

# CLIMATIC DATA FOR THE COTTONWOOD LAKE AREA, STUTSMAN COUNTY, NORTH DAKOTA 1983

By

A.M. Sturrock, B.A. Hanson, J.L. Scarborough, and T.C. Winter

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## METRIC CONVERSION FACTORS

<i>Multiply</i>	<i>By</i>	<i>To obtain</i>
meter	3.281	foot
kilometer	0.621	mile
centimeter	0.394	inch
millibar	0.0145	pounds per square inch
millibar	1.0197	grams per square centimeter
miler per hour	1.609	kilometer per hour
calories per square centimeter per minute	$1.433 \times 10^{-3}$	watts per square meter
calories per square centimeter per day	278.96	watts per square meter
calories per square centimeter per day	25.913	watts per square foot

To convert degree Celsius ( $^{\circ}\text{C}$ ) to degree Fahrenheit ( $^{\circ}\text{F}$ ) use the following formula:

$$(^{\circ}\text{C} \times 9/5) + 32 = ^{\circ}\text{F} .$$

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ABSTRACT

Research on the hydrology of the Cottonwood Lake area, Stutsman County, North Dakota, includes study of evaporation. Presented here are those climatic data needed for energy-budget and mass-transfer evaporation studies that were collected during 1983, including: water-surface temperature, sediment temperature, dry-bulb and wet-bulb air temperatures, vapor pressure at and above the water surface, wind speed, and short- and long-wave radiation. Data are collected at raft and land stations.

INTRODUCTION

Climatic data are being collected at the Cottonwood Lake area as part of a continuing study of the hydrology of a group of small lakes and wetlands by the U.S. Geological Survey and the U.S. Fish and Wildlife Service. The Cottonwood Lake area is one of several lake areas in different parts of the United States that have been selected for intensive study of hydrological and related chemical and biological processes. The rationale for selection of the Cottonwood Lake area is given by Winter and Carr (1980). Climatic data for the 1982 open-water season are given in Sturrock and others (1986).

DATA COLLECTION AND PRESENTATION

Data presented here are being collected principally for studies of evaporation; therefore, data are collected only during the time the lakes and wetlands are ice-free. Data for 1983 were collected from May 18 (Julian day 138) to September 20 (Julian day 263). Within each table, the data are grouped according to energy-budget periods; the periods are defined by the dates thermal survey were made in the water body. For example, the first energy-budget period for 1983 is Julian days 138 through 144.

Climatic instruments are located at a raft station near the middle of wetland P1 and at a land station. Instruments at the raft station include anemometers at 2 and 3 meters above the water surface, a thermistor psychrometer with dry-bulb and wet-bulb temperature sensors at 2 meters above the water surface, and water-temperature sensors beneath the raft at a depth of about 1 centimeter below the water surface and 20 centimeters above the sediments. This second water-temperature sensor is referred to in the tables as "lake bottom water temperature". Sediment-temperature sensors are at 0.5 and 1.0 meter below the sediment-water interface.

Data from the above sensors are recorded by a digital data logger located on the raft. The data logger scans the sensors every minute and calculates hourly and daily averages and totals. In addition, for selected sensors, maximum and minimum values and the times they occur are stored and recorded at midnight of each day. Additional analog instruments for measuring water-surface temperature and wind speed also are located on the raft. These are used to backup the primary instruments for quality control and for filling in missing data.

The land station consists of short- and long-wave radiometers. These data also are recorded by a digital-data logger that operates similarly to the one on the raft. A backup hygromograph that records air temperature and relative humidity is located on the shore near wetland P1. Calibration checks with laboratory-quality thermometers and motorized psychrometers are made weekly. Vapor pressure of water ( $e_o$ ) is calculated using water-temperature data and assuming the air is completely saturated at the air-water interface.

Data presented here are daily summaries. For periods during which the primary instruments were not operating properly, daily values were obtained by regression using data from backup instruments, provided a satisfactory statistical relationship could be established. Data used to establish regressions were selected so they bracketed the period of missing or inadequate data. Only table 1, which is considered to be the primary source of data for evaporation studies, includes values obtained by regression. The data in table 2 terminate at Julian day 183 because maximum and minimum dry-bulb air temperatures were not recorded after that day. The data in table 3 begin at Julian day 180 because maximum and minimum radiation values were not recorded before that day. Graphs of daily average air temperature are shown in figure 1, of daily average water temperature in figure 2, and daily average sediment temperatures in figure 3.

Although only daily values are reported here, hourly values also were recorded. Hourly values are voluminous and expensive to reproduce, but they are available for all or part of the period of record, on request to T.C. Winter.

#### REFERENCES

- Koberg, G.E., 1964, Methods to compute long-wave radiation from the atmosphere and reflected solar radiation from a water surface: U.S. Geological Survey Professional Paper 272-F, p. 107-136.
- Sturrock, A.M., Hanson, B.A., Scarborough, J.L., and Winter, T.C., 1986, Climatic data for the Cottonwood Lake area, Stutsman County, North Dakota, 1982: U.S. Geological Survey Open-File Report 86-477, 24 p.
- Winter, T.C. and Carr, M.R., 1980, Hydrologic setting of wetlands in the Cottonwood Lake area, Stutsman County, North Dakota: U.S. Geological Survey Water-Resources Investigations 80-99, 42 p.

Table 1. --Summary of 1983 energy budget data  
 [C, degrees celsius; mb, millibars; mi/h, miles per hour; (cal/cm<sup>2</sup>)/d, calories per square centimeter per day; blank, no data]

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	BOWEN RATIO			
138	12.41	11.75	10.27	14.40	11.56	0.134			
139	12.30	7.05	5.56	14.30	8.13	0.492			
140	12.01	8.29	6.81	14.03	8.95	0.423			
141	13.12	12.72	11.27	15.09	12.44	0.087			
142	13.70	10.14	8.69	15.67	10.32	0.385			
143	15.37	15.15	13.76	17.46	14.85	0.049			
144	15.55	8.79	4.64	17.66	5.90	0.332			

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE AT 0.5 METER (C)	SEDIMENT TEMPERATURE AT 1 METER (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]		
138	12.58	6.49	5.76	10.06	10.43	617.0	572.1		
139	12.33	6.69	5.77	5.77	6.28	191.8	633.4		
140	12.04	6.99	5.81	5.61	5.96	517.6	599.8		
141	13.28	7.23	5.88	10.25	10.78	451.8	627.2		
142	13.90	7.47	5.94	9.98	10.40	669.5	571.4		
143	15.29	7.75	6.05	6.97	7.40	629.8	648.5		
144		8.05	6.15	8.96	9.41	599.8	579.8		

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION										
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	BOWEN RATIO				
145	15.34	11.28	4.14	17.42	3.73	0.171				
146	15.68	17.13	9.29	17.81	6.75	-0.076				
147	18.25	18.61	11.52	20.96	9.09	-0.018				
148	18.17	14.69	7.16	20.85	5.37	0.130				
149	13.84	8.70	3.56	15.81	4.66	0.266				
150	12.37	7.76	4.14	14.36	5.94	0.316				
151	12.94	11.05	5.43	14.91	5.44	0.115				
152	15.23	14.09	7.15	17.30	5.74	0.057				
153	15.99	13.15	8.35	18.16	7.95	0.161				
154	16.72	13.08	7.29	19.03	6.57	0.169				
155	14.33	8.55	4.97	16.32	6.45	0.338				
156	13.25	8.72	3.91	15.22	5.06	0.258				
157	14.68	13.10	5.85	16.70	4.68	0.076				
158	16.95	16.48	8.28	19.31	5.75	0.020				

DAILY AVERAGES AT RAFT STATION						DAILY TOTALS AT LAND STATION		
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT AT 0.5 METER TEMPERATURE (C)	SEDIMENT AT 1 METER TEMPERATURE (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]	
145	8.38	6.28	6.84	7.17	672.5	555.6		
146	8.70	6.43	12.55	12.96	592.5	667.0		
147	8.97	6.57	7.35	7.73	680.1	654.3		
148	9.30	6.72	13.51	14.01	652.4	606.7		
149	9.65	6.86	11.67	12.10	344.1	614.8		
150	9.89	7.03	11.42	11.80	348.9	599.3		
151	9.96	7.21	6.63	7.00	540.0	634.0		
152	9.93	7.37	5.76	6.10	540.2	664.2		
153	9.94	7.50	9.05	9.38	542.2	638.8		
154	10.07	7.61	9.19	9.78	596.4	622.1		
155	10.26	7.72	10.73	11.13	218.9	662.8		
156	13.44	7.83	5.12	5.50	401.8	594.7		
157	14.84	7.95	7.45	7.91	705.5	574.6		
158	16.82	8.07	5.33	5.91	680.0	632.2		



Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	BOWEN RATIO	DAILY TOTALS AT LAND STATION		
							SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> )/d]	
159	18.56	15.63	9.49	21.37	7.98	0.126	718.9	616.7	
160	18.84	18.24	9.14	21.75	5.83	0.022	597.6	656.4	
161	19.84	21.51	13.67	23.14	10.66	-0.077	630.9	726.4	
162	20.55	20.19	14.87	24.18	13.52	0.020	460.2	738.6	
163	20.34	19.32	15.12	23.87	14.51	0.063	335.0	763.0	
164	18.93	13.89	10.34	21.87	10.31	0.252	360.4	671.1	
165	19.02	15.59	9.50	21.99	8.02	0.142	597.1	613.1	
166	16.18	10.47	6.06	18.39	6.61	0.280	355.0	593.5	
167	16.82	11.49	6.08	19.15	5.99	0.234	733.6	537.3	
168	18.15	14.82	7.63	20.83	5.91	0.129	746.1	545.2	
169	18.30	16.99	11.72	21.02	10.42	0.071	479.9	655.3	
170	18.26	17.59	15.32	20.97	15.96	0.077	220.6	745.7	
171	20.49	20.17	17.13	24.09	17.59	0.028	496.0	732.5	
172	22.73	20.71	18.00	27.63	18.90	0.134	555.7	754.1	

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT AT 0.5 METER TEMPERATURE (C)	SEDIMENT AT 1 METER TEMPERATURE (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	DAILY TOTALS AT LAND STATION			
						SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> )/d]		
159	18.61	10.61	8.16	7.91	8.33	718.9	616.7		
160	19.04	10.82	8.26	9.33	9.75	597.6	656.4		
161	19.71	11.10	8.36	7.49	7.79	630.9	726.4		
162	20.74	11.37	8.48	13.84	14.27	460.2	738.6		
163	20.52	11.69	8.60	10.10	10.51	335.0	763.0		
164	19.13	12.01	8.74	8.48	8.80	360.4	671.1		
165	19.19	12.27	8.89	8.86	9.33	597.1	613.1		
166	16.38	12.46	9.04	11.59	11.92	355.0	593.5		
167	16.48	12.57	9.21	3.99	4.43	733.6	537.3		
168	18.34	12.56	9.36	7.08	7.44	746.1	545.2		
169	18.51	12.57	9.49	12.09	12.47	479.9	655.3		
170	18.41	12.67	9.62	12.12	12.57	220.6	745.7		
171	19.99	12.79	9.72	7.04	7.51	496.0	732.5		
172	22.05	12.92	9.83	8.95	9.50	555.7	754.1		

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION										
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	BOWEN RATIO	DAILY TOTALS AT RAFT STATION			
							SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]
173	22.14	18.08	13.20	26.66	12.07	0.161	709.5	9.90	9.90	642.0
174	22.89	20.83	14.49	27.90	12.46	0.077	691.0	7.77	7.77	691.7
175	24.06	25.06	18.94	29.94	17.97	-0.048	678.0	13.59	13.59	722.3
176	24.67	23.54	20.39	31.05	21.93	0.072	651.9	9.73	9.73	686.6
177	24.74	20.17	19.00	31.18	21.22	0.265	673.3	5.54	5.54	597.3
178	22.83	16.60	15.29	27.80	16.53	0.320	589.3	6.88	7.38	579.5
179	22.23	16.66	15.34	26.81	16.58	0.315	590.7	6.97	6.97	579.5

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE AT 0.5 METER (C)	SEDIMENT TEMPERATURE AT 1 METER (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	DAILY TOTALS AT LAND STATION			
						SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]
173	22.39	13.10	9.93	9.02	9.90	709.5	9.02	9.90	642.0
174	23.08	13.37	10.05	7.26	7.77	691.0	7.26	7.77	691.7
175	24.22	13.70	10.18	13.20	13.59	678.0	13.20	13.59	722.3
176	24.28	14.03	10.33	9.39	9.73	651.9	9.39	9.73	686.6
177	24.44	14.38	10.46	5.05	5.54	673.3	5.05	5.54	597.3
178	22.51	14.67	10.62	6.88	7.38	589.3	6.88	7.38	579.5
179	22.26	14.92	10.79	6.37	6.97	590.7	6.37	6.97	579.5

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION												
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	ROMEN RATIO	DAILY TOTALS AT LAND STATION					
							SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	WIND SPEED AT 3 METERS (mi/h)	WIND SPEED AT 2 METERS (mi/h)	SEDIMENT TEMPERATURE AT 0.5 METER (C)	SEDIMENT TEMPERATURE AT 1 METER (C)	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]
180	20.20	14.39	12.94	23.67	13.99	0.347	87.0	5.68	5.24	10.94	10.94	665.3
181	20.05	16.91	15.52	23.45	16.74	0.271	519.9	7.56	6.88	11.12	11.12	697.2
182	22.61	19.07	17.70	27.43	19.37	0.254	646.7	4.96	4.35	11.29	11.29	712.3
183	21.16	19.54	18.22	25.11	20.08	0.186	199.6	7.51	6.90	11.42	11.42	731.4
184	19.47	13.87	12.76	22.62	14.03	0.377	153.8	7.53	6.72	11.54	11.54	661.3
185	17.82	14.05	13.02	20.40	14.34	0.359	429.6	10.76	10.21	11.64	11.64	663.7
186	19.21	15.10	12.65	22.26	13.08	0.259	629.7	7.36	6.94	11.73	11.73	649.3
187	21.64	22.72	19.12	25.86	19.83	-0.104	633.4	8.84	8.49	11.83	11.83	753.9
188	24.62	25.18	21.19	30.96	22.60	-0.039	556.8	6.41	6.41	11.92	11.92	786.7
189	26.08	25.10	22.88	33.77	26.46	0.078	472.8	5.67	5.18	11.97	11.97	804.4
190	25.42	27.03	22.69	32.47	24.78	-0.121	578.4	11.09	10.60	12.02	12.02	821.6
191	25.50	25.29	19.57	32.63	19.10	0.009	651.9	11.23	10.74	12.07	12.07	778.6
192	21.17	17.89	13.29	25.12	12.34	0.148	660.7	11.27	10.78	12.09	12.09	663.9
193	22.57	23.48	16.52	27.37	14.35	-0.040	664.0	8.95	8.46	12.16	12.16	746.3

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	DOWNWAVE RADIATION	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]	NET LONG-WAVE RADIATION [(cal/cm <sup>2</sup> )/d]
194	24.45	26.98	20.99	30.65	21.01		641.0	811.6	-0.152
195	25.92	27.45	20.76	33.45	20.21		642.2	799.5	-0.067
196	24.40	24.47	20.09	30.56	20.70		578.4	783.9	-0.004
197	24.12	19.57	15.11	30.05	14.33		638.7	699.1	0.167
198	23.85	21.19	18.55	29.25	19.67		409.5	747.2	0.155
199	23.67	22.52	19.55	29.25	20.83		487.6	775.6	0.079
200	24.93	23.26	20.62	31.54	22.60		410.1	759.1	0.108
201	24.32	22.80	20.73	30.41	23.13		477.4	728.3	0.121
202	24.85	22.51	20.26	31.39	22.31		506.0	660.6	0.149
203	25.05	21.94	16.65	31.77	15.57		457.3	679.1	0.111
204	23.52	18.66	15.81	28.98	16.14		597.4	678.2	0.219
205	24.04	22.01	16.45	29.90	16.44		597.4	678.2	0.173
206	23.44	22.20	17.02	28.84	16.09		467.5	739.1	0.056
207	22.96	22.96	19.16	28.02	19.76				0.000

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE AT 0.5 METER (C)	SEDIMENT TEMPERATURE AT 1 METER (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]	NET LONG-WAVE RADIATION [(cal/cm <sup>2</sup> )/d]	
194	21.31	15.38	12.25	8.30	8.79	641.0	811.6	-0.152	
195	22.30	15.46	12.31	7.77	8.26	642.2	799.5	-0.067	
196	24.29	15.53	12.37	11.98	12.47	578.4	783.9	-0.004	
197	23.08	15.63	12.43	6.86	7.36	638.7	699.1	0.167	
198	22.31	15.78	12.50	5.33	5.83	409.5	747.2	0.155	
199	21.84	15.96	12.60	7.75	8.24	487.6	775.6	0.079	
200	22.44	16.06	12.68	5.21	5.70	410.1	759.1	0.108	
201	22.68	16.13	12.76	7.95	8.53	477.4	728.3	0.121	
202	22.86	16.22	12.87	6.77	7.15	506.0	660.6	0.149	
203	22.76	16.27	12.94	3.79	4.26	457.3	679.1	0.111	
204	22.29	16.34	13.01	4.40	4.77	597.4	678.2	0.219	
205	21.65	16.42	13.10	2.93	3.44	597.4	678.2	0.173	
206	21.44	16.47	13.19	6.72	7.11	467.5	739.1	0.056	
207	22.34	16.49	13.26	9.74	10.16				0.000

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION										
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	ROMEN RATIO	DAILY TOTALS AT LAND STATION			
							SHORT-WAVE SOLAR RADIATION [ (col/cm <sup>2</sup> )/d ]	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	LONG-WAVE ATMOSPHERIC RADIATION [ (col/cm <sup>2</sup> )/d ]
208	25.22	23.38	20.35	32.09	21.95	0.105	528.2	5.25	5.69	728.7
209	25.42	23.13	19.17	32.47	19.67	0.103	551.5	5.45	6.05	717.5
210	24.58	22.53	18.32	30.89	18.36	0.095	356.5	3.53	3.95	697.7
211	24.69	22.00	18.39	31.09	18.84	0.127	579.3	5.79	6.22	697.5
212	23.80	19.29	15.60	29.48	15.37	0.185	609.6	5.36	5.73	627.9
213	23.69	21.59	16.56	29.28	15.63	0.089	604.7	5.68	6.08	678.2
214	25.79	24.51	21.36	33.19	23.40	0.076	514.5	5.13	5.52	750.7
215	27.69	26.16	21.16	37.12	21.90	0.058	585.3	2.07	2.52	729.6
216	26.67	27.22	20.00	34.96	18.76	-0.020	572.0	4.70	5.06	728.1
217	27.53	26.72	21.06	36.77	21.33	0.030	548.2	3.54	4.06	736.6
218	26.70	26.36	19.35	35.03	17.97	0.012	572.7	5.65	6.03	723.8
219	24.80	27.72	19.69	31.30	17.79	-0.125	581.1	11.01	11.48	720.8
220	24.81	20.82	15.29	31.31	13.85	0.132	581.1	4.06	4.50	649.5
221	22.39	20.87	16.50	27.07	15.98	0.079	349.3	7.29	7.71	735.9

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION										
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	ROMEN RATIO				
222	22.60	19.75	16.17	27.41	16.09	0.146				
223	22.91	19.85	14.47	27.93	13.05	0.119				
224	22.46	23.54	17.86	27.18	16.83	-0.060				
225	22.61	20.24	15.23	27.43	14.11	0.103				
226	22.35	21.90	14.55	27.00	11.88	0.017				
227	23.97	23.91	18.04	29.78	16.94	0.003				
228	21.99	18.87	15.39	26.42	15.26	0.162				
229	22.32	23.37	18.08	26.95	17.36	-0.063				
230	22.96	24.69	22.18	28.02	25.11	-0.344				
231	21.68	18.51	13.76	25.92	12.71	0.139				
232	20.13	18.69	15.23	23.56	15.10	0.098				
233	21.28	18.71	15.74	25.29	15.98	0.160				
234	20.38	17.36	14.10	23.93	14.01	0.176				
235	20.38	19.58	17.89	23.93	19.41	0.102				

DAILY AVERAGES AT RAFT STATION										DAILY TOTALS AT LAND STATION		
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE AT 0.5 METER (C)	SEDIMENT TEMPERATURE AT 1 METER (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]					
222	22.04	17.35	14.14	8.04	8.38	586.3	649.8					
223	21.17	17.35	14.21	4.76	5.15	593.1	623.2					
224	21.64	17.34	14.27	9.64	10.06	534.5	712.2					
225	21.94	17.30	14.32	6.97	7.28	584.4	626.3					
226	21.83	17.26	14.35	5.58	5.79	573.5	662.9					
227	21.77	17.27	14.40	4.57	4.96	539.0	712.4					
228	21.45	17.26	14.43	5.22	5.64	341.5	710.7					
229	21.59	17.27	14.46	6.64	6.83	477.5	711.5					
230	22.72	17.26	14.50	7.22	7.75	357.0	776.0					
231	21.77	17.27	14.50	7.18	7.71	417.2	660.5					
232	20.08	17.30	14.54	6.04	6.57	243.9	735.8					
233	21.26	17.32	14.58	5.86	6.57	528.1	652.9					
234	20.33	17.26	14.58	3.45	5.35	290.9	688.1					
235	19.88	17.25	14.62	6.68	7.08	300.0	726.1					

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	ROMEN RATIO			
236	22.82	22.35	19.96	27.78	21.79	0.045			
237	23.62	24.20	20.70	29.16	22.17	-0.048			
238	24.84	22.84	19.25	31.37	20.02	0.102			
239	24.29	23.96	18.91	30.36	18.62	0.016			
240	25.36	25.18	20.46	32.36	21.03	0.009			
241	22.54	21.71	19.31	27.32	20.86	0.074			
242	23.73	21.33	17.87	29.35	18.26	0.125			
243	23.47	24.09	18.10	28.90	16.94	-0.030			
244	24.06	26.29	20.13	29.94	19.62	-0.125			
245	23.37	25.82	18.38	28.72	16.38	-0.115			
246	21.85	18.41	13.11	26.19	11.71	0.137			
247	20.58	18.29	13.34	24.23	12.16	0.110			
248	18.90	16.24	12.36	21.83	11.89	0.155			
249	14.47	11.98	7.97	16.47	8.17	0.173			
250	15.69	17.82	12.48	17.82	11.08	-0.183			

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT AT 0.5 METER TEMPERATURE (C)	SEDIMENT AT 1 METER TEMPERATURE (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]		
236	21.44	17.19	14.65	6.63	7.02	408.9	736.8		
237	21.29	17.13	14.66	7.33	7.75	482.9	728.2		
238	22.12	17.14	14.69	3.33	3.87	476.3	694.2		
239	22.90	17.17	14.71	3.79	4.26	445.1	697.2		
240	22.88	17.23	14.72	3.14	3.70	489.3	714.1		
241	22.18	17.31	14.73	5.68	6.24	176.7	708.4		
242	21.18	17.39	14.76	2.28	3.27	489.1	671.4		
243	22.03	17.44	14.79	5.47	5.78	459.7	679.5		
244	22.61	17.46	14.83	6.33	6.74	478.1	706.0		
245	23.44	17.49	14.87	8.72	9.25	413.9	719.3		
246	21.98	17.54	14.88	4.73	5.40	472.7	612.8		
247	20.47	17.61	14.89	4.01	4.43	350.1	653.0		
248	19.04	17.66	14.95	8.21	8.87	263.5	635.2		
249	14.65	17.57	14.97	10.90	11.79	184.2	594.8		
250	15.83	17.36	15.01	8.37	8.86	465.9	633.9		

Table 1. --Summary of 1983 energy budget data --Continued

DAILY AVERAGES AT RAFT STATION									
JULIAN DAY	LAKE-SURFACE WATER TEMPERATURE (C)	DRY-BULB AIR TEMPERATURE (C)	WET-BULB AIR TEMPERATURE (C)	WATER VAPOR PRESSURE (mb)	ATMOSPHERIC VAPOR PRESSURE (mb)	BOWEN RATIO			
251	17.99	18.54	16.47	20.62	17.41	-0.099			
252	17.75	16.52	14.06	20.31	14.48	0.122			
253	16.66	12.17	8.36	18.96	8.58	0.250			
254	13.21	7.11	6.64	15.18	9.48	0.619			
255	11.77	7.75	7.28	13.81	9.91	0.597			
256	13.28	8.96	6.88	15.25	8.62	0.377			
257	11.43	9.34	8.57	13.50	10.66	0.425			
258	11.72	10.88	10.36	13.76	12.24	0.320			
259	12.38	10.35	8.98	14.37	10.59	0.310			
260	12.47	11.83	9.52	14.46	10.42	0.092			
261	10.99	8.75	4.83	13.11	6.16	0.186			
262	8.94	4.34	2.60	11.43	6.28	0.517			
263	6.42	3.77	1.54	9.63	5.43	0.365			

DAILY AVERAGES AT RAFT STATION					DAILY TOTALS AT LAND STATION		
JULIAN DAY	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT AT 0.5 METER TEMPERATURE (C)	SEDIMENT AT 1 METER TEMPERATURE (C)	WIND SPEED AT 2 METERS (mi/h)	WIND SPEED AT 3 METERS (mi/h)	SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]
251	18.03	17.04	15.04	8.36	8.85	155.0	714.5
252	17.82	16.79	15.02	7.19	7.68	381.9	667.8
253	16.96	16.63	14.95	9.88	10.37	469.9	542.7
254	13.34	16.49	14.88	4.32	4.81	62.1	619.4
255	11.82	16.28	14.84	2.60	3.09	146.5	623.0
256	12.88	15.92	14.79	2.82	3.32	429.9	523.2
257	11.53	15.52	14.69	10.33	10.82	70.0	628.5
258	11.83	15.20	14.63	7.41	7.90	97.5	681.0
259	12.49	14.89	14.50	5.77	6.26	215.5	623.3
260	12.55	14.64	14.38	8.63	9.12	219.7	619.2
261	11.26	14.42	14.23	11.03	11.52	423.1	519.7
262	9.16	14.21	14.08	9.91	10.40	93.9	580.2
263	6.64	13.96	13.96	13.89	14.38	189.7	567.3



Footnotes to table 1:

1. Calculated by regression equation 1 (see below), which was determined by using air-temperature data from the hygromograph and the dry-bulb sensor connected to the digital data logger.
2. Calculated by regression equation 2 (see below), which was determined by using humidity data from the hygromograph, the psychrometric tables, and the wet-bulb sensor connected to the digital data logger.
3. Calculated by regression equation 3 (see below), which was determined by using wind data from the totalizing anemometer and the 2-meter anemometer connected to the digital data logger.
4. Calculated using Brunt's equation (Koberg, 1964).

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Regression	Data points	r <sup>2</sup> value
1. $Y = - 0.429 + 0.955X$	16	0.996
2. $Y = - 1.291 + 1.031X$	20	.969
3. $Y = 0.499 + 0.999X$	24	.996

Table 2.--Summary of 1983 temperature data at the raft station  
 [C, degrees Celsius; h, hour; blank, no data]

JULIAN DAY	DAILY AVERAGE LAKE-SURFACE WATER TEMPERATURE (C)		DAILY AVERAGE LAKE-BOTTOM WATER TEMPERATURE (C)		DAILY AVERAGE SEDIMENT TEMPERATURE AT 0.5 METER (C)		DAILY AVERAGE SEDIMENT TEMPERATURE AT 1 METER (C)		DAILY AVERAGE DRY BULB TEMPERATURE (C)		MAXIMUM DRY BULB TEMPERATURE (C)		TIME OF MAXIMUM DRY BULB TEMPERATURE (h)		MINIMUM DRY BULB TEMPERATURE (C)		TIME OF MINIMUM DRY BULB TEMPERATURE (h)		DAILY AVERAGE WET BULB TEMPERATURE (C)	
	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)
138	12.410	12.580	6.488	5.758	11.750	18.140	12.45	5.482	0520	10.270										
139	12.300	12.330	6.692	5.770	7.054	14.540	1136	1.259	0421	5.563										
140	12.010	12.040	6.991	5.814	8.290	16.120	1508	1.347	0501	6.808										
141	13.120	13.280	7.229	5.878	12.720	21.660	1451	6.625	0501	11.270										
142	13.700	13.900	7.468	5.943	10.140	17.700	1451	3.458	0524	8.690										
143	15.370	15.290	7.746	6.055	15.150	22.100	1849	6.977	0015	13.760										
144	15.550		8.050	6.151	8.790	12.950	1408	4.514	0805	4.645										

JULIAN DAY	DAILY AVERAGE LAKE-SURFACE WATER TEMPERATURE (C)		DAILY AVERAGE LAKE-BOTTOM WATER TEMPERATURE (C)		DAILY AVERAGE SEDIMENT TEMPERATURE AT 0.5 METER (C)		DAILY AVERAGE SEDIMENT TEMPERATURE AT 1 METER (C)		DAILY AVERAGE DRY BULB TEMPERATURE (C)		MAXIMUM DRY BULB TEMPERATURE (C)		TIME OF MAXIMUM DRY BULB TEMPERATURE (h)		MINIMUM DRY BULB TEMPERATURE (C)		TIME OF MINIMUM DRY BULB TEMPERATURE (h)		DAILY AVERAGE WET BULB TEMPERATURE (C)	
	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)	LAKE-BOTTOM WATER TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	SEDIMENT TEMPERATURE (C)	LAKE-SURFACE WATER TEMPERATURE (C)
145	15.340		8.380	6.279	11.280	18.850	1847	2.843	0435	4.145										
146	15.680		8.700	6.434	17.130	26.060	1808	9.790	0727	9.290										
147	18.250		8.970	6.565	18.610	25.880	1609	11.550	0224	11.520										
148	18.170		9.300	6.725	14.690	20.430	1451	5.833	2358	7.157										
149	13.840		9.650	6.860	8.700	14.800	1734	3.370	0402	3.565										
150	12.370		9.890	7.030	7.762	12.070	1614	3.810	0450	4.141										
151	12.940		9.960	7.214	11.050	16.210	1350	5.394	0514	5.426										
152	15.230	15.310	9.930	7.371	14.090	19.460	1734	8.910	0438	7.153										
153	15.990	16.180	9.940	7.501	13.150	18.320	1714	6.977	0500	8.350										
154	16.720	16.910	10.070	7.614	13.080	21.130	1358	5.570	0324	7.292										
155	14.330	14.550	10.260	7.717	8.550	11.630	1527	4.426	2400	4.972										
156	13.250	13.440	10.440	7.831	8.720	15.940	1644	1.875	0443	3.911										
157	14.680	14.840	10.490	7.950	13.100	20.250	1709	4.074	0454	5.846										
158	16.950	16.820	10.510	8.070	16.480	24.830	1525	4.514	0345	8.280										

Table 2.--Summary of 1983 temperature data at the raft station--continued

JULIAN DAY	DAILY AVERAGE LAKE-SURFACE WATER TEMPERATURE (c)		DAILY AVERAGE LAKE-BOTTOM WATER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 0.5 METER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 1 METER TEMPERATURE (c)		DAILY AVERAGE DRY BULB AIR TEMPERATURE (c)		MAXIMUM DRY BULB AIR TEMPERATURE (c)		MINIMUM DRY BULB AIR TEMPERATURE (c)		TIME OF DRY BULB AIR TEMPERATURE (h)		DAILY AVERAGE WET BULB AIR TEMPERATURE (c)	
	LAKE-SURFACE WATER TEMPERATURE	LAKE-BOTTOM WATER TEMPERATURE	LAKE-SURFACE WATER TEMPERATURE	LAKE-BOTTOM WATER TEMPERATURE	SEDIMENT AT 0.5 METER TEMPERATURE	SEDIMENT AT 1 METER TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	MAXIMUM DRY BULB AIR TEMPERATURE	MAXIMUM DRY BULB AIR TEMPERATURE	MINIMUM DRY BULB AIR TEMPERATURE	MINIMUM DRY BULB AIR TEMPERATURE	TIME OF DRY BULB AIR TEMPERATURE	TIME OF DRY BULB AIR TEMPERATURE	WET BULB AIR TEMPERATURE	WET BULB AIR TEMPERATURE
159	18.560	18.610	10.610	8.160	15.630	21.840	1709	9.440	2345	9.490								
160	18.840	19.040	10.820	8.260	18.240	24.830	1331	8.640	0106	9.140								
161	19.840	19.710	11.100	8.360	21.510	28.960	1755	13.480	0432	13.670								
162	20.550	20.740	11.370	8.480	20.190	25.270	1432	17.000	2358	14.870								
163	20.340	20.520	11.690	8.600	19.320	25.800	1516	14.010	2400	15.120								
164	18.930	19.130	12.010	8.740	13.890	18.580	1751	10.230	2258	10.340								
165	19.020	19.190	12.270	8.890	15.590	22.630	1409	9.700	0526	9.500								
166	16.180	16.380	12.460	9.040	10.470	13.750	1704	6.009	2400	6.060								
167	16.820	16.480	12.570	9.210	11.490	19.110	1720	1.963	0441	6.075								
168	18.150	18.340	12.560	9.360	14.820	22.100	1623	6.361	0420	11.720								
169	18.300	18.510	12.570	9.490														
170	18.260	18.410	12.670	9.620														
171	20.490	19.990	12.790	9.720														
172	22.730	22.050	12.920	9.830														

JULIAN DAY	DAILY AVERAGE LAKE-SURFACE WATER TEMPERATURE (c)		DAILY AVERAGE LAKE-BOTTOM WATER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 0.5 METER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 1 METER TEMPERATURE (c)		DAILY AVERAGE DRY BULB AIR TEMPERATURE (c)		MAXIMUM DRY BULB AIR TEMPERATURE (c)		MINIMUM DRY BULB AIR TEMPERATURE (c)		TIME OF DRY BULB AIR TEMPERATURE (h)		DAILY AVERAGE WET BULB AIR TEMPERATURE (c)	
	LAKE-SURFACE WATER TEMPERATURE	LAKE-BOTTOM WATER TEMPERATURE	LAKE-SURFACE WATER TEMPERATURE	LAKE-BOTTOM WATER TEMPERATURE	SEDIMENT AT 0.5 METER TEMPERATURE	SEDIMENT AT 1 METER TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	DRY BULB AIR TEMPERATURE	MAXIMUM DRY BULB AIR TEMPERATURE	MAXIMUM DRY BULB AIR TEMPERATURE	MINIMUM DRY BULB AIR TEMPERATURE	MINIMUM DRY BULB AIR TEMPERATURE	TIME OF DRY BULB AIR TEMPERATURE	TIME OF DRY BULB AIR TEMPERATURE	WET BULB AIR TEMPERATURE	WET BULB AIR TEMPERATURE
173	22.140	22.390	13.100	9.930	18.080	22.720	1619	12.870	2321	13.200								
174	22.890	23.080	13.370	10.050	20.830	26.940	1622	11.630	0452	14.490								
175	24.060	24.220	13.700	10.180	25.060	32.660	1544	17.620	0427	18.940								
176	24.670	24.280	14.030	10.330	23.540	27.820	1418	17.970	2344	20.390								
177	24.740	24.440	14.380	10.460	20.170	25.530	1246	13.750	0458	19.000								
178	22.830	22.510	14.670	10.620	16.600	22.540	1543	10.580	0520	15.290								
179	22.230	22.260	14.920	10.790	16.660	21.660	1438	10.230	0454	15.340								

Table 2.--Summary of 1983 temperature data at the raft station--continued

JULIAN DAY	DAILY AVERAGE LAKE-SURFACE WATER TEMPERATURE (c)		DAILY AVERAGE LAKE-BOTTOM WATER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 0.5 METER TEMPERATURE (c)		DAILY AVERAGE SEDIMENT AT 1 METER TEMPERATURE (c)		DAILY AVERAGE DRY BULB AIR TEMPERATURE (c)		MAXIMUM DRY BULB AIR TEMPERATURE (c)		TIME OF MAXIMUM DRY BULB AIR TEMPERATURE (h)		MINIMUM DRY BULB AIR TEMPERATURE (c)		TIME OF MINIMUM DRY BULB AIR TEMPERATURE (h)		DAILY AVERAGE WET BULB AIR TEMPERATURE (c)	
	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE
180	20.200	20.420	15.070	10.940	14.390	16.380	0042	12.600	1144	12.940	12.600	1144	12.940							
181	20.050	19.970	15.120	11.120	16.910	21.750	1531	12.690	0450	15.520	12.690	0450	15.520							
182	22.610	20.830	15.170	11.290	19.070	24.920	1507	11.630	0520	17.700	11.630	0520	17.700							
183	21.160	20.580	15.160	11.420	19.540	26.940	1554	14.890	2349	18.220	14.890	2349	18.220							
184	19.470	19.660	15.170	11.540	13.870					12.760			12.760							
185	17.820	17.910	15.170	11.640	14.050					13.020			13.020							
186	19.210	17.820	15.090	11.730	15.100					12.650			12.650							
187	21.640	19.200	15.010	11.830	22.720					19.120			19.120							
188	24.620	20.470	14.940	11.920	25.180					21.190			21.190							
189	26.080	21.120	14.930	11.970	25.100					22.880			22.880							
190	25.420	22.270	14.980	12.020	27.030					22.690			22.690							
191	25.500	23.430	15.070	12.070	25.290					19.570			19.570							
192	21.170	21.110	15.150	12.090	17.890					13.290			13.290							
193	22.570	21.030	15.280	12.160	23.480					16.520			16.520							
194	24.450	21.310	15.380	12.250	26.980					20.990			20.990							
195	25.920	22.300	15.460	12.310	27.450					20.760			20.760							
196	24.400	24.290	15.530	12.370	24.470					20.090			20.090							
197	24.120	23.080	15.630	12.430	19.570					15.110			15.110							
198	23.850	22.310	15.780	12.500	21.190					18.550			18.550							
199	23.670	21.840	15.960	12.600	22.520					19.550			19.550							
200	24.930	22.440	16.060	12.680	23.260					20.620			20.620							
201	24.320	22.680	16.130	12.760	22.800					20.730			20.730							
202	24.850	22.860	16.220	12.870	22.510					20.260			20.260							
203	25.050	22.760	16.270	12.940	21.940					16.650			16.650							
204	23.520	22.290	16.340	13.010	18.660					15.810			15.810							
205	24.040	21.650	16.420	13.100	20.010					16.450			16.450							
206	23.440	21.440	16.470	13.190	22.200					17.020			17.020							
207	22.960	22.340	16.490	13.260	22.960					19.160			19.160							

Table 3.-- Summary of 1983 wind-speed data at the raft station  
 [mi/h, miles per hour; h, hour; blank, no data]

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS (h)			DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)			DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			
	AVERAGE WIND SPEED AT 2 METERS (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	AVERAGE WIND SPEED (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	AVERAGE WIND SPEED (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	AVERAGE WIND SPEED (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	AVERAGE WIND SPEED (mi/h)	MAXIMUM WIND SPEED (h)	MINIMUM WIND SPEED (mi/h)	
138	10.06	22.10	1.02	1737	2347	1.02	10.43	19.05	1404	1.82	2400	7.17	15.39	1038	0.70	2010	19.05	1404	1.82
139	5.77	25.84	0.60	1530	1254	0.60	6.28	23.93	1441	0.70	0739	12.96	26.06	0856	0.85	2236	23.93	1441	0.70
140	5.61	21.03	0.60	1546	1646	0.60	5.96	18.19	1547	0.70	0530	7.73	17.18	1350	0.70	2347	18.19	1547	0.70
141	10.25	29.94	0.60	1749	2158	0.60	10.78	23.34	1030	0.85	1707	14.01	28.19	1722	0.70	0108	23.34	1030	0.85
142	9.98	24.03	0.60	1045	2246	0.60	10.40	20.17	1049	0.70	2231	12.10	21.96	0105	3.42	2249	20.17	1049	0.70
143	6.97	24.11	0.60	2106	2042	0.60	7.40	20.54	2106	0.70	2031	7.00	13.68	1334	3.98	0059	20.54	2106	0.70
144	8.96	22.16	0.60	0534	2234	0.60	9.41	18.79	0737	0.70	2054	6.10	14.91	1302	0.89	0309	18.79	0737	0.70
145	6.84	17.77	0.60	1010	2009	0.60	7.17	15.39	1038	0.70	2010	7.17	15.39	1038	0.70	2010	15.39	1038	0.70
146	12.55	33.25	0.60	0855	2237	0.60	12.96	26.06	0856	0.85	2236	12.96	26.06	0856	0.85	2236	26.06	0856	0.85
147	7.35	22.16	0.57	1252	2353	0.57	7.73	17.18	1350	0.70	2347	7.73	17.18	1350	0.70	2347	17.18	1350	0.70
148	13.51	32.94	0.57	1534	2134	0.57	14.01	28.19	1722	0.70	0108	14.01	28.19	1722	0.70	0108	28.19	1722	0.70
149	11.67	26.89	2.61	0826	2326	2.61	12.10	21.96	0105	3.42	2249	12.10	21.96	0105	3.42	2249	21.96	0105	3.42
150	11.42	23.66	3.29	1428	2104	3.29	11.80	20.46	1334	3.98	0059	11.80	20.46	1334	3.98	0059	20.46	1334	3.98
151	6.63	16.27	0.60	1215	2350	0.60	7.00	13.68	1219	0.70	2130	7.00	13.68	1219	0.70	2130	13.68	1219	0.70
152	5.76	16.90	0.60	1120	0528	0.60	6.10	14.91	1302	0.89	0309	6.10	14.91	1302	0.89	0309	14.91	1302	0.89
153	9.05	24.14	0.60	0901	2348	0.60	9.38	20.46	1045	1.15	2217	9.38	20.46	1045	1.15	2217	20.46	1045	1.15
154	9.19	28.75	0.60	1910	0528	0.60	9.78	23.90	1917	0.96	0250	9.78	23.90	1917	0.96	0250	23.90	1917	0.96
155	10.73	22.27	0.60	0412	2400	0.60	11.13	21.14	0413	1.71	2400	11.13	21.14	0413	1.71	2400	21.14	0413	1.71
156	5.12	18.57	0.60	1707	2359	0.60	5.50	17.78	1350	0.70	2400	5.50	17.78	1350	0.70	2400	17.78	1350	0.70
157	7.45	24.37	0.60	1041	2400	0.60	7.91	21.47	1049	0.70	2233	7.91	21.47	1049	0.70	2233	21.47	1049	0.70
158	5.33	20.32	0.60	1213	2001	0.60	5.91	15.43	1213	0.70	0521	5.91	15.43	1213	0.70	0521	15.43	1213	0.70

Table 3. --Summary of 1983 wind-speed data at the raft station --Continued

JULIAN DAY	DAILY WIND SPEED AT 2 METERS AT 2 METERS			DAILY WIND SPEED AT 3 METERS AT 3 METERS			DAILY WIND SPEED AT 2 METERS AT 2 METERS			DAILY WIND SPEED AT 3 METERS AT 3 METERS		
	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)
159	7.91	22.56	1255	8.33	18.11	1255	8.33	18.11	1255	0.70	2334	0.70
160	9.33	25.02	1452	9.75	21.28	1346	9.75	21.28	1346	0.70	0046	0.70
161	7.49	20.63	1336	7.79	15.58	1335	7.79	15.58	1335	1.89	1947	1.89
162	13.84	29.66	1740	14.27	26.95	1740	14.27	26.95	1740	5.10	0010	5.10
163	10.10	20.94	1508	10.51	19.87	1448	10.51	19.87	1448	2.94	0615	2.94
164	8.48	22.08	1003	8.80	16.70	1233	8.80	16.70	1233	0.70	2250	0.70
165	8.86	31.78	1539	9.33	27.40	1535	9.33	27.40	1535	0.81	0046	0.81
166	11.59	24.62	0841	11.92	20.24	0712	11.92	20.24	0712	2.30	2400	2.30
167	3.99	12.14	1552	4.43	11.51	1136	4.43	11.51	1136	0.70	0530	0.70
168	7.08	19.36	1623	7.44	14.98	1540	7.44	14.98	1540	2.19	0208	2.19
169	12.09	31.16	1410	12.47	24.08	1059	12.47	24.08	1059	2.97	0258	2.97
170	12.12	26.66	1947	12.57	21.92	1948	12.57	21.92	1948	3.01	2219	3.01
171	7.04	20.60	1033	7.51	22.25	0630	7.51	22.25	0630	0.77	0237	0.77
172	8.95	22.64	1224	9.50	37.51	1036	9.50	37.51	1036	0.77	0102	0.77

JULIAN DAY	DAILY WIND SPEED AT 2 METERS AT 2 METERS			DAILY WIND SPEED AT 3 METERS AT 3 METERS			DAILY WIND SPEED AT 2 METERS AT 2 METERS			DAILY WIND SPEED AT 3 METERS AT 3 METERS		
	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)	AVERAGE (mi/h)	MAXIMUM (mi/h)	TIME OF MAXIMUM (h)
173	9.02	45.56	0004	9.90	38.89	0005	9.90	38.89	0005	0.70	2322	0.70
174	7.26	19.24	1436	7.77	16.92	1254	7.77	16.92	1254	0.70	0534	0.70
175	13.20	28.64	1800	13.59	23.26	1710	13.59	23.26	1710	4.36	0532	4.36
176	9.39	21.25	0721	9.73	17.67	0008	9.73	17.67	0008	2.60	2240	2.60
177	5.05	16.84	1632	5.54	14.12	1601	5.54	14.12	1601	0.89	0846	0.89
178	6.88	16.47	1158	7.38	13.56	0712	7.38	13.56	0712	1.30	2012	1.30
179	6.37	15.03	1641	6.97	13.64	2257	6.97	13.64	2257	2.23	0602	2.23

Table 3. --Summary of 1983 wind-speed data at the raft station --Continued

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS			DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS			DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS			DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS			DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS			DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS		
	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)
180	5.24	14.26	0946	0.60	0.60	0033	5.68	12.44	0906	1.60	0042							
181	6.88	19.24	1423	0.57	0.57	2201	7.56	17.82	1341	0.70	2257							
182	4.35	13.44	2336	0.54	0.54	0316	4.96	11.44	2046	0.70	0420							
183	6.90	25.73	0932	0.60	0.60	2400	7.51	22.25	0937	0.70	2229							
184	6.72	21.79	1443	0.60	0.60	0854	7.53	17.93	1426	0.81	0036							
185	10.21	26.09	1026	0.60	0.60	2340	10.76	20.69	0824	0.77	2207							
186	6.94	18.42	1250	0.57	0.57	0025	7.36	14.76	1458	1.22	0026							
187	8.49	19.16	1637	2.75	2.75	2355	8.84	15.54	1418									
188	6.41	16.44	0912	0.57	0.57	2238												
189	5.18	13.39	0926	0.37	0.37	0528												
190	10.60	25.95	1550	4.00	4.00	0402												
191	10.74	25.67	2333	2.47	2.47	0602												
192	10.78	25.39	1216	0.57	0.57	2227												
193	8.46	25.22	1413	0.60	0.60	0144												

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS			DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS			DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS			DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS			DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS			DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS		
	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)	(mi/h)	(mi/h)	(h)
194	8.30	19.61	0102	0.60	0.60	2400	8.79											
195	7.77	21.88	1631	0.60	0.60	0540	8.26											
196	11.98	28.75	1323	2.04	2.04	1919	12.47											
197	6.86	18.31	1006	0.60	0.60	2056	7.36											
198	5.33	16.39	2356	0.57	0.57	2219	5.83											
199	7.75	28.16	0033	0.60	0.60	2303	8.24											
200	5.21	36.14	0950	0.60	0.60	2108	5.70											
201	7.95	22.84	0351	0.97	0.97	0520	8.53	19.83	0614	2.01	0521							
202	6.77	21.31	1222	0.57	0.57	2200	7.15	17.22	1154	0.70	2215							
203	3.79	13.78	1650	0.57	0.57	2243	4.26	12.41	1627	0.70	2317							
204	4.40	15.88	1312	0.57	0.57	2028	4.77	13.27	1021	0.70	2334							
205	2.93	12.54	1210	0.60	0.60	2349	3.44	8.60	1207	0.70	0520							
206	6.72	20.72	1408	0.60	0.60	0031	7.11	16.29	1549	1.56	0037							
207	9.74	35.01	1857	0.60	0.60	1923	10.16	35.09	1856	0.70	1827							

Table 3. --Summary of 1983 wind-speed data at the raft station --Continued

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS (mi/h)		DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS (mi/h)		DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS (h)		DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS (mi/h)		DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (mi/h)		DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)		DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)	
	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM
208	5.25	0854	0.60	2254	5.69	19.61	0.70	0834	0.70	2121				
209	5.45	0124	0.57	2201	6.05	21.96	0.70	0129	0.70	2218				
210	3.53	1242	0.60	0735	3.95	8.49	0.89	1151	0.89	0259				
211	5.79	1657	0.60	2349	6.22	18.19	0.70	0053	0.70	2313				
212	5.36	19.22	0.60	2400	5.73	15.99	0.70	0956	0.70	2356				
213	5.68	16.30	0.57	0608	6.08	14.38	0.70	1333	0.70	0358				
214	5.13	16.44	0.57	2138	5.52	18.67	0.70	0139	0.70	2400				
215	2.07	1431	0.57	0247	2.52	7.97	0.70	1535	0.70	0741				
216	4.70	15.28	0.57	0217	5.06	12.67	0.70	1107	0.70	0406				
217	3.54	11.43	0.60	2358	4.06	10.99	0.70	1438	0.70	0528				
218	5.65	13.90	0.60	0555	6.03	13.75	0.77	1527	0.77	0057				
219	11.01	28.44	0.60	2358	11.48	20.87	0.77	1115	0.77	2243				
220	4.06	15.96	0.60	2036	4.50	9.91	1.11	1207	1.11	2015				
221	7.29	1329	0.60	2336	7.71	19.12	1.30	1359	1.30	2333				

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS (mi/h)		DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS (mi/h)		DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS (h)		DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS (mi/h)		DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (mi/h)		DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)		DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)	
	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	WIND SPEED	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM
222	8.04	0756	0.60	2339	8.38	17.85	0.70	1303	0.70	2310				
223	4.76	1643	0.60	1952	5.15	12.67	0.70	1644	0.70	0442				
224	9.64	0751	0.60	2108	10.06	20.35	1.18	0944	1.18	2106				
225	6.97	1319	0.57	2344	7.28	16.92	0.70	0754	0.70	2400				
226	5.58	18.17	0.57	0155	5.79	18.04	0.70	2332	0.70	0736				
227	4.57	23.83	0.57	2037	4.96	19.53	0.70	0243	0.70	2109				
228	5.22	15.57	0.57	2215	5.64	12.56	0.70	1016	0.70	2400				
229	6.64	15.44	0.57	0433	6.83	17.74	0.70	1352	0.70	0455				
230	7.22	1029	0.34	2221	7.75	18.04	0.70	1030	0.70	2100				
231	7.18	24.76	0.57	2333	7.71	22.40	0.70	0433	0.70	2137				
232	6.04	19.24	0.60	2345	6.57	19.01	0.92	0811	0.92	2218				
233	5.86	23.83	0.40	0612	6.57	17.48	0.70	1257	0.70	2400				
234	3.45	15.85	0.32	1406	5.35	14.24	0.70	1621	0.70	0656				
235	6.68	17.15	0.57	2005	7.08	15.35	1.07	1451	1.07	2006				



Table 3. --Summary of 1983 wind-speed data at the raft station --Continued

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS (h)			DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)		
	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM
236	6.63	1846	0.60	26.24	1846	0.60	7.02	0608	21.28	1845	0.70	0547						
237	7.33	0041	0.60	17.38	0041	0.60	7.75	2302	15.62	2127	0.70	2259						
238	3.33	0035	0.60	13.90	0035	0.60	3.87	2034	12.33	0105	0.70	0638						
239	3.79	0948	0.49	13.90	0948	0.49	4.26	2118	11.96	1030	0.70	2117						
240	3.14	0848	0.57	13.22	0848	0.57	3.70	0326	9.98	1321	0.70	0653						
241	5.68	2338	0.60	23.38	0458	0.60	6.24	2400	20.73	0504	0.70	1142						
242	2.28	0801	0.37	9.54	0801	0.37	3.27	2117	8.34	0800	0.70	0410						
243	5.47	0843	0.57	16.90	0843	0.57	5.78	0526	13.23	0844	0.70	0503						
244	6.33	0328	0.57	21.71	0328	0.57	6.74	1920	22.55	0333	0.70	1900						
245	8.72	2952	0.60	29.52	1305	0.60	9.25	2359	25.16	1527	0.70	0349						
246	4.73	2072	0.57	20.72	1330	0.57	5.40	2038	17.63	1330	0.70	2400						
247	4.01	2069	0.49	20.69	1057	0.49	4.43	0725	16.92	1104	0.70	1912						
248	8.21	2836	0.60	28.36	1527	0.60	8.87	2108	44.82	1623	0.85	1959						
249	10.90	3518	0.57	35.18	1212	0.57	11.79	2339	28.93	1224	0.70	2400						
250	8.37	2479	0.57	24.79	1126	0.57		0305										

JULIAN DAY	DAILY AVERAGE WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY MINIMUM WIND SPEED AT 2 METERS AT 2 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 2 METERS AT 2 METERS (h)			DAILY AVERAGE WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			DAILY MINIMUM WIND SPEED AT 3 METERS AT 3 METERS (mi/h)			DAILY MAXIMUM WIND SPEED AT 3 METERS AT 3 METERS (h)		
	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM	WIND SPEED	TIME OF MAXIMUM	TIME OF MINIMUM
251	8.36	1710	0.60	26.12	1710	0.60	8.85	1053										
252	7.19	0847	0.60	19.41	0847	0.60	7.68	2036										
253	9.88	0000	0.00	0.00	0000	0.00	10.37	0000										
254	4.32	1396	0.57	13.96	1130	0.57	4.81	2337										
255	2.60	1739	0.57	14.58	1739	0.57	3.09	0615										
256	2.82	1022	0.60	10.22	1525	0.60	3.32	2015										
257	10.33	2578	2.07	25.78	2003	2.07	10.82	2342										
258	7.41	1848	1.31	18.71	1848	1.31	7.90	0003										
259	5.77	1823	0.60	18.23	2331	0.60	6.26	0829										
260	8.63	2142	0.60	21.42	0253	0.60	9.12	1950										
261	11.03	2788	0.60	27.88	1334	0.60	11.52	2341										
262	9.91	2191	1.56	21.91	2052	1.56	10.40	0230										
263	13.89	2853	5.18	28.53	1415	5.18	14.38	2024										

Table 4. --Summary of 1983 radiation data at the land station  
 [(cal/cm<sup>2</sup>)/d, calories per square centimeter per day; (cal/cm<sup>2</sup>)min,  
 calories per square centimeter per minute; h, hour; blank, no data]

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	MAXIMUM SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)
159	718.9			616.7				
160	597.6			656.4				
161	630.9			726.4				
162	460.2			738.6				
163	335.0			763.0				
164	360.4			671.1				
165	597.1			613.1				
166	355.0			593.5				
167	733.6			537.3				
168	746.1			545.2				
169	479.9			655.3				
170	220.6			745.7				
171	496.0			732.5				
172	555.7			754.1				

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/d]	MAXIMUM SHORT-WAVE SOLAR RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/d]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(cal/cm <sup>2</sup> )/min]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)
173	709.5			642.0				
174	691.0			691.7				
175	678.0			722.3				
176	651.9			686.6				
177	673.3			597.3				
178	589.3			579.5				
179	590.7	1.439	1221	579.5	0.498	0.739	0.321	0509

Table 4. --Summary of 1983 radiation data at the land station --Continued

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
180	87.0	0.284	1527					
181	519.9	1.645	1226					
182	646.7	1.314	1213					
183	199.6	1.349	1507					
184	153.8	1.694	1042					
185	429.6	1.594	1246					
186	629.7	1.455	1234					
187	633.4	1.448	1352					
188	556.8	1.462	1042					
189	472.8	1.402	1458					
190	578.4	1.435	1124					
191	651.9	1.229	1239					
192	660.7	1.662	1228					
193	664.0	1.265	1245					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION	MAXIMUM SHORT-WAVE SOLAR RADIATION	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION	DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION
	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /d)]	[(cal/cm <sup>2</sup> /min)]	(h)	[(cal/cm <sup>2</sup> /min)]	(h)
194	641.0	1.233	1243					
195	642.2	1.236	1303					
196	578.4	1.650	1209					
197	638.7	1.268	1245					
198	409.5	1.444	1404					
199	465.7	1.597	1050					
200	487.6	1.522	1110					
201	410.1	1.630	1237					
202	477.4	1.504	1134					
203	640.7	1.496	1324					
204	506.0	1.839	1200					
205	457.3	1.546	1215					
206	597.4	1.315	1317					
207	467.5	1.665	1114					

Table 4. --Summary of 1983 radiation data at the land station --Continued

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)		DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		
208	528.2	728.7	1.391	0.565	1226	0759	728.7	0.472	0.565	0759	0237					
209	551.5	717.5	1.509	.559	1102	0125	717.5	.454	.559	0125	2355					
210	356.5	697.7	1.110	.548	1528	1134	697.7	.427	.548	1134	0453					
211	579.3	697.5	1.323	.548	1153	1432	697.5	.403	.548	1432	2325					
212	609.6	627.9	1.355	.495	1242	1344	627.9	.388	.495	1344	0513					
213	604.7	678.2	1.234	.516	1218	1717	678.2	.432	.516	1717	0714					
214	514.5	750.7	1.163	.593	1227	1554	750.7	.461	.593	1554	2342					
215	585.3	729.6	1.166	.535	1258	1559	729.6	.451	.535	1559	0120					
216	572.0	728.1	1.180	.552	1246	1855	728.1	.457	.552	1855	0523					
217	548.2	736.6	1.163	.557	1139	1436	736.6	.465	.557	1436	0510					
218	572.7	723.8	1.161	.557	1248	1420	723.8	.458	.557	1420	0545					
219	581.1	720.8	1.204	.575	1245	1755	720.8	.435	.575	1755	2400					
220	581.1	649.5	1.200	.516	1247	1956	649.5	.392	.516	1956	0535					
221	349.3	735.9	1.601	.559	1307	1738	735.9	.464	.559	1738	2358					

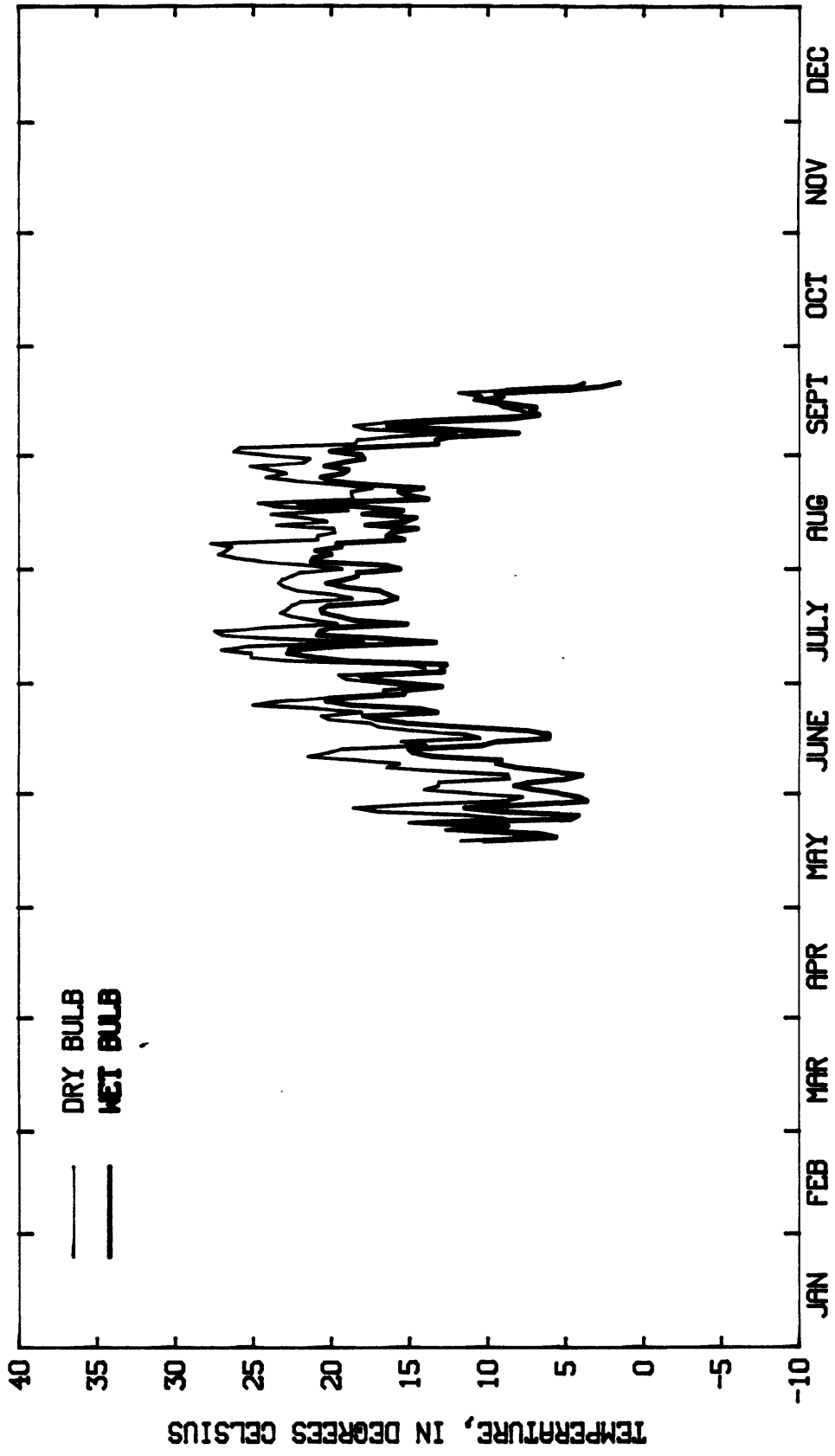
JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)		DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		
222	586.3	649.8	1.378	0.519	1156	1146	649.8	0.398	0.519	1146	2352					
223	593.1	623.2	1.190	.477	1248	1340	623.2	.380	.477	1340	0455					
224	534.5	712.2	1.126	.557	1255	1742	712.2	.432	.557	1742	0343					
225	584.4	626.3	1.192	.472	1236	1400	626.3	.401	.472	1400	2356					
226	573.5	662.9	1.178	.535	1239	2331	662.9	.399	.535	2331	0021					
227	539.0	712.4	1.141	.537	1237	1710	712.4	.431	.537	1710	0527					
228	341.5	710.7	1.496	.543	1246	1220	710.7	.416	.543	1220	2400					
229	477.5	711.5	1.234	.559	1206	1526	711.5	.414	.559	1526	0001					
230	357.0	776.0	1.459	.604	1320	1320	776.0	.468	.604	1320	0035					
231	417.2	660.5	1.556	.549	1338	0004	660.5	.399	.549	0004	0848					
232	243.9	735.8	1.301	.553	1103	1850	735.8	.469	.553	1850	1036					
233	528.1	652.9	1.245	.508	1201	0619	652.9	.392	.508	0619	2400					
234	298.9	688.1	1.506	.531	1215	1349	688.1	.390	.531	1349	0021					
235	300.0	726.1	1.393	.557	1200	1629	726.1	.427	.557	1629	0441					

Table 4. --Summary of 1983 radiation data at the land station --Continued

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)		DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
236	408.9	408.9	1.135	736.8	1444	1442	0.611	736.8	0.611	1442	0.457	0.457	0.457	0.457	0400	
237	482.9	482.9	1.136	728.2	1301	1840	.586	728.2	.586	1840	.428	.428	.428	.428	0603	
238	476.3	476.3	1.163	694.2	1118	1847	.550	694.2	.550	1847	.423	.423	.423	.423	0556	
239	445.1	445.1	1.286	697.2	1203	0112	.524	697.2	.524	0112	.438	.438	.438	.438	0540	
240	489.3	489.3	1.058	714.1	1237	1425	.539	714.1	.539	1425	.434	.434	.434	.434	0442	
241	176.7	176.7	.949	708.4	1514	1516	.563	708.4	.563	1516	.427	.427	.427	.427	2348	
242	489.1	489.1	1.053	671.4	1237	1345	.504	671.4	.504	1345	.413	.413	.413	.413	0236	
243	459.7	459.7		679.5				679.5								
244	478.1	478.1	1.038	706.0	1228	1329	.552	706.0	.552	1329	.447	.447	.447	.447	0157	
245	413.9	413.9	1.258	719.3	1211	1436	.576	719.3	.576	1436	.423	.423	.423	.423	2349	
246	472.7	472.7	1.234	612.8	1214	1248	.476	612.8	.476	1248	.383	.383	.383	.383	0555	
247	350.1	350.1	1.289	635.2	1150	1524	.520	635.2	.520	1524	.388	.388	.388	.388	0301	
248	263.5	263.5	1.293	594.8	1205	1205	.513	635.2	.513	1205	.357	.357	.357	.357	2306	
249	184.2	184.2		633.9				594.8								
250	465.9	465.9	1.081	633.9	1216	1942	.494	633.9	.494	1942	.380	.380	.380	.380	0006	

JULIAN DAY	DAILY TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)		DAILY TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]		MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)		MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]		TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /d)]	SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	TOTAL SHORT-WAVE SOLAR RADIATION [(col/cm <sup>2</sup> /min)]	MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	TIME-OF MAXIMUM SHORT-WAVE SOLAR RADIATION (h)	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	TOTAL LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /d)]	MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MAXIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	MINIMUM LONG-WAVE ATMOSPHERIC RADIATION [(col/cm <sup>2</sup> /min)]	TIME-OF MINIMUM LONG-WAVE ATMOSPHERIC RADIATION (h)	
251	155.0	155.0	1.051	714.5	1144	1319	0.557	714.5	0.557	1319	0.413	0.413	0.413	0.413	2119	
252	381.9	381.9	1.234	667.8	1031	2156	.524	667.8	.524	2156	.396	.396	.396	.396	0448	
253	469.9	469.9	1.084	542.7	1243	0016	.487	542.7	.487	0016	.324	.324	.324	.324	2341	
254	62.1	62.1	.390	619.4	1100	1334	.458	619.4	.458	1334	.321	.321	.321	.321	0011	
255	146.5	146.5	.873	623.0	1236	1233	.465	623.0	.465	1233	.365	.365	.365	.365	0003	
256	429.9	429.9	1.151	523.2	1245	1401	.425	523.2	.425	1401	.324	.324	.324	.324	0452	
257	70.0	70.0	.467	628.5	0956	1908	.483	628.5	.483	1908	.332	.332	.332	.332	0245	
258	97.5	97.5	.531	681.0	0841	0633	.483	681.0	.483	0633	.427	.427	.427	.427	0752	
259	215.5	215.5	1.182	623.3	1322	1322	.484	623.3	.484	1322	.366	.366	.366	.366	1924	
260	219.7	219.7	1.075	619.2	1114	1042	.476	619.2	.476	1042	.354	.354	.354	.354	2026	
261	423.1	423.1	1.103	519.7	1246	0010	.423	519.7	.423	0010	.302	.302	.302	.302	0643	
262	93.9	93.9	.396	580.2	1406	0100	.425	580.2	.425	0100	.333	.333	.333	.333	1928	
263	189.7	189.7	1.102	567.3	1300	1337	.424	567.3	.424	1337	.328	.328	.328	.328	1330	



1983  
 FIGURE 1. --DRY-BULB AND WET-BULB AIR TEMPERATURES AT THE RAFT STATION.

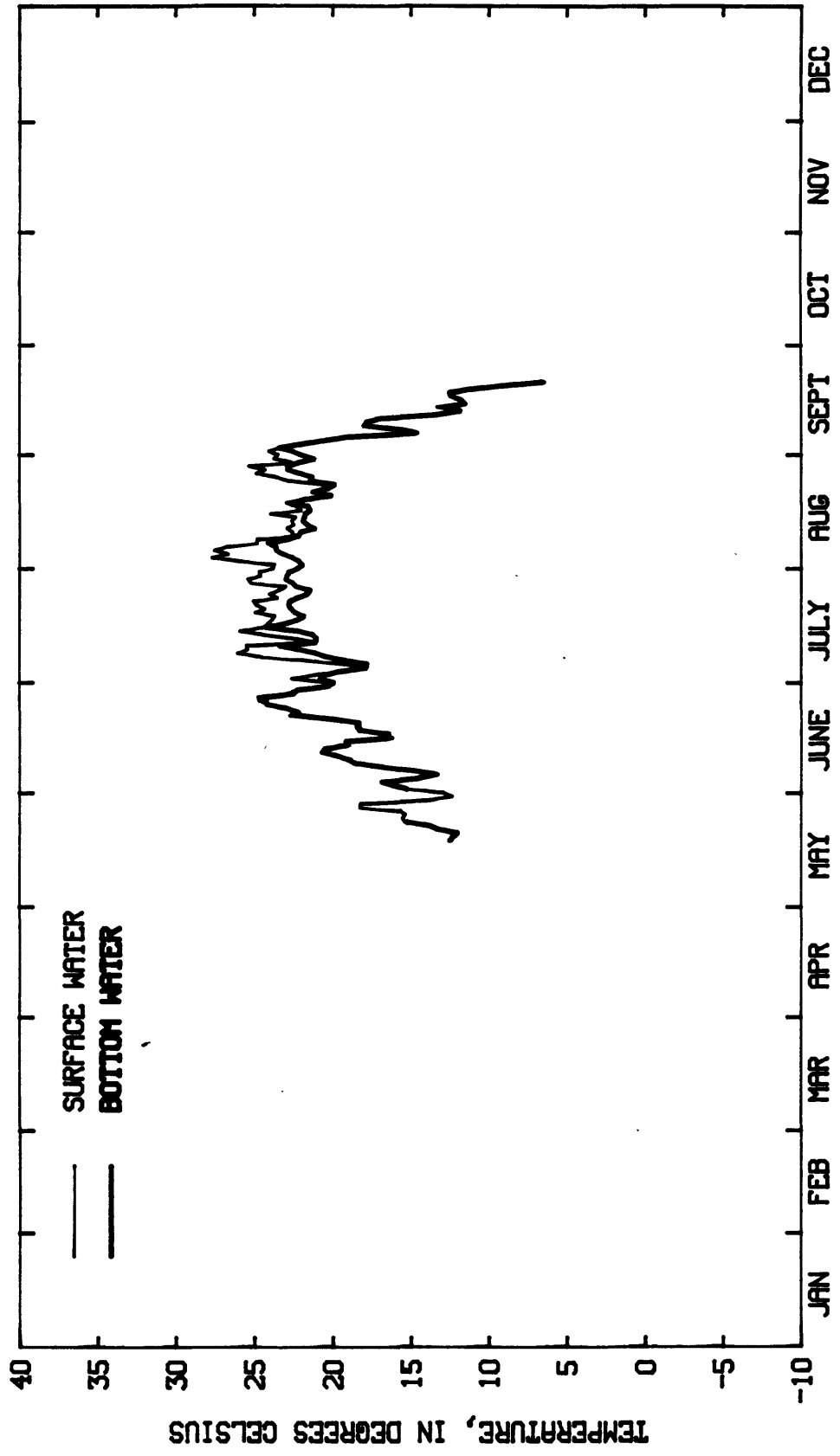


FIGURE 2. --TEMPERATURE OF WATER AT SURFACE AND AT 20 CM ABOVE LAKE BOTTOM AT THE RAFT STATION.

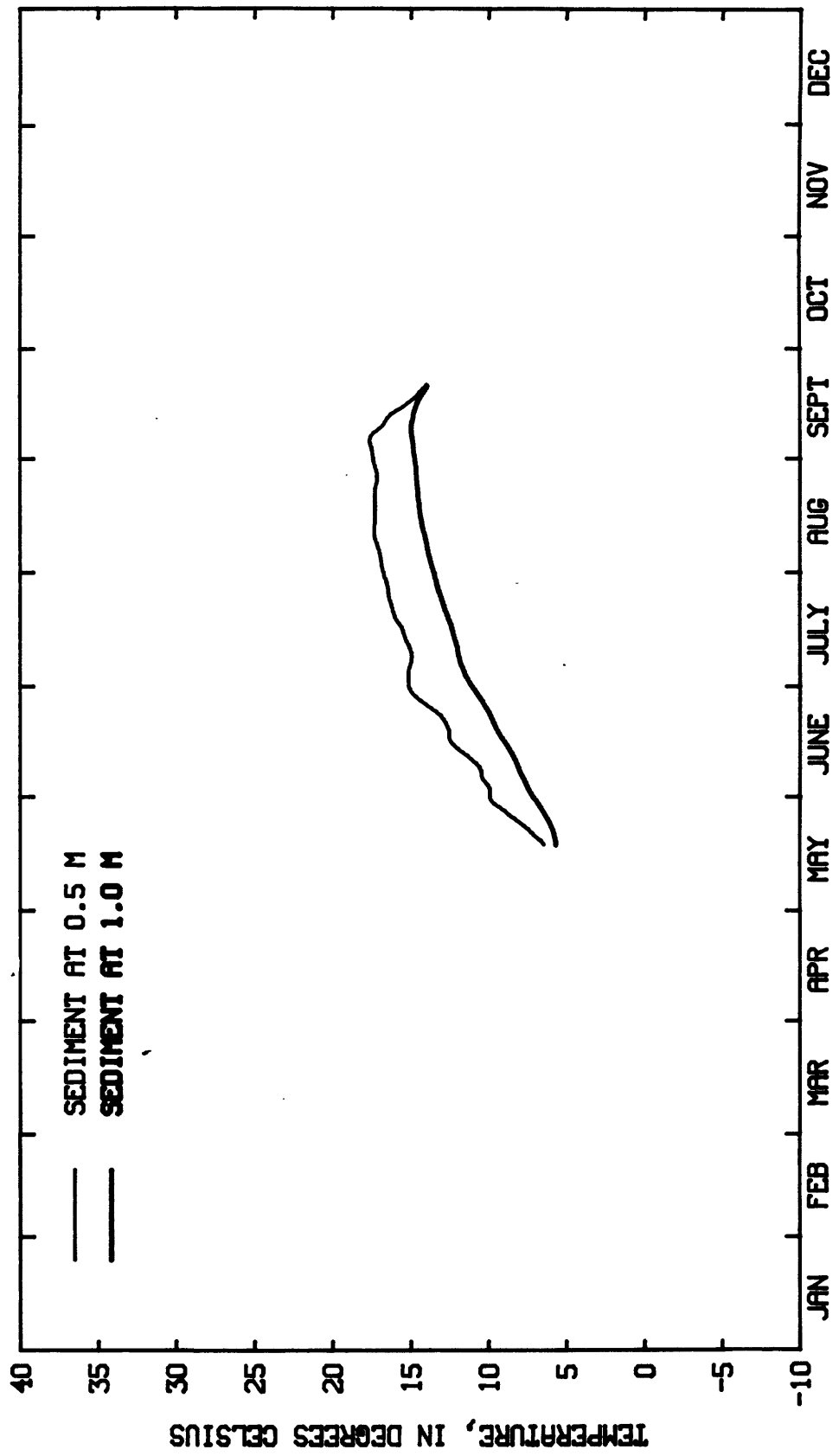


FIGURE 3. --TEMPERATURE OF SEDIMENT AT DEPTHS OF 0.5 AND 1.0 METER AT THE RAFT STATION.