0	23.2	4.7	21.5	3.1	21.7	12.8	25.0	12.2
17		24.9	11.8	23.2	4.5	21.5	3.7	23.6	11.8	23.9	15.6
18		24.8	11.4	24.1	5.3	21.3	3.1	23.4	13.0	24.3	14.8
19		24.8	11.4	22.8	4.7	21.1	0.0	24.0	14.0	23.9	13.8
20		24.6	10.4	23.4	5.3	20.5	0.0	20.9	--	23.2	15.0
Average:		24.4	10.9	22.4	4.4	21.5	1.7	23.6	12.7	24.6	16.0
Std. Deviation:		0.4	0.8	1.3	0.7	0.5	1.8	1.8	1.5	0.9	1.9

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		MW113		MW202		MW211		MW212		USGS (F)					
Date:		31-Mar		31-Mar		31-Mar		31-Mar		31-Mar	4-Apr	6-Apr	10-Apr	12-Apr	15-Apr
Start Time:		--		--		--		--		--	1700	1715	1645	1610	1255
Description:		Open		Open		Open		Open		Open	Open	Open	Open	Open	Open
Slope Aspect:		Level		Level		Level		Level		Level	Level	Level	Level	Level	Level
Measurement															
1		20.7		21.3		25.2		24.0		23.8	21.9	19.3	14.4	11.8	7.3
2		20.9		22.8		19.7		22.0		23.2	20.5	18.7	14.6	10.6	6.7
3		20.7		22.0		20.5		25.2		23.4	19.5	18.7	15.4	9.8	6.3
4		21.1		22.4		23.6		22.4		24.0	19.9	18.0	14.0	9.1	7.9
5		20.7		22.0		24.0		21.7		24.4	17.7	17.3	13.8	10.6	6.1
6		20.5		22.2		25.0		21.9		23.5	22.0	17.4	13.4	10.4	6.5
7		21.1		22.4		21.1		23.6		24.0	22.0	18.0	11.4	10.4	6.1
8		22.8		22.2		24.2		21.3		23.2	22.2	16.3	11.6	10.8	6.5
9		22.8		22.4		21.7		24.0		23.8	21.5	15.9	12.2	11.2	6.9
10		22.4		22.4		22.0		22.0		23.8	22.6	16.9	13.0	10.2	5.3
11		22.4		22.2		19.7		23.6		24.0	22.4	17.9	13.2	10.6	5.1
12		22.8		22.6		23.2		23.6		23.2	24.6	18.1	13.0	9.3	5.3
13		22.6		22.4		19.7		22.4		22.8	21.3	20.1	14.2	10.6	7.3
14		22.2		22.8		20.5		21.9		24.0	22.8	17.6	13.8	9.1	7.5
15		22.4		23.0		24.0		22.4		23.6	23.4	15.9	12.6	9.4	6.5
16		22.6		22.4		21.7		22.8		23.4	20.5	17.9	13.6	8.7	5.5
17		22.8		22.4		24.0		22.8		23.6	23.4	17.7	13.4	9.3	6.3
18		20.5		22.4		22.4		22.2		24.2	22.6	17.3	11.8	10.4	6.5
19		20.5		21.3		21.7		24.0		23.4	23.2	17.1	11.8	9.4	5.7
20		20.5		22.2		20.9		22.4		23.6	21.9	16.9	12.4	10.0	6.5
Average:		21.7		22.3		22.2		22.8		23.7	21.8	17.6	13.2	10.1	6.4
Std. Deviation:		1.0		0.4		1.8		1.0		0.4	1.6	1.0	1.1	0.8	0.8

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		USGS (F)		USGS (B)				AR76		AR106	FWD223	
Date:	17-Apr	1720	Open	4-Apr	6-Apr	10-Apr	12-Apr	15-Apr	6-Apr	11-Apr	10-Apr	31-Mar
Start Time:				1720	1730	1637	1640	1323	1000	1343	1759	1700
Description:				Wooded	Wooded	Wooded	Wooded	Wooded	Open	Open	Open	Bog
Slope Aspect:		Level		North	North	North	North	North	Level	Level	Level	Level
Measurement												
1		3.1		19.7	18.1	16.1	13.6	12.2	12.9	6.2	5.8	24.8
2		3.3		20.9	19.3	16.7	15.0	14.2	12.7	4.9	5.9	25.4
3		4.3		17.1	15.6	16.1	14.2	13.6	12.2	5.4	4.9	23.3
4		4.5		21.1	17.0	17.7	15.2	12.6	13.0	6.1	5.2	27.2
5		4.7		19.9	16.9	17.3	15.9	13.0	12.3	5.9	5.3	24.9
6		5.1		19.7	17.2	16.9	14.2	13.0	11.2	5.9	7.0	25.2
7		5.9		19.9	17.7	16.1	14.6	10.6	12.1	5.9	5.1	28.8
8		4.3		19.1	19.0	13.6	15.6	12.2	12.8	5.2	5.3	19.7
9		4.9		18.1	17.5	15.7	15.6	11.4	13.3	6.0	5.4	24.0
10		4.5		18.9	18.5	15.7	14.6	12.4	14.0	5.7	5.3	29.5
11		0.0		19.9	18.7	15.2	14.2	14.8	12.2	5.3	6.3	27.8
12		5.3		19.1	17.7	16.1	15.4	12.0	11.2	6.0	6.5	26.8
13		5.3		18.9	15.6	17.3	16.5	12.6	13.9	6.5	6.5	27.2
14		5.1		18.5	14.9	17.7	14.8	13.2	13.3	6.6	5.9	25.4
15		4.9		18.5	15.2	12.2	15.4	13.0	14.0	6.5	6.3	24.2
16		4.5		17.7	15.2	13.4	15.4	13.4	13.3	6.7	6.3	26.8
17		4.7		18.9	14.8	16.1	14.6	13.0	13.8	6.3	5.3	26.8
18		4.3		18.9	15.6	16.9	12.6	12.8	11.8	6.1	4.6	26.6
19		4.7		18.7	15.9	16.7	10.6	11.0	12.7	6.1	5.9	27.1
20		0.0		18.3	16.7	15.0	13.0	11.4	13.0	5.7	5.4	32.4
Average:		4.2		19.1	16.9	15.9	14.5	12.6	12.8	5.9	5.7	26.2
Std. Deviation:		1.6		1.0	1.4	1.5	1.3	1.0	0.8	0.5	0.6	2.6

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:			FWD223			FWD224			FWD230			FWM5781		
Date:	7-Apr	10-Apr	4-Apr	7-Apr	10-Apr	4-Apr	7-Apr	10-Apr	4-Apr	7-Apr	10-Apr	3-Apr	7-Apr	
Start Time:	--	--	1211	--	--	1230	--	--	1230	--	--	1255	--	
Description:	Bog	Bog	Open	Open	Open	Open	Open	Open	Open	Open	Open	Open	Open	
Slope Aspect:	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	
Measurement														
1	23.6	18.0	19.9	13.2	9.5	21.7	20.1	20.0	21.7	20.1	20.0	26.8	18.9	
2	14.8	16.0	19.5	14.6	10.0	22.8	19.1	19.0	22.8	19.1	19.0	22.2	16.1	
3	18.9	10.0	19.5	13.8	10.0	23.7	15.7	19.0	23.7	15.7	19.0	21.1	18.4	
4	18.3	20.0	20.7	14.6	9.0	22.8	16.5	18.0	22.8	16.5	18.0	23.1	17.2	
5	15.9	14.5	20.1	15.4	10.0	23.5	21.2	16.0	23.5	21.2	16.0	23.5	17.1	
6	12.7	8.0	19.8	14.5	9.5	23.7	20.9	14.0	23.7	20.9	14.0	23.2	15.5	
7	21.9	10.0	19.4	15.5	11.0	24.0	17.9	17.0	24.0	17.9	17.0	24.0	17.5	
8	17.2	11.0	20.9	13.8	11.0	24.2	23.1	17.0	24.2	23.1	17.0	22.8	16.6	
9	21.7	12.0	21.1	15.2	10.0	24.8	23.0	17.0	24.8	23.0	17.0	23.7	18.1	
10	17.3	11.0	21.1	14.1	10.0	24.2	16.9	20.0	24.2	16.9	20.0	23.3	19.3	
11	18.5	15.0	20.5	15.2	9.0	24.6	22.6	18.0	24.6	22.6	18.0	23.0	19.2	
12	12.3	17.0	20.2	13.1	10.0	24.6	20.3	17.0	24.6	20.3	17.0	23.1	18.8	
13	14.1	16.0	20.7	13.4	9.0	24.6	19.6	16.0	24.6	19.6	16.0	18.5	19.0	
14	18.1	5.0	20.9	13.5	10.0	24.2	18.9	17.0	24.2	18.9	17.0	22.4	18.4	
15	18.7	19.0	20.5	14.8	10.0	24.5	21.9	17.0	24.5	21.9	17.0	22.4	18.6	
16	14.6	16.5	20.5	14.1	10.0	24.0	19.9	19.0	24.0	19.9	19.0	21.5	18.3	
17	16.3	25.0	21.3	15.2	10.0	24.4	15.7	20.0	24.4	15.7	20.0	20.9	18.1	
18	20.7	14.0	20.5	13.9	10.0	24.6	17.3	19.0	24.6	17.3	19.0	21.7	18.5	
19	15.2	13.0	20.2	13.6	10.0	24.7	18.2	21.0	24.7	18.2	21.0	22.1	19.3	
20	12.6	13.0	21.3	10.6	10.0	23.4	16.2	21.0	23.4	16.2	21.0	23.1	18.8	
Average:	17.2	14.2	20.4	14.1	9.9	24.0	19.3	18.1	24.0	19.3	18.1	22.6	18.1	
Std. Deviation:	3.2	4.6	0.6	1.1	0.5	0.8	2.4	1.8	0.8	2.4	1.8	1.6	1.1	

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		FWM5781		FWM6060				FWM6061				FWM6673	
Date:	10-Apr	31-Mar	7-Apr	10-Apr	3-Apr	5-Apr	7-Apr	10-Apr	13-Apr	31-Mar			
Start Time:	--	1645	1218	--	1242	1540	1218	--	1420	1630			
Description:	Open	Bog	Bog	Bog	Wooded	Wooded	Wooded	Wooded	Wooded	Brush			
Slope Aspect:	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level			
Measurement													
1	15.0	21.5	22.6	20.0	20.7	18.7	18.1	14.0	6.9	24.0			
2	16.0	25.2	22.8	18.0	21.5	20.5	15.2	15.0	4.5	23.5			
3	15.0	26.2	22.2	20.0	21.7	17.6	19.3	16.0	9.1	19.9			
4	15.0	27.5	23.2	20.0	19.3	15.0	15.2	11.0	4.7	23.7			
5	16.0	27.9	22.2	17.0	21.1	17.8	16.4	11.0	9.4	23.4			
6	15.0	25.2	21.7	20.0	20.6	18.9	15.5	11.0	9.4	26.0			
7	14.0	25.6	19.1	20.0	18.9	18.7	15.1	12.0	8.5	24.0			
8	14.0	24.9	17.2	8.0	20.9	17.2	15.1	13.0	9.1	22.0			
9	15.0	22.4	24.8	10.0	19.3	15.0	13.1	14.0	8.3	22.9			
10	14.0	20.6	23.0	14.0	22.0	13.6	13.6	14.0	7.1	22.8			
11	16.0	25.3	20.1	21.0	17.7	15.0	13.2	16.0	11.0	24.0			
12	15.0	20.5	19.4	21.0	20.2	15.8	10.2	13.0	7.9	25.8			
13	16.0	24.6	18.6	21.0	18.2	14.6	15.7	13.0	9.1	24.8			
14	14.0	27.4	19.3	14.0	19.6	14.8	4.3	13.0	6.7	26.1			
15	13.5	15.4	17.3	14.0	18.5	15.7	13.4	11.0	10.6	25.9			
16	15.0	24.0	15.6	6.0	18.2	19.1	14.8	16.0	7.1	21.3			
17	15.0	27.0	17.5	22.0	19.1	13.6	13.8	13.0	3.1	23.2			
18	15.0	26.3	21.2	23.0	20.9	14.8	14.1	15.0	6.1	23.8			
19	15.0	20.0	17.1	17.0	19.7	20.2	15.6	6.0	6.7	24.0			
20	15.0	24.1	23.2	18.0	--	14.0	13.8	9.0	3.5	26.7			
Average:	14.9	24.1	20.4	17.2	19.9	16.5	14.3	12.8	7.4	23.9			
Std. Deviation:	0.7	3.2	2.6	4.8	1.3	2.3	3.0	2.5	2.2	1.7			

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		FWM6673			FWM6709			FWM6711			Met (U)	
Date:		7-Apr	10-Apr		30-Mar	5-Apr	10-Apr	14-Apr	30-Mar	5-Apr	6-Apr	10-Apr
Start Time:		--	--		1324	1552	1520	1420	1450	1518	1025	--
Description:		Brush	Brush		Open	Open	Open	Open	Wooded	Wooded	Wooded	Wooded
Slope Aspect:		Level	Level		Level	Level	Level	Level	Level	Level	South	South
Measurement												
1		20.9	12.0		25.2	14.2	4.2	0.0	21.6	15.9	17.5	15.0
2		15.4	13.0		25.2	14.4	4.2	0.0	12.2	14.6	19.9	16.0
3		13.5	13.0		26.7	14.4	4.2	0.0	27.8	16.9	22.1	16.0
4		13.8	11.0		25.4	12.6	8.7	0.0	25.8	18.7	23.3	17.0
5		15.7	11.0		25.8	13.2	4.1	0.0	27.6	18.7	20.1	16.5
6		15.0	11.0		27.8	13.4	5.9	0.0	21.6	14.6	18.9	16.0
7		10.7	11.0		25.8	13.1	5.9	0.0	24.0	21.7	19.5	16.0
8		14.6	11.0		25.8	13.2	5.5	0.0	26.1	20.2	19.5	16.5
9		13.4	12.0		25.2	15.0	5.3	0.0	25.4	21.3	20.7	14.0
10		15.4	14.0		24.6	15.2	8.3	0.0	26.4	20.9	19.3	15.0
11		11.3	14.0		25.2	15.0	8.3	0.0	23.8	20.9	18.7	15.0
12		8.3	11.0		23.8	13.6	6.7	0.0	24.6	17.8	20.3	13.5
13		11.1	12.0		26.1	13.1	6.9	0.0	25.2	13.8	19.3	10.0
14		16.9	13.0		27.2	13.3	8.1	0.0	24.5	15.5	15.0	7.0
15		15.7	12.0		28.2	12.8	8.1	0.0	18.5	19.0	15.8	13.5
16		15.0	10.0		--	12.6	8.7	0.0	--	8.7	17.0	15.5
17		16.0	13.0		--	12.8	6.3	0.0	--	23.0	14.5	14.0
18		15.9	8.0		--	14.8	5.9	0.0	--	16.7	17.3	13.5
19		15.9	13.0		--	13.8	7.1	0.0	--	19.2	17.5	14.5
20		17.2	12.0		--	13.0	7.5	0.0	--	22.0	17.9	13.5
Average:		14.6	11.8		25.9	13.7	6.5	0.0	23.7	18.0	18.7	14.4
Std. Deviation:		2.7	1.4		1.2	0.8	1.6	0.0	4.0	3.5	2.2	2.4

Site Identification:		Met (U)			Met (L)			FWM7092		BH-1		
Date:		13-Apr	25-Apr		10-Apr	13-Apr	25-Apr	30-Mar	1-Apr	4-Apr	6-Apr	
Start Time:		1333	1550		--	1424	1558	1310	1538	1430	1436	
Description:		Wooded	Wooded		Brush	Brush	Brush	Open	Wooded	Wooded	Wooded	
Slope Aspect:		South	South		South	South	South	Level	Southeast	Southeast	Southeast	
Measurement												
1		14.2	0.0		17.0	15.7	0.0	22.2	18.9	21.5	25.2	
2		13.8	0.0		15.0	15.6	0.0	22.3	26.2	25.6	20.9	
3		15.9	0.0		16.0	15.7	0.0	19.2	26.0	26.0	22.8	
4		11.8	0.0		20.0	16.1	0.0	16.2	26.0	28.3	21.5	
5		14.2	0.0		17.0	15.4	0.0	20.4	24.8	26.8	20.9	
6		12.4	0.0		17.5	16.7	0.0	22.8	26.2	24.8	21.7	
7		13.8	0.0		19.0	13.4	0.0	23.8	27.2	26.4	21.9	
8		14.2	0.0		17.5	12.6	0.0	23.3	24.8	27.6	21.9	
9		12.2	0.0		20.0	10.2	0.0	21.1	25.6	25.8	20.5	
10		12.2	0.0		20.0	12.4	0.0	19.8	25.2	20.7	18.9	
11		12.6	0.0		20.5	14.0	0.0	22.2	25.2	24.6	20.1	
12		13.0	0.0		20.0	12.6	0.0	21.4	26.2	23.8	21.5	
13		12.6	0.0		21.0	12.0	0.0	19.4	28.3	19.7	21.9	
14		12.2	0.0		18.5	14.2	0.0	19.6	28.7	23.6	22.0	
15		11.2	0.0		19.7	15.7	0.0	20.0	22.4	23.2	22.8	
16		13.0	0.0		19.7	15.7	0.0	--	25.6	22.0	22.4	
17		12.4	0.0		--	19.3	0.0	--	28.7	23.1	21.1	
18		13.0	0.0		--	17.3	0.0	--	26.4	22.8	24.8	
19		14.2	0.0		--	13.8	0.0	--	27.0	24.6	24.0	
20		16.1	0.0		22.0	16.7	0.0	--	25.8	22.4	24.8	
Average:		13.2	0.0		19.9	14.8	0.0	20.9	25.8	24.2	22.1	
Std. Deviation:		1.3	0.0		2.5	2.2	0.0	2.0	2.2	2.3	1.6	

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		BH-1						BH-2	
Date:		8-Apr	11-Apr	13-Apr	17-Apr	18-Apr	20-Apr	25-Apr	1-Apr
Start Time:		1248	1628	1258	1611	1310	1335	1529	1600
Description:		Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded
Slope Aspect:		Southeast	Southeast	Southeast	Southeast	Southeast	Southeast	Southeast	South
Measurement									South
1		24.2	22.8	21.3	11.8	17.5	0.0	0.0	27.8
2		23.0	23.0	21.9	12.2	12.6	0.0	0.0	26.0
3		22.0	21.1	21.7	12.4	13.4	0.0	0.0	28.0
4		22.0	19.3	21.3	9.8	12.2	0.0	0.0	25.6
5		23.4	18.5	19.1	12.0	14.6	0.0	0.0	27.0
6		21.1	21.7	13.8	9.4	12.6	0.0	0.0	26.4
7		23.2	20.5	12.6	11.8	9.1	0.0	0.0	28.0
8		22.8	18.1	9.1	10.2	10.4	0.0	0.0	27.2
9		21.3	17.5	11.4	13.0	6.7	0.0	0.0	29.5
10		17.1	20.5	11.8	14.6	5.9	0.0	0.0	24.4
11		19.3	22.4	8.7	14.6	3.9	12.6	0.0	23.8
12		21.9	22.0	9.4	14.0	10.8	6.3	0.0	24.4
13		18.1	17.3	13.4	13.0	9.4	7.5	0.0	20.5
14		19.9	14.6	11.2	14.2	12.0	7.9	0.0	23.6
15		17.5	21.5	14.2	14.2	13.4	6.5	0.0	25.0
16		20.9	23.6	15.7	12.8	16.7	12.6	0.0	25.6
17		20.3	23.2	16.5	13.8	13.6	12.6	0.0	25.6
18		16.1	22.4	15.7	13.6	17.7	15.4	0.0	25.2
19		20.5	22.6	16.1	14.0	13.8	9.1	0.0	23.8
20		25.4	24.8	16.9	9.4	17.5	9.1	0.0	25.8
Average:		21.0	20.9	15.1	12.5	12.2	5.0	0.0	25.6
Std. Deviation:		2.5	2.6	4.3	1.7	3.8	5.5	0.0	2.0

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		BH-2										BH-3
Date:	6-Apr	8-Apr	11-Apr	13-Apr	17-Apr	18-Apr	20-Apr	25-Apr				4-Apr
Start Time:	1444	1258	1638	1306	1628	1315	1342	1533				1521
Description:	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded				Wooded
Slope Aspect:	South	South	South	South	South	South	South	South				Northeast
Measurement												
1	17.5	26.0	22.8	20.1	15.0	15.7	0.0	3.0				29.9
2	24.0	26.8	24.8	20.3	13.4	12.2	11.4	2.0				28.3
3	24.8	23.0	19.7	20.9	15.2	16.1	10.2	4.0				26.0
4	21.7	24.4	22.4	22.0	15.0	15.2	11.0	5.0				25.8
5	20.5	23.6	19.9	22.6	13.8	18.3	7.5	9.0				23.2
6	20.1	25.2	22.2	21.7	10.6	12.8	5.7	7.0				21.7
7	25.0	23.6	18.3	22.0	11.0	12.4	11.0	0.0				23.0
8	23.8	23.4	20.5	19.3	13.4	14.6	7.3	0.0				22.4
9	21.7	24.6	20.7	20.9	15.2	13.2	13.4	0.0				27.4
10	20.7	23.6	19.9	17.7	11.4	11.4	8.3	0.0				20.5
11	20.7	23.4	22.4	18.9	11.0	12.2	6.3	0.0				18.1
12	23.4	21.1	16.9	16.1	9.1	12.2	9.1	0.0				20.9
13	22.4	24.6	16.5	16.1	11.4	11.8	6.7	0.0				20.5
14	22.4	16.5	17.3	15.0	12.6	14.0	9.8	0.0				12.2
15	21.5	22.4	19.7	11.6	14.0	9.1	8.9	0.0				20.7
16	21.5	19.9	18.9	15.7	14.4	8.5	3.1	0.0				20.1
17	24.4	23.0	23.2	19.5	13.6	9.3	5.5	0.0				20.7
18	21.5	25.2	19.9	18.1	12.0	9.4	7.5	0.0				22.8
19	21.3	26.6	18.3	17.3	11.8	15.4	7.1	0.0				19.5
20	22.4	18.7	17.9	17.1	10.8	8.1	3.5	0.0				21.1
Average:	22.1	23.3	20.1	18.7	12.7	12.6	7.7	1.5				22.2
Std. Deviation:	1.8	2.6	2.3	2.8	1.8	2.8	3.2	2.7				3.9

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		BH-3										BR-1
Date:		6-Apr	8-Apr	11-Apr	13-Apr	17-Apr	18-Apr	20-Apr	25-Apr			1-Apr
Start Time:		1248	1321	1613	1245	1542	1255	1322	1516			1452
Description:		Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded			Open
Slope Aspect:		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast	Northeast	Northeast			Level
Measurement												
1		20.9	22.6	19.3	18.1	14.2	9.4	0.0	0.0			26.0
2		22.2	25.2	19.7	15.7	14.0	10.2	0.0	0.0			26.8
3		21.5	21.9	15.0	18.3	15.0	9.3	0.0	0.0			29.1
4		21.7	21.9	17.7	15.7	15.0	13.8	0.0	0.0			28.1
5		21.7	20.9	17.7	12.8	15.7	10.0	0.0	0.0			28.7
6		19.1	21.9	17.7	14.4	15.7	11.4	0.0	0.0			27.1
7		18.1	22.0	20.5	16.1	15.4	14.4	9.1	0.0			29.1
8		20.7	19.1	18.9	18.1	13.8	12.2	6.7	0.0			24.8
9		19.5	21.3	19.1	16.7	15.7	12.2	7.9	0.0			26.0
10		19.3	21.1	16.1	15.9	11.4	9.4	11.4	0.0			23.6
11		18.5	21.7	18.1	15.2	15.7	7.1	3.9	0.0			28.0
12		24.0	22.8	13.4	15.4	12.6	11.0	6.7	0.0			27.6
13		22.2	20.3	17.7	15.7	14.2	10.6	7.9	0.0			30.7
14		25.2	21.3	17.3	9.8	13.0	9.8	6.7	0.0			24.0
15		27.2	23.2	17.7	10.4	12.2	10.8	6.9	0.0			26.8
16		20.7	19.9	15.9	14.4	11.4	10.6	5.1	0.0			23.0
17		16.5	18.1	16.9	14.6	13.6	8.1	5.5	0.0			28.3
18		20.1	16.9	18.5	13.4	13.0	10.4	7.1	0.0			28.9
19		20.1	20.3	16.9	11.8	12.6	11.0	4.3	0.0			27.4
20		25.0	19.9	16.1	16.1	13.8	9.1	6.5	0.0			28.1
Average:		21.2	21.1	17.5	14.9	13.9	10.6	4.8	0.0			27.1
Std. Deviation:		2.6	1.8	1.7	2.3	1.4	1.7	3.6	0.0			2.0

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:				BR-1				BR-2			
Date:	4-Apr	6-Apr	8-Apr	11-Apr	13-Apr	18-Apr	20-Apr	1-Apr	4-Apr		
Start Time:	1100	1606	1151	1526	1210	1401	1535	1508	1128		
Description:	Open	Open	Open	Open	Open	Open	Open	Brush	Brush		
Slope Aspect:	North	North	North	North	North	North	North	Level	Level		
Measurement											
1	29.8	20.9	26.8	22.4	20.9	11.4	7.9	27.8	26.6		
2	24.8	26.2	29.1	16.9	17.3	10.6	4.3	26.8	26.4		
3	23.4	26.4	22.2	17.5	15.4	17.3	7.9	24.0	27.2		
4	26.6	22.0	21.3	14.6	15.2	18.7	5.9	22.8	26.8		
5	23.1	20.1	23.0	17.9	15.4	10.6	10.2	23.6	25.8		
6	25.2	26.0	21.1	21.3	15.7	15.7	8.7	21.3	26.0		
7	25.8	23.6	20.7	18.1	13.6	9.4	7.9	17.3	23.2		
8	25.4	23.0	23.6	19.7	15.0	10.6	6.7	18.5	26.0		
9	29.1	23.6	20.9	19.5	11.8	9.1	6.3	20.5	26.8		
10	28.5	22.0	19.9	19.1	15.4	13.4	10.4	19.7	22.8		
11	27.0	28.3	24.0	18.1	17.7	13.6	6.9	23.6	21.7		
12	23.2	26.4	21.3	18.1	15.6	9.1	9.6	20.5	23.4		
13	28.3	22.8	21.1	17.3	17.5	8.9	5.5	14.8	19.3		
14	26.8	27.2	22.8	20.5	17.9	11.8	6.9	25.2	18.9		
15	25.2	25.2	21.7	16.9	14.6	12.4	10.6	22.8	18.9		
16	29.5	23.2	20.1	19.1	16.9	8.7	11.0	26.8	23.8		
17	25.2	24.0	25.2	16.3	13.8	7.9	7.9	28.3	17.3		
18	26.8	24.0	21.5	20.1	16.5	11.0	7.1	26.8	22.8		
19	21.5	28.3	23.4	17.5	16.5	9.4	6.7	27.2	18.9		
20	28.7	26.0	19.9	17.3	13.2	12.8	7.5	26.4	15.0		
Average:	26.2	24.5	22.5	18.4	15.8	11.6	7.8	23.2	22.9		
Std. Deviation:	2.4	2.3	2.4	1.8	2.0	2.9	1.8	3.8	3.7		

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		BR-2						HC-1	
Date:		6-Apr	8-Apr	11-Apr	13-Apr	18-Apr	20-Apr	1-Apr	4-Apr
Start Time:		1606	1159	1532	1219	1410	1539	1410	1142
Description:		Brush	Brush	Brush	Brush	Brush	Brush	Wooded	Wooded
Slope Aspect:		Level	Level	Level	Level	Level	Level	West	West
Measurement									
1		23.8	23.8	19.1	15.6	0.0	0.0	19.9	19.1
2		24.8	23.8	20.5	21.3	0.0	0.0	19.7	18.9
3		24.0	16.5	22.4	19.5	0.0	0.0	20.3	17.7
4		25.0	14.2	20.1	19.9	14.2	0.0	18.5	17.7
5		21.7	20.9	18.7	21.9	14.6	6.1	18.9	19.5
6		24.6	24.6	19.7	20.9	15.7	11.4	18.7	19.1
7		24.0	18.5	20.9	20.7	17.5	12.6	19.9	15.9
8		22.2	20.9	22.0	21.3	18.5	13.4	19.7	14.8
9		20.5	23.2	18.7	23.2	17.5	9.8	17.3	15.4
10		18.5	20.5	16.9	15.4	14.6	5.9	20.9	17.1
11		18.9	22.0	22.4	13.0	16.1	12.6	19.7	15.7
12		15.9	20.5	15.7	17.3	14.6	12.6	20.1	15.4
13		20.5	19.1	9.6	18.1	14.2	9.4	19.7	20.9
14		14.8	22.6	15.7	12.4	10.6	11.0	20.1	18.3
15		19.1	22.0	20.9	7.5	9.8	2.6	16.3	19.3
16		24.8	22.4	18.5	20.5	9.4	5.5	18.4	13.8
17		18.9	17.7	21.7	17.7	9.1	5.9	19.9	17.7
18		24.8	16.7	19.7	15.0	11.6	4.3	19.1	19.3
19		20.7	23.2	20.1	17.7	18.1	9.8	15.7	16.7
20		21.7	23.2	15.4	19.3	14.2	9.3	19.3	18.9
Average:		21.5	20.8	18.9	17.9	12.0	7.1	19.1	17.6
Std. Deviation:		3.1	2.9	3.1	3.9	5.9	4.7	1.3	1.9
									1.8

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		HC-1						HC-2					
Date:		8-Apr	11-Apr	13-Apr	18-Apr	20-Apr	1-Apr	4-Apr	6-Apr	8-Apr			
Start Time:		1207	1516	1157	1337	1545	1432	1153	1554	1212			
Description:		Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded	Wooded			
Slope Aspect:		West	West	West	West	West	West	West	West	West			
Measurement													
1		16.7	13.8	8.9	8.7	0.0	21.9	20.5	17.7	15.0			
2		16.1	15.4	10.2	7.9	0.0	21.5	18.5	17.3	18.3			
3		15.0	13.8	11.6	9.4	0.0	20.9	20.7	16.5	18.5			
4		14.2	11.6	12.2	6.9	0.0	21.7	23.6	14.2	17.1			
5		10.8	13.6	9.6	6.3	4.3	22.0	21.3	28.0	17.3			
6		17.5	10.2	12.6	8.3	2.0	24.8	20.7	17.9	18.1			
7		15.0	11.4	12.8	5.9	7.1	20.5	22.2	17.0	19.7			
8		11.8	13.0	8.5	0.0	4.9	22.3	26.4	19.1	18.3			
9		12.2	14.0	8.3	6.3	2.4	21.5	21.3	18.5	16.5			
10		15.2	13.8	7.7	4.7	5.5	22.8	22.8	15.6	16.5			
11		14.6	13.4	8.3	5.5	4.3	22.8	21.7	17.3	16.3			
12		13.0	12.8	6.1	7.5	3.9	23.0	22.0	17.9	17.5			
13		13.2	12.8	8.1	7.7	6.3	23.1	21.5	24.4	16.1			
14		11.8	11.6	10.4	7.1	5.5	23.2	21.1	19.7	15.7			
15		16.7	15.9	10.2	10.0	6.5	22.4	20.3	18.6	18.1			
16		16.9	15.0	10.4	11.6	5.7	24.0	20.5	18.1	16.9			
17		18.1	13.6	11.0	9.1	6.5	24.4	20.1	17.7	15.7			
18		15.7	13.2	12.2	7.9	4.9	25.2	16.9	21.7	16.9			
19		16.7	11.4	13.4	6.3	4.5	20.9	20.7	18.9	16.3			
20		16.5	13.8	12.0	3.3	3.3	24.0	21.7	18.4	16.5			
Average:		14.9	13.2	10.2	7.0	3.9	22.6	21.2	18.7	17.1			
Std. Deviation:		2.1	1.4	2.0	2.5	2.4	1.4	1.9	3.0	1.2			

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		HC-2				VW-1				
Date:		11-Apr	13-Apr	18-Apr	20-Apr	4-Apr	6-Apr	8-Apr	11-Apr	13-Apr
Start Time:		1347	1201	1343	1548	1205	1521	1219	1332	1139
Description:		Wooded	Wooded	Wooded	Wooded	Wooded	Bog	Bog	Bog	Bog
Slope Aspect:		West	West	West	West	Level	Level	Level	Level	Level
Measurement										
1		10.2	8.5	0.0	0.0	26.8	19.3	15.2	17.3	16.1
2		14.4	12.0	0.0	0.0	30.7	22.0	19.3	19.1	14.8
3		13.0	9.4	0.0	0.0	24.4	23.0	16.9	17.7	12.0
4		14.4	12.0	13.4	5.1	29.1	21.7	11.0	15.6	7.5
5		14.0	12.2	9.4	0.0	25.6	20.7	18.3	19.5	16.1
6		21.3	11.8	7.1	0.0	24.8	16.1	16.9	17.1	18.1
7		18.1	10.2	5.1	0.0	24.6	18.9	17.1	21.5	23.0
8		14.0	14.6	8.3	6.7	24.6	18.9	21.7	18.5	17.3
9		16.1	13.8	8.1	0.0	16.7	21.7	22.8	21.1	19.1
10		16.1	14.6	7.7	0.0	25.4	24.2	27.2	21.9	11.4
11		15.0	14.2	2.6	0.0	25.6	22.8	21.3	19.5	11.8
12		12.2	15.9	9.1	6.7	27.8	23.2	20.9	15.9	15.7
13		14.2	12.0	4.5	0.0	26.8	22.4	21.1	19.1	13.4
14		15.0	12.6	3.5	0.0	24.0	25.0	23.0	19.1	16.9
15		17.7	11.8	2.4	0.0	26.2	24.0	25.6	18.7	11.2
16		13.4	10.4	3.1	4.3	26.2	18.3	23.2	14.8	14.0
17		14.2	8.5	7.5	0.0	21.7	20.1	20.5	16.9	15.9
18		13.6	8.5	8.1	0.0	24.8	21.7	17.3	17.5	17.3
19		12.0	11.8	5.5	0.0	20.7	14.6	14.2	16.3	12.0
20		9.6	15.7	4.3	7.1	23.6	18.9	19.9	16.1	15.9
Average:		14.4	12.0	5.5	1.5	25.0	20.9	19.7	18.2	15.0
Std. Deviation:		2.6	2.3	3.6	2.7	3.0	2.7	3.9	2.0	3.4

Appendix A. Measured snow depths, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:		WW-1		WW-2	
Date:	18-Apr 1347	20-Apr 1450		11-Apr 1325	20-Apr 1450
Start Time:	Bog	Bog		Wooded	Wooded
Description:	Level	Level		North	North
Slope Aspect:					
Measurement					
1	0.0	0.0		16.1	0.0
2	0.0	0.0		13.0	0.0
3	0.0	0.0		11.0	0.0
4	14.4	0.0		10.2	0.0
5	11.0	0.0		8.3	0.0
6	15.7	0.0		12.4	0.0
7	15.4	0.0		10.4	0.0
8	12.2	0.0		11.0	7.3
9	12.6	0.0		13.4	0.0
10	12.6	0.0		14.8	0.0
11	2.4	0.0		14.6	0.0
12	7.5	0.0		19.3	0.0
13	10.4	0.0		15.2	0.0
14	0.8	0.0		16.5	0.0
15	8.9	0.0		18.9	3.3
16	8.5	0.0		15.4	0.0
17	9.8	0.0		12.0	0.0
18	11.8	0.0		11.0	0.0
19	10.2	0.0		11.0	0.0
20	5.9	0.0		11.2	0.0
Average:	8.5	0.0		13.3	0.5
Std. Deviation:	5.3	0.0		3.0	1.8

APPENDIX B

Measured snow depths and water equivalents

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; —, no data; std. deviation, standard deviation]

Site Identification:	USGS (F)							
Date:	4-Apr		6-Apr		12-Apr		15-Apr	
Start Time:	1700		1730		1610		1255	
Description:	Open		Open		Open		Open	
Slope Aspect:	Level		Level		Level		Level	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	22.0	5.3	20.0	5.9	10.0	3.5	6.0	1.5
2	16.0	5.0	19.0	6.1	13.0	4.0	7.0	2.1
3	20.0	6.4	19.0	5.8	10.0	3.4	7.0	2.3
4	23.0	5.6	19.0	6.0	11.0	3.9	7.0	1.8
5	22.0	5.6	17.0	5.7	10.0	3.5	6.0	2.0
6	21.0	5.9	17.0	5.5	10.0	3.0	6.0	1.6
7	24.0	5.9	18.0	5.5	13.0	4.2	8.0	2.1
8	23.0	5.9	19.0	5.8	10.0	3.2	7.0	2.2
9	23.0	5.5	18.0	5.9	11.0	3.8	7.0	2.3
10	23.0	5.7	20.0	6.1	11.0	3.6	7.0	2.3
Average:	21.7	5.7	18.6	5.8	10.9	3.6	6.8	2.0
Std. Deviation:	2.3	0.4	1.1	0.2	1.2	0.4	0.6	0.3

Site Identification:	USGS (F)		USGS (B)					
Date:	17-Apr		4-Apr		6-Apr		12-Apr	
Start Time:	1720		1720		1730		1610	
Description:	Open		Wooded		Wooded		Wooded	
Slope Aspect:	Level		North		North		North	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	4.0	0.9	20.0	5.0	19.0	5.1	14.0	4.0
2	4.0	1.0	20.0	4.7	19.0	4.9	14.0	4.0
3	3.0	0.8	18.0	4.6	18.5	4.3	16.0	4.3
4	3.0	0.5	20.0	4.9	17.0	4.5	16.0	4.4
5	4.0	1.0	20.0	5.1	17.0	5.0	16.0	5.1
6	5.0	0.9	19.0	4.9	18.5	5.0	16.0	4.3
7	0.0	0.0	20.0	5.3	15.0	3.9	16.0	4.7
8	3.0	0.9	21.0	5.0	18.0	4.7	14.0	4.4
9	4.0	0.5	20.0	5.3	17.0	4.5	16.0	4.5
10	3.0	0.6	19.0	4.5	18.5	4.6	10.0	2.8
Average:	3.3	0.7	19.7	4.9	17.8	4.6	14.8	4.3
Std. Deviation:	1.3	0.3	0.8	0.3	1.3	0.4	1.9	0.6

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	USGS (B)				Met (U)			
Date:	15-Apr		17-Apr		6-Apr		13-Apr	
Start Time:	1323		1701		1025		1333	
Description:	Wooded		Wooded		Wooded		Wooded	
Slope Aspect:	North		North		South		South	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	12.0	3.6	9.0	2.6	17.0	5.4	12.0	3.5
2	11.0	3.6	9.0	2.6	19.0	6.8	12.0	3.7
3	11.0	3.3	11.0	3.0	17.0	5.1	12.0	4.0
4	14.0	3.9	9.0	2.4	18.0	5.3	14.0	5.1
5	13.0	3.8	10.0	2.8	20.0	4.9	14.0	4.4
6	12.0	3.2	11.0	3.1	18.0	4.9	11.0	3.6
7	13.0	3.9	10.0	2.8	19.0	5.5	12.0	3.7
8	13.0	4.2	11.0	3.5	20.0	5.6	14.0	4.5
9	13.0	3.7	7.0	1.8	18.0	3.6	11.0	3.6
10	8.0	2.4	9.0	2.5	17.0	5.3	14.0	4.5
Average:	12.0	3.6	9.6	2.7	18.3	5.2	12.6	4.1
Std. Deviation:	1.7	0.5	1.3	0.5	1.2	0.8	1.3	0.5

Site Identification:	Met (U)		Met (L)		Met (L)		Met (L)	
Date:	18-Apr		6-Apr		13-Apr		18-Apr	
Start Time:	1502		1144		1424		1522	
Description:	Wooded		Brush		Brush		Brush	
Slope Aspect:	South		South		South		South	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	10.0	3.2	23.0	5.6	16.0	5.2	9.0	3.0
2	8.0	2.5	24.0	6.2	15.0	4.9	0.0	0.0
3	8.0	2.8	22.0	3.7	15.0	4.6	9.0	2.6
4	8.0	2.5	22.0	4.0	15.0	4.2	8.0	2.7
5	7.0	2.6	22.0	2.4	10.0	3.1	0.0	0.0
6	6.0	2.3	23.0	3.9	16.0	5.4	0.0	0.0
7	8.0	2.6	19.0	3.5	15.0	4.0	7.0	2.5
8	8.0	2.6	21.0	2.6	17.0	5.3	0.0	0.0
9	8.0	2.5	22.0	5.6	15.0	5.1	8.0	2.4
10	6.0	2.4	21.0	3.5	13.0	4.2	0.0	0.0
Average:	7.7	2.6	21.9	4.1	14.7	4.6	4.1	1.3
Std. Deviation:	1.2	0.2	1.4	1.3	1.9	0.7	4.4	1.4

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	BH-1							
Date:	1-Apr		4-Apr		10-Apr		17-Apr	
Start Time:	1538		1430		--		1611	
Description:	Brush		Brush		Brush		Brush	
Slope Aspect:	South		South		South		South	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	25.0	4.6	25.0	4.9	23.0	5.4	12.0	4.0
2	23.0	4.6	22.0	5.2	23.0	5.4	11.0	3.5
3	28.0	6.2	23.0	5.3	25.0	6.4	8.0	2.5
4	23.0	4.8	22.0	5.6	23.0	5.3	10.0	2.8
5	22.0	5.1	23.0	5.5	21.0	7.5	13.0	3.6
6	25.0	8.3	23.0	5.7	25.0	5.8	10.0	3.2
7	26.0	6.0	23.0	5.2	23.0	5.1	8.0	2.6
8	24.0	4.2	23.0	6.5	23.0	6.3	10.0	3.0
9	19.0	2.6	23.0	6.5	25.0	5.4	8.0	2.5
10	24.0	3.4	23.0	5.2	25.0	6.8	13.0	3.6
Average:	23.9	5.0	23.0	5.6	23.6	5.9	10.3	3.1
Std. Deviation:	2.4	1.6	0.8	0.5	1.3	0.8	1.9	0.5

Site Identification:	BH-2							
Date:	1-Apr		4-Apr		6-Apr		10-Apr	
Start Time:	1600		1450		1444		--	
Description:	Wooded		Wooded		Wooded		Wooded	
Slope Aspect:	South		South		South		South	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	27.0	5.8	26.0	5.5	27.0	6.3	24.0	7.0
2	26.0	6.4	25.0	4.9	22.0	5.4	21.0	6.6
3	28.0	6.0	25.0	5.5	16.0	5.3	21.0	7.0
4	25.0	5.0	26.0	6.4	24.0	5.4	24.0	6.4
5	26.0	5.8	25.0	6.0	26.0	6.6	23.0	6.0
6	25.0	5.7	26.0	5.7	26.0	6.1	24.0	6.1
7	25.0	4.8	25.0	5.5	21.0	4.5	21.0	5.5
8	25.0	5.3	27.0	5.7	26.0	5.9	20.0	5.2
9	25.0	5.8	22.0	4.2	21.0	4.4	21.0	5.6
10	26.0	4.6	23.0	6.0	16.0	4.1	19.0	6.2
Average:	25.8	5.5	25.0	5.5	22.5	5.4	21.8	6.2
Std. Deviation:	1.0	0.6	1.5	0.6	4.1	0.8	1.8	0.6

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	BH-2				BH-3			
Date:	17-Apr		25-Apr		4-Apr		10-Apr	
Start Time:	1628		1533		1521		--	
Description:	Wooded		Wooded		Wooded		Wooded	
Slope Aspect:	South		South		South		South	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	16.0	4.3	2.0	0.6	23.0	5.8	20.0	5.1
2	15.0	4.3	1.2	0.3	21.0	3.9	19.0	4.9
3	13.0	3.6	2.4	0.7	21.0	4.5	22.0	4.9
4	16.0	5.1	0.0	0.0	22.0	5.1	20.0	5.3
5	16.0	5.0	0.0	0.0	21.0	6.0	21.0	6.5
6	15.0	4.7	0.0	0.0	22.0	5.5	20.0	5.7
7	13.0	4.3	0.0	0.0	20.0	5.3	21.0	5.3
8	12.0	4.0	0.0	0.0	23.0	5.9	21.0	6.0
9	13.0	4.2	0.0	0.0	19.0	5.3	21.0	5.4
10	9.0	2.6	0.0	0.0	21.0	4.7	20.0	5.1
Average:	13.8	4.2	0.6	0.2	21.3	5.2	20.5	5.4
Std. Deviation:	2.2	0.7	0.9	0.3	1.3	0.7	0.8	0.5

Site Identification:	BH-3		BR-1		BR-1		BR-1	
Date:	17-Apr		1-Apr		4-Apr		10-Apr	
Start Time:	1542		1452		1100		--	
Description:	Wooded		Open		Open		Open	
Slope Aspect:	South		North		North		North	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	12.0	4.0	27.0	5.6	25.0	5.2	19.0	5.4
2	11.0	3.5	28.0	6.1	25.0	5.5	20.0	6.2
3	8.0	2.5	26.0	5.4	27.0	5.7	19.0	5.4
4	10.0	2.8	27.0	5.8	27.0	6.0	19.0	5.7
5	13.0	3.6	28.0	6.1	23.0	5.4	21.0	6.6
6	10.0	3.2	28.0	6.2	26.0	5.8	25.0	6.2
7	8.0	2.6	28.0	6.2	25.0	5.5	25.0	6.8
8	10.0	3.0	28.0	6.0	24.0	5.8	25.0	6.6
9	8.0	2.5	25.0	6.1	26.0	6.1	23.0	5.0
10	13.0	3.6	26.0	6.0	25.0	6.0	19.0	5.1
Average:	10.3	3.1	27.1	5.9	25.3	5.7	21.5	5.9
Std. Deviation:	1.9	0.5	1.1	0.3	1.3	0.3	2.7	0.7

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	BR-1		BR-2					
Date:	18-Apr		1-Apr		4-Apr		10-Apr	
Start Time:	1552		1508		1128		--	
Description:	Open		Brush		Brush		Brush	
Slope Aspect:	North		Level		Level		Level	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	9.0	2.7	24.0	4.9	22.0	5.3	21.0	5.7
2	9.0	2.6	25.0	6.0	20.0	5.6	19.0	4.0
3	8.0	2.2	27.0	6.1	11.0	3.4	22.0	4.8
4	12.0	3.5	22.0	5.0	22.0	6.0	19.0	4.7
5	10.0	2.9	17.0	4.1	20.0	5.3	26.0	6.1
6	13.0	2.6	20.0	4.1	25.0	6.5	15.0	3.7
7	7.0	1.7	18.0	3.9	22.0	5.5	14.0	3.5
8	5.0	1.2	18.0	3.7	22.0	6.2	26.0	5.8
9	8.0	2.3	14.0	3.4	24.0	6.2	23.0	5.8
10	8.0	2.1	13.0	3.7	24.0	6.9	25.0	5.7
Average:	8.9	2.4	19.8	4.5	21.2	5.7	21.0	5.0
Std. Deviation:	2.3	0.6	4.7	1.0	3.9	1.0	4.3	1.0

Site Identification:	BR-2		HC-1					
Date:	18-Apr		1-Apr		4-Apr		10-Apr	
Start Time:	1605		1410		1142		--	
Description:	Brush		Wooded		Wooded		Wooded	
Slope Aspect:	Level		West		West		West	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	13.0	3.6	20.0	4.2	16.0	3.6	15.0	4.5
2	17.0	5.1	20.0	4.4	17.0	4.2	16.0	7.2
3	0.0	0.0	19.0	4.0	20.0	4.7	16.0	4.9
4	15.0	4.6	21.0	5.1	19.0	4.9	16.0	4.4
5	7.0	2.4	17.5	3.8	17.0	5.0	13.0	4.4
6	8.0	2.5	17.0	4.1	20.0	4.9	12.0	3.6
7	10.0	2.0	20.0	4.6	15.0	3.5	12.0	3.4
8	6.0	1.7	20.0	4.7	14.0	3.7	10.0	2.5
9	17.0	5.6	20.0	5.0	19.0	4.5	11.0	3.1
10	17.0	5.4	16.5	5.0	14.0	3.8	10.0	2.7
Average:	11.0	3.3	19.1	4.5	17.1	4.3	13.1	4.1
Std. Deviation:	5.8	1.9	1.5	0.5	2.3	0.6	2.5	1.4

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	HC-1		HC-2		HC-2		10-Apr	
Date:	18-Apr		1-Apr		4-Apr		10-Apr	
Start Time:	1618		1432		1153		--	
Description:	Wooded		Wooded		Wooded		Wooded	
Slope Aspect:	West		West		West		West	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	10.0	3.2	22.0	5.3	19.0	4.7	15.0	4.6
2	8.0	2.8	22.0	5.5	19.0	5.0	15.0	5.0
3	8.0	3.1	20.0	5.0	19.0	5.0	16.0	5.2
4	0.0	0.0	22.0	5.0	22.0	5.2	17.0	5.6
5	6.0	1.8	24.0	5.8	19.0	5.0	19.0	5.7
6	4.0	1.3	23.0	5.1	21.0	4.7	18.0	5.6
7	6.0	2.0	24.0	6.1	17.0	4.4	15.0	4.7
8	8.0	2.4	21.0	5.1	22.0	4.0	18.0	5.9
9	7.0	2.1	23.0	5.4	18.0	5.0	15.0	4.9
10	9.0	3.0	20.0	5.0	21.0	6.4	14.0	3.8
Average:	6.6	2.2	22.1	5.3	19.7	4.9	16.2	5.1
Std. Deviation:	2.9	1.0	1.5	0.4	1.7	0.6	1.7	0.6

Site Identification:	18-Apr		4-Apr		WW-1		18-Apr	
Date:	18-Apr		4-Apr		10-Apr		18-Apr	
Start Time:	1632		1205		--		1657	
Description:	Wooded		Bog		Bog		Bog	
Slope Aspect:	West		Level		Level		Level	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	2.0	1.0	19.0	4.2	18.0	5.5	0.0	0.0
2	7.0	2.1	25.0	4.5	16.0	3.4	0.0	0.0
3	3.0	1.2	26.0	6.0	17.0	6.0	0.0	0.0
4	9.0	2.9	25.0	5.2	16.0	5.2	0.0	0.0
5	8.0	2.6	22.0	5.2	18.0	4.9	0.0	0.0
6	6.0	1.7	26.0	6.7	17.0	7.4	0.0	0.0
7	8.0	2.7	20.0	4.5	15.0	4.5	0.0	0.0
8	0.0	0.0	22.0	4.6	16.0	5.1	0.0	0.0
9	5.0	1.2	26.0	6.0	24.0	6.0	0.0	0.0
10	8.0	2.3	26.0	6.0	21.0	5.9	0.0	0.0
Average:	5.6	1.8	23.7	5.3	17.8	5.4	0.0	0.0
Std. Deviation:	3.0	0.9	2.7	0.8	2.7	1.1	0.0	0.0

Appendix B. Measured snow depths and water equivalents for selected sites, Fairbanks, Alaska, Spring 1995--Continued

[Snow depth and water equivalent (H₂O Eq.) values in inches; a measurement of 0.0 indicates bare ground; --, no data; std. deviation, standard deviation]

Site Identification:	WW-2							
Date:	4-Apr		6-Apr		10-Apr		18-Apr	
Start Time:	1334		1529		--		1645	
Description:	Bog		Bog		Bog		Bog	
Slope Aspect:	Level		Level		Level		Level	
Measurement	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.	Depth	H ₂ O Eq.
1	24.0	5.1	16.0	4.4	17.0	4.7	7.0	2.3
2	20.0	3.9	19.0	5.2	19.0	4.4	4.0	1.5
3	22.0	5.2	19.0	5.1	15.0	4.4	0.0	0.0
4	21.0	5.1	20.0	6.2	12.0	3.5	4.0	1.4
5	19.0	5.2	13.0	3.5	12.0	3.5	0.0	0.0
6	18.0	4.3	17.0	4.8	8.0	2.4	4.0	0.8
7	12.0	3.3	19.0	5.1	7.0	2.4	4.0	1.0
8	20.0	4.7	20.0	6.1	11.0	3.0	0.0	0.0
9	17.0	4.4	20.0	4.8	10.0	3.1	3.0	0.8
10	19.0	4.7	11.0	2.4	10.0	3.2	6.0	1.6
Average:	19.2	4.6	17.4	4.8	12.1	3.5	3.2	0.9
Std. Deviation:	3.2	0.6	3.2	1.1	3.8	0.8	2.5	0.8