

WOODS HOLE LABORATORY REFERENCE DOCUMENT NO. 86-02

A RECORD OF AIR AND SURFACE WATER TEMPERATURES IN
GREAT HARBOR, WOODS HOLE, MASSACHUSETTS 1962-1981

by

Charles L. Wheeler

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<i>David G. Mountain</i> (APPROVING OFFICIAL)
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National Marine Fisheries Service

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Woods Hole Laboratory

Woods Hole, Massachusetts 02543

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ABSTRACT

A 20-year record of air and water temperatures in Great Harbor, Woods Hole, has been compiled, beginning in 1962. The daily readings, taken at 0830, are presented in tabular form, together with the weekly, monthly, seasonal, and annual means. Figures are used to supplement the tables and to make direct comparisons between air and water temperatures throughout the year. The annual range of air and water temperatures is shown graphically by comparing weekly mean highs and lows with the 20-year mean for each of the 52 weeks. Comparisons are also made with the Boothbay Harbor temperature record for the same period (1962 - 1981).

Textual material describes the methods employed in obtaining the data and discusses the climatic characteristics of the Woods Hole region and some of the meteorological anomalies occurring during the 20-year time span.

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INTRODUCTION

This temperature record was compiled as a part of the routine activities of the Northeast Fisheries Center aquarium at Woods Hole, which began operations in the spring of 1961. It covers the 20-year period 1962 through 1981 and consists essentially of daily air and water temperatures taken on the east side of Great Harbor (Figure 1). Tables 1 through 9 give the weekly, monthly, seasonal, and annual means for the two decades and an appendix includes the complete weekly and daily series of readings which began on January 1, 1962. Comparisons are made between the 20-year means and the extreme high and low values for each week. A table showing monthly and annual means for Great Harbor water temperatures beginning in 1880 and running through 1956 is provided for comparison with the more recent data (Table 1). The Boothbay Harbor, Maine, surface water temperature record is compared with its Woods Hole counterpart and their value as an index of offshore water temperature trends is discussed. A summation of winter conditions in the Woods Hole region is presented in tabular form. Daily weather notes which were kept as a part of the original record are not included here.

METHODS

Both air and surface water temperatures were taken at 0830 hours using uncalibrated thermometers of good quality. The figures thus obtained are relative rather than absolute values and the data are most useful in providing a general overview of the Great Harbor temperature regime during the period under consideration. The 0830 time of recording was chosen for convenience and because it is a time of relative thermal stability, before the effects of solar radiation and wind bring about rapid changes, particularly in air temperature.

Two methods of securing the water sample were employed; 1) by means of a 10-quart pail in which a thermometer was placed after filling it with surface water; 2) with a standard bucket thermometer, designed especially for the purpose. The latter method was adopted in 1974 and provided greater convenience without sacrificing accuracy.

The seasons referred to in the tables are defined as follows: Winter, January - March; Spring, April - June; Summer, July - September; Autumn, October - December.

The Fahrenheit scale was used when recording the original data and is continued here.

From time to time the 0830 water temperature was taken simultaneously at two different locations on the NEFC grounds, the alternate being the sea wall about 100 meters south and slightly west of the original. In 1981 the alternate series was taken from a pier, completed in 1980, which extends approximately 75 meters into Great Harbor in a

westerly direction. Comparisons of temperatures taken at the regular and alternate sites showed no significant or consistent variation, with an average difference of less than 0.4°F (0.2°C). It was recognized that the water in Great Harbor is a mixture of waters from Buzzards Bay and Vineyard Sound which may differ seasonally by as much as 5°F (3°C) or more. Generally speaking, the Bay is colder than the Sound in winter with the reverse situation prevailing in summer. The regular temperature recording site behind the aquarium building is out of the main circulation pattern in the harbor and, hence, probably less subject to sudden changes due to imperfect mixing of Bay and Sound water.

As an adjunct to the air and water temperature record, brief weather notes were kept on a daily basis, including wind direction and velocity, cloud cover and any changes in the weather situation during the day. As stated above, these are not included here. The information in these ancillary notes is relevant to the total record since air temperature and wind velocity have a strong effect on the rate of water temperature change. A cold, windy day, for example, will cause a decrease of several degrees in a 24-hour period whereas a cold day without wind will have little effect.

DISCUSSION

The climatic characteristics of the Woods Hole region and of the entire Cape Cod peninsula are basically those of an island or of a land mass largely surrounded and dominated by the marine environment. The sea exerts a strong controlling influence on the climate and temperature extremes are prevented or moderated by the stabilizing influence of the

ocean. The cold of winter and the heat of summer are less intense and the seasonal changes more gradual than those experienced only a few miles inland. Springs are cool, summers are never hot and the autumns are pleasantly mild. In some years the accumulated solar energy of the neighboring Atlantic carries a warm fall into a winter devoid of harsh extremes, although this is not always the case.

The frontal systems that bring New England its diversity of weather move generally from west to east with highs coming directly from the west or northwest and the lows from a more southerly direction, often following the coastline northeasterly from the Carolinas. Highs have an anticyclonic or clockwise rotation and are accompanied by westerly winds. Lows rotate the other way and usually bring easterly wind to the Massachusetts coast in addition to overcast, snowy or rainy weather. During the winter season the marine influence is strong in the Woods Hole region with most precipitation in the form of rain instead of the snow that may inundate the countryside 20 miles west of the shoreline. The boundary between rain and snow can be sharply drawn; sometimes 2° F is sufficient to make the difference, and the line may be crossed while traveling the 10 miles between Woods Hole and North Falmouth.

The surrounding water mass that keeps the snow at bay during the winter also slows the advance of spring and it may be late May before any prolonged period of warm weather arrives. Buzzards Bay and Vineyard Sound continue their influence throughout the summer, warding off many incipient heat waves and keeping the nights cool enough for restful sleep.

By September the sea has absorbed its quota of thermal energy and will give it up slowly in the course of the next three months providing the best weather of the year for the Woods Hole region.

The progression of the seasons is shown as a 20-year mean temperature curve in Figure 3 and individually, by years, in Figures 2+4. Some years are outstanding for seasonal anomalies, as, for instance, the winters of 1968 and 1977, the summer of 1967 and the autumn of 1976. The entire year of 1967 was exceptionally cold with an annual mean of 49.3°F as compared with the 20-year mean of 51.4°F.

Figure 5 shows the weekly mean water temperatures for the period 1962 - 1981 plotted against the extreme highs and lows of the two decades. The average differences between the high and the low through the 52 weeks is 7°F and the extreme spread is slightly more than 10°F (May and October). In general, early winter and mid fall are the periods of greatest temperature diversity while summer, particularly the months of July and August, is a time of thermal stability. At this season temperature gradients are at a minimum and frontal systems are weak and ineffective. While short-term fluctuations of air temperature are greater than those of the water, the difference between the mean high and low readings for the year was only 13°F (Figure 6). The extreme variation between an individual high and low was 31°F, in the seventh week, with a maximum of 35°F and a minimum of 4°F. Most of the very cold intervals were accompanied by strong westerly winds which accentuated their effect on the water temperature. The daily temperature record in the appendix shows this clearly, for example, on January 7 and 8, 1968,

when the surface water dropped from 34.0°F on the 7th to 29.5°F on the 8th. Checking the air temperature for those dates it will be found that on the 7th the air was 30°F at 0830 and on the morning of the 8th it was down to 8°F. Referring to the weather notes for that second week of January, wind conditions were gale force from the northwest, 35 - 40 knots, at least, on both the 7th and 8th. There were brisk winds from the same quarter for several days thereafter with morning air temperatures close to zero, Fahrenheit. Ice formed in Great Harbor and the water temperature went down to the winter's low point, 29.0°F.

An example of a different kind of winter storm is excerpted from the weather notes for 1976 when February 2 brought a violent frontal system into the area after an overnight southerly gale. The barometer stood at 28.54" that morning and a rapid wind shift from 40 knots southeast to 60 knots northwest drove an abnormally high tide over the piers and seawalls of Great Harbor. The air temperature dropped 20°F in half an hour as a warm southeaster became a cold northwester. Few small boats were in the water at the time and property loss was minimal in Woods Hole and vicinity. The storm, however, crossed the Gulf of Maine later in the day and seriously damaged vessels and shore facilities as far north and east as Nova Scotia.

Although there have been cold winters during the last two decades, not all of them have caused the freezing of Buzzards Bay or any other extensive body of salt water along the southern New England coast (Table 8). Most ice producing years begin with low temperatures (31° - 33°F) in early January or late in the previous December, sometimes in the

wake of a cold fall; 1981 was an outstanding example with several windy, near zero days in the final week of 1980. The result was an overnight freezeup of Buzzards Bay on the 5th of January and a record-tying low for that month of 29.6°F (Table 7). An exception to this early freeze rule was 1979 which held off until February and then struck with two cold and windy weeks which included several nights with sub-zero air temperatures. Nantucket Island was deprived of regular boat service in both 1977 and 1979 because of heavy ice in the harbor and the ship channel. The mild years of the middle '70's (Figure 4) are best remembered for their snowless, iceless winters and early springs and more or less average summers and falls, although the autumn of 1975 set a record high for the 20-year period. Often the temperature characteristics of the winter determined those of the entire year, as can be seen in Table 2.

One particular year, mentioned briefly on page 5, that deserves special comment is 1967, an anomaly in the recent weather pattern. Coming at the end of a cooling period which began in the middle 1950's it compiled the lowest annual mean in over a quarter century. The first few weeks were quite moderate with January and February temperatures well above the 20-year average (Table 7). When March arrived, however, there was none of the customary warmup and the month ended with a mean temperature only 0.2°F above that of February. There followed a chilly spring, punctuated by a three-day northeaster in late May, and the succeeding summer and fall were considerably below average. The momentum carried into the severe winter of 1968 but conditions returned to a more normal level by the summer of that year and no subsequent annual mean has seriously threatened the 1967 record.

As a matter of interest, the existence of the phenomenon known as the January Thaw has sometimes been denied but Figure 6 provides evidence of its reality. Week 4 of all three air temperature plots shows a distinct rise over the level of the previous weeks followed by an equally obvious drop prior to the customary seasonal warming which begins during the seventh or eighth week of the year. The thaw does not always occur, it was missing in 1977, for instance, but as a general rule there is a mild spell of several days duration in the fourth or fifth week.

A long-term temperature record has been kept at Boothbay Harbor, Maine, since March 1905. It is one of the most complete and, in recent years, one of the most accurate coastal records in existence and is worth comparing with the Woods Hole figures to demonstrate their basic similarities. Figure 7 shows the annual mean surface water temperatures at Boothbay Harbor and Woods Hole from 1962 through 1981. The mean annual difference between the two localities is 4.2°F but the general similarity in the pattern of temperature variations from one year to another is fairly obvious. There is negative correlation in 1962, 1963, 1964, 1970, 1974, and 1981 but the overall agreement through the 20 years represented is good. Both records are typical of inshore waters which are dominated by continental weather systems and which show quick response to seasonal changes. There is considerable estuarine influence in the Woods Hole region which promotes rapid warming of the water in late winter and early spring and equally rapid cooling during the shortening days of autumn. This situation exists to a lesser degree along the Maine coast north and east of Portland where most of the estuaries are smaller and deeper than those of Cape Cod.

One of the principal differences between Boothbay Harbor and Woods Hole is the mean tidal amplitude; 8.7 feet at the former and 2.0 feet at the latter. Another difference is the great depth of water close to land along the western Gulf of Maine coast. Six miles south of Boothbay Harbor the water is over 200 feet deep; no comparable depth can be found within approximately 50 miles of Woods Hole. This large volume of deep water results in slower warming and cooling at Boothbay Harbor, where the maximum seasonal differences average 11.5°F , than in southeastern Massachusetts where the Woods Hole seasonal differences average 17.5°F . Seasonal variations of individual years are also substantially greater at Woods Hole with an extreme of 22.2°F in the winter-spring category (1977; Table 9). The extreme at Boothbay Harbor was 13.7°F (1981, winter-spring and 1980, summer-autumn). At Woods Hole the greatest seasonal variations came between the winter and spring means (warming) and at Boothbay Harbor between summer and autumn (cooling).

Regardless of the differences between the two temperature regimes, both show a reasonably good correlation with the recent temperature trends in the waters lying off the northeastern United States (Davis, 1978, 1979). Colton (1968) documented offshore warming and cooling trends which are recognizable in both records. As an example, the cooling trend that began about 1954 and ended in 1967 is shown in part, beginning in 1962 (Figure 7). The subsequent warming period which reached a climax in 1975 is also clearly indicated, as is the present cooling trend which is carried through 1981, the terminus of the subject 20-year record.

There have been no hurricanes in the vicinity of Woods Hole since Carol and Hazel in 1954 and only one near miss, Donna, in 1960. Tropical storms have not abandoned the Caribbean or the Gulf of Mexico during this period but Cape Cod and its environs have escaped their destructive force for nearly 30 years.

In summary, Woods Hole weather exemplifies conditions and patterns common to other New England coastal regions. It is dominated by the movements of continental air masses, which, as they arrive from the west, are modified by the marine environment, sometimes extensively. The result of this eternal conflict of land and sea is constant change due to the complexity of factors influencing atmospheric conditions at the boundary of continent and ocean. Even with satellites, computers, and other modern aids to weather prediction it is often difficult to forecast the rapid changes that take place when a converging group of these factors interact. Experienced meteorologists adopt a philosophical attitude toward their profession when practicing it in the more easterly reaches of New England and assume the gambler's attitude, declaring "a 30% change of rain tomorrow" instead of making a more arbitrary prognostication. All of which substantiates the accumulated knowledge of long-term dwellers in the Woods Hole region who say to their critical visitors from far inland, "If you don't like the weather, just wait a minute!"

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Addendum

A Summary of the Weather Characteristics of 1982

The weather during the 21st year of the current series was characterized by extremes, which, even in New England, were unusual. Perhaps the most notable were the second coldest June and the warmest late fall period in two decades, together with an April blizzard which left over a foot of snow in some eastern Massachusetts areas. The annual mean was 0.1°F above the 21-year mean as the periodic cold spells of the first nine months were counteracted by the exceptionally mild weeks at the year's end.

The coldest part of the winter came between the 10th and 30th of January, pushing the well-known January thaw into early February. The thermometer stood at 0°F on the morning of January 22nd, and the mean for the week of January 17 - 23 was 8°F . Ice formed in Great Harbor and Buzzards Bay and the Eel Pond in Woods Hole was frozen to a thickness of 5" - 6". The February thaw brought rain and fog and removed nearly all of the ice by the 6th of that month. The rest of the winter was stable and normal with weekly means between 25°F and 38°F through March.

After the blizzard of April 6th there was a very normal period of weather which lasted until the first week of June. Cold and wet conditions predominated on and after the 5th of June and continued almost without interruption until the 19th when the sun returned and both air and water responded to its influence. The water temperature in Buzzards Bay failed to rise at the usual rate during this abnormally cool interlude and on several occasions went down rather than up.

The moult frequency of lobster larvae in Buzzards Bay was affected and development of the several stages was delayed for nearly two weeks although apparently there was no significant mortality. The last 12 days of August brought a return of cool conditions and the water temperature in Great Harbor dropped from 70.7°F on the 20th to 65.8°F on the 31st.

The final act of a year fraught with anomalies was the unusually warm fall which exceeded the 20-year seasonal mean (50.0°F) water temperature by 2.4°F and brought the warmest December in over two decades with a mean water temperature of 44.9°F.

October was slightly warmer than usual with periods of mild weather early and late. In November two days were recorded with morning air temperatures below 32°F which is rare, such low readings being usually reserved for December. The first of these was on the 16th and the second on the 28th and on both occasions a warming trend followed immediately. The air temperature at 0830 on November 16th was 29°F and by 0830 on the 17th it had risen to 43°F. On the 20th the morning air temperature was 24°F and 24 hours later it was up to 53°F. Water temperatures ranged from 58.5°F on November 5th to 48°F on the 30th then rose to 51.2°F by early December.

With the exception of a snowstorm on the 12th and an associated period of cold weather from the 10th to the 14th December was exceptionally mild with a morning air temperature of 59°F on the 6th and in the 50's immediately after Christmas. The mean water temperature for the month, 44.9°F, exceeded the previous 20-year high of 44.2°F by 0.7°F and the 20-year mean (40.2°F) by almost 5°F. Thus the new year of 1983 began with the probability of little or no sea ice and a relatively warm January.

Appendix C shows monthly water temperatures and annual and monthly means for the period 1962 - 1982 and serves to emphasize the aberrations of the most recent year. Note particularly the months of April, June, November, and December and their departure from the 21-year mean. Note also the year 1967, from March through December, the only year in two decades with an annual mean water temperature of less than 50° F.

Rainfall, which has been below normal since 1979, increased slightly in 1982 and went over 40 inches (40.33") for the first time in 3 years. The annual mean for the last 26 years at the Falmouth Pumping Station is 42.22".

Table 1. Monthly mean Woods Hole water temperature record, 1962 - 1981, compared with a similar record for the period 1880 - 1956 (Bumpus, 1957). There are several gaps in the earlier record and the number in parentheses over the temperature value indicates the number of years represented in the mean.

<u>1962 - 1981</u>												Ann.
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
33.5	31.8	35.7	43.3	52.8	62.3	68.9	70.5	66.6	58.9	50.0	40.2	51.4 (°F)
0.9	0.1	2.0	6.3	11.5	16.9	20.5	21.4	19.2	14.9	10.0	4.5	10.8 (°C)
<u>1880 - 1956</u>												Ann.
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
(62)	(63)	(61)	(62)	(63)	(61)	(58)	(60)	(60)	(61)	(63)	(60)	
34.1	32.3	35.3	42.9	52.6	62.0	69.0	70.3	67.0	58.9	49.5	39.7	51.1 (°F)
1.2	0.2	1.9	6.1	11.5	16.6	20.5	21.3	19.4	15.0	9.7	4.3	10.6 (°C)

Extreme variation = 0.6°F January. (Variations for February, November, and December = 0.5°F)

Table 2. Surface water temperature, Great Harbor, Woods Hole
seasonal and annual means, 1962 - 1981 (°F).

YEAR	WINTER	SPRING	SUMMER	AUTUMN	ANNUAL
1962	34.4	54.3	67.8	48.8	51.3
1963	32.3	53.3	68.1	49.9	50.9
1964	33.6	52.7	67.9	49.8	51.0
1965	33.1	52.0	68.0	48.6	50.4
1966	34.0	51.8	68.0	49.6	50.8
1967	33.5	48.9	66.4	48.6	49.3
1968	31.8	52.9	68.4	49.9	50.7
1969	33.0	54.7	69.2	50.2	51.8
1970	32.4	53.1	68.8	51.0	51.3
1971	32.2	51.3	69.2	51.6	51.1
1972	35.1	51.1	68.0	50.1	51.1
1973	35.9	54.1	68.8	51.1	52.5
1974	36.3	53.1	69.4	49.9	52.3
1975	36.1	53.0	69.5	52.7	52.8
1976	35.4	54.5	69.3	47.4	51.6
1977	32.0	54.2	69.5	50.2	51.5
1978	32.5	52.9	68.2	50.7	51.1
1979	34.5	54.4	69.4	52.2	52.8
1980	34.3	53.4	70.9	49.3	51.9
1981	33.0	54.8	70.1	48.9	51.6
Means	33.8	53.0	68.7	50.0	51.4

Table 3. Monthly mean air and water temperatures, Great Harbor,
Woods Hole, 1962 - 1981 (°F)

MONTH	AIR	WATER
January	27	33.5
February	27	31.8
March	35	35.7
April	43	43.3
May	53	52.8
June	62	62.3
July	69	68.9
August	69	70.5
September	62	66.6
October	52	58.9
November	44	50.0
December	33	40.2
Means	48	51.4

Table 4. 20-year weekly mean water temperatures vs. extreme highs and lows (°F).

Week No.	20-year mean	Extreme high	Extreme low	Week No.	20-year mean	Extreme high	Extreme low
1	35.5	40.4	30.6	27	67.0	69.6	63.8
2	34.0	38.9	28.9	28	68.4	72.2	66.5
3	32.8	37.4	29.1	29	69.6	72.5	66.9
4	33.1	37.4	29.2	30	70.1	72.9	67.0
5	32.3	38.2	29.1	31	70.7	74.5	68.4
6	31.6	36.2	29.2	32	70.9	75.3	68.1
7	31.4	33.4	29.2	33	70.5	73.5	67.7
8	31.8	35.9	29.3	34	69.9	71.8	68.0
9	32.8	38.1	29.7	35	69.7	71.6	67.9
10	34.0	38.7	30.2	36	68.5	71.3	65.4
11	35.3	39.3	32.6	37	67.1	70.0	63.3
12	36.8	39.1	31.9	38	65.9	68.7	62.8
13	38.4	41.5	33.3	39	64.2	67.0	60.0
14	40.5	43.3	37.8	40	62.8	64.7	59.5
15	42.0	45.0	39.0	41	60.7	63.9	58.2
16	44.3	46.9	40.3	42	58.7	61.5	56.8
17	46.2	49.0	42.0	43	56.7	60.6	53.3
18	48.3	50.7	43.7	44	54.5	60.5	50.2
19	50.5	54.2	45.5	45	52.7	56.7	49.0
20	52.6	56.3	48.5	46	50.0	54.9	45.1
21	55.2	57.8	49.5	47	47.7	52.3	43.1
22	57.7	60.8	50.8	48	45.8	51.3	42.1
23	60.0	63.0	56.2	49	43.5	47.1	39.3
24	61.9	65.6	59.4	50	41.5	45.4	37.2
25	63.7	66.7	60.3	51	38.7	42.3	34.7
26	65.2	68.0	61.9	52	37.1	42.2	33.1

Table 5. 20-year weekly mean air temperatures vs. extreme highs and lows (°F).

Week No.	20-year mean	Extreme high	Extreme low	Week No.	20-year mean	Extreme high	Extreme low
1	27	37	16	27	68	74	62
2	25	38	8	28	68	73	64
3	25	34	11	29	69	74	67
4	30	40	20	30	69	74	65
5	25	33	16	31	70	76	65
6	24	29	13	32	70	76	64
7	27	35	4	33	68	73	62
8	29	41	20	34	68	72	65
9	30	40	18	35	67	74	62
10	34	42	25	36	64	70	61
11	34	42	29	37	62	69	58
12	36	41	28	38	61	67	55
13	38	45	31	39	59	63	52
14	39	45	33	40	56	62	50
15	41	48	36	41	54	60	42
16	45	59	40	42	52	59	45
17	47	57	40	43	51	58	45
18	47	53	42	44	49	57	42
19	51	61	44	45	47	55	39
20	53	59	49	46	43	48	36
21	55	62	45	47	41	52	36
22	58	65	53	48	39	45	32
23	60	65	55	49	36	43	28
24	62	68	57	50	33	41	26
25	64	71	60	51	30	36	18
26	67	69	60	52	30	41	19

Table 6. Monthly mean surface water temperatures, Great Harbor, Woods Hole

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann. Mean
1962	35.1	32.1	35.5	45.3	53.2	63.7	67.7	69.6	66.1	58.7	48.1	37.4	51.3
1963	31.6	30.1	33.5	43.7	52.6	62.9	67.3	70.8	64.0	58.9	51.3	38.9	50.9
1964	32.7	32.0	36.1	42.5	53.3	61.8	68.9	68.2	66.1	57.3	50.5	40.6	51.0
1965	33.5	30.0	34.9	41.0	52.5	61.5	68.3	70.0	65.4	57.1	47.6	40.7	50.4
1966	33.8	31.1	36.5	43.1	50.5	61.0	69.0	69.4	65.5	57.2	50.2	40.1	50.8
1967	35.9	32.5	32.7	39.8	47.3	58.6	66.8	68.7	63.7	58.9	47.8	38.8	49.3
1968	31.0	30.4	33.7	44.3	53.0	61.3	68.7	69.7	66.6	60.9	49.1	38.0	50.7
1969	31.5	32.2	35.1	44.6	54.4	64.2	68.1	71.7	67.8	60.2	50.4	39.6	51.8
1970	30.3	31.7	34.9	43.1	53.2	62.1	68.7	70.8	66.6	61.0	51.6	39.8	51.3
1971	30.6	30.6	35.0	41.3	50.0	61.7	68.7	70.6	68.2	62.3	51.3	40.8	51.1
1972	37.0	32.2	36.0	41.1	53.1	60.8	67.9	69.4	66.7	58.3	48.7	41.9	51.1
1973	35.1	33.9	37.7	44.6	53.6	63.2	69.0	70.1	67.2	58.0	49.2	43.9	52.5
1974	37.5	34.5	38.1	42.6	52.8	61.7	68.6	71.4	68.1	58.0	50.6	40.8	52.3
1975	37.3	33.9	39.8	41.8	53.1	61.0	70.3	71.7	66.3	60.9	54.0	42.7	52.8
1976	33.0	34.0	39.0	45.9	54.3	63.3	70.3	70.2	67.2	58.4	45.6	36.4	51.6
1977	29.6	29.6	36.4	45.1	54.1	62.6	69.9	71.6	66.8	58.4	51.8	40.0	51.5
1978	33.1	30.2	33.9	43.2	52.1	62.6	68.2	70.4	65.8	58.5	51.5	41.3	51.1
1979	36.0	30.6	36.3	43.0	55.4	64.0	69.4	70.7	67.9	59.1	52.8	44.2	52.8
1980	36.5	31.1	35.0	45.1	54.1	62.7	70.4	72.8	69.2	59.5	47.0	37.8	51.9
1981	29.6	32.3	37.5	45.4	53.7	64.7	71.2	71.7	67.1	56.7	50.0	39.7	51.6
Means	33.5	31.8	35.7	43.3	52.8	62.3	68.9	70.5	66.6	58.9	50.0	40.2	51.4

Table 7. Monthly mean air temperatures 1962 - 1981.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann. Mean
1962	31	29	36	45	52	63	67	72	63	53	42	31	49
1963	27	24	36	44	53	62	67	66	58	54	45	27	47
1964	28	25	33	39	52	61	67	65	60	52	45	35	47
1965	26	26	33	41	53	60	67	68	60	52	42	34	47
1966	28	27	36	42	50	58	69	67	60	52	45	33	47
1967	32	27	32	40	46	59	68	66	59	53	40	33	46
1968	23	24	35	45	51	58	68	66	62	55	43	30	47
1969	27	29	33	44	54	63	67	69	62	53	44	31	48
1970	21	28	32	43	53	61	69	69	62	53	46	31	47
1971	23	28	33	41	51	63	70	69	66	58	44	35	48
1972	31	28	35	40	52	61	69	68	63	50	42	36	48
1973	29	28	39	46	53	65	70	70	63	54	43	38	50
1974	30	27	35	45	51	63	69	71	63	49	45	36	49
1975	33	30	33	39	55	64	71	70	61	54	48	33	49
1976	23	33	38	49	56	67	72	70	63	50	39	28	49
1977	20	27	35	46	55	62	70	71	63	52	47	32	48
1978	27	23	33	43	53	63	67	70	59	51	43	34	47
1979	30	18	38	46	60	63	71	67	61	51	49	37	47
1980	28	23	33	45	53	61	71	72	63	51	41	27	48
1981	17	32	34	44	53	63	70	67	59	47	41	32	47
Means	27	27	35	43	53	62	69	69	62	52	44	33	48

Table 8. Winter conditions, Woods Hole Region

Year	No. days below 30° F*	Ice on Buzzards Bay	Comments
1962	None	No	
1963	12	Yes	
1964	5	No	
1965	9	"	
1966	8	"	
1967	1	"	
1968	36	Yes	Additional 23 days below 32° F
1969	3	No	
1970	21	Yes	
1971	26	"	
1972	1	No	
1973	None	"	
1974	"	"	
1975	"	"	
1976	3	"	
1977	46	Yes	Additional 18 days below 32° F
1978	13	"	
1979	11	"	
1980	3	"	Ice field, E. side of Bay
1981	32	"	Early ice formation, Jan. 5 very cold December 1980

*Refers to surface water temperature, Great Harbor

Table 9. Surface water temperature, seasonal and annual means, Boothbay Harbor, Maine, and Woods Hole, Mass. 1962 - 1981.

Year	Boothbay Harbor, Maine					Seasonal variations			
	Winter	Spring	Summer	Autumn	Annual	Winter-Spring	Spring-Summer	Summer-Autumn	Autumn-Winter
1962	35.4	47.1	58.5	46.7	46.6	11.7	11.4	11.8	10.8
1963	37.2	48.7	58.9	47.2	47.9	11.5	10.2	11.7	9.5
1964	37.1	47.3	58.1	45.2	46.9	10.2	11.2	12.9	10.1
1965	34.0	47.3	57.5	44.0	45.8	13.3	10.2	13.5	11.2
1966	35.8	46.1	56.6	44.2	45.7	10.3	10.5	12.4	8.2
1967	34.2	43.8	57.0	45.2	45.1	9.6	13.2	11.8	10.0
1968	33.7	46.4	58.6	47.3	46.6	12.7	12.2	11.3	11.5
1969	36.3	48.0	59.0	48.2	47.9	11.7	11.0	10.8	11.0
1970	37.4	48.4	58.5	47.5	48.0	11.0	10.1	11.0	10.8
1971	34.8	47.6	59.8	48.4	47.7	12.8	12.2	11.4	12.7
1972	36.1	46.7	59.0	47.6	47.1	10.6	12.3	12.3	12.3
1973	36.7	47.4	58.9	48.0	47.8	10.7	11.5	10.9	10.0
1974	38.6	47.5	60.2	47.6	48.5	8.9	12.7	12.6	9.4
1975	38.5	48.3	59.9	48.6	48.9	9.8	11.6	11.3	9.1
1976	37.5	49.9	60.8	46.4	48.7	12.4	10.9	14.4	11.1
1977	35.7	47.4	58.5	48.6	47.6	11.7	11.1	9.9	10.7
1978	35.2	45.9	58.5	45.7	46.4	10.7	12.6	12.8	13.4
1979	35.8	48.2	59.4	48.2	48.0	12.4	11.2	11.2	9.9
1980	35.1	47.2	58.5	44.7	46.4	12.1	11.3	13.7	13.1
1981	33.6	47.3	60.0	47.2	47.1	13.7	12.7	12.8	11.2
Means	35.9	47.3	58.8	47.2	47.2	11.4	11.5	12.0	10.8
Differential	11.3	11.4	11.5	11.6					
Woods Hole, Mass.									
1962	34.4	54.3	67.8	48.8	51.3	19.9	13.5	19.0	--
1963	32.3	53.3	68.1	49.9	50.9	21.0	14.8	18.2	16.5
1964	33.6	52.7	67.9	49.8	51.0	19.1	15.2	18.1	16.3
1965	33.1	52.0	68.0	48.6	50.4	18.9	16.0	19.4	16.7
1966	34.0	51.8	68.0	49.6	50.8	17.8	16.2	18.4	14.6
1967	33.5	48.9	66.4	48.6	49.3	15.4	17.5	17.8	16.1
1968	31.8	52.9	68.4	49.9	50.7	21.1	15.5	18.5	16.8
1969	33.0	54.7	69.2	50.2	51.8	21.7	14.5	19.0	16.9
1970	32.4	53.1	68.8	51.0	51.3	20.7	15.7	17.8	17.8
1971	32.2	51.3	69.2	51.6	51.1	19.1	17.9	17.6	18.8
1972	35.1	51.1	68.0	50.1	51.1	16.0	16.9	17.9	16.5
1973	35.9	54.1	68.8	51.1	52.5	18.2	14.7	17.7	14.2
1974	36.3	53.1	69.4	49.9	52.3	16.8	16.3	19.5	14.8
1975	36.1	53.0	69.5	52.7	52.8	16.9	16.5	16.8	13.8
1976	35.4	54.5	69.3	47.4	51.6	19.1	14.8	21.9	17.3
1977	32.0	54.2	69.5	50.2	51.5	22.2	15.3	19.3	15.4
1978	32.5	52.9	68.2	50.7	51.1	20.4	15.3	17.5	17.7
1979	34.5	54.4	69.4	52.2	52.8	19.9	15.0	17.2	16.2
1980	34.3	53.4	70.9	49.3	51.9	19.1	17.5	21.6	17.9
1981	33.0	54.8	70.1	48.9	51.6	21.8	15.3	21.2	16.3
Means	33.8	53.0	68.7	50.0	51.4	19.3	15.7	18.7	16.3
Differential	16.2	19.2	15.7	18.7					

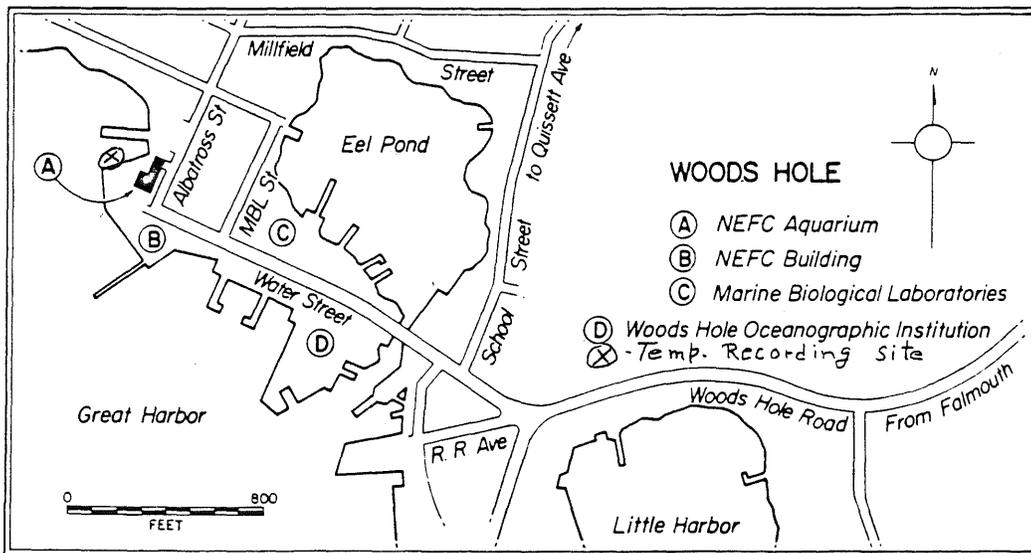
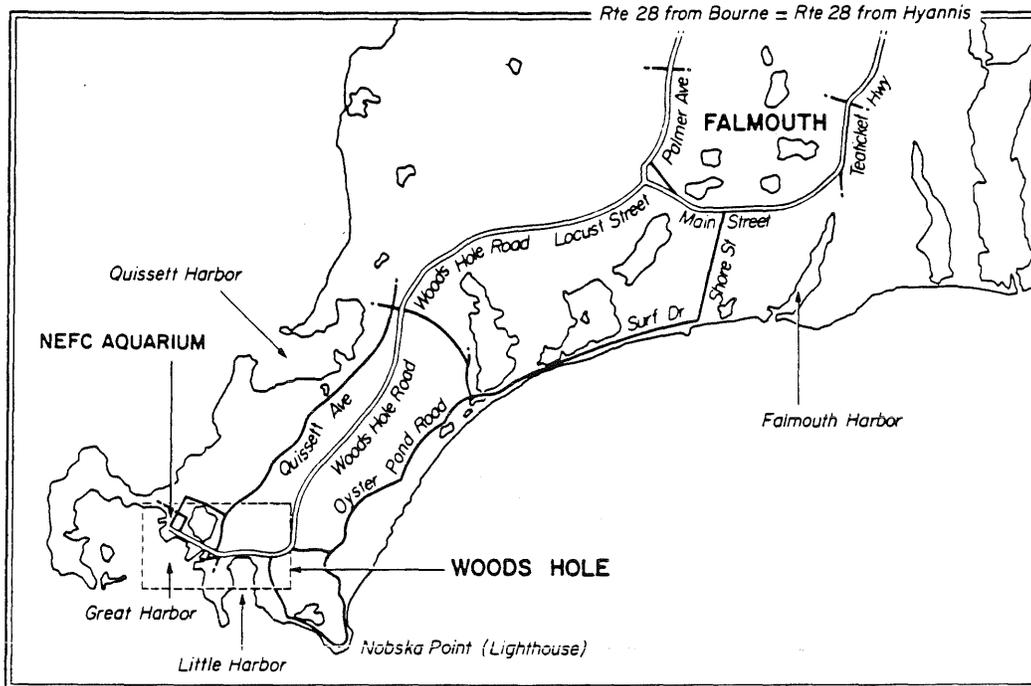
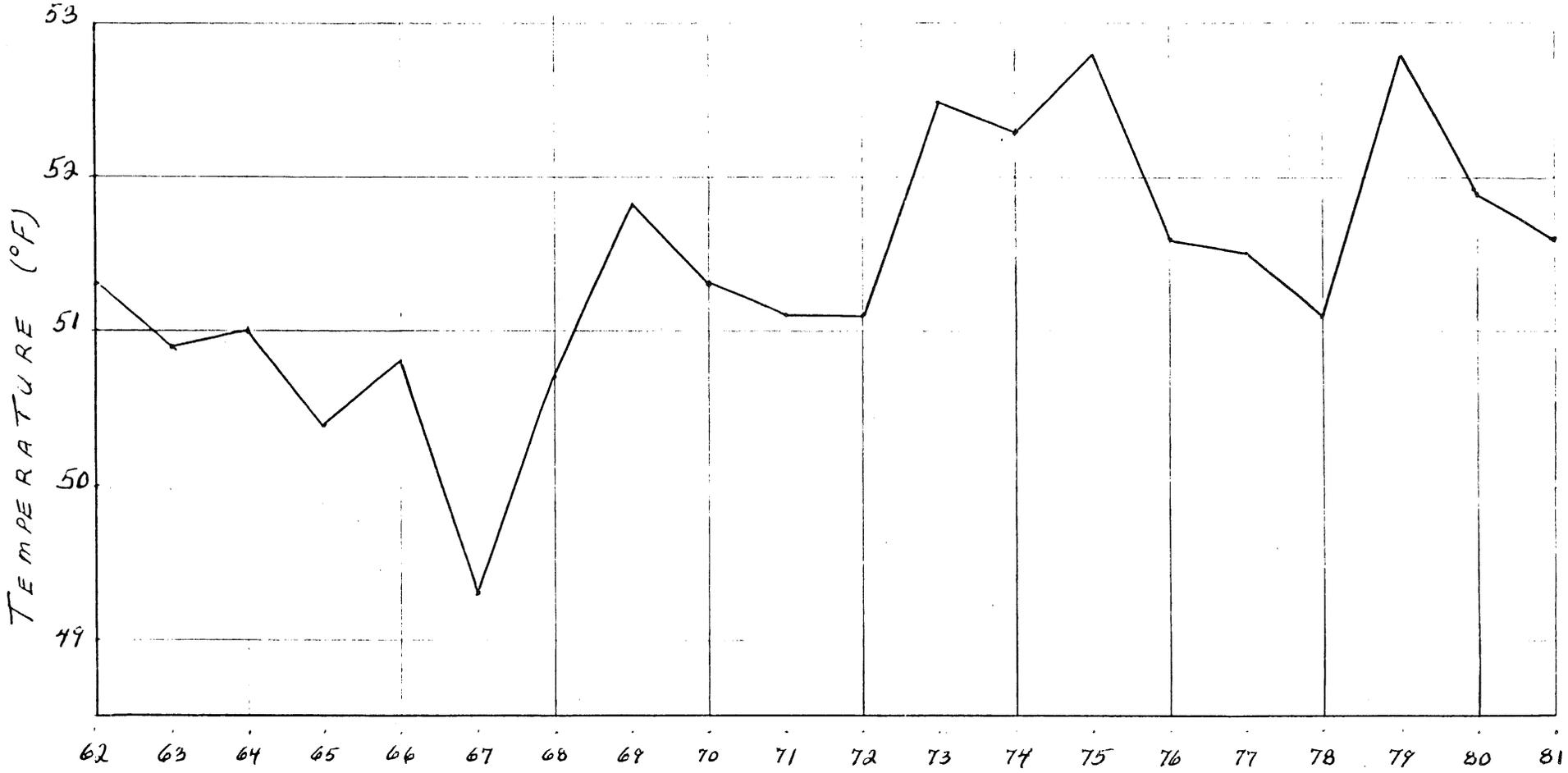


Figure 1. Map of the Woods Hole region showing Northeast Fisheries Center Laboratory and temperature recording site.

Figure 2 SURFACE WATER TEMPERATURE

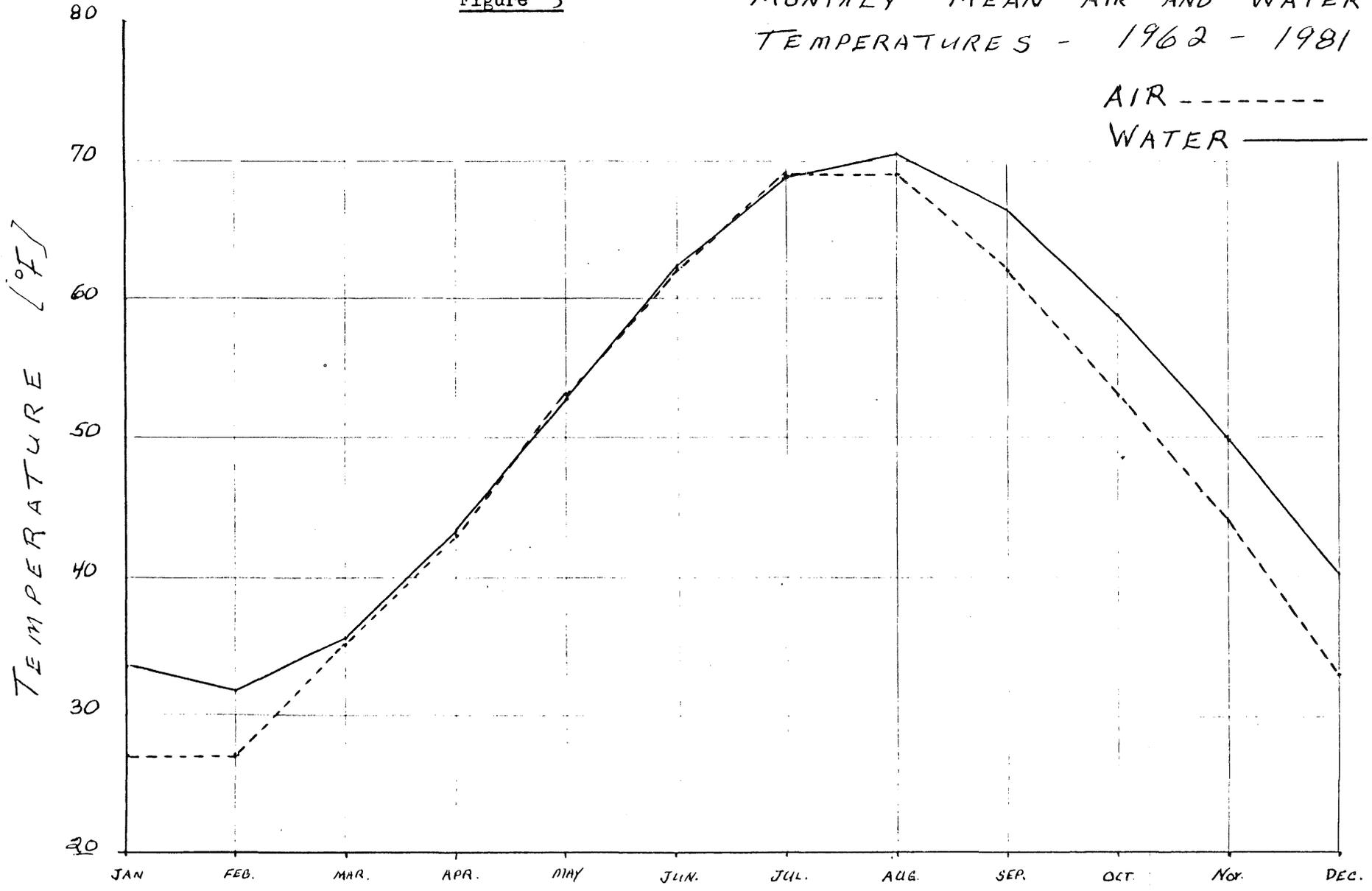
GREAT HARBOR, WOODS HOLE



ANNUAL MEANS
1962 — 1981

Figure 3

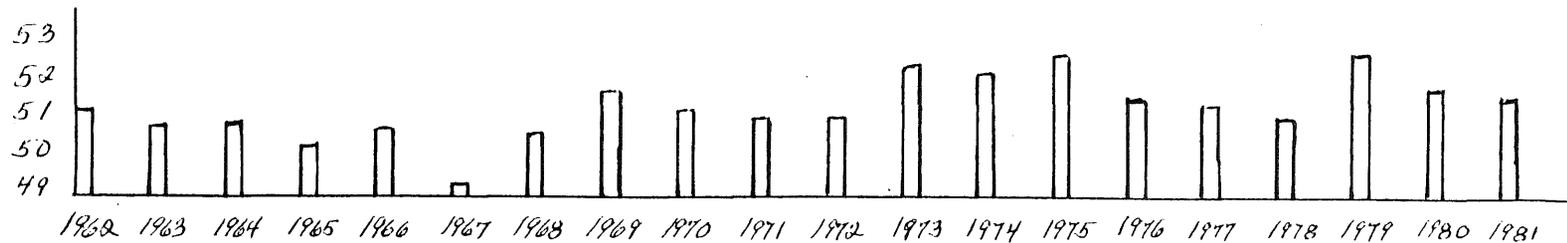
MONTHLY MEAN AIR AND WATER
TEMPERATURES - 1962 - 1981



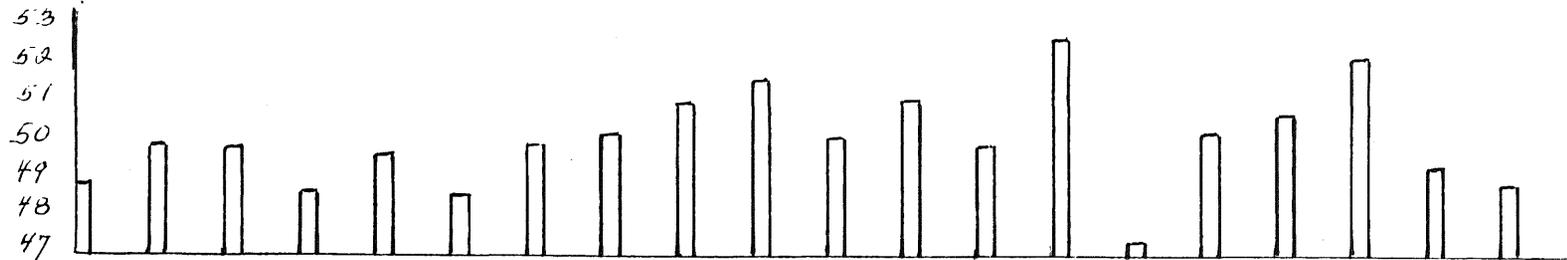
TEMP. Fig. 4. Surface Water Temperature, Seasonal and Annual Means, Woods Hole, Massachusetts, 1962 - 1981

'F

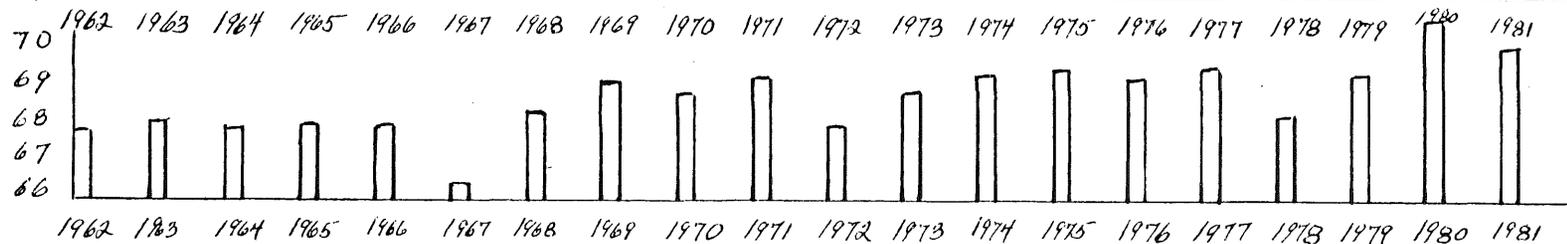
Figure 4



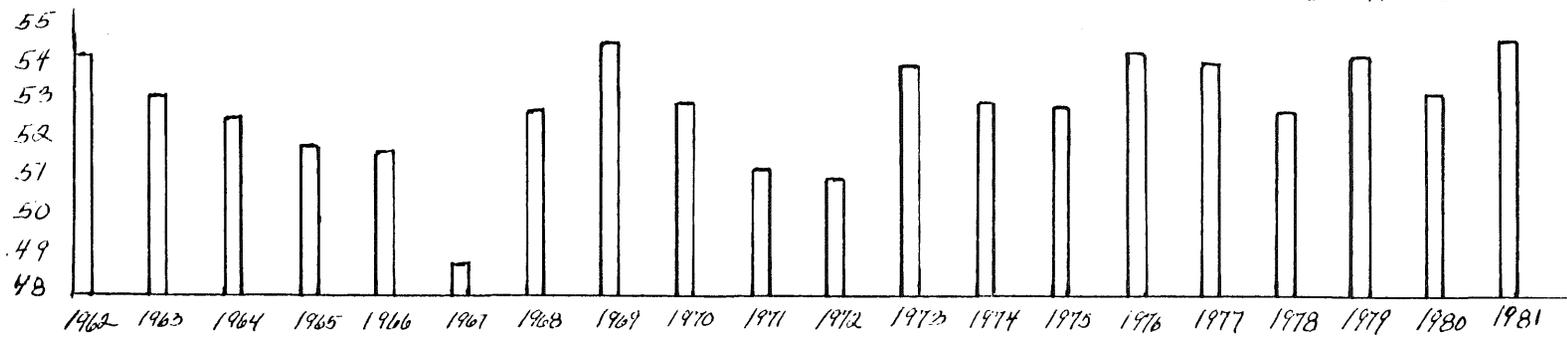
ANNUAL
MEANS



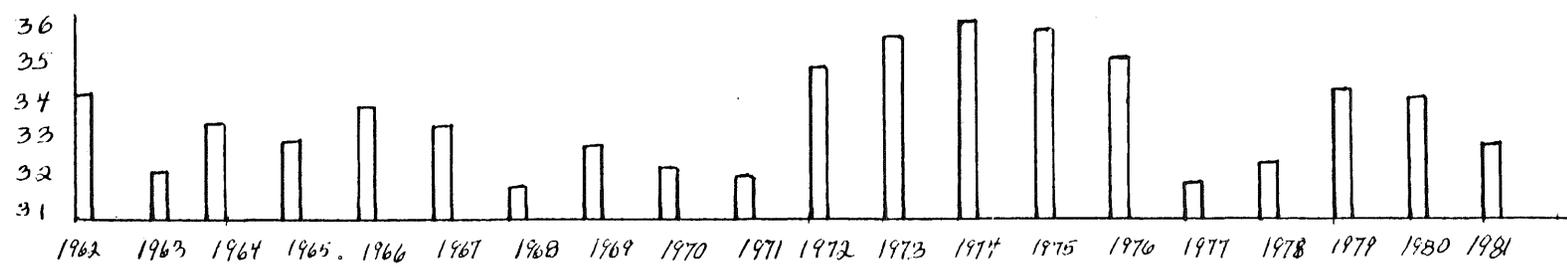
AUTUMN
MEANS



SUMMER
MEANS



SPRING
MEANS



WINTER
MEANS

Figure 5 SURFACE WATER TEMPERATURE, 1962-1981

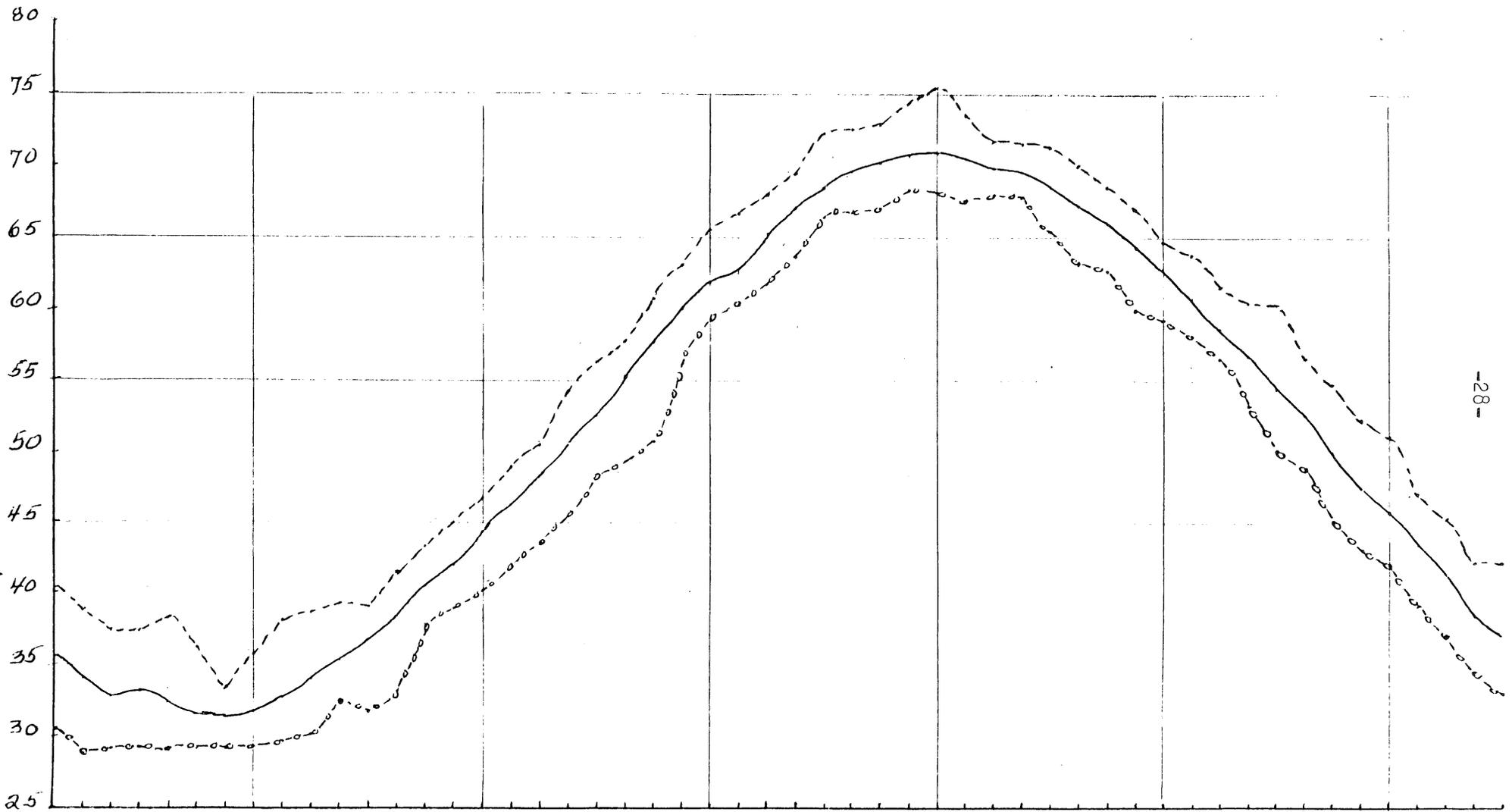
WEEKLY MEANS PLOTTED AGAINST EXTREMES

WEEKLY MEAN —————

EXTREME HIGH - - - - -

EXTREME LOW - o - o - o -

TEMP.
(°F)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

WEEKS OF THE YEAR

Figure 6

0830 AIR TEMPERATURE - 1962-1981

WEEKLY MEANS PLOTTED AGAINST EXTREMES

WEEKLY MEAN —————
EXTREME HIGH - - - - -
EXTREME LOW - o - o - o - o -

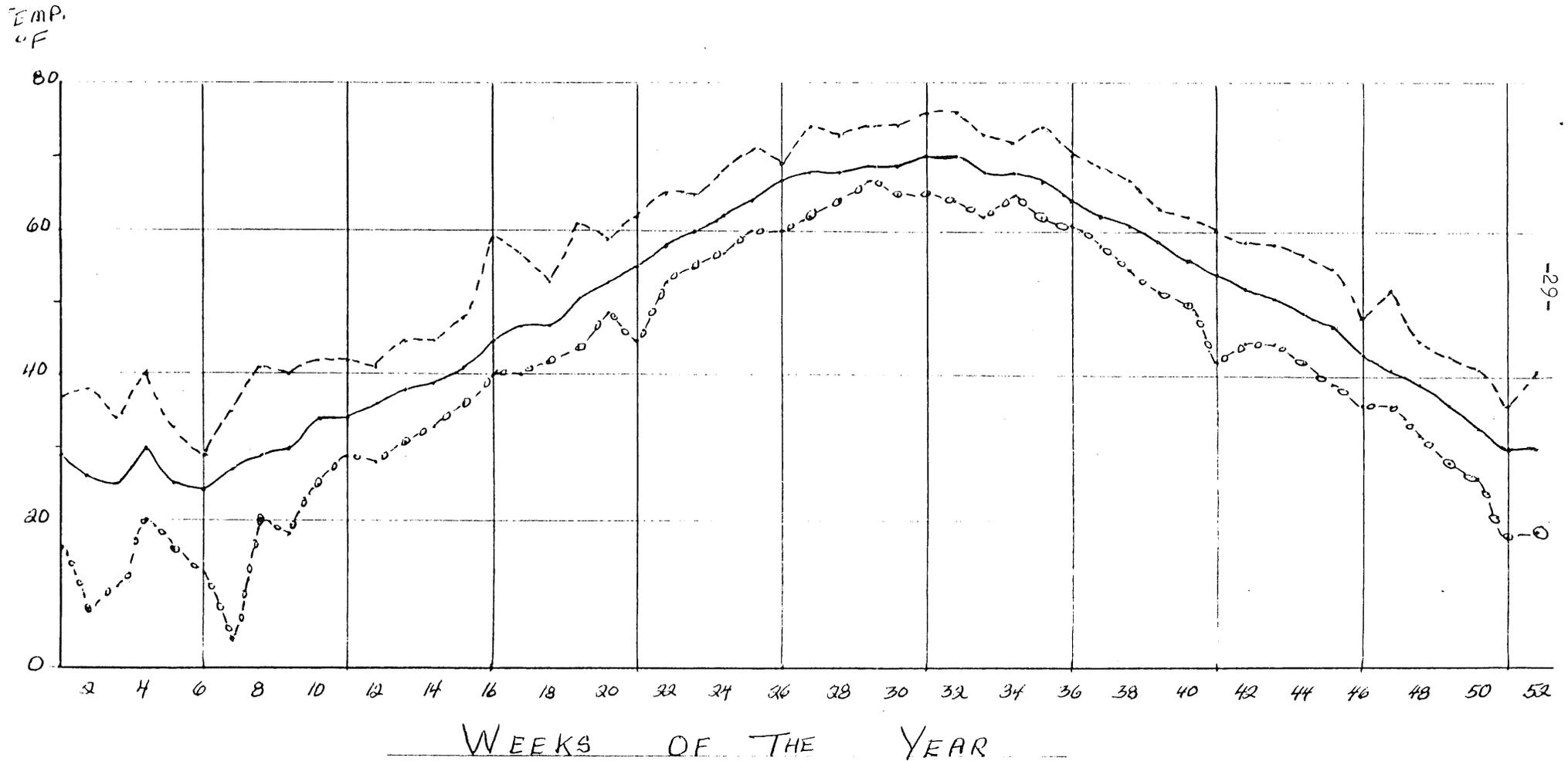


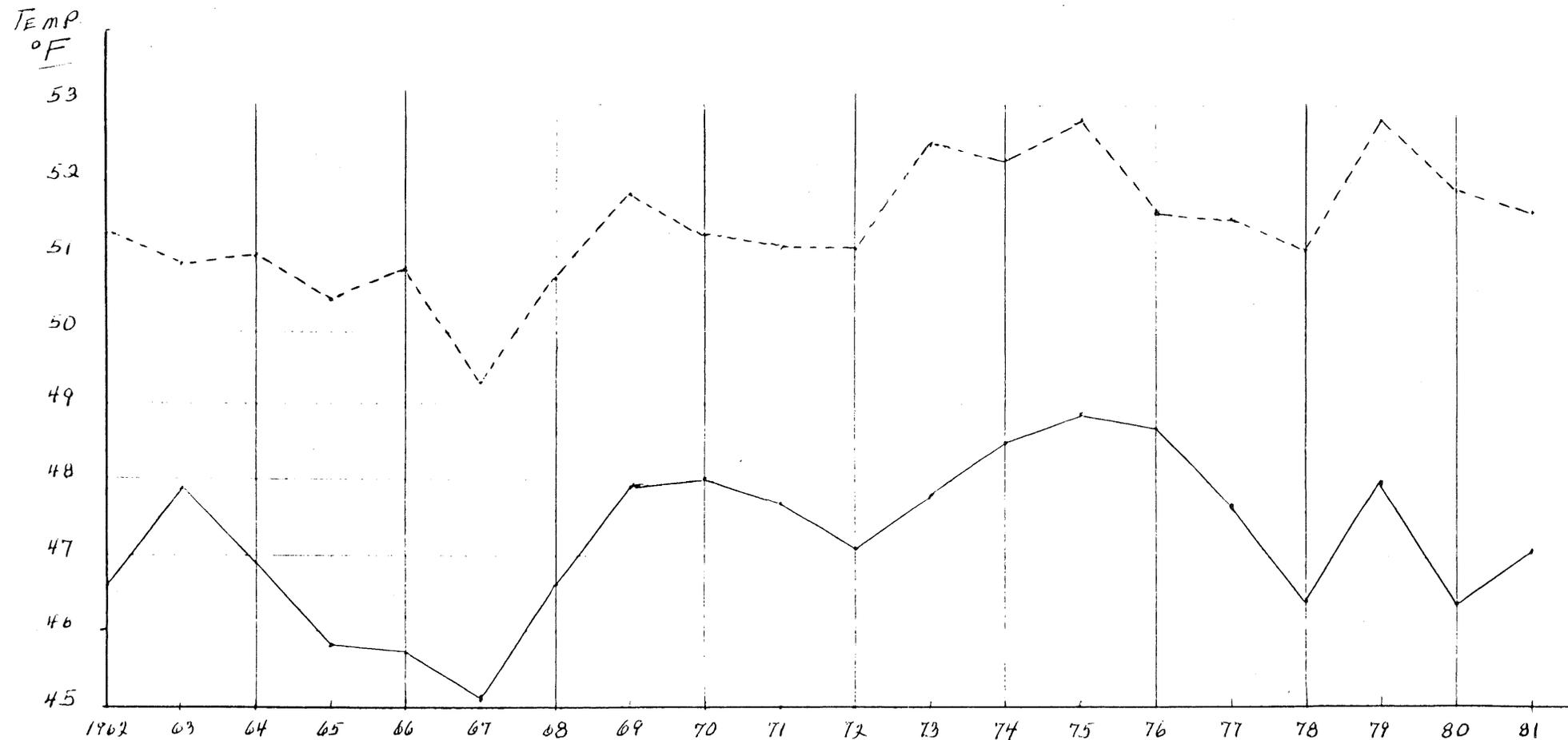
Figure 7

ANNUAL MEAN SURFACE WATER TEMPERATURES - 1962-1981

WOODS HOLE, MASSACHUSETTS AND BOOTHBAY HARBOR, MAINE

WOODS HOLE, MASS - - - - - 20 year mean: 51.4°F

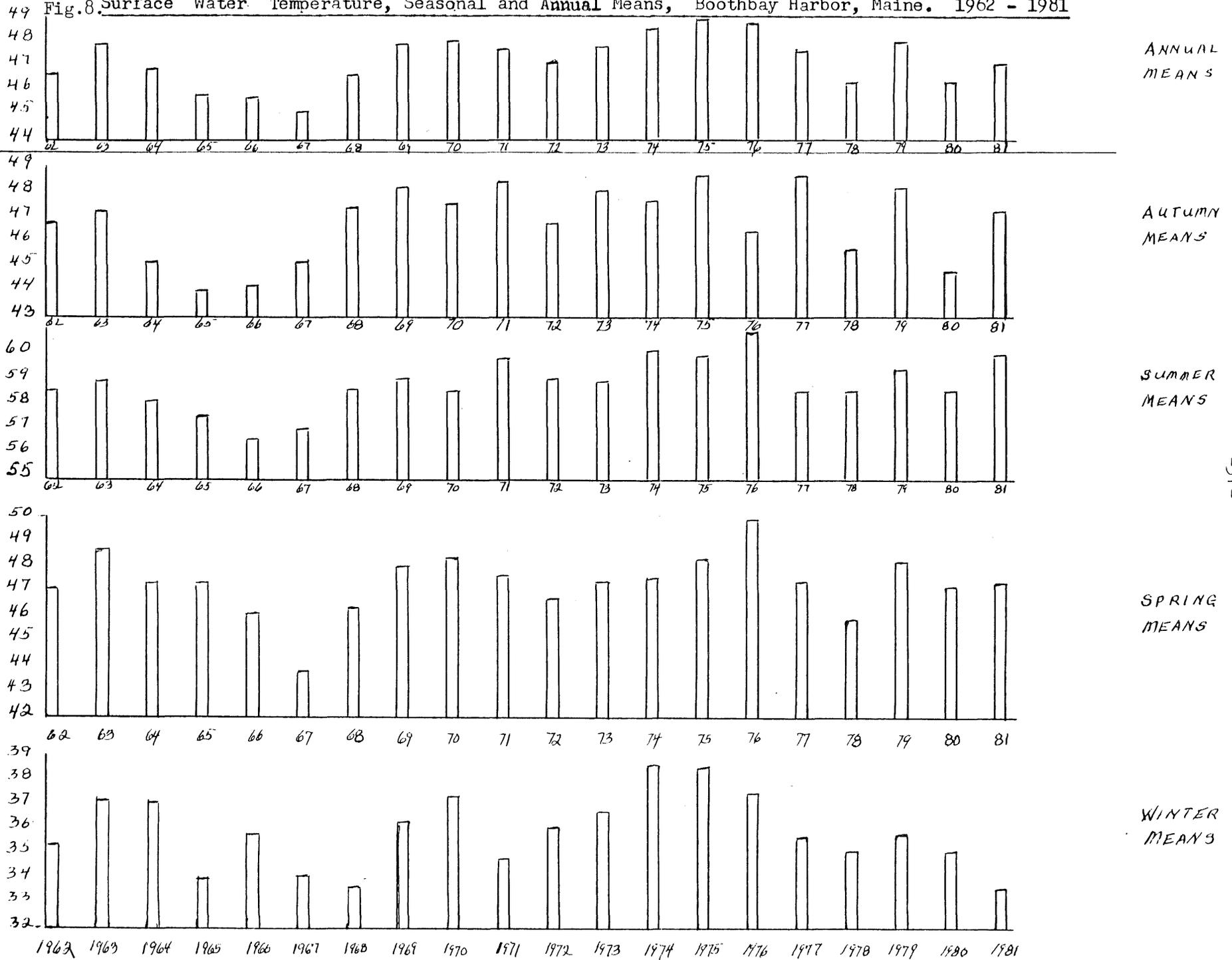
BOOTHBAY HARBOR, MAINE ————— 20 year mean: 47.3°F



TEMP.
°F

Fig. 8. Surface Water Temperature, Seasonal and Annual Means, Boothbay Harbor, Maine. 1962 - 1981

Figure 8



Appendix A. Daily water temperatures, 1962-1983.

Daily Surface Water Temperature 1962

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.2	32.4	33.0	43.6	48.6	60.8	—	68.9	—	61.1	53.9	—
2	36.0	32.2	31.5	42.3	48.5	62.2	66.4	69.3	69.0	62.1	53.0	—
3	35.5	32.7	30.0	41.5	48.5	61.8	66.1	69.1	68.8	61.6	52.4	44.8
4	35.1	33.0	30.3	41.9	48.6	61.8	66.2	69.0	—	62.4	52.3	45.0
5	35.2	33.8	32.0	42.1	49.5	62.4	65.9	69.0	67.9	62.6	51.9	45.0
6	36.0	34.4	31.8	43.1	50.3	61.3	65.8	69.4	66.8	62.7	51.1	44.9
7	38.2	31.9	31.9	44.6	50.0	63.5	66.6	71.0	68.0	61.1	49.8	44.6
8	37.9	31.8	32.5	45.7	50.2	63.0	67.0	72.0	68.7	60.0	49.9	44.1
9	36.6	32.8	32.9	45.0	49.5	65.4	68.8	69.6	67.0	61.1	50.7	44.2
10	35.3	33.0	33.4	45.0	50.0	63.3	67.4	68.2	67.4	60.4	51.4	43.2
11	34.0	31.0	33.9	45.0	50.6	63.6	68.0	67.3	68.5	59.3	51.0	41.8
12	34.0	30.0	34.3	45.3	52.9	63.8	68.0	—	68.0	60.2	49.9	—
13	34.5	30.5	35.0	44.6	52.8	62.3	—	67.3	66.9	59.5	50.0	38.5
14	34.4	31.3	35.0	44.5	51.8	61.6	—	67.8	68.5	59.0	49.4	37.6
15	35.4	31.8	34.8	44.3	51.6	61.7	68.3	—	—	58.6	46.8	—
16	36.5	30.5	35.0	44.7	51.7	62.9	67.7	68.8	—	58.2	45.0	38.1
17	35.5	32.5	36.0	44.8	51.7	64.1	67.0	69.1	66.6	59.1	46.1	36.8
18	33.5	31.2	36.1	44.7	52.7	64.3	67.0	—	66.2	58.6	46.7	37.0
19	32.8	31.7	36.0	45.4	56.3	64.8	66.4	70.3	65.2	58.5	45.0	37.0
20	34.1	31.2	36.6	45.8	54.9	65.6	68.4	70.2	65.0	58.3	45.2	37.0
21	33.6	30.7	37.3	45.8	55.0	—	69.0	—	63.2	60.0	45.7	35.1
22	34.8	31.9	37.3	46.0	54.9	—	69.5	—	—	58.1	46.6	36.0
23	36.4	32.6	37.9	47.1	55.9	—	68.1	—	—	57.3	45.3	35.0
24	34.2	32.4	38.0	46.5	56.3	65.6	68.2	—	62.0	57.5	45.9	—
25	35.0	32.3	38.6	46.5	56.6	65.5	68.0	—	62.8	56.4	45.2	35.4
26	35.1	32.5	38.9	47.0	57.5	65.5	68.0	69.8	63.0	56.3	44.4	35.7
27	36.5	33.0	39.2	48.1	57.4	65.5	68.0	70.3	63.1	54.3	44.0	36.4
28	35.0	33.2	39.5	49.3	57.6	65.5	67.7	70.4	61.9	54.2	44.1	35.4
29	33.3	—	39.3	50.0	58.2	65.4	68.5	—	—	53.7	44.6	35.3
30	33.7	—	40.4	49.0	59.0	66.3	69.0	—	—	53.2	45.0	34.7
31	32.4	—	41.4	—	60.0	—	69.0	—	—	53.7	—	30.3
Mean	35.1	32.1	35.5	45.3	53.2	63.7	67.7	69.6	66.1	58.7	48.1	37.4

Daily Surface Water Temperature 1963

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.0	30.1	29.5	40.5	47.6	—	68.1	72.5	67.8	59.9	54.5	48.2
2	30.5	30.3	30.4	41.1	47.4	—	70.5	70.8	67.9	60.0	54.7	46.3
3	30.9	30.3	30.0	41.4	47.2	60.0	72.5	72.2	68.6	60.4	53.0	46.5
4	31.0	29.8	30.5	41.2	50.6	60.0	69.2	72.8	68.5	60.0	52.5	46.0
5	30.5	31.0	31.3	39.5	51.8	63.0	69.0	71.5	67.4	60.3	53.0	44.5
6	30.3	30.2	31.2	42.8	49.5	63.6	68.3	71.4	66.2	59.3	—	45.2
7	31.0	31.9	32.0	41.4	49.5	63.2	68.2	72.7	64.0	60.0	53.2	—
8	31.5	29.7	32.1	41.4	50.0	60.9	—	73.2	—	60.4	53.7	45.0
9	31.7	31.5	34.5	41.7	—	62.3	64.5	73.4	65.0	59.8	—	45.7
10	31.9	31.0	34.5	41.4	51.0	61.8	67.1	72.4	67.4	59.0	52.7	44.1
11	32.7	30.1	32.6	42.0	50.9	61.2	66.8	73.0	66.0	59.5	52.3	43.5
12	33.3	30.7	33.5	42.5	50.2	60.8	68.6	69.8	66.5	59.0	52.5	42.5
13	33.3	31.0	33.9	43.0	50.3	60.5	68.5	71.0	65.8	—	52.2	41.3
14	31.7	30.0	34.3	43.3	51.0	61.7	67.4	70.7	64.0	57.8	51.6	—
15	31.2	30.0	33.1	43.3	51.5	61.0	69.5	69.7	63.5	58.5	50.0	39.5
16	32.0	30.0	36.3	43.8	52.2	60.5	68.8	70.1	63.0	58.7	50.2	38.2
17	31.7	28.6	35.0	—	—	61.0	71.2	70.7	62.8	59.5	50.7	37.0
18	32.8	28.6	35.3	45.0	53.2	63.0	—	69.9	62.7	58.8	51.0	36.3
19	—	29.7	35.0	45.0	53.5	63.5	71.5	70.5	63.1	59.2	51.3	35.6
20	34.6	30.1	36.0	45.7	54.1	64.0	70.9	69.6	—	59.6	50.4	33.5
21	33.8	30.5	34.7	46.7	54.5	64.6	69.6	70.8	63.5	59.5	50.5	—
22	30.8	29.5	35.9	45.8	54.8	62.6	68.5	70.6	62.8	58.6	50.0	32.9
23	32.9	29.5	36.3	46.0	55.0	62.9	67.9	—	61.0	58.0	51.5	32.6
24	32.2	—	36.9	45.5	55.2	65.6	68.2	70.2	59.7	58.2	50.7	33.4
25	30.8	29.6	37.5	46.2	—	64.8	69.8	68.6	59.5	—	48.6	34.3
26	30.9	29.6	37.7	45.8	56.8	65.6	72.7	68.7	59.3	59.2	48.5	33.7
27	32.6	29.7	41.0	—	56.5	65.9	70.8	69.0	60.2	59.5	49.0	34.2
28	30.7	29.5	39.1	46.6	56.5	—	—	68.5	61.3	59.4	49.0	33.2
29	29.5	—	39.3	46.8	57.7	66.0	71.9	69.5	—	57.6	49.0	34.0
30	30.0	—	—	46.7	—	65.3	72.2	—	60.0	53.8	—	32.3
31	30.2	—	39.7	—	57.7	—	72.5	68.3	—	54.3	—	29.7
Mean	31.6	30.1	33.4	43.7	52.6	62.9	67.3	70.8	64.0	58.9	51.3	38.9

Daily Surface Water Temperature 1961

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.8	33.4	32.6	37.5	47.0	58.5	68.0	—	70.1	61.5	53.5	43.6
2	33.0	34.0	33.0	38.9	47.4	57.6	66.5	69.0	69.3	61.7	53.5	42.5
3	33.3	31.0	33.6	39.2	47.6	57.5	68.1	—	69.0	61.0	53.5	43.2
4	33.7	31.2	33.6	39.0	48.1	58.6	68.2	68.0	68.8	61.5	53.2	43.5
5	33.8	32.1	35.3	38.7	49.0	58.3	68.0	68.1	68.9	61.5	52.3	43.5
6	33.6	32.5	35.6	39.7	48.5	59.3	67.2	68.3	68.4	60.3	52.0	43.0
7	34.7	33.4	35.2	41.5	49.0	59.5	70.5	68.9	69.0	60.2	52.2	41.3
8	33.6	32.8	35.6	40.5	50.7	59.4	70.6	68.4	69.4	58.9	—	40.8
9	33.8	32.1	35.5	40.5	52.5	59.3	69.8	67.4	68.8	59.0	52.5	41.0
10	35.3	32.1	35.8	40.3	52.6	59.7	68.4	67.2	68.5	58.9	52.5	39.2
11	33.2	32.0	35.2	41.8	52.5	59.3	67.5	—	68.8	57.0	52.8	39.0
12	31.5	32.1	35.2	42.4	54.3	60.5	68.0	68.1	68.7	56.5	52.7	41.8
13	32.5	32.0	35.0	42.5	53.7	61.1	67.8	68.0	67.5	56.6	52.8	41.5
14	29.7	33.0	35.8	42.7	52.9	62.2	67.8	68.0	66.8	56.7	52.1	42.0
15	ICE	32.2	37.4	43.7	52.4	61.9	68.5	67.8	—	56.7	51.5	41.0
16	ICE	32.8	36.2	42.7	53.0	64.6	71.0	66.9	64.6	57.0	51.1	39.2
17	29.8	30.5	36.6	43.5	53.5	61.3	69.3	67.3	64.9	—	50.5	40.2
18	31.0	31.8	36.8	44.2	54.2	62.0	71.9	67.8	65.1	57.8	49.8	41.0
19	31.5	32.0	35.5	44.9	54.2	63.5	70.1	68.8	65.0	57.4	49.7	38.0
20	31.7	31.5	36.0	44.1	57.7	62.9	69.2	69.5	63.6	57.2	50.2	38.1
21	32.7	33.0	37.2	43.9	54.8	64.0	69.3	66.5	63.8	56.4	50.0	38.0
22	32.1	30.9	37.0	44.0	55.0	64.5	69.9	67.6	64.0	55.0	47.4	37.2
23	31.9	30.6	36.7	44.5	—	64.2	70.0	68.2	64.3	55.7	46.1	38.0
24	32.6	31.3	37.0	45.0	57.5	64.2	69.8	68.8	64.2	54.5	47.0	38.3
25	33.5	29.5	37.6	—	58.0	64.8	68.2	68.7	63.0	53.2	47.0	40.6
26	34.4	31.6	38.3	45.0	56.9	65.2	67.5	69.2	60.8	53.6	48.5	42.3
27	33.0	32.0	37.6	45.4	57.5	65.1	68.3	68.5	63.1	54.9	47.0	42.0
28	33.7	32.0	37.8	46.4	57.6	65.3	68.5	68.8	63.2	55.0	47.5	40.5
29	31.2	33.0	38.9	46.5	58.2	66.0	70.3	68.0	62.5	55.4	48.0	39.0
30	32.5	—	38.2	46.6	58.2	66.2	71.0	68.9	62.2	55.2	46.7	39.3
31	32.0	—	37.6	—	59.5	—	68.4	70.1	—	54.0	—	39.8
Mean	32.7	32.0	36.1	42.5	53.3	61.8	68.9	68.2	66.1	57.3	50.5	40.6

Daily Surface Water Temperature 1965

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	38.5	30.0	30.5	35.3	46.8	58.5	64.8	68.5	67.0	62.5	52.0	43.6
2	38.0	29.8	31.7	37.0	46.8	58.9	65.2	67.8	67.5	62.3	50.0	43.0
3	37.3	29.5	32.6	36.3	47.2	57.7	65.2	67.2	67.5	61.9	49.8	43.2
4	35.4	28.8	32.5	37.4	47.2	57.7	65.1	67.5	67.2	59.8	50.6	44.0
5	34.5	29.4	33.2	38.1	48.0	58.0	65.3	68.7	66.0	58.0	48.8	43.2
6	36.0	29.7	33.8	38.2	48.2	58.5	65.8	68.9	65.4	56.8	49.2	43.4
7	34.8	29.8	34.0	39.0	48.3	59.5	65.8	69.5	66.0	56.7	49.7	43.5
8	35.5	31.3	34.5	39.1	48.2	60.4	65.5	69.9	66.0	57.2	49.8	41.8
9	37.2	31.3	35.0	39.0	49.5	60.9	66.0	70.0	65.8	57.9	49.5	41.8
10	37.0	31.4	35.2	39.5	50.5	61.7	67.8	70.7	66.0	57.8	48.5	42.2
11	36.4	31.5	35.0	40.2	51.2	61.0	67.8	69.7	67.0	57.8	48.4	42.1
12	35.2	31.9	34.2	40.4	51.2	61.7	67.4	69.9	66.0	57.5	48.6	41.5
13	35.5	33.0	34.2	40.2	52.1	62.2	67.5	70.7	65.3	56.8	49.0	41.5
14	35.3	31.4	34.8	40.1	52.3	61.0	69.2	70.7	64.4	57.0	49.0	41.0
15	33.2	31.5	35.7	40.8	53.4	60.7	69.8	70.5	64.1	57.5	47.5	41.0
16	32.6	31.5	35.4	42.5	53.7	59.4	68.7	71.5	65.0	58.0	48.0	41.2
17	31.3	31.2	35.3	41.8	54.5	58.7	69.5	72.5	65.0	56.8	48.0	41.0
18	30.7	32.0	36.0	42.5	54.2	59.0	70.5	72.8	64.3	56.5	46.5	40.2
19	30.2	31.7	36.3	42.5	53.6	61.0	70.3	73.4	64.5	56.5	46.0	40.0
20	31.7	29.7	35.8	42.2	53.9	61.2	69.5	72.8	64.1	56.9	45.5	38.6
21	31.2	30.3	34.8	42.3	54.4	62.8	70.0	71.2	65.0	57.5	46.0	38.0
22	31.1	31.5	34.4	43.2	53.8	63.3	69.8	70.5	65.5	58.0	46.5	37.9
23	32.2	29.2	35.7	43.5	54.8	64.0	69.8	69.3	66.0	57.3	45.9	38.3
24	31.4	29.4	36.2	42.7	54.3	64.8	69.8	69.8	66.0	56.9	45.1	39.2
25	30.4	30.5	35.9	43.2	55.0	64.6	69.9	70.5	66.0	55.8	45.0	40.3
26	30.7	31.6	36.4	43.8	56.5	64.5	70.2	70.8	65.0	55.4	45.2	40.5
27	31.9	30.0	36.2	44.3	56.7	64.8	69.9	70.0	64.0	55.8	45.6	37.2
28	30.8	31.7	36.5	44.1	57.6	65.3	70.0	70.7	63.3	55.0	45.1	37.3
29	30.5	—	37.0	44.6	57.6	65.9	70.3	68.8	63.0	53.0	44.6	38.1
30	30.3	—	36.5	45.3	57.8	66.0	69.8	67.5	63.5	52.0	43.7	38.0
31	30.2	—	35.9	—	57.2	—	69.0	67.6	—	52.5	—	39.2
Mean	33.5	30.0	34.9	41.0	52.5	61.5	68.3	70.0	65.4	57.1	47.6	40.7

Daily Surface Water Temperature 1966

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.8	29.0	34.2	38.7	47.0	56.2	65.5	68.4	69.8	60.5	53.1	46.1
2	39.2	29.5	33.6	39.3	46.7	56.0	66.7	69.7	68.8	59.0	53.8	46.5
3	38.9	30.0	33.9	39.5	46.8	56.8	67.1	69.4	69.5	59.1	55.2	44.8
4	38.0	30.2	34.5	38.0	47.0	57.8	68.2	69.4	68.5	59.9	51.7	41.5
5	37.8	30.2	35.0	40.0	47.0	58.6	67.5	69.8	67.8	61.0	51.9	41.5
6	38.1	29.4	35.5	40.5	-	59.6	67.5	69.2	68.0	59.0	52.1	43.0
7	38.2	29.4	34.7	41.7	47.4	60.0	67.0	69.8	67.8	57.7	50.9	42.5
8	38.6	29.7	34.4	41.9	48.0	60.0	68.0	70.4	68.2	59.0	51.2	43.5
9	35.3	30.0	34.8	41.6	47.5	60.5	69.2	69.0	67.5	59.0	51.8	44.0
10	35.4	30.0	35.1	42.3	47.0	59.8	69.0	68.5	66.6	59.4	52.3	44.2
11	35.8	31.1	35.8	42.6	47.3	59.0	69.0	69.5	67.5	59.0	53.3	46.0
12	33.8	31.9	35.8	42.6	48.4	59.0	69.2	69.6	67.1	58.4	53.0	43.2
13	33.2	31.8	35.3	42.5	48.5	58.8	69.8	68.4	66.6	57.5	51.7	43.0
14	33.8	33.3	35.3	42.0	49.0	59.5	69.8	68.8	66.5	57.9	51.0	43.1
15	33.6	32.5	35.8	42.5	49.5	61.0	69.6	69.0	66.7	58.2	50.0	41.9
16	32.2	32.4	35.4	43.6	49.2	62.0	69.2	69.0	65.1	58.8	49.2	41.5
17	30.8	33.1	35.8	43.8	49.8	62.0	69.6	68.8	65.3	57.1	49.5	41.4
18	31.0	32.0	36.6	44.3	49.7	62.0	70.3	69.5	65.7	56.4	50.8	42.3
19	31.0	33.0	37.0	44.6	50.5	62.5	70.0	70.1	66.0	57.0	49.2	41.8
20	31.8	30.7	38.0	45.0	50.7	61.9	70.2	70.1	65.7	55.4	47.5	40.9
21	32.0	30.2	37.6	44.5	51.5	63.0	69.0	69.7	64.5	55.4	47.1	40.6
22	32.0	29.6	38.5	45.4	52.4	63.0	69.0	69.0	64.0	55.4	-	38.2
23	32.0	31.5	38.5	45.3	52.5	63.0	69.7	69.8	63.0	55.8	47.0	37.5
24	32.0	31.8	38.8	45.5	53.5	65.5	69.7	69.1	62.5	56.5	45.8	38.0
25	32.0	31.9	40.1	45.6	55.2	63.4	70.0	69.3	61.2	55.8	47.2	37.0
26	32.0	31.6	38.5	45.5	55.6	61.5	70.6	69.2	60.7	55.2	48.2	36.5
27	32.0	31.6	39.7	45.7	54.8	62.8	70.0	69.1	60.8	54.7	48.0	36.5
28	30.0	32.8	38.5	46.0	57.0	64.0	70.0	69.6	61.0	54.8	48.2	36.0
29	28.5	-	38.0	45.5	55.8	65.5	69.8	69.5	61.4	55.0	48.2	36.5
30	30.0	-	38.7	45.8	55.3	65.0	69.4	70.5	61.0	53.0	47.9	35.8
31	29.0	-	39.2	-	55.8	-	69.0	69.9	-	52.5	-	34.7
Mean	33.8	31.1	36.5	43.1	50.5	61.0	69.0	69.4	65.5	57.2	50.2	40.1

Daily Surface Water Temperature 19 67

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.0	35.2	30.2	36.0	42.8	51.0	61.0	71.0	68.0	61.5	53.8	40.8
2	36.7	35.5	29.6	37.1	43.5	52.0	62.1	70.3	66.5	55.8	54.2	39.5
3	36.5	35.0	31.1	38.3	43.7	54.0	63.2	68.3	65.0	61.5	55.2	40.5
4	36.6	34.8	31.0	36.8	43.6	53.0	64.0	69.3	65.0	62.0	55.0	40.8
5	36.2	35.3	31.3	38.3	44.3	53.5	—	70.0	65.7	62.2	53.4	39.0
6	34.8	34.5	31.8	38.5	46.0	55.7	64.0	69.8	65.8	62.5	52.5	39.2
7	35.1	32.3	31.8	38.2	44.5	58.5	65.0	69.8	65.5	61.1	52.8	40.0
8	37.0	30.8	31.0	37.9	44.6	57.3	65.0	69.7	65.2	60.5	50.0	40.5
9	36.9	31.2	32.0	38.0	45.8	57.1	66.5	69.0	66.0	61.0	49.5	40.0
10	36.5	32.3	32.6	39.1	45.8	58.5	67.0	69.7	66.4	61.5	49.7	39.0
11	35.3	33.0	33.5	38.1	45.7	59.6	67.3	69.0	67.5	61.1	50.2	39.2
12	35.0	31.1	34.0	38.2	46.2	60.3	65.6	68.0	63.3	60.4	50.2	40.0
13	35.2	30.5	34.3	38.9	46.1	59.7	66.3	67.0	62.5	60.0	49.7	40.2
14	36.0	31.5	35.6	39.7	47.3	57.2	66.5	66.2	61.8	59.0	48.4	40.0
15	36.8	32.6	34.8	41.5	47.9	58.0	66.5	67.1	62.1	59.3	48.0	38.8
16	35.7	34.1	33.5	40.0	47.7	60.0	67.0	68.0	62.6	59.0	45.7	38.0
17	35.8	32.5	33.5	40.0	48.8	61.4	66.8	69.0	62.5	59.7	45.0	37.0
18	35.0	33.0	30.0	40.0	48.6	61.5	66.6	69.3	62.5	60.5	46.2	38.1
19	34.0	32.1	30.0	39.7	49.3	61.1	67.0	69.5	63.5	59.3	45.1	39.3
20	33.7	32.8	31.0	40.3	49.9	60.0	67.0	69.5	63.1	56.8	47.0	38.2
21	35.0	33.6	32.5	41.0	49.5	60.2	66.5	69.2	62.7	57.4	44.0	38.4
22	35.5	31.0	32.8	41.5	50.0	59.8	67.5	69.0	63.3	57.1	44.2	40.0
23	36.2	32.7	32.5	41.6	50.0	60.5	68.2	68.5	62.5	56.7	44.5	39.0
24	36.6	30.9	32.0	42.0	50.5	61.5	68.7	68.0	62.5	56.7	43.1	37.6
25	37.0	30.0	33.0	41.9	50.0	62.3	69.1	66.5	61.3	57.0	44.8	38.1
26	37.3	30.0	34.0	42.0	48.8	61.7	69.0	66.5	61.0	57.2	43.8	38.9
27	37.5	30.0	34.5	42.8	48.0	62.4	70.0	67.0	61.2	56.2	44.6	37.1
28	38.5	31.2	34.5	42.0	48.5	63.0	70.5	68.5	61.7	56.8	43.0	37.2
29	36.0	—	34.8	42.1	50.2	62.0	69.5	68.2	63.6	55.0	41.2	37.3
30	33.6	—	34.7	42.2	50.0	61.0	69.5	68.4	63.8	54.0	42.0	35.9
31	33.2	—	35.2	—	49.9	—	69.7	69.0	—	53.5	—	36.4
Mean	35.9	32.5	32.7	39.8	47.3	58.8	66.8	68.7	63.7	58.9	47.8	38.8

Daily Surface Water Temperature 1968

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.1	31.7	29.8	41.3	48.6	56.8	65.4	70.0	67.7	64.6	54.1	47.7
2	34.6	32.5	29.3	39.1	49.3	57.7	66.9	70.5	68.0	65.4	54.9	45.5
3	35.0	34.7	29.9	39.9	49.5	57.5	67.3	70.5	68.2	65.7	55.1	45.4
4	35.3	32.2	29.2	41.0	50.6	57.5	66.6	71.1	68.4	65.3	54.4	45.7
5	33.1	31.6	29.9	42.4	50.5	57.7	65.0	71.5	67.8	63.4	54.7	45.1
6	33.0	32.0	30.3	40.2	50.5	59.5	66.0	69.5	66.8	62.5	54.0	42.7
7	34.0	32.1	30.2	40.5	49.6	60.5	66.8	70.0	67.0	62.2	53.7	42.2
8	29.5	32.3	29.8	41.4	51.0	61.0	67.0	71.0	66.7	62.0	51.8	42.0
9	29.0	30.6	31.0	42.8	51.2	60.4	67.5	71.2	66.8	61.0	51.4	39.3
10	29.0	32.0	31.0	43.0	52.0	60.8	67.9	72.0	66.8	61.0	51.6	36.7
11	29.0	29.7	31.2	43.0	52.0	59.4	67.2	70.0	66.0	61.0	49.7	36.0
12	29.5	29.9	31.5	43.3	52.5	59.8	67.0	70.4	67.2	61.0	49.7	37.2
13	29.5	30.0	34.5	44.1	52.0	60.2	67.2	70.4	65.8	61.0	47.0	38.5
14	30.0	29.3	31.0	44.5	53.0	60.5	67.5	70.6	65.7	61.2	46.4	41.0
15	30.5	29.3	32.2	44.4	52.6	62.0	69.0	69.6	66.4	61.0	47.0	41.3
16	29.8	29.3	33.5	44.2	54.0	63.7	70.0	69.8	65.7	61.2	48.5	38.5
17	29.5	29.5	34.0	44.3	54.9	61.5	70.4	70.0	65.5	61.5	47.9	35.5
18	29.5	29.0	34.9	45.5	54.7	60.8	69.3	70.0	65.5	61.6	47.7	35.5
19	29.7	29.3	35.0	45.5	53.3	62.0	70.5	69.3	65.3	62.0	48.8	36.5
20	29.4	29.4	36.1	46.0	53.3	63.0	70.8	69.5	65.7	62.2	46.7	37.0
21	30.1	29.1	36.3	46.0	52.8	62.0	69.3	69.5	66.0	60.8	45.7	36.7
22	29.8	29.0	36.5	46.0	54.5	63.0	70.5	69.0	66.0	59.5	45.9	36.8
23	30.3	29.2	36.3	45.5	55.5	63.5	71.0	69.5	66.5	60.0	45.0	37.0
24	31.0	29.5	36.0	46.3	56.0	63.5	70.8	68.5	66.8	60.2	46.4	36.5
25	30.0	29.5	35.4	47.7	54.5	64.7	71.2	68.9	67.0	60.0	46.8	31.8
26	29.5	29.3	36.5	47.2	55.1	64.5	71.2	69.7	67.3	59.0	43.7	30.0
27	30.0	29.6	37.5	47.8	55.5	64.2	70.5	68.6	67.2	57.0	45.5	30.8
28	30.5	29.9	37.8	47.5	55.7	64.0	70.7	68.0	66.4	58.0	45.1	32.4
29	30.7	30.2	38.2	48.5	56.0	62.5	70.0	68.5	65.8	57.0	47.5	34.3
30	31.0	—	39.0	49.0	56.5	63.8	70.2	67.5	65.0	56.3	45.5	31.8
31	31.6	—	39.5	—	56.7	—	70.0	67.5	—	54.3	—	32.9
Mean	31.0	30.4	33.7	44.3	53.0	61.3	68.7	69.7	66.6	60.9	49.1	38.0

Daily Surface Water Temperature 1969

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33.7	33.0	34.9	39.0	49.8	59.2	68.5	70.0	70.6	64.2	53.0	45.0
2	29.5	32.6	34.7	40.2	50.0	60.0	67.5	70.2	71.4	64.5	53.5	45.2
3	30.0	33.2	34.0	39.2	50.2	60.9	68.2	70.3	70.9	64.8	54.3	45.5
4	31.0	31.9	34.0	39.7	50.5	60.0	70.2	70.8	69.8	64.0	54.5	42.0
5	31.0	31.0	33.2	41.3	51.5	60.6	68.8	71.2	69.2	63.5	54.6	40.8
6	31.0	30.4	32.2	40.5	52.0	61.0	68.1	71.2	69.2	62.2	53.3	39.8
7	32.0	31.2	33.5	40.6	52.0	61.7	67.8	71.0	71.0	62.8	53.2	39.9
8	30.5	31.2	31.2	41.7	51.8	62.0	66.8	72.0	70.3	65.2	53.5	41.3
9	30.5	32.0	31.8	41.8	52.6	62.6	66.5	72.0	69.5	62.6	53.8	42.5
10	31.0	32.0	32.5	42.7	52.3	63.0	67.2	72.4	67.7	62.9	53.5	42.2
11	29.0	30.5	32.0	43.1	52.5	63.6	68.0	71.8	67.9	65.5	52.8	43.6
12	30.0	31.6	31.9	42.8	52.6	63.6	68.0	72.1	68.0	63.4	52.5	42.6
13	31.0	31.8	33.0	43.5	53.0	65.5	67.5	72.7	68.0	63.5	51.7	42.3
14	30.4	31.0	33.2	44.9	53.5	67.0	67.2	73.2	68.7	64.0	52.1	42.0
15	29.8	30.3	33.6	45.3	53.0	67.0	68.0	73.2	68.6	62.0	52.0	41.5
16	30.3	30.0	33.8	45.9	54.2	67.0	68.7	73.5	69.2	61.6	49.8	39.0
17	30.3	30.7	34.2	46.7	54.5	65.4	69.8	74.0	69.0	65.0	49.6	38.2
18	31.1	31.8	35.0	47.1	55.3	65.2	70.0	73.7	69.0	60.5	50.0	38.6
19	33.5	32.8	35.8	47.0	57.0	65.2	70.0	74.8	67.5	59.8	49.6	39.0
20	30.9	33.0	36.3	45.8	57.7	66.0	69.2	73.0	67.3	60.5	50.5	37.0
21	31.5	33.3	36.3	45.6	56.6	67.0	68.0	71.8	66.0	60.5	47.5	38.0
22	32.0	33.5	36.2	46.5	56.1	65.3	67.3	71.3	65.9	59.8	46.9	39.3
23	32.8	33.7	36.1	48.0	55.5	65.2	67.0	71.0	65.5	55.8	47.2	37.5
24	34.5	33.6	37.1	47.7	56.5	64.5	66.3	71.7	65.1	54.5	47.7	37.2
25	34.4	34.0	38.2	47.1	56.5	64.8	66.5	72.1	65.3	55.0	46.0	35.1
26	33.5	33.1	39.5	48.0	57.5	65.0	66.8	71.6	66.0	55.5	46.3	35.5
27	32.2	34.1	38.2	48.5	56.6	66.0	66.8	70.0	65.0	55.7	46.0	37.7
28	31.0	34.1	37.6	49.5	57.0	67.0	67.2	69.8	64.9	54.9	45.5	35.6
29	31.5	—	39.0	49.8	58.2	67.5	68.2	69.5	64.2	53.3	46.0	34.5
30	32.0	—	39.1	49.5	59.0	67.9	69.5	70.0	64.5	53.4	45.2	35.8
31	33.3	—	38.9	—	59.8	—	69.5	70.3	—	53.1	—	36.0
Mean	31.5	32.2	35.1	44.6	54.4	64.2	68.1	71.7	67.8	60.2	50.4	39.6

Daily Surface Water Temperature 1970

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33.5	29.4	32.0	37.9	48.7	58.7	64.2	71.8	69.5	65.1	55.3	47.3
2	33.3	29.5	32.9	38.8	50.0	59.8	64.5	72.0	68.0	64.8	55.5	47.8
3	32.9	31.5	32.6	38.9	50.6	60.5	64.0	71.5	69.0	64.9	54.7	47.5
4	33.4	29.7	32.6	38.8	50.3	59.4	65.0	72.0	69.2	65.0	54.8	48.7
5	32.0	30.0	33.5	39.5	50.0	59.4	65.4	71.8	69.5	62.8	54.5	45.5
6	32.5	31.1	34.0	40.0	50.6	59.5	66.0	69.7	68.3	63.3	53.0	44.8
7	32.3	31.3	33.2	40.4	49.2	58.8	66.5	69.3	68.5	63.3	53.2	43.5
8	31.6	31.6	34.2	40.4	50.3	58.8	67.6	69.5	67.0	64.0	53.5	40.8
9	30.4	32.0	32.1	41.5	51.7	60.5	68.0	70.6	66.7	64.0	52.8	42.1
10	29.2	32.3	31.7	42.0	52.0	62.0	68.8	70.1	66.4	64.0	53.0	42.2
11	29.6	33.8	32.3	41.6	53.5	62.5	69.3	69.2	66.5	63.5	53.5	41.7
12	30.6	32.0	33.0	41.8	54.0	62.8	69.0	68.3	66.0	63.5	53.5	41.2
13	29.5	32.1	34.2	42.0	53.2	62.0	68.3	70.4	66.1	64.0	53.2	41.0
14	29.0	31.3	34.0	43.5	53.0	61.0	68.8	71.5	66.5	64.2	52.5	40.0
15	29.0	31.8	33.5	42.7	52.5	61.9	67.5	72.0	65.5	64.5	52.3	39.2
16	29.0	31.8	33.7	43.3	52.7	62.3	69.3	72.7	65.0	64.0	52.0	39.2
17	30.0	31.9	34.0	43.3	53.4	63.1	68.5	73.0	64.5	60.2	50.6	39.5
18	29.3	32.5	34.6	43.7	53.7	63.2	69.0	71.2	65.0	57.3	50.8	37.8
19	29.2	33.3	35.0	44.5	53.0	63.0	69.6	71.8	64.8	58.2	50.9	38.5
20	29.1	32.1	34.9	44.8	53.0	63.3	69.4	71.2	64.9	58.5	50.8	39.2
21	29.0	31.4	36.5	44.3	54.2	62.8	69.0	70.7	65.1	58.5	50.5	38.8
22	28.9	31.6	36.1	44.5	54.3	63.7	69.0	71.0	66.0	58.5	50.3	37.7
23	29.0	32.8	36.7	44.8	54.5	63.3	69.5	70.0	66.3	59.0	51.1	36.8
24	29.2	31.3	36.6	44.8	54.7	64.9	71.5	69.0	66.6	59.0	49.2	37.6
25	29.3	33.0	37.1	46.0	54.6	65.4	71.5	69.8	66.9	59.0	47.7	35.2
26	29.5	31.6	37.9	46.2	55.5	64.5	71.5	70.5	67.0	58.3	47.2	36.0
27	29.3	32.5	39.3	47.3	56.4	64.0	71.7	71.1	67.5	57.1	47.3	34.5
28	29.5	33.0	38.3	48.6	55.8	63.5	72.0	70.5	65.0	55.5	47.2	33.5
29	30.0	—	39.0	49.0	56.8	64.1	72.0	70.5	65.5	55.5	47.9	33.5
30	30.0	—	37.9	48.5	57.1	64.5	72.1	70.5	65.5	55.2	47.9	32.0
31	29.0	—	38.0	—	58.9	—	71.8	71.0	—	55.2	—	32.1
Mean	30.3	31.7	34.9	43.1	53.2	62.1	68.7	70.8	66.6	61.0	51.6	39.8

Daily Surface Water Temperature 1971

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.2	29.0	33.3	36.6	44.6	55.0	66.5	71.0	68.0	65.5	60.5	44.0
2	32.0	28.6	33.0	38.7	43.5	55.8	66.2	72.5	68.3	65.8	61.0	45.2
3	31.0	28.5	34.0	39.5	45.9	56.8	65.2	73.0	68.2	66.0	61.0	41.5
4	32.5	28.8	34.1	39.0	45.6	57.2	65.9	73.4	68.2	65.0	59.5	41.0
5	35.0	28.9	31.8	39.4	45.5	57.5	67.0	71.0	68.8	65.2	57.5	39.8
6	33.5	31.0	33.0	39.5	46.5	58.2	67.3	70.3	69.2	65.8	58.0	39.7
7	32.0	29.3	34.0	39.6	46.8	59.4	68.6	71.0	68.9	64.8	58.7	42.5
8	31.0	29.5	33.8	38.7	47.6	61.0	69.0	71.1	69.0	63.0	55.8	41.5
9	31.0	29.6	32.1	39.0	47.8	61.0	69.3	72.0	69.5	63.3	53.1	41.3
10	32.4	29.7	33.0	40.6	47.1	60.4	70.0	72.8	69.0	63.4	52.5	41.8
11	32.5	29.0	34.1	40.7	47.5	60.2	69.0	72.6	69.0	63.0	52.1	43.0
12	32.8	29.5	33.8	40.6	48.6	60.6	68.4	70.5	69.0	62.0	51.1	41.8
13	30.8	30.5	34.5	41.7	49.7	62.5	67.7	71.0	70.0	61.3	51.8	42.5
14	31.4	32.1	34.8	42.1	50.2	61.5	68.2	71.2	68.8	62.0	49.8	41.5
15	31.4	30.3	35.0	40.6	49.7	60.5	68.4	69.3	69.0	62.7	49.2	42.4
16	29.5	30.0	36.7	41.2	50.3	60.5	69.0	69.0	69.8	62.6	49.0	43.2
17	29.1	30.4	36.0	41.1	50.2	61.5	69.6	69.7	70.5	62.1	48.8	42.4
18	29.1	31.2	35.8	41.7	50.8	63.0	69.0	69.8	69.0	61.3	49.0	42.0
19	29.0	31.0	35.6	42.1	51.0	63.5	69.1	70.3	68.5	61.0	49.5	39.7
20	—	31.5	36.2	42.6	50.8	63.8	69.1	71.0	68.2	60.7	50.2	40.5
21	28.8	31.8	36.5	43.4	51.1	64.3	69.1	71.0	68.5	60.1	49.7	40.4
22	29.1	31.9	36.3	43.0	51.3	64.5	69.0	71.5	67.9	60.5	48.2	39.2
23	29.5	32.9	36.7	43.0	51.7	64.5	68.8	71.1	67.5	60.6	47.2	36.7
24	29.4	32.0	36.0	43.5	52.1	64.4	69.0	68.9	66.8	60.8	45.9	39.4
25	29.5	32.0	35.8	42.9	53.4	64.5	69.9	69.2	66.0	60.5	45.5	38.5
26	29.7	32.0	36.3	43.0	54.4	66.0	69.3	69.8	66.0	60.5	43.1	39.2
27	29.2	33.0	36.6	44.0	55.2	65.5	69.8	69.2	65.8	60.5	45.2	39.7
28	28.9	33.7	36.0	44.2	54.5	66.0	70.5	69.2	65.8	60.6	45.5	40.5
29	28.8	—	36.9	43.8	55.9	64.5	69.5	68.4	65.6	60.7	45.1	39.5
30	30.2	—	36.3	43.5	55.2	65.8	70.2	69.0	66.2	60.5	46.0	39.3
31	29.2	—	37.1	—	55.0	—	71.0	68.7	—	60.4	—	38.8
Mean	30.6	30.6	35.0	41.3	50.0	61.7	68.7	70.6	68.2	62.3	51.3	40.8

Daily Surface Water Temperature 1972

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	37.5	32.8	34.0	33.8	46.8	59.0	63.3	68.4	69.5	64.0	53.2	44.9
2	38.0	34.0	36.1	39.1	47.5	58.3	65.2	69.5	68.8	63.2	53.6	43.0
3	38.0	33.7	38.0	39.0	47.0	58.8	66.9	68.4	68.0	62.8	54.8	44.5
4	39.0	34.7	35.0	39.2	48.5	59.8	66.5	70.0	67.4	63.2	53.8	44.8
5	34.2	32.8	35.8	38.5	48.0	60.1	66.5	68.5	67.4	63.5	53.2	44.8
6	36.9	32.5	32.9	39.3	47.2	59.4	64.1	67.7	67.4	63.5	52.5	44.9
7	37.3	33.3	33.9	39.3	49.0	59.4	64.6	68.7	68.4	63.8	52.0	44.5
8	35.2	31.2	36.0	38.0	49.5	60.0	64.6	70.0	68.3	63.5	52.0	44.0
9	36.5	30.5	33.4	38.0	49.0	60.4	65.8	69.5	68.3	62.0	51.5	45.0
10	40.3	30.8	33.4	38.5	48.2	60.5	66.5	68.5	66.5	60.0	50.5	45.8
11	39.5	30.3	34.0	39.0	48.3	59.5	67.0	68.5	65.8	60.0	50.0	43.7
12	39.5	30.5	34.8	39.2	48.8	59.9	67.7	69.0	66.6	60.3	51.2	42.3
13	40.0	31.6	35.0	39.6	49.8	59.8	68.7	69.0	67.3	59.4	51.5	44.0
14	41.0	33.1	35.0	40.4	51.0	60.1	68.0	69.4	67.3	59.5	51.0	43.0
15	39.0	32.6	35.1	40.0	51.8	60.9	68.2	68.5	67.0	58.4	49.8	43.0
16	36.0	33.2	35.0	40.9	51.6	61.6	68.9	68.0	66.2	57.5	46.0	42.2
17	34.5	33.1	36.5	40.4	52.5	62.0	69.0	68.1	67.5	57.8	47.0	37.5
18	35.5	33.2	37.0	41.3	52.2	60.6	69.5	67.7	67.5	56.0	47.0	39.0
19	37.0	34.0	36.3	42.6	52.5	59.3	68.7	69.0	67.9	55.4	47.7	39.3
20	35.6	32.7	35.8	42.6	52.0	59.1	69.2	68.1	66.0	53.5	48.8	39.5
21	37.0	30.0	36.6	42.4	52.4	60.5	67.8	68.1	65.4	53.5	47.1	39.8
22	36.5	32.5	37.2	42.5	53.3	60.0	69.0	68.7	65.3	53.9	46.0	40.9
23	37.3	29.4	38.0	43.2	53.5	60.5	70.0	69.1	64.8	54.4	44.5	40.0
24	37.3	31.0	37.5	43.5	54.2	61.5	70.0	70.3	64.5	55.5	42.5	40.2
25	38.1	31.5	37.5	43.7	54.5	61.5	70.0	70.5	64.9	55.7	43.2	40.0
26	34.5	32.0	37.2	43.6	54.2	62.5	69.4	70.6	65.7	54.4	45.0	40.5
27	34.0	31.4	37.0	44.0	54.0	63.7	69.8	70.4	65.9	54.5	44.6	40.2
28	34.5	32.6	37.2	44.0	55.0	65.0	70.5	70.5	65.5	54.8	45.2	39.0
29	34.0	33.5	38.0	45.0	55.5	65.3	71.0	70.2	65.0	56.1	45.0	38.5
30	34.5	—	38.7	45.5	57.0	64.2	69.6	70.2	65.3	54.2	44.4	38.8
31	33.2	—	38.5	—	58.1	—	70.0	69.7	—	54.0	—	39.8
Mean	37.0	32.2	36.0	41.1	53.1	60.8	67.9	69.4	66.7	58.3	48.7	41.9

Daily Surface Water Temperature 1973

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.5	37.0	32.8	40.8	49.5	58.5	66.5	69.7	71.0	63.5	54.2	46.2
2	40.0	35.5	34.0	41.7	51.0	59.0	67.0	69.0	71.0	63.3	54.2	44.0
3	38.0	38.0	34.5	41.3	51.7	59.3	67.7	69.0	70.4	64.0	54.2	45.8
4	39.0	36.1	34.9	41.6	51.8	59.7	68.0	69.5	73.1	64.0	53.4	45.8
5	39.0	36.7	35.4	42.0	50.5	59.6	68.4	70.8	72.5	64.5	52.7	46.2
6	37.0	37.0	35.8	41.2	50.7	59.5	68.5	71.5	69.4	62.0	51.5	48.0
7	34.4	37.0	36.2	42.0	51.6	60.3	68.5	71.9	70.0	62.7	50.2	45.8
8	33.8	36.8	37.0	42.7	52.2	60.5	70.3	72.2	69.6	62.0	50.0	45.6
9	32.8	36.1	37.5	41.5	52.3	62.5	70.7	72.4	69.5	62.4	50.0	45.8
10	31.6	34.5	37.8	42.5	52.5	63.3	71.0	72.2	68.4	62.4	48.5	46.5
11	32.0	35.0	38.2	42.1	52.8	63.8	70.9	72.5	68.5	61.8	47.5	46.0
12	31.3	32.0	38.8	41.6	52.8	64.8	69.4	72.2	67.7	61.0	47.2	44.5
13	32.2	31.8	38.8	41.7	53.6	64.7	69.5	72.0	68.2	61.6	47.5	44.5
14	32.4	32.4	39.0	42.0	54.5	64.7	69.5	72.0	68.5	61.8	48.7	45.2
15	33.0	34.0	39.2	43.4	54.7	65.0	68.5	71.5	67.5	60.2	48.8	44.2
16	32.8	33.9	39.0	43.5	53.8	65.0	68.2	70.0	66.9	60.6	49.8	44.3
17	34.0	31.6	40.6	44.6	54.5	63.3	68.0	69.0	64.8	59.4	48.2	44.8
18	35.0	30.1	39.8	45.7	54.8	63.5	67.2	69.2	66.5	59.2	46.5	42.5
19	35.2	30.0	38.3	45.9	53.8	63.4	66.7	69.6	65.5	58.4	47.6	41.2
20	36.8	32.2	39.5	46.2	54.7	63.7	68.8	68.1	65.5	58.0	47.1	42.0
21	34.5	33.1	39.4	46.3	54.8	64.0	69.2	68.3	64.8	57.2	46.5	44.0
22	35.0	33.5	39.6	46.7	54.7	66.0	68.6	68.0	64.3	57.0	47.7	40.5
23	37.5	32.8	38.6	48.2	55.4	66.0	67.5	67.0	64.8	57.5	47.5	41.4
24	36.7	32.5	38.6	48.5	55.4	65.2	67.8	68.0	65.0	57.5	47.2	40.5
25	34.6	32.9	39.4	49.3	55.1	64.9	69.5	68.0	64.0	58.0	48.0	40.9
26	35.5	33.3	40.0	48.5	54.6	64.2	70.5	68.8	63.4	57.8	47.4	42.1
27	36.0	32.9	40.0	48.3	54.5	64.4	70.5	69.6	63.1	56.5	47.2	44.0
28	36.8	32.2	39.9	50.0	54.6	64.9	70.8	70.4	64.0	56.5	47.8	42.5
29	36.6	—	40.2	49.0	55.5	65.6	70.0	70.2	63.6	55.9	47.4	42.3
30	35.8	—	40.5	48.3	56.5	66.5	69.8	71.0	63.3	56.1	47.0	43.0
31	33.8	—	40.6	—	57.9	—	70.1	71.0	—	55.4	—	42.0
Mean	35.1	33.9	37.7	44.6	53.6	63.2	69.0	70.1	67.2	58.0	49.2	43.9

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Daily Surface Water Temperature 1974

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	42.5	37.9	36.8	39.0	49.5	56.6	64.1	71.5	71.9	67.0	55.3	43.9
2	41.2	39.0	36.0	40.1	49.0	56.1	65.1	72.0	71.9	64.2	55.2	43.0
3	41.0	37.0	37.1	39.9	47.9	56.2	66.0	73.0	70.4	63.6	54.5	43.0
4	46.6	36.5	37.9	42.0	49.0	56.7	67.0	72.5	70.5	61.4	55.0	42.0
5	38.2	34.3	39.0	42.5	49.8	57.6	67.2	72.5	69.0	62.8	55.0	40.2
6	39.7	33.0	38.4	42.5	49.9	59.0	68.0	71.9	68.5	61.8	54.5	41.1
7	39.8	34.5	39.0	40.6	49.2	58.6	68.0	72.0	68.0	62.3	54.5	41.2
8	38.1	33.5	39.4	42.0	49.7	59.8	68.9	71.6	67.4	61.5	53.9	42.3
9	37.7	33.2	39.5	42.0	50.5	59.8	69.3	72.5	67.8	61.0	52.1	44.0
10	37.0	32.2	39.0	41.5	50.8	61.1	70.8	71.0	68.2	60.5	51.8	41.4
11	38.0	33.6	36.7	39.0	50.2	62.5	69.7	70.2	68.8	59.5	51.8	41.5
12	36.3	32.0	37.5	42.5	51.2	62.7	68.5	70.0	68.8	60.0	52.5	42.0
13	33.9	33.2	36.0	43.5	51.3	62.2	68.5	69.6	69.5	60.0	52.8	41.9
14	34.8	35.0	35.9	43.0	51.7	62.8	69.0	70.0	69.5	59.2	52.1	42.0
15	35.5	32.8	36.9	44.3	53.3	62.5	69.9	70.5	68.7	60.2	52.4	40.8
16	36.0	32.5	38.0	43.8	54.7	61.3	70.0	70.8	68.3	60.6	50.0	46.8
17	36.2	33.4	39.2	44.2	54.4	62.4	69.5	71.0	68.4	58.8	50.5	41.0
18	33.1	32.0	37.2	45.2	54.8	63.1	69.5	71.2	67.8	58.8	49.9	46.8
19	35.0	33.7	38.0	45.7	54.8	64.5	69.6	71.5	68.0	56.8	50.3	39.5
20	34.3	35.5	38.3	45.0	54.7	65.6	68.5	71.7	68.0	55.8	50.1	40.0
21	35.3	34.0	37.9	45.2	55.1	66.0	69.3	71.0	68.8	52.2	50.0	41.0
22	37.0	35.1	38.2	46.6	55.6	65.5	69.9	70.7	67.9	53.2	48.3	41.3
23	36.5	36.3	39.0	47.9	56.5	65.5	69.5	71.0	67.3	53.8	47.2	40.2
24	37.4	34.3	40.4	47.2	55.7	64.8	68.8	71.8	65.7	53.5	47.5	40.8
25	36.8	37.0	38.1	46.7	55.5	63.2	68.7	72.5	64.5	53.2	48.8	39.3
26	37.0	35.1	38.8	46.5	55.4	62.4	68.5	71.8	65.1	53.0	46.1	38.5
27	38.8	34.9	38.1	46.5	56.0	62.1	68.5	70.9	65.3	53.3	44.5	38.2
28	38.3	35.3	38.2	47.5	54.0	62.2	68.7	71.4	66.0	53.1	44.6	38.5
29	39.2	—	38.8	48.5	55.4	63.0	69.4	71.9	66.8	53.5	44.5	38.3
30	39.0	—	38.8	49.2	55.2	64.4	69.1	72.0	65.3	53.8	43.3	39.5
31	38.8	—	39.2	—	55.3	—	70.6	71.5	—	54.5	—	38.2
Mean	37.5	34.5	38.1	42.6	52.8	61.7	68.6	71.4	68.1	58.0	50.6	40.8

Daily Surface Water Temperature 1975

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.3	35.5	36.5	38.8	45.5	61.8	64.7	74.0	68.5	64.5	55.0	56.3
2	38.0	34.9	34.4	39.3	46.7	60.8	64.9	74.5	68.7	65.2	55.9	48.4
3	37.7	34.3	35.0	40.2	46.5	61.5	66.4	74.4	68.0	63.0	56.3	48.0
4	38.2	33.7	34.7	39.4	47.3	61.9	66.2	72.7	67.5	62.5	56.7	46.0
5	37.9	34.2	33.7	38.5	46.6	61.8	67.3	71.6	67.7	63.0	56.2	45.9
6	37.6	34.4	35.2	39.0	46.7	59.5	68.5	71.8	68.0	63.3	56.0	46.5
7	37.9	34.5	35.2	39.2	48.0	59.5	68.1	71.5	68.0	62.3	56.2	45.9
8	37.0	33.2	37.5	39.2	47.9	61.1	68.0	71.0	68.3	62.3	57.0	45.1
9	38.1	34.5	33.9	39.5	49.0	60.7	67.8	71.7	68.3	62.0	57.0	44.9
10	38.3	32.7	34.9	39.8	50.2	60.1	68.9	71.7	66.7	61.5	57.5	45.3
11	39.0	33.3	35.5	39.8	51.0	61.3	69.0	72.0	67.0	61.2	57.0	45.2
12	40.5	33.0	35.7	41.0	52.5	62.1	69.0	72.5	67.5	61.4	56.5	44.5
13	40.3	31.8	37.4	40.4	52.8	61.5	68.5	73.0	66.5	60.2	57.0	47.3
14	39.0	30.9	36.3	40.5	52.0	61.8	69.0	73.0	65.9	60.0	56.3	44.5
15	36.7	31.8	35.8	41.8	52.2	61.7	69.2	72.5	65.3	61.5	57.0	45.3
16	36.4	32.8	35.2	41.9	52.7	61.8	70.6	73.0	65.4	62.0	57.0	46.0
17	35.3	33.0	36.4	42.0	52.5	62.2	71.8	72.3	65.4	60.2	53.4	44.0
18	36.0	33.3	36.8	42.5	52.8	62.9	72.3	71.4	65.2	61.0	53.0	44.2
19	37.0	33.5	37.4	43.2	54.0	64.3	72.5	71.2	65.3	60.7	53.0	41.9
20	37.1	33.5	38.2	43.3	55.8	65.0	72.3	71.2	65.5	60.0	52.9	41.0
21	36.4	33.7	37.8	43.0	57.8	64.5	71.9	71.4	66.0	59.0	53.5	41.7
22	35.7	34.0	38.0	43.0	56.9	65.0	72.7	71.5	65.7	59.5	53.0	39.6
23	35.8	35.3	38.8	43.5	56.3	65.6	73.0	70.8	65.9	59.8	52.2	37.5
24	36.2	35.3	39.0	44.8	57.6	66.8	73.5	71.2	65.8	59.8	51.8	35.5
25	36.6	35.8	40.4	45.4	57.6	66.7	74.2	70.8	64.7	60.0	50.0	35.5
26	37.3	35.6	39.5	45.2	57.2	66.3	73.0	70.7	64.5	60.5	49.9	37.0
27	36.1	35.1	37.3	44.8	57.8	66.0	72.5	70.6	65.5	59.5	50.0	39.0
28	35.8	35.0	37.2	44.6	59.2	66.0	71.8	70.9	64.5	59.2	49.2	37.5
29	37.2	—	38.2	45.1	59.8	65.7	72.5	70.5	64.5	59.2	49.2	37.0
30	36.5	—	39.1	45.5	60.8	65.2	72.9	70.2	64.4	58.4	48.9	37.3
31	35.5	—	38.0	—	61.5	—	73.5	69.0	—	55.3	—	38.5
Mean	37.3	35.9	36.8	41.8	53.1	61.0	70.3	71.7	66.3	60.9	54.0	42.7

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Daily Surface Water Temperature 1976

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.4	32.9	39.0	43.4	50.5	59.6	68.5	69.0	68.2	64.6	50.7	40.8
2	36.4	34.4	39.0	42.8	51.5	58.4	69.5	68.7	69.0	64.2	49.4	41.1
3	37.5	30.6	38.3	43.5	51.5	57.6	69.5	68.9	68.0	63.8	49.2	39.0
4	36.8	32.4	38.3	43.4	51.0	58.0	69.8	69.0	67.6	63.9	50.4	38.8
5	33.5	31.8	39.2	42.7	51.2	58.5	69.0	68.0	68.2	63.5	50.7	39.2
6	34.2	32.3	39.6	43.8	51.7	58.5	69.5	69.3	67.0	63.5	49.0	38.5
7	34.9	30.5	38.7	44.4	52.3	58.0	71.3	70.0	66.5	63.9	49.5	39.4
8	35.8	30.5	38.0	44.4	51.6	59.5	71.4	70.2	66.9	64.0	49.0	39.0
9	33.2	30.9	38.1	44.4	52.5	60.5	71.0	70.0	67.3	64.0	47.2	36.6
10	32.0	31.0	37.4	43.6	53.0	61.7	71.0	70.0	67.0	62.6	47.2	37.3
11	32.5	32.4	37.5	44.0	53.5	62.8	71.9	69.8	67.0	61.0	46.5	38.9
12	32.2	31.5	36.9	42.1	54.1	63.0	71.8	70.8	66.6	61.0	46.0	38.0
13	31.9	32.5	38.8	42.5	53.7	62.2	71.1	71.0	67.0	61.0	45.0	38.0
14	34.0	33.2	37.6	43.8	54.4	62.1	70.8	71.3	67.5	61.0	44.8	35.5
15	32.8	32.8	38.2	44.3	55.5	62.5	70.5	71.7	67.9	59.0	45.0	35.8
16	32.9	34.4	38.3	44.8	55.0	63.2	70.0	71.5	67.8	59.2	44.4	36.5
17	33.2	34.3	37.0	45.5	55.2	64.0	70.8	70.4	67.5	59.0	44.0	36.9
18	31.1	34.8	35.5	47.1	55.8	64.0	70.8	70.8	67.6	57.0	44.2	35.5
19	30.9	35.9	37.2	48.2	55.7	65.0	70.2	70.0	68.1	55.5	44.5	35.5
20	31.0	35.3	38.6	49.5	53.4	65.2	71.0	69.0	68.3	56.0	43.5	36.7
21	31.6	35.2	40.0	48.9	54.9	65.4	70.6	70.0	68.6	56.8	43.0	37.6
22	31.5	37.0	39.0	48.3	55.5	66.5	70.3	71.0	67.9	56.0	42.8	33.7
23	29.0	35.8	38.3	49.1	55.3	67.3	69.5	71.7	66.5	54.5	42.0	35.3
24	29.7	35.8	39.2	50.0	55.5	67.9	69.6	70.4	66.4	54.0	41.8	33.8
25	29.4	36.5	40.1	50.0	55.7	68.5	69.8	69.7	66.3	54.5	41.6	34.5
26	30.6	37.0	40.6	49.3	55.5	68.0	69.3	71.1	66.3	54.9	42.2	35.0
27	33.0	37.9	40.6	48.2	55.5	67.5	69.3	71.5	66.5	51.4	44.0	32.6
28	35.0	38.2	42.4	48.6	55.7	67.3	70.1	71.0	66.2	50.0	44.5	33.0
29	32.9	37.6	41.7	49.0	58.0	68.0	70.7	71.0	65.5	50.2	44.2	33.9
30	32.5	—	42.3	50.0	58.5	68.5	70.5	69.5	64.6	50.6	41.8	30.6
31	32.0	—	42.6	—	58.0	—	68.8	68.8	—	51.0	—	31.4
Mean	33.0	34.0	39.0	45.4	54.3	63.3	70.3	70.2	67.2	58.4	45.6	36.4

Daily Surface Water Temperature 1977

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	29.5	29.0	31.0	40.5	49.4	60.2	68.0	70.5	69.8	63.3	55.0	46.5
2	31.2	28.9	30.5	41.0	50.4	60.7	68.0	71.5	69.8	64.1	55.0	46.5
3	32.0	29.4	31.7	43.0	50.5	60.5	67.5	72.0	71.0	63.5	55.3	45.8
4	32.5	29.4	32.4	41.7	51.2	59.0	68.4	71.0	70.0	62.0	55.6	46.5
5	32.2	29.4	34.0	45.0	51.5	60.6	68.8	72.2	69.4	61.8	56.0	45.5
6	32.2	29.0	33.4	42.0	51.5	61.2	69.0	72.5	70.1	62.0	55.5	45.2
7	32.5	29.0	33.8	41.1	52.0	60.0	68.5	73.1	70.2	61.0	55.5	43.2
8	31.8	29.0	33.5	42.0	51.4	59.2	68.0	73.3	69.5	60.5	54.3	42.3
9	29.4	29.2	34.5	41.0	51.5	59.8	67.0	73.7	68.8	60.6	55.0	42.7
10	30.4	29.4	35.1	41.5	50.1	60.0	67.8	73.0	68.5	60.0	55.0	40.2
11	29.7	29.4	35.7	42.2	50.0	58.2	68.0	73.1	67.7	59.2	55.5	38.9
12	29.2	29.5	36.0	43.3	50.5	58.5	68.5	74.0	67.1	60.2	53.8	37.0
13	29.0	29.7	36.7	44.4	51.7	60.1	68.9	74.0	67.2	59.0	53.2	37.2
14	29.0	29.7	38.0	44.7	51.5	60.7	69.0	73.7	67.6	58.8	51.7	38.0
15	29.0	30.5	37.6	44.5	52.3	62.0	69.5	72.4	66.5	58.0	51.3	40.4
16	29.5	29.4	37.6	45.0	53.0	62.3	70.0	72.5	66.5	58.0	51.6	38.5
17	29.0	29.2	37.0	45.6	53.5	62.0	71.8	72.3	66.5	57.0	52.5	37.8
18	28.9	29.0	37.4	45.9	54.8	63.2	72.3	71.0	66.8	56.1	51.5	38.2
19	29.0	29.2	37.0	47.8	54.7	63.5	72.4	71.0	67.5	56.6	50.0	38.5
20	29.2	29.8	37.4	47.1	54.8	64.5	73.7	71.0	67.4	56.5	49.3	37.9
21	29.3	29.5	37.7	46.5	55.2	65.2	74.3	70.5	65.4	55.5	49.5	38.8
22	29.2	29.5	38.2	49.3	56.5	65.2	73.2	70.5	63.8	56.0	49.4	39.5
23	29.2	29.8	38.8	50.5	57.8	65.5	71.2	70.3	64.0	55.5	49.5	38.2
24	29.4	29.8	38.0	48.0	58.8	65.0	71.2	70.6	64.0	55.0	50.0	39.0
25	29.3	30.0	37.2	47.5	58.8	66.0	71.1	70.0	63.0	55.2	48.8	39.8
26	29.4	30.0	37.6	47.5	58.6	66.3	70.7	69.5	62.5	55.4	49.0	38.6
27	29.4	30.7	38.4	48.1	59.0	65.8	70.0	69.0	63.5	56.1	46.6	36.0
28	29.2	31.5	38.9	49.3	59.0	67.0	70.1	70.0	63.8	56.7	46.5	36.0
29	29.0	—	40.0	48.9	59.5	67.4	70.0	70.6	63.5	56.0	46.4	35.7
30	29.1	—	40.5	48.3	59.0	67.2	70.5	71.0	63.0	55.8	46.3	35.7
31	29.0	—	41.8	—	58.5	—	69.7	70.5	—	55.1	—	36.5
Mean	29.6	29.6	36.4	45.1	54.1	62.6	69.9	71.6	66.8	58.4	51.8	40.0

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Daily Surface Water Temperature 1978

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.6	29.5	31.2	40.0	46.4	60.0	68.0	68.5	69.0	62.5	55.2	44.8
2	35.5	30.2	30.0	40.0	46.5	58.6	66.5	68.0	68.5	62.7	54.2	44.5
3	33.5	30.0	30.5	40.0	46.8	58.8	67.0	68.0	69.2	62.5	54.5	44.2
4	33.1	29.0	30.5	39.9	47.4	60.9	66.0	69.0	69.4	61.9	54.5	45.1
5	34.4	29.4	29.5	40.2	47.7	60.5	65.0	70.0	69.4	61.5	54.3	45.9
6	34.8	29.8	29.5	40.6	47.0	60.0	64.8	68.8	69.5	61.6	54.6	45.2
7	35.2	29.9	29.8	41.0	47.9	60.9	66.0	70.0	69.4	61.0	54.5	45.0
8	35.2	29.8	30.5	41.1	48.8	61.5	66.5	71.0	68.0	60.5	54.6	45.9
9	37.3	29.6	30.6	41.0	50.0	61.2	66.8	71.2	67.0	59.0	53.8	46.0
10	34.5	29.5	31.5	41.3	49.9	60.3	67.2	71.1	65.9	58.2	54.0	44.2
11	32.4	29.5	31.5	42.0	50.0	61.1	67.1	71.0	66.6	59.0	54.0	46.8
12	32.9	29.5	32.4	42.0	50.7	62.0	67.5	70.2	67.0	59.2	53.5	45.9
13	34.0	29.8	32.6	42.8	52.0	62.3	68.5	68.9	66.2	59.5	52.6	42.6
14	34.8	30.1	33.0	43.1	51.4	62.0	68.5	69.7	65.8	60.0	52.6	42.0
15	34.3	30.1	35.0	42.2	52.3	61.8	68.5	72.0	65.2	59.6	52.8	41.0
16	32.5	30.5	33.5	43.0	51.6	62.0	68.2	72.9	65.0	57.6	53.5	41.0
17	32.8	30.7	33.0	43.5	51.2	62.0	68.0	73.3	65.2	58.0	54.0	42.8
18	33.2	31.0	33.0	44.0	51.8	62.0	67.8	72.6	65.7	57.0	53.0	41.5
19	32.4	30.6	33.8	44.1	52.6	62.3	69.1	72.5	64.9	56.0	52.4	39.3
20	32.6	30.0	34.0	45.3	54.5	63.5	69.7	72.2	64.2	56.6	51.0	38.4
21	31.0	30.8	35.0	44.7	55.2	64.2	69.2	71.5	64.5	56.0	50.8	39.6
22	31.3	30.2	37.0	44.8	55.0	65.5	70.5	70.8	65.1	56.8	50.5	38.9
23	31.1	30.4	36.5	45.0	55.2	64.0	70.9	70.9	64.0	57.5	49.5	38.0
24	30.6	30.5	37.0	46.2	55.9	64.2	70.9	71.8	63.7	55.9	49.5	39.6
25	32.0	30.6	37.0	46.6	55.5	65.0	69.8	69.5	63.5	55.8	48.0	40.2
26	34.1	31.7	37.2	46.8	55.2	66.0	68.5	69.0	63.0	56.3	46.2	37.5
27	31.9	31.0	37.8	46.4	55.6	66.4	68.5	68.5	62.6	57.1	45.0	37.8
28	31.3	30.6	38.7	45.7	56.0	66.5	70.5	68.8	63.0	56.6	44.9	36.2
29	31.9	—	39.0	45.6	57.0	66.3	69.8	69.0	62.0	55.9	45.0	36.3
30	30.1	—	39.4	46.8	58.5	67.0	70.5	64.5	62.0	55.5	45.3	35.6
31	29.8	—	39.4	—	59.6	—	69.9	70.0	—	55.0	—	37.6
Mean	33.1	30.2	33.9	43.2	52.1	62.6	68.2	70.4	65.8	58.5	51.5	41.3

Daily Surface Water Temperature 1979

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	38.0	34.7	32.2	41.1	42.7	61.3	66.9	73.4	70.2	64.4	54.3	50.8
2	40.8	32.9	32.5	43.1	44.3	62.5	66.6	75.2	70.3	64.2	54.7	49.5
3	40.3	32.0	32.6	40.5	50.4	61.7	67.4	75.7	71.3	64.6	57.1	47.2
4	38.2	32.4	32.9	40.3	51.4	61.8	67.3	74.9	71.2	63.8	56.0	47.7
5	37.8	32.2	34.3	40.5	51.5	61.2	66.4	74.8	71.4	62.4	54.1	46.2
6	37.0	30.6	35.2	40.6	52.2	61.5	66.7	75.0	71.6	63.9	54.1	46.9
7	38.0	31.1	35.4	40.2	51.6	62.6	67.0	73.8	70.7	62.2	54.3	47.8
8	39.5	31.5	35.6	40.0	52.5	62.1	67.4	73.0	70.5	60.6	54.1	42.6
9	37.2	31.5	35.5	40.5	54.0	62.5	67.5	73.2	68.9	61.2	53.8	45.5
10	37.0	29.5	35.9	40.5	55.2	64.7	67.8	73.0	68.5	60.3	56.0	44.1
11	36.0	28.9	37.0	40.6	54.9	64.4	68.0	71.6	68.5	59.3	55.6	45.3
12	35.2	29.2	34.3	41.4	55.6	64.0	68.0	70.0	68.5	59.3	54.1	46.0
13	35.0	29.8	34.5	41.7	55.6	63.9	68.9	68.0	68.3	59.5	53.6	46.4
14	37.2	28.9	36.7	42.0	55.4	64.0	69.8	68.9	68.5	57.2	52.5	44.2
15	34.3	28.9	30.1	42.5	55.4	64.2	69.0	69.4	68.4	56.8	51.3	44.3
16	34.3	29.3	35.2	42.1	55.0	65.0	67.3	68.4	68.6	56.5	51.1	46.8
17	35.1	29.0	35.5	41.7	56.2	65.0	67.7	68.2	68.4	56.3	50.9	44.6
18	34.2	29.2	35.2	42.3	57.6	65.9	67.3	68.3	68.7	56.8	50.5	40.6
19	31.1	29.3	35.6	42.8	57.5	64.8	67.6	68.7	68.5	57.0	49.5	40.1
20	32.5	29.5	36.1	43.0	56.8	64.8	68.7	67.8	66.6	57.8	50.0	39.7
21	34.1	30.0	36.9	43.2	56.1	64.2	70.8	67.8	66.0	60.2	50.5	39.4
22	36.0	30.2	37.0	45.2	57.4	63.0	71.6	67.6	66.8	59.3	50.7	40.6
23	33.4	30.6	37.8	44.8	57.2	65.9	72.0	68.0	65.8	59.2	51.3	40.8
24	34.3	30.2	38.5	45.9	56.8	65.4	72.2	68.2	64.7	59.0	51.8	42.2
25	35.6	30.7	40.1	45.5	58.1	64.4	72.3	69.3	64.8	57.0	52.8	42.3
26	35.6	31.5	39.6	46.2	58.8	65.2	73.0	69.3	64.4	56.5	53.0	43.0
27	35.5	32.0	38.1	47.5	58.8	64.9	72.5	69.0	64.5	56.0	52.3	42.2
28	36.5	31.5	39.6	48.8	58.8	65.5	72.4	69.8	64.4	55.7	52.0	40.7
29	35.8	—	39.2	49.5	58.6	65.8	73.3	70.0	64.6	54.9	51.3	42.8
30	35.2	—	39.9	48.0	59.7	66.6	74.1	71.1	64.4	55.0	50.2	42.2
31	35.6	—	40.0	—	60.3	—	73.6	70.7	—	54.5	—	40.8
Mean	36.0	30.6	36.3	43.0	55.4	64.0	69.4	70.7	67.4	59.1	52.8	44.2

Daily Surface Water Temperature 1980

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.6	31.1	30.3	39.6	48.6	61.3	66.6	73.9	70.8	65.1	52.5	43.5
2	39.6	30.7	30.5	39.9	48.6	61.8	66.7	74.0	71.2	64.9	51.8	43.9
3	38.3	30.1	30.0	40.1	49.7	61.2	67.1	74.3	71.6	65.3	50.2	43.7
4	37.0	29.8	30.0	41.0	50.2	60.6	68.0	74.2	71.4	64.4	51.1	39.6
5	36.8	30.2	31.1	41.7	50.7	60.8	68.9	75.2	71.1	64.3	52.2	40.1
6	36.6	30.6	32.4	41.7	50.9	58.5	69.1	76.1	71.3	64.0	50.7	39.9
7	36.7	30.7	32.4	41.9	50.8	60.1	68.5	75.7	71.3	63.1	50.4	40.2
8	36.9	30.9	33.9	42.4	51.0	61.1	68.2	75.9	71.1	63.0	52.3	40.3
9	36.5	30.8	34.0	42.8	51.0	59.7	68.0	75.6	70.9	62.8	50.6	41.2
10	35.8	30.1	33.3	43.7	51.8	59.9	68.9	74.5	70.5	61.9	50.2	41.0
11	37.0	29.8	35.1	44.6	52.1	60.4	69.2	74.3	69.2	62.2	48.1	39.0
12	40.6	30.2	31.8	44.8	52.5	60.3	69.8	74.1	69.6	61.3	47.5	39.6
13	38.2	29.8	33.1	45.2	53.5	61.2	69.3	73.2	69.4	60.7	45.5	41.7
14	37.4	30.0	34.5	45.0	53.6	61.5	69.5	74.0	70.0	58.8	46.8	39.3
15	38.3	30.4	35.1	46.0	53.9	61.8	70.3	73.8	69.8	58.8	47.3	38.7
16	37.9	31.5	34.9	45.7	54.5	62.6	71.2	73.1	68.9	58.8	45.7	39.2
17	37.2	31.3	34.3	45.1	55.3	62.2	70.3	72.0	68.9	59.5	45.7	37.9
18	37.4	30.7	36.9	45.3	55.7	62.6	71.1	72.4	69.4	60.5	45.5	36.5
19	38.6	30.6	34.5	46.4	55.2	63.1	70.7	72.5	68.0	60.7	43.3	37.8
20	37.6	31.6	36.0	47.3	56.0	62.0	71.4	72.1	68.0	59.0	43.2	35.6
21	34.7	32.0	36.7	48.6	55.4	62.0	72.9	71.6	68.8	58.6	44.1	35.3
22	35.8	32.2	37.4	47.7	55.0	64.0	73.2	70.7	69.1	57.7	44.3	33.8
23	36.9	32.8	38.1	47.3	56.8	64.5	72.9	69.4	69.6	56.1	44.3	34.7
24	34.0	33.0	37.6	48.2	57.3	65.5	71.6	69.4	68.2	55.6	44.4	35.6
25	34.3	33.1	38.3	48.4	57.6	66.7	72.1	70.1	67.6	56.2	45.3	33.2
26	34.8	33.1	37.8	48.7	57.0	66.7	72.6	70.2	67.5	55.0	42.4	32.6
27	34.3	31.5	38.0	48.5	57.2	67.6	73.5	71.2	65.7	53.6	42.9	33.9
28	33.4	31.6	38.5	48.0	57.8	67.3	73.8	71.6	65.3	54.1	44.4	33.9
29	33.8	30.7	39.3	49.1	58.6	67.2	72.7	70.7	65.1	53.4	44.3	34.2
30	31.1	—	39.6	48.6	58.6	66.7	72.1	70.2	64.8	53.2	43.7	34.5
31	32.0	—	39.8	—	60.3	—	73.0	70.5	—	52.2	—	31.6
Mean	36.5	31.1	35.0	45.1	54.1	62.7	70.4	72.8	69.2	59.5	47.0	37.8

Daily surface water temperature 1981

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.4	29.8	37.7	40.8	48.7	65.1	66.1	71.9	69.3	60.6	54.	42.3
2	32.9	32.0	37.0	42.5	49.2	65.3	67.3	72.1	69.3	61.0	53.8	44.4
3	31.0	30.7	36.7	41.4	49.2	59.7	68.8	73.2	68.9	60.1	53.6	44.6
4	30.3	29.8	36.1	43.5	48.9	60.3	69.7	73.4	68.9	60.0	53.2	44.2
5	28.9	29.1	36.9	44.3	48.9	61.3	69.2	73.8	68.3	59.5	53.4	44.9
6	29.3	29.3	36.5	44.5	49.6	63.5	69.0	73.0	68.0	59.4	54.1	42.2
7	29.5	29.5	37.2	42.2	49.5	63.2	69.8	72.9	68.0	59.0	54.0	40.8
8	28.8	30.2	37.7	43.3	50.0	63.0	70.3	72.8	68.4	57.2	53.4	41.1
9	29.0	30.0	37.0	44.1	51.2	63.5	71.6	72.6	68.4	57.5	52.3	40.5
10	28.8	29.7	37.0	44.6	52.0	63.0	72.3	73.0	67.8	57.9	52.0	40.1
11	28.8	30.2	37.0	45.7	51.3	63.5	72.8	73.9	68.0	57.0	51.5	39.9
12	28.8	30.7	37.2	45.2	52.0	63.9	72.6	74.1	68.5	56.7	50.9	39.7
13	28.8	31.1	37.7	45.1	52.0	64.6	72.5	72.9	68.8	55.8	50.0	39.3
14	29.0	30.3	38.2	45.3	52.5	64.5	72.1	72.5	68.9	55.7	50.3	38.7
15	29.2	30.6	36.5	45.1	53.6	64.4	71.8	72.9	69.6	56.3	50.0	39.9
16	29.3	31.8	37.6	45.0	54.4	65.3	71.8	73.0	69.3	56.5	50.0	39.9
17	29.3	32.0	36.3	45.5	55.1	65.8	71.8	72.0	68.2	56.1	50.0	38.7
18	29.3	32.9	35.4	40.4	54.5	66.0	72.4	71.2	68.0	56.0	50.2	39.2
19	29.1	33.3	36.1	47.8	54.5	65.8	73.1	71.5	67.4	55.9	50.1	39.6
20	29.3	33.7	36.5	47.1	54.9	66.4	72.9	71.6	66.0	54.7	49.2	37.5
21	29.3	35.4	37.2	45.9	55.8	66.8	72.3	71.0	66.0	54.2	49.0	36.1
22	29.5	36.3	37.5	45.7	55.2	67.5	72.9	70.6	66.0	54.9	48.4	36.9
23	29.3	36.0	38.2	46.9	55.6	67.3	71.2	70.3	66.6	55.6	47.7	37.4
24	29.6	36.1	37.0	46.8	56.1	66.9	71.4	69.5	64.9	55.1	46.5	38.2
25	29.7	36.5	37.6	46.7	57.8	67.5	72.2	70.2	64.0	55.3	46.0	38.2
26	29.8	36.7	37.9	46.6	57.9	67.5	71.7	69.9	64.2	55.0	45.6	37.6
27	29.8	37.0	38.5	47.3	58.1	67.6	72.0	68.7	64.5	55.0	45.5	38.3
28	30.0	36.3	39.2	48.0	58.6	67.7	71.6	69.4	64.7	55.2	45.7	37.8
29	29.8	—	39.3	48.2	59.2	67.8	71.6	69.8	63.0	55.4	45.0	38.6
30	28.9	—	39.6	48.7	59.8	68.9	70.9	70.0	61.3	54.7	42.5	36.0
31	29.6	—	41.9	—	60.0	—	71.2	69.2	—	53.2	—	36.4
Mean	29.6	32.3	37.5	45.4	53.7	64.7	71.2	71.7	67.1	56.7	50.0	39.7

* Mean 1000 temperature estimated

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Daily Surface Water Temperature 1982

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	37.2	30.8	32.4	39.9	42.7	56.5	64.3	72.2	67.3	63.5	55.9	48.4
2	37.6	30.1	32.7	39.7	43.2	57.0	64.4	72.0	67.2	63.2	56.3	49.1
3	36.0	30.7	32.2	40.8	43.4	57.5	65.6	71.0	68.0	63.5	56.2	48.9
4	37.7	34.5	32.0	41.5	48.6	58.5	65.7	70.1	65.5	63.5	57.7	50.4
5	38.5	32.8	34.3	38.3	48.6	57.6	64.8	69.4	67.8	63.5	58.5	51.2
6	37.6	33.6	35.7	39.6	48.7	58.6	65.7	69.8	68.0	63.7	56.9	51.1
7	37.5	31.0	34.7	36.0	49.6	58.6	66.0	69.2	67.5	64.0	55.7	50.4
8	37.1	30.9	34.0	36.1	50.7	57.2	66.7	69.6	67.1	64.0	54.7	49.3
9	37.0	31.9	33.4	36.7	51.9	55.8	67.0	70.3	66.6	63.9	54.5	48.9
10	34.9	31.5	33.8	39.1	51.3	56.7	67.6	70.7	66.7	62.0	53.2	45.7
11	30.5	30.6	34.7	39.0	51.3	57.4	67.0	70.8	67.2	60.2	53.7	47.4
12	30.8	30.4	36.3	38.3	51.4	57.6	66.8	70.2	67.6	60.0	53.4	45.1
13	31.5	32.7	36.4	38.3	51.6	57.3	67.8	68.9	67.4	60.6	54.8	41.8
14	32.8	31.4	37.0	39.6	52.2	57.2	69.1	68.9	67.1	60.6	52.9	41.4
15	31.0	32.2	36.0	39.7	52.9	57.2	66.7	69.8	67.3	60.0	52.2	42.3
16	30.9	33.6	36.0	40.5	53.7	58.6	70.7	70.2	67.1	60.1	49.8	44.2
17	30.0	32.5	36.1	42.1	53.4	59.5	71.6	70.9	66.4	58.2	50.5	44.1
18	29.4	32.0	35.4	44.6	53.1	59.7	71.8	70.5	67.2	57.6	50.9	43.1
19	29.3	32.4	36.9	44.4	53.9	59.9	72.1	70.2	66.4	57.7	51.0	43.0
20	29.4	32.8	37.3	43.2	54.3	62.2	72.9	70.7	66.2	58.1	51.2	41.9
21	29.5	33.9	38.0	44.9	54.9	61.5	70.7	69.1	65.3	58.5	51.5	41.4
22	29.3	35.1	37.4	43.3	54.4	61.3	70.3	68.7	64.9	57.4	51.3	40.8
23	29.7	32.1	37.4	43.5	54.4	61.7	69.6	68.6	64.4	57.3	51.4	40.4
24	30.1	32.9	38.3	45.3	54.8	62.2	70.3	68.9	63.5	56.3	56.4	41.3
25	29.4	32.1	39.2	45.8	54.5	63.0	70.7	69.6	64.8	55.2	50.2	43.0
26	29.1	29.8	39.6	45.9	55.2	63.1	70.7	67.8	64.4	55.0	49.7	43.5
27	29.2	31.6	39.2	46.8	56.2	63.9	70.9	68.9	64.2	54.3	49.3	41.4
28	29.4	32.4	37.6	46.0	56.2	63.4	70.2	67.7	64.4	54.5	48.5	42.3
29	30.2	—	36.9	45.8	57.4	64.0	69.4	66.2	64.4	54.9	48.9	43.7
30	30.4	—	38.3	46.5	57.2	64.3	70.7	65.7	64.0	55.5	48.0	42.6
31	30.6	—	39.2	—	57.1	—	70.5	65.8	—	56.3	—	43.1
Mean	32.4	32.0	36.1	41.7	52.8	59.6	68.7	69.5	66.2	59.5	52.7	44.9

Daily Surface water Temperature 1983

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	43.2	36.0	36.1									
2	42.8	36.1	37.0									
3	41.0	37.6	37.2									
4	40.1	37.8	37.0									
5	40.1	36.4	38.7									
6	40.6	36.1	38.3									
7	40.5	35.6	38.5									
8	41.3	35.2	38.0									
9	40.3	34.3	39.1									
10	39.9	33.1	39.0									
11	41.4	32.9	39.1									
12	41.4	32.5	40.2									
13	40.6	32.6	39.7									
14	38.8	32.4	39.1									
15	40.1	32.9	39.7									
16	40.0	33.4										
17	38.8	33.8										
18	37.8	34.3										
19	35.6	35.3										
20	33.3	36.5										
21	32.9	35.4										
22	34.8	35.1										
23	35.2	35.4										
24	36.1	35.6										
25	35.4	35.8										
26	35.2	36.3										
27	35.1	35.9										
28	35.4	35.7										
29	36.3	—										
30	36.7	—										
31	36.2	—										
Mean	38.3	35.0										

20 yr mean = 33.5 31.8

Appendix B. Daily air temperature data, 1962-1983.

0830 Air
Daily XXXXXXXXXX Temperature 1962

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39	26	31	51	43	60	66	67	—	62	50	42
2	27	25	14	41	43	64	64	71	72	58	41	45
3	32	34	14	51	45	62	62	—	65	58	45	38
4	38	35	26	38	47	61	62	72	—	64	51	35
5	26	46	35	46	52	64	60	70	63	61	38	45
6	42	33	34	44	50	56	61	72	55	62	38	47
7	50	16	34	52	50	58	65	74	60	54	34	42
8	43	27	37	45	47	61	73	73	69	55	51	41
9	32	35	31	47	45	68	73	64	69	58	46	40
10	22	30	37	44	50	64	68	61	72	53	56	34
11	20	14	41	43	50	65	68	62	72	54	50	29
12	27	17	37	47	50	62	70	—	68	58	40	24
13	28	21	38	42	48	54	—	66	63	52	39	19
14	38	33	35	42	50	51	—	67	67	49	36	22
15	45	31	36	43	49	56	67	—	—	50	36	—
16	36	27	35	38	51	64	62	70	—	56	38	27
17	36	39	37	40	50	65	64	68	67	62	40	24
18	15	26	37	38	57	68	64	—	66	56	43	28
19	30	30	37	44	61	67	65	72	65	—	33	34
20	24	26	38	46	56	68	68	75	65	52	34	33
21	26	26	40	38	51	—	70	72	63	61	45	12
22	34	34	37	51	52	—	74	—	—	49	51	—
23	36	37	40	61	54	—	67	—	—	52	41	30
24	28	34	40	44	54	63	66	—	50	46	42	—
25	37	32	43	47	58	65	—	—	—	42	37	33
26	31	34	43	46	62	70	—	68	—	43	40	37
27	40	36	38	50	59	65	64	74	56	39	36	27
28	24	37	41	50	60	61	—	72	54	55	38	32
29	17	—	41	50	55	66	—	65	—	47	—	27
30	37	—	45	46	62	68	71	64	—	39	38	18
31	13	—	45	—	62	—	69	—	—	56	—	0
Mean	31	29	36	45	52	63	67	72	63	53	42	31

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 Daily 0830 Air Temperature 1963

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15	15	24	41	44	—	71	74	61	49	52	25
2	25	30	35	42	44	—	72	68	64	58	42	34
3	36	30	30	45	47	62	—	66	67	58	42	42
4	33	10	34	41	48	64	63	71	66	54	50	35
5	31	33	35	33	51	63	65	69	57	46	54	36
6	30	30	34	36	50	63	60	69	55	57	—	35
7	29	27	36	42	46	60	73	71	58	60	—	34
8	30	3	30	39	52	56	—	70	—	61	—	38
9	36	11	36	40	54	65	58	70	62	52	—	44
10	33	37	38	38	56	58	64	69	62	44	45	34
11	33	34	26	46	42	58	60	66	57	55	44	26
12	37	38	34	44	44	55	63	66	66	53	44	36
13	32	30	35	48	50	55	66	68	50	—	42	25
14	21	26	35	43	56	61	69	70	50	55	40	29
15	27	23	30	44	52	57	67	59	55	57	35	22
16	18	12	28	44	54	58	68	64	57	58	45	20
17	34	15	37	—	—	60	74	66	58	56	43	19
18	37	30	40	46	58	59	—	67	59	53	53	21
19	38	34	34	48	53	61	71	62	59	56	46	18
20	45	32	34	46	58	64	60	67	—	56	40	13
21	26	37	30	52	54	63	67	69	58	56	46	—
22	15	10	36	43	54	58	67	66	55	49	48	20
23	35	13	33	46	49	64	63	68	48	50	55	26
24	12	41	34	40	49	64	64	69	47	55	41	29
25	11	22	42	43	49	67	67	56	54	56	31	36
26	21	17	43	45	54	—	70	57	56	58	44	32
27	38	18	44	50	56	68	71	59	60	60	47	25
28	19	25	46	45	56	72	—	63	62	56	42	18
29	12	—	46	46	57	67	73	63	58	42	48	27
30	31	—	—	48	—	71	68	—	48	34	43	15
31	31	—	44	—	66	—	62	65	—	—	—	14
Mean	27	24	36	44	53	62	67	66	58	54	45	27

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 0830 Air
 Daily XXXXXXXXXX Temperature 1964

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26	35	33	28	44	56	—	—	68	50	42	25
2	32	33	36	27	42	54	—	67	—	52	47	26
3	33	16	35	42	42	52	68	61	62	56	42	45
4	36	23	31	33	46	55	67	62	68	60	45	40
5	31	34	47	26	50	52	66	—	68	55	48	38
6	32	28	35	35	44	56	66	—	63	47	46	30
7	35	32	34	43	46	56	67	65	58	48	46	19
8	24	30	37	40	53	60	66	62	61	49	—	23
9	32	25	38	38	54	56	—	59	67	52	48	30
10	36	18	34	37	54	60	65	60	67	58	48	24
11	25	19	24	39	54	57	—	65	64	40	48	38
12	12	28	28	40	56	62	64	68	59	50	52	46
13	22	26	29	39	55	64	—	64	54	55	56	36
14	13	30	33	48	51	65	66	56	50	49	48	40
15	13	25	38	46	45	63	67	59	—	55	43	32
16	23	33	34	39	50	68	—	69	52	56	45	26
17	28	15	34	42	53	58	68	62	53	58	40	44
18	27	22	30	51	57	62	69	65	61	56	44	32
19	27	29	26	44	56	62	67	—	56	54	40	22
20	37	25	32	42	57	62	68	64	49	50	56	31
21	36	26	48	40	49	64	64	63	55	44	40	28
22	31	18	38	40	54	66	70	63	60	55	31	33
23	27	16	34	42	—	61	68	68	67	47	29	38
24	34	28	32	43	61	64	64	—	63	37	36	45
25	46	15	39	—	57	66	59	68	60	50	45	51
26	34	28	40	41	56	66	62	68	55	54	52	52
27	28	26	33	44	58	65	45	63	59	54	47	50
28	35	26	32	45	54	63	67	—	57	54	40	37
29	15	27	41	42	49	—	—	70	53	56	50	25
30	26	—	36	39	54	66	67	65	55	56	36	32
31	23	—	24	—	54	—	64	69	—	44	—	40
Mean	28	25	33	39	52	61	67	65	60	52	45	35

Daily 0830 Air Temperature 1965

Month Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22	19	28	27	50	58	63	68	62	64	46	34
2	24	28	32	36	48	58	66	68	63	58	31	36
3	23	20	34	33	46	56	64	68	59	56	47	35
4	28	16	34	37	52	51	66	66	59	44	54	46
5	30	13	35	39	50	60	65	68	60	46	34	37
6	36	31	35	42	47	60	66	68	59	41	48	40
7	27	34	34	40	46	60	67	71	62	48	50	30
8	37	38	35	41	45	59	65	70	63	58	46	28
9	45	31	35	39	52	62	68	72	62	56	45	31
10	33	29	36	43	51	60	67	72	67	51	34	39
11	28	30	32	44	54	62	66	70	67	52	46	36
12	34	34	25	40	54	62	66	70	59	58	46	32
13	30	34	29	44	54	60	67	70	57	52	52	38
14	30	22	34	38	49	52	68	71	54	52	50	36
15	8	25	35	43	52	53	68	70	59	57	36	34
16	21	33	33	45	55	54	70	73	65	55	38	35
17	16	27	34	43	56	58	71	74	58	45	50	34
18	19	32	32	41	55	57	72	74	62	48	34	31
19	20	26	36	38	49	61	69	74	62	55	40	34
20	33	11	30	38	54	61	67	70	64	57	44	18
21	25	28	24	40	55	63	66	67	64	58	44	22
22	31	30	24	46	52	64	68	68	62	58	44	29
23	22	18	39	47	59	66	67	64	65	57	41	37
24	25	20	32	39	53	65	70	63	64	54	36	42
25	26	34	31	41	55	63	71	70	60	44	36	51
26	25	30	34	42	61	62	73	67	56	52	45	31
27	33	18	38	43	57	64	69	70	50	54	43	18
28	24	29	37	41	58	63	67	69	45	49	43	29
29	16	—	33	45	56	66	66	57	52	34	36	34
30	16	—	31	46	52	68	64	57	52	46	33	36
31	14	—	26	—	58	—	66	55	—	54	—	41
Mean	26	26	35	41	53	66	67	68	66	54	44	34

Month Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	46	24	40	35	47	56	66	66	64	54	56	40
2	35	24	35	40	47	54	65	69	67	50	59	42
3	39	30	34	40	44	57	70	65	63	52	63	25
4	34	28	37	38	43	59	74	66	57	57	44	20
5	34	26	36	39	45	61	69	67	66	60	43	28
6	38	19	37	40	50	61	68	67	67	52	45	36
7	35	16	33	42	42	62	70	69	65	53	41	35
8	35	18	28	40	45	60	69	69	62	58	46	46
9	16	22	29	40	44	64	68	66	66	66	52	48
10	31	33	34	40	38	60	72	68	62	61	57	48
11	30	37	36	42	44	52	69	70	65	55	56	50
12	14	35	34	43	48	56	74	69	60	52	52	34
13	14	34	32	40	50	60	72	63	61	47	43	34
14	29	34	32	38	48	58	72	65	64	50	41	40
15	29	32	36	41	51	61	71	64	61	54	39	33
16	10	30	28	43	49	64	65	65	52	58	35	26
17	18	31	34	44	52	61	68	67	55	51	50	38
18	28	27	40	44	51	64	68	68	63	45	50	45
19	24	30	40	45	55	63	70	69	63	50	42	32
20	30	8	42	44	50	61	68	67	57	52	32	28
21	32	9	39	45	51	64	63	68	57	44	34	35
22	30	22	40	48	54	63	67	70	63	52	40	28
23	32	25	41	46	54	65	69	72	60	56	38	28
24	30	30	43	42	58	71	68	65	58	57	34	26
25	28	33	41	47	58	65	68	65	56	50	38	28
26	26	29	34	46	58	60	69	67	53	42	46	28
27	30	30	39	37	54	63	68	65	52	44	45	22
28	18	35	24	40	58	68	69	66	55	50	46	20
29	18	—	27	39	57	66	67	67	55	46	45	40
30	32	—	39	46	54	68	64	69	66	42	41	32
31	18	—	39	—	54	—	63	68	—	40	—	24
Mean	28	27	36	42	50	58	69	67	60	52	45	33

Daily 0830 Air Temperature 1967

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32	35	20	40	43	50	60	66	59	58	50	24
2	35	35	21	50	46	50	62	67	54	56	52	26
3	30	26	36	40	46	57	65	66	58	60	57	38
4	34	30	32	34	43	57	65	72	64	64	53	34
5	32	34	30	41	45	56	64	68	64	64	44	32
6	26	28	32	40	45	57	63	66	65	60	38	30
7	27	22	33	38	41	58	65	68	64	48	42	34
8	42	13	28	33	42	58	66	66	63	47	37	40
9	34	25	34	32	46	59	68	68	65	61	38	36
10	30	30	38	42	44	61	68	68	66	63	41	26
11	30	34	38	32	44	62	69	64	54	58	40	34
12	27	16	36	29	44	61	67	60	54	50	51	50
13	34	4	34	36	46	53	69	60	54	50	46	42
14	38	30	39	41	47	55	68	62	58	50	37	40
15	38	39	33	42	48	60	68	65	60	54	38	31
16	32	42	30	37	48	60	68	67	59	54	24	25
17	36	20	20	39	49	64	67	66	60	60	35	31
18	27	22	8	43	49	63	68	68	62	60	39	32
19	12	20	8	34	49	60	70	68	61	54	40	39
20	25	30	26	41	50	55	67	67	60	50	34	36
21	38	34	32	41	48	56	66	67	59	54	28	33
22	36	25	32	46	48	59	70	66	63	49	38	49
23	41	36	34	44	48	62	70	63	50	43	42	30
24	42	23	34	40	47	62	70	60	52	49	39	26
25	41	18	32	40	41	62	71	64	52	53	43	23
26	40	18	42	40	40	62	69	66	53	55	42	32
27	38	21	44	43	42	64	70	69	60	45	41	22
28	40	31	44	36	50	66	72	69	62	54	34	29
29	29	-	44	40	54	62	69	67	65	42	30	32
30	20	-	34	42	51	50	68	67	65	39	26	23
31	20	-	35	-	50	-	70	68	-	44	-	25
Mean	32	27	32	40	46	59	67	66	59	53	40	30

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 Daily ~~Temperature~~ Temperature 1968

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28	32	33	45	45	55	70	70	66	62	40	32
2	12	43	25	37	49	53	71	70	62	63	52	48
3	29	34	20	42	45	54	70	70	66	65	51	42
4	30	27	18	46	52	58	63	70	66	57	46	43
5	20	23	29	46	50	58	60	71	58	48	50	42
6	25	30	29	36	49	53	64	67	60	48	50	36
7	30	22	26	35	47	63	64	71	65	53	47	31
8	8	25	27	42	46	63	66	70	63	50	44	28
9	0	20	34	45	50	60	67	68	63	50	38	20
10	6	30	35	44	52	54	69	72	67	54	40	10
11	0	14	33	44	54	54	66	61	67	55	38	20
12	4	18	30	40	52	61	64	64	65	55	38	34
13	14	16	40	49	48	60	68	67	62	58	38	40
14	30	18	23	48	50	63	68	69	60	56	37	50
15	31	27	31	42	50	64	68	65	58	58	41	38
16	15	17	40	45	56	64	70	64	57	60	46	23
17	13	31	44	44	54	61	74	70	57	60	39	22
18	26	18	40	44	52	59	72	64	60	60	44	30
19	30	20	36	46	48	62	72	62	58	62	44	30
20	30	26	37	48	49	61	72	66	62	59	39	34
21	31	9	39	56	51	55	67	70	60	55	36	32
22	25	16	40	44	54	62	72	64	64	51	44	32
23	36	24	46	44	51	65	70	64	66	61	39	37
24	27	16	38	53	51	66	72	65	63	52	49	32
25	28	26	31	47	53	66	72	70	66	60	44	13
26	23	22	30	46	55	60	72	70	67	48	34	4
27	26	24	40	51	49	58	70	62	64	44	44	15
28	30	30	42	45	52	58	70	60	58	58	43	32
29	30	34	40	47	56	56	66	60	56	50	53	34
30	32	-	44	49	55	66	65	58	57	43	35	21
31	35	-	45	-	56	-	67	58	-	42	-	27
Mean	23	24	35	45	51	58	68	66	62	55	45	30

0830 Air
Daily Temperature 1969

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32	30	31	29	45	58	70	70	70	61	43	30
2	18	29	34	43	50	63	64	71	72	59	52	28
3	22	33	32	33	52	67	68	72	68	65	58	36
4	22	26	32	40	51	58	63	72	66	56	55	26
5	18	24	19	44	51	61	68	69	66	53	52	26
6	18	25	25	37	48	60	66	66	66	54	48	22
7	34	24	26	40	54	63	62	68	71	56	48	27
8	26	23	25	44	50	63	63	71	61	63	50	39
9	24	32	25	40	53	56	64	70	66	55	50	45
10	22	30	28	49	52	62	66	67	62	55	47	46
11	22	24	28	44	55	65	68	70	58	60	48	53
12	24	32	23	41	50	62	68	68	66	60	49	40
13	24	28	32	43	50	62	63	71	64	60	44	34
14	26	21	32	44	52	67	64	71	65	64	44	30
15	23	16	32	47	52	66	65	72	67	48	48	30
16	25	20	32	50	54	65	69	72	66	48	36	26
17	26	23	33	47	56	61	70	73	67	58	37	24
18	35	35	38	50	56	63	72	71	56	51	46	24
19	35	37	36	43	62	62	70	73	55	54	44	34
20	28	35	36	37	62	66	66	64	54	60	48	30
21	29	33	43	42	56	60	64	60	54	56	34	27
22	33	34	36	50	54	62	64	63	53	50	24	47
23	39	34	34	50	48	61	66	64	56	34	46	24
24	41	33	38	48	52	58	63	69	59	36	42	26
25	36	29	40	45	54	61	62	72	63	46	30	20
26	28	28	41	50	56	62	64	66	54	50	47	36
27	19	31	37	49	50	66	62	59	64	54	36	34
28	16	31	33	54	55	68	71	68	54	44	33	28
29	24	—	44	52	63	69	73	68	54	46	38	26
30	30	—	32	45	60	72	73	62	54	42	38	32
31	36	—	31	—	60	—	70	68	—	43	—	32
Mean	27	29	33	44	54	63	67	69	62	53	47	31

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 0830 Air
 Daily XXXXXXXXXX Temperature 1970

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20	32	24	33	50	66	65	74	61	55	46	40
2	22	35	3	35	51	61	66	73	59	54	53	49
3	21	44	25	37	51	62	65	72	65	64	48	44
4	27	23	27	37	52	57	65	66	66	56	52	51
5	22	16	33	38	48	54	67	69	70	54	48	26
6	25	26	33	38	49	59	66	66	64	50	44	34
7	24	27	29	40	40	52	66	66	61	60	54	24
8	17	27	37	40	48	56	70	66	57	61	48	17
9	13	27	22	45	56	60	70	70	60	60	44	36
10	14	36	27	44	55	62	72	69	65	60	52	40
11	17	36	27	36	57	60	72	67	64	58	55	37
12	20	28	30	38	58	66	67	66	60	59	55	34
13	20	27	33	45	57	62	67	70	61	62	50	33
14	16	15	31	46	48	57	68	70	61	62	44	32
15	12	28	29	49	50	60	68	70	56	65	45	24
16	18	28	28	50	56	56	72	73	59	54	44	22
17	32	30	28	45	57	65	68	72	56	38	39	44
18	30	32	35	43	52	65	68	67	62	46	42	30
19	12	37	34	41	48	65	68	68	60	45	48	32
20	11	21	35	45	48	60	72	70	58	43	50	37
21	16	23	36	42	53	58	71	68	64	51	48	32
22	6	29	37	44	52	59	68	66	67	56	45	25
23	12	30	37	44	56	58	68	67	68	54	55	20
24	13	30	37	48	56	66	72	62	67	60	32	39
25	27	35	37	48	52	66	72	67	68	53	28	24
26	34	13	40	50	60	62	72	68	66	54	32	30
27	26	24	38	50	57	64	70	76	67	44	44	24
28	24	30	38	50	54	57	72	68	55	42	42	22
29	40	-	37	46	56	63	72	70	54	47	44	19
30	36	-	29	50	53	64	74	63	56	47	48	19
31	18	-	30	-	54	-	74	70	-	42	-	21
Mean	21	28	32	43	53	61	69	69	62	53	46	31

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 Daily 0830 Air Temperature 1971

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33	12	34	33	44	57	69	74	62	61	60	33
2	30	6	30	40	48	58	66	76	64	66	60	24
3	30	8	34	40	46	55	66	75	66	66	62	28
4	30	10	42	40	43	66	66	70	68	58	48	30
5	48	27	29	37	46	60	67	66	70	64	40	28
6	28	34	30	40	49	61	71	69	66	66	52	28
7	20	27	36	39	49	63	71	70	65	66	62	44
8	18	32	32	33	55	66	74	70	69	48	36	39
9	18	34	27	37	46	60	74	73	69	58	29	39
10	27	22	28	44	44	60	72	75	64	60	41	40
11	29	24	33	40	50	59	70	76	68	56	40	45
12	34	36	31	39	52	63	67	65	72	55	40	39
13	9	43	34	45	53	66	69	69	72	52	44	42
14	25	33	36	44	51	62	68	58	65	61	35	35
15	26	26	40	34	51	59	66	65	69	61	38	37
16	8	26	41	41	49	60	69	63	71	59	41	47
17	10	25	34	36	50	62	72	67	71	56	40	40
18	18	31	30	40	53	66	66	70	68	54	44	34
19	6	32	33	42	54	66	72	70	64	52	51	20
20	4	33	33	44	54	66	66	72	64	51	44	36
21	13	29	35	44	52	66	69	72	70	56	40	34
22	28	32	35	42	51	67	70	72	62	56	35	30
23	34	33	34	42	53	66	70	71	59	59	31	21
24	27	30	28	45	53	66	68	59	62	52	34	45
25	31	31	27	39	56	66	72	62	54	59	42	30
26	37	36	29	42	57	68	72	68	60	55	35	42
27	20	38	34	42	57	68	72	66	57	58	32	39
28	12	36	32	44	54	68	70	72	63	66	46	47
29	17	—	40	42	57	64	72	68	64	52	38	33
30	38	—	36	42	56	70	71	70	66	56	44	35
31	20	—	35	—	55	—	73	62	—	54	—	24
Mean	23	27	33	41	51	63	70	69	66	58	44	35

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 Daily Temperature 1972

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22	25	46	38	52	60	62	60	66	50	44	40
2	37	20	43	42	44	56	62	70	70	52	49	35
3	35	32	54	38	52	60	70	70	68	52	59	41
4	37	33	26	40	56	63	64	70	65	52	45	37
5	34	22	36	31	49	64	66	63	62	60	48	44
6	22	23	25	39	48	58	60	66	62	60	45	50
7	26	26	29	30	52	58	66	70	62	62	44	34
8	26	20	44	28	52	60	64	73	65	56	42	35
9	36	21	23	34	46	61	67	71	66	53	49	46
10	43	21	22	37	40	60	67	64	56	41	44	42
11	43	20	24	40	46	53	70	62	62	49	42	37
12	40	25	37	37	48	58	71	68	66	58	45	26
13	42	34	34	40	54	59	71	70	63	47	45	46
14	36	36	31	40	56	61	68	67	66	52	42	35
15	28	36	37	38	54	62	70	58	58	47	38	34
16	10	35	33	42	56	64	72	60	64	42	32	34
17	12	30	45	38	56	62	71	68	67	57	36	18
18	32	32	38	44	55	61	72	65	67	42	36	30
19	42	36	34	46	57	55	74	70	69	32	37	35
20	32	24	27	41	50	61	68	65	55	36	55	36
21	36	14	34	40	54	66	66	68	59	32	33	36
22	34	33	40	42	59	64	72	68	60	42	30	40
23	37	10	40	41	56	60	73	69	55	54	25	40
24	37	29	38	44	57	62	70	71	59	56	38	36
25	50	29	34	42	52	62	74	72	64	50	35	34
26	23	35	30	39	50	64	66	72	66	42	50	37
27	21	34	32	42	50	66	62	69	66	42	42	36
28	23	34	29	44	55	66	70	72	58	52	42	32
29	22	36	40	48	55	66	68	70	60	56	38	25
30	22	—	34	47	59	62	70	69	66	42	34	32
31	23	—	37	—	64	—	72	69	—	42	—	36
Mean	31	27	35	40	52	61	69	67	63	50	44	36

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 0830 Air
 Daily ~~Temperature~~ Temperature 1973

Month Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	48	18	33	47	52	63	67	67	74	56	54	37
2	36	34	38	47	54	58	68	74	76	58	51	36
3	29	40	38	40	53	58	72	71	74	62	50	38
4	34	34	45	44	52	66	74	70	76	62	46	46
5	38	37	39	40	44	64	74	70	71	60	42	51
6	26	32	40	41	48	64	70	74	74	56	40	50
7	14	32	38	44	49	66	72	74	68	53	40	38
8	9	34	47	34	51	64	75	74	64	52	43	36
9	10	24	40	37	50	64	74	74	62	57	41	44
10	23	16	38	44	54	68	73	74	58	60	32	44
11	24	25	42	39	53	68	69	74	67	56	33	40
12	21	18	46	37	54	69	62	74	66	54	38	34
13	22	19	40	38	56	64	62	74	63	58	48	28
14	25	27	42	36	57	66	68	73	64	61	52	48
15	32	40	42	44	55	63	64	66	58	59	51	35
16	30	30	44	46	49	66	66	64	65	54	53	34
17	36	12	46	49	52	56	68	68	56	56	34	52
18	36	12	34	53	52	63	66	71	63	56	46	26
19	38	26	35	54	52	63	68	69	54	45	41	17
20	36	33	37	50	57	70	70	63	60	52	34	34
21	24	36	32	48	54	73	66	64	50	46	36	54
22	32	34	33	50	52	68	68	67	54	50	50	28
23	41	29	33	62	58	66	68	61	64	54	42	36
24	36	28	36	54	54	67	70	66	60	56	42	23
25	28	26	40	53	52	67	73	69	56	53	50	24
26	32	30	42	49	50	65	70	76	54	52	41	50
27	34	26	34	45	52	64	71	70	61	50	42	46
28	36	23	36	56	56	66	71	74	63	47	50	46
29	42	-	38	49	57	70	70	73	66	56	45	46
30	10	-	44	46	63	74	72	75	54	54	42	42
31	22	-	42	-	61	-	74	76	-	56	-	34
Mean	29	28	39	46	53	65	70	70	63	54	43	38

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 Daily 0830 Air Temperature 1974

Month Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	48	30	39	38	51	60	66	74	73	51	57	35
2	29	20	30	44	42	50	66	74	66	58	53	45
3	31	24	36	43	51	60	65	72	64	48	49	40
4	30	27	42	49	44	59	72	74	63	45	56	37
5	24	12	46	50	44	61	72	70	59	52	52	26
6	32	15	38	42	46	61	70	70	60	60	50	30
7	30	33	42	37	45	57	70	74	60	62	50	35
8	25	22	39	44	46	62	72	69	59	48	47	51
9	22	25	34	40	54	65	76	70	66	46	45	45
10	20	18	38	30	48	68	74	64	65	56	47	34
11	33	26	29	38	44	67	64	66	65	47	44	35
12	20	23	28	44	49	66	64	67	69	56	52	42
13	16	34	23	52	52	61	62	68	70	51	51	37
14	18	34	28	43	54	67	67	70	69	44	52	36
15	34	17	32	48	56	64	74	68	64	64	51	32
16	33	22	38	44	59	68	69	68	65	54	41	38
17	20	30	38	45	55	65	68	72	64	44	42	40
18	13	24	32	48	60	66	70	72	66	46	46	35
19	34	26	36	44	52	67	70	71	64	38	44	34
20	18	38	36	38	51	68	64	76	66	37	48	34
21	34	30	36	47	55	68	66	71	68	34	46	38
22	36	37	32	49	58	66	70	71	59	42	34	38
23	35	36	38	48	52	64	67	72	55	50	31	35
24	34	25	46	44	49	62	66	72	50	44	47	41
25	36	32	26	38	52	56	65	68	52	48	50	30
26	34	38	32	44	54	54	66	69	62	46	32	20
27	48	26	29	44	50	57	68	69	63	51	29	34
28	38	35	34	50	46	58	68	72	66	46	32	32
29	38	—	26	52	53	62	71	72	67	54	35	35
30	38	—	34	60	52	65	70	74	58	56	30	42
31	38	—	41	—	57	—	71	66	—	55	—	32
Mean	30	27	35	45	51	63	69	71	63	49	45	36

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 Daily ~~0830 Air~~ Temperature 1975

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	52	25	36	36	47	65	62	78	57	62	70	52
2	34	22	28	30	45	62	62	80	62	65	57	33
3	25	24	27	40	42	65	71	80	62	44	57	41
4	50	15	24	30	70	60	70	72	60	50	60	37
5	30	25	26	30	44	60	70	74	62	54	56	50
6	26	32	31	30	47	56	71	76	64	62	47	70
7	42	30	32	35	50	58	73	66	66	51	55	32
8	33	22	38	32	51	55	68	64	65	55	62	34
9	38	31	18	33	52	53	70	69	67	51	56	42
10	37	17	27	33	54	56	72	70	54	49	56	52
11	44	26	32	36	52	61	70	73	62	54	52	36
12	41	25	34	36	54	64	71	73	68	58	47	32
13	38	21	40	36	58	66	71	72	60	52	53	34
14	29	18	32	37	55	60	72	73	51	56	51	44
15	25	22	30	42	53	63	72	72	52	64	40	44
16	29	34	30	41	54	62	73	72	60	62	46	42
17	35	30	36	43	56	65	73	70	59	54	41	24
18	25	35	32	43	57	67	74	69	60	64	50	34
19	36	38	42	46	60	69	74	65	60	52	43	23
20	31	33	44	44	60	68	75	67	64	54	51	14
21	23	33	35	41	61	62	72	65	66	50	56	36
22	35	32	36	38	59	66	74	72	62	58	44	34
23	27	40	37	41	60	67	74	64	57	54	37	20
24	36	39	39	47	60	69	76	70	58	54	39	8
25	42	52	41	45	56	73	74	66	56	56	34	14
26	41	37	38	44	59	60	67	69	62	60	37	30
27	27	34	19	41	62	66	69	70	72	52	45	38
28	32	30	23	42	62	70	72	68	57	50	42	30
29	55	—	32	42	61	69	72	66	56	57	34	27
30	31	—	38	42	64	64	71	66	61	46	46	31
31	25	—	32	—	64	—	73	58	—	36	—	37
Mean	33	30	33	34	55	64	71	70	61	54	48	33

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	55	36	43	45	56	62	70	64	65	56	42	33
2	20	41	36	47	55	51	70	69	69	56	34	35
3	34	19	30	41	57	66	72	66	56	62	50	13
4	30	29	35	43	47	61	76	73	62	58	51	21
5	16	22	42	41	51	62	74	70	68	57	50	26
6	18	20	42	48	54	62	77	74	58	64	40	27
7	33	18	38	48	56	57	76	74	59	65	48	45
8	34	28	33	45	44	67	77	69	62	65	36	31
9	16	26	31	40	50	70	72	75	62	66	26	26
10	14	26	28	40	55	72	74	70	64	50	40	33
11	16	37	36	52	60	66	75	71	60	42	38	40
12	20	28	26	28	57	68	72	71	58	44	30	38
13	20	42	42	40	51	63	65	72	66	50	34	31
14	37	34	35	49	57	63	70	72	67	52	38	12
15	28	28	40	55	56	70	69	72	72	50	38	34
16	28	40	36	47	62	71	70	70	70	54	36	41
17	25	39	29	62	59	66	72	63	66	46	37	30
18	9	35	23	63	62	72	68	66	70	38	45	30
19	13	40	41	62	52	70	71	65	68	36	43	27
20	29	37	44	61	53	67	74	64	68	52	38	39
21	26	30	50	65	60	73	74	70	69	56	33	32
22	26	45	32	54	52	76	70	76	60	46	33	20
23	4	28	33	60	51	73	72	80	56	42	36	30
24	13	34	42	52	61	71	70	69	60	45	36	28
25	18	40	47	48	57	68	65	70	52	53	32	30
26	55	42	46	45	54	68	65	74	62	50	46	34
27	46	42	48	42	55	66	74	70	66	30	48	22
28	45	44	47	45	63	65	74	70	56	34	47	18
29	34	38	42	48	64	66	77	74	52	43	42	34
30	27	—	41	51	66	72	72	59	56	44	25	17
31	21	—	46	—	62	—	64	56	—	55	—	18
Mean	33	30	38	49	56	67	72	70	63	50	39	28

Daily 0830 Air Temperature 1977

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14	20	30	38	51	63	68	73	72	67	47	47
2	29	13	20	35	54	66	71	71	70	65	52	45
3	24	27	32	40	52	65	67	75	74	50	57	40
4	28	25	36	44	47	54	67	72	67	50	60	37
5	20	28	36	46	51	64	71	74	66	54	58	34
6	22	15	37	40	55	62	68	74	72	60	55	42
7	30	17	35	33	56	53	72	74	65	49	53	29
8	26	16	33	46	46	54	70	76	64	48	52	24
9	17	21	36	28	43	60	66	74	62	60	56	43
10	30	31	42	37	39	50	67	73	66	52	54	20
11	20	30	40	39	44	50	66	74	63	50	52	19
12	18	32	42	48	51	59	68	76	57	50	44	8
13	12	37	49	54	55	61	71	74	68	50	41	26
14	21	32	43	50	46	65	70	71	72	46	35	38
15	20	34	39	44	52	64	70	69	56	50	41	44
16	34	23	44	44	53	63	71	72	64	53	52	34
17	8	12	35	50	57	70	72	76	66	50	66	30
18	5	16	37	46	65	66	74	66	66	47	44	34
19	12	28	37	50	51	64	76	62	68	54	40	36
20	22	34	38	46	58	69	76	66	62	50	36	35
21	22	24	37	60	62	66	76	61	56	48	43	38
22	16	26	43	58	60	64	70	68	52	54	45	36
23	15	30	35	54	63	63	62	69	54	44	44	34
24	20	34	35	44	56	66	71	71	56	43	46	38
25	32	35	30	43	61	68	73	62	52	54	40	44
26	26	34	36	51	60	64	69	66	64	55	40	21
27	32	36	38	51	62	64	63	66	64	60	31	26
28	22	36	48	54	70	65	66	71	64	59	42	26
29	10	—	50	39	54	70	68	72	58	50	38	20
30	10	—	48	47	56	69	70	72	55	48	37	30
31	12	—	50	—	58	—	70	68	—	46	—	34
Mean	26	27	35	46	55	62	70	71	63	52	47	32

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 Daily ~~Temperature~~ Temperature 1978

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30	31	24	40	40	65	64	67	64	62	52	32
2	26	20	20	40	40	62	63	65	60	62	50	42
3	24	15	24	32	40	64	67	73	66	50	40	27
4	20	6	22	40	43	57	58	74	65	50	54	50
5	32	11	17	41	39	62	56	72	64	50	54	42
6	30	29	20	40	42	57	62	71	66	57	50	41
7	30	30	24	42	50	62	64	71	71	56	54	32
8	34	25	23	44	50	63	64	73	54	47	42	46
9	50	18	26	36	52	62	68	71	58	40	44	44
10	18	16	38	37	54	60	66	72	54	54	50	22
11	17	16	36	44	52	62	66	70	65	52	50	25
12	24	24	42	46	53	63	63	68	68	56	46	22
13	26	25	34	46	62	66	68	70	56	58	42	37
14	36	30	39	44	56	54	72	72	54	60	55	36
15	31	25	40	38	50	55	66	73	58	42	51	36
16	22	29	36	42	48	60	66	73	62	46	43	36
17	28	32	28	45	52	64	63	74	58	44	45	42
18	40	30	24	44	58	63	70	74	62	41	56	27
19	22	25	39	48	58	65	66	72	56	54	45	22
20	30	18	31	51	62	65	70	73	54	44	46	27
21	18	24	44	44	55	65	68	70	63	50	34	42
22	22	18	40	42	57	66	78	65	66	55	36	30
23	24	24	42	44	58	64	76	69	52	57	36	34
24	26	27	43	45	60	64	71	72	52	38	44	30
25	36	27	30	46	56	64	71	56	56	42	36	41
26	49	30	32	46	58	66	69	62	46	57	23	30
27	25	24	43	49	54	68	70	64	50	52	22	22
28	22	21	38	42	61	68	62	66	58	50	34	22
29	20	—	44	46	62	70	66	71	46	51	32	22
30	16	—	37	47	64	69	73	72	54	47	40	22
31	17	—	36	—	64	—	69	72	—	42	—	34
Mean	27	23	33	43	53	63	67	70	59	51	43	34

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 Daily ~~0830 Air~~ Temperature 1979

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	44	22	32	45	53	64	69	75	67	57	40	41
2	51	21	38	41	46	62	67	79	69	59	56	37
3	30	20	38	41	53	65	64	79	67	61	63	28
4	23	21	36	44	56	59	63	77	68	60	43	39
5	22	20	47	41	52	66	58	77	69	61	41	38
6	22	15	49	49	57	62	59	75	71	57	48	49
7	33	17	45	38	59	68	62	64	70	60	48	44
8	41	21	38	33	55	68	68	73	62	49	45	47
9	25	16	40	36	62	69	68	70	57	51	49	29
10	22	2	38	40	63	69	68	72	58	37	58	38
11	20	2	37	39	64	67	70	61	65	40	51	45
12	15	1	25	44	64	57	71	57	55	46	—	47
13	30	6	27	42	62	57	77	56	60	54	47	38
14	39	0	45	42	60	58	78	66	68	45	44	27
15	23	8	28	40	58	64	78	60	61	43	39	31
16	32	10	24	43	58	68	80	59	57	44	42	50
17	22	0	33	46	55	67	74	60	56	45	48	37
18	27	0	30	41	66	66	71	64	63	55	51	24
19	11	10	38	44	58	59	70	59	66	51	45	16
20	20	20	37	41	61	62	68	60	47	55	51	27
21	39	32	39	44	61	61	71	66	63	61	48	29
22	33	33	38	53	61	65	72	65	62	58	51	37
23	30	34	42	46	65	66	71	64	56	59	54	42
24	31	40	50	52	58	60	72	68	51	61	57	44
25	42	37	46	56	69	56	73	68	55	49	58	50
26	34	33	42	65	62	58	78	67	59	44	59	39
27	34	31	31	55	58	60	74	68	53	39	50	35
28	35	30	33	58	62	65	75	68	57	48	55	30
29	36	—	40	57	66	66	76	70	60	46	40	36
30	37	—	43	56	65	67	76	71	58	45	34	46
31	31	—	44	—	63	—	72	68	—	42	—	28
Mean	30	18	38	46	60	63	71	67	61	51	49	37

0830 A F -74-
Daily ~~Temperature~~ Temperature 1980

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26	10	9	40	45	62	67	78	72	60	50	45
2	22	16	17	43	46	65	66	80	71	60	42	47
3	24	16	24	39	48	64	68	79	68	61	35	37
4	17	14	25	44	49	64	72	80	65	62	50	23
5	29	20	36	44	53	57	74	78	69	61	51	22
6	22	19	33	40	54	59	67	80	70	53	37	29
7	32	30	37	41	49	57	65	77	71	51	48	29
8	32	17	38	49	48	59	70	78	61	52	53	37
9	28	19	40	50	47	48	68	78	57	60	43	41
10	22	19	28	49	49	54	69	71	64	43	47	33
11	40	20	40	48	52	53	70	69	60	61	37	24
12	31	26	22	47	52	51	67	70	61	58	36	23
13	24	25	21	48	56	57	69	70	68	50	34	40
14	36	27	42	47	56	56	71	72	71	42	47	27
15	42	25	31	55	51	58	70	71	59	46	43	20
16	34	30	23	48	52	63	74	70	57	54	35	33
17	32	19	35	36	57	57	75	69	61	60	31	26
18	33	18	46	41	55	60	73	71	67	64	40	25
19	38	32	31	46	56	63	72	64	55	59	29	38
20	36	30	36	48	58	59	77	63	62	50	31	10
21	26	35	41	51	54	61	77	62	70	48	40	16
22	30	29	37	41	56	61	78	64	69	46	42	19
23	32	30	35	41	63	66	79	65	69	39	42	31
24	19	29	37	43	58	69	70	68	59	39	44	29
25	20	30	35	49	55	72	70	72	54	50	50	-2
26	21	26	35	47	49	67	72	70	60	49	35	14
27	23	14	36	45	54	68	73	73	50	41	34	26
28	23	21	41	44	53	64	72	74	54	49	40	33
29	25	13	40	46	53	66	74	69	50	39	42	34
30	17	—	40	45	59	64	71	65	57	38	42	35
31	12	—	37	—	61	—	71	70	—	42	—	11
Mean	28	23	33	45	53	61	71	72	63	51	41	27

0830 Air -75-
Daily Temperature 1981

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21	31	37	43	47	59	67	69	65	46	42	28
2	27	42	35	42	49	56	69	69	63	54	48	52
3	12	25	29	48	47	57	69	71	64	51	45	38
4	3	13	22	48	43	61	70	73	61	48	48	37
5	2	11	31	51	43	63	69	77	64	54	42	39
6	16	20	30	42	47	65	68	69	62	49	55	30
7	28	24	33	39	41	61	74	66	62	52	42	29
8	10	33	37	42	46	58	73	73	66	49	39	33
9	10	24	35	47	47	62	73	72	61	42	47	29
10	15	24	35	43	53	64	76	73	53	44	37	28
11	4	45	34	48	56	63	73	74	64	43	46	29
12	2	23	30	46	57	64	73	76	66	40	33	29
13	7	19	39	42	46	65	75	69	64	32	29	26
14	11	24	37	43	53	60	71	67	66	39	42	29
15	22	32	23	39	57	61	64	71	67	45	47	39
16	16	37	40	38	54	63	67	70	60	45	46	37
17	23	35	21	47	51	69	73	60	56	47	48	29
18	6	35	20	50	48	61	74	61	53	48	44	37
19	21	38	23	40	51	59	72	60	60	50	46	30
20	24	45	30	48	49	68	71	60	61	40	46	20
21	9	45	32	33	51	68	72	61	54	50	47	17
22	15	44	36	35	50	67	70	66	60	52	41	32
23	22	36	36	45	54	65	64	68	63	58	36	36
24	27	44	33	44	55	63	65	69	50	39	37	32
25	19	37	40	41	61	69	68	57	51	41	35	34
26	31	34	36	43	60	67	65	53	53	50	36	33
27	32	37	40	46	60	67	72	64	66	56	41	35
28	29	38	39	47	63	64	67	60	55	54	40	39
29	29	—	39	52	62	66	70	66	47	44	33	36
30	14	—	45	50	63	63	61	65	46	40	27	26
31	12	—	43	—	65	—	65	64	—	44	—	24
Mean	17	32	34	44	53	63	70	67	59	47	41	32

6830 Air -76-

Daily ~~Temperature~~ Temperature 1982

Month day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	37	47	16	39	47	57	59	70	65	56	56	43
2	29	25	30	35	44	59	60	69	66	54	57	47
3	36	42	20	42	46	57	62	37	62	49	58	44
4	34	35	15	41	51	55	60	64	63	59	59	51
5	33	26	38	23	49	54	62	65	64	51	61	51
6	28	35	34	29	49	52	64	65	66	58	44	59
7	33	18	33	18	44	47	63	61	59	54	39	44
8	22	28	30	24	51	48	66	64	59	59	50	38
9	30	30	26	30	50	53	65	69	55	59	47	44
10	10	26	24	38	44	59	67	71	62	57	35	16
11	3	20	36	37	45	51	63	67	65	50	44	39
12	4	21	46	35	45	48	65	60	66	46	48	22
13	16	23	43	35	50	48	70	60	65	55	51	9
14	27	22	39	38	51	52	68	62	63	55	40	27
15	24	24	33	40	48	52	69	70	61	55	41	39
16	24	37	31	45	44	60	71	66	59	50	29	52
17	4	28	31	50	51	59	70	70	58	42	43	35
18	1	28	32	45	51	61	72	65	60	42	42	28
19	8	30	36	41	51	57	73	66	62	46	42	29
20	18	29	38	42	55	59	72	69	54	51	46	28
21	15	29	39	46	56	61	62	62	53	59	49	34
22	0	29	37	39	52	63	63	55	54	40	47	27
23	8	29	35	37	49	60	68	61	55	45	46	28
24	31	29	38	43	50	61	71	65	55	43	48	41
25	12	18	42	44	50	60	71	67	57	41	38	45
26	10	15	46	47	54	62	71	61	53	46	44	50
27	2	29	31	52	55	61	65	67	58	45	37	32
28	21	22	19	41	53	59	62	61	59	42	24	49
29	27	-	30	39	56	62	65	55	57	46	53	48
30	36	-	37	42	57	62	64	60	57	55	43	32
31	37	-	44	-	53	-	70	64	-	56	-	29
Mean	25	38	33	39	51	57	66	65	60	51	45	37

Appendix C. Weekly mean water temperatures, 1962-1983.

Week numbers as referred to in the following tables

<u>Week No.</u>	<u>Dates, inclusive</u>	<u>Week No.</u>	<u>Dates, inclusive</u>
1	Jan. 1-7	27	July 2-8
2	Jan. 8-14	28	July 9-15
3	Jan 15-21	29	July 16-22
4	Jan. 22-28	30	July 23-29
5	Jan. 29 - Feb 4	31	July 30 - Aug. 5
6	Feb. 5-11	32	Aug. 6-12
7	Feb. 12-18	33	Aug. 13-19
8	Feb. 19-25	34	Aug. 20-26
9	Feb. 26 - March 4	35	Aug. 27 - Sept. 2
10	Mar. 5-11	36	Sept. 3-9
11	Mar. 12-18	37	Sept. 10-16
12	Mar. 19-25	38	Sept. 17-23
13	Mar. 26 - April 1	39	Sept. 24-30
14	Apr. 2-8	40	Oct. 1-7
15	Apr. 9-15	41	Oct. 8-14
16	Apr. 16-22	42	Oct. 15-21
17	Apr. 23-29	43	Oct. 22-28
18	April 30 - May 6	44	Oct. 29 - Nov. 4
19	May 7-13	45	Nov. 5-11
20	May 14-20	46	Nov. 12-18
21	May 21-27	47	Nov. 19-25
22	May 28 - June 3	48	Nov. 26 - Dec. 2
23	June 4-10	49	Dec. 3-9
24	June 11-17	50	Dec. 10-16
25	June 18-24	51	Dec. 17-23
26	June 25 - July 1	52	Dec. 24-31

Water
Weekly mean temperature record

1962			1963			1964			1965						
Wk	TEMP	Wk	TEMP	Wk	TEMP	Wk	TEMP	Wk	TEMP	Wk	TEMP				
1	36.0	27	66.3	1	30.6	27	69.6	1	33.4	27	68.1	1	36.4	27	65.4
2	35.2	28	68.1	2	32.3	28	67.5	2	32.8	28	68.5	2	36.0	28	67.9
3	34.5	29	67.9	3	32.7	29	70.1	3	31.3	29	69.9	3	31.6	29	69.8
4	35.3	30	68.1	4	31.6	30	70.2	4	33.0	30	68.9	4	31.2	30	70.0
5	32.8	31	69.0	5	30.0	31	72.1	5	32.2	31	69.3	5	29.9	31	68.4
6	32.7	32	69.6	6	30.7	32	72.3	6	32.4	32	68.1	6	30.6	32	69.8
7	31.1	33	68.6	7	30.0	33	70.4	7	32.1	33	67.7	7	31.8	33	71.7
8	31.8	34	70.7	8	29.8	34	69.8	8	31.3	34	68.3	8	30.3	34	70.7
9	31.9	35	69.9	9	29.9	35	68.5	9	32.5	35	68.9	9	31.5	35	68.9
10	32.6	36	67.9	10	32.6	36	66.6	10	35.2	36	69.0	10	34.4	36	66.3
11	35.2	37	67.9	11	34.5	37	65.2	11	35.9	37	68.2	11	35.1	37	65.4
12	37.4	38	65.2	12	36.0	38	62.7	12	36.6	38	64.4	12	35.6	38	64.9
13	40.3	39	62.6	13	39.6	39	60.0	13	38.0	39	63.4	13	36.3	39	64.4
14	43.0	40	61.9	14	41.3	40	60.0	14	39.2	40	61.4	14	37.9	40	59.7
15	44.8	41	59.9	15	42.5	41	59.3	15	41.4	41	58.2	15	40.0	41	57.4
16	45.3	42	58.8	16	45.2	42	59.1	16	43.9	42	57.1	16	42.4	42	57.1
17	47.8	43	56.3	17	46.2	43	58.8	17	45.1	43	54.8	17	43.9	43	56.3
18	49.0	44	53.2	18	48.7	44	54.3	18	47.5	44	54.3	18	47.1	44	51.4
19	50.9	45	50.8	19	50.3	45	53.0	19	51.4	45	52.5	19	50.1	45	49.3
20	53.0	46	47.7	20	52.6	46	51.2	20	53.4	46	51.9	20	53.7	46	48.1
21	56.2	47	45.6	21	55.5	47	50.4	21	56.7	47	48.6	21	55.1	47	45.7
22	59.9	48	44.4	22	57.8	48	48.3	22	58.2	48	46.9	22	57.9	48	44.4
23	63.0	49	44.7	23	62.1	49	45.5	23	58.8	49	42.5	23	59.5	49	43.0
24	62.9	50	39.8	24	61.0	50	41.5	24	61.3	50	40.8	24	60.7	50	41.5
25	65.1	51	36.3	25	63.7	51	34.7	25	63.2	51	38.8	25	62.3	51	39.1
26	65.3	52	34.7	26	65.9	52	33.1	26	65.3	52	40.0	26	65.1	52	38.7

Weekly mean water temperature record

1966		1967		1968		1969									
WEEK	TEMP	WEEK	TEMP	WEEK	TEMP	WEEK	TEMP								
1	38.6	27	67.4	1	35.9	27	63.8	1	34.4	27	66.3	1	31.2	27	68.2
2	35.1	28	69.4	2	35.9	28	66.5	2	29.8	28	67.3	2	30.3	28	67.5
3	31.8	29	69.6	3	35.0	29	66.9	3	29.9	29	69.9	3	31.1	29	69.0
4	31.7	30	70.0	4	36.9	30	69.2	4	30.2	30	70.8	4	32.9	30	67.0
5	29.5	31	69.3	5	34.7	31	69.7	5	32.1	31	70.3	5	32.5	31	70.2
6	30.0	32	69.4	6	32.7	32	69.2	6	31.5	32	70.7	6	31.2	32	71.8
7	32.4	33	69.1	7	32.0	33	68.0	7	29.5	33	70.1	7	31.0	33	73.5
8	31.2	34	69.5	8	31.8	34	68.1	8	29.3	34	69.2	8	33.4	34	71.8
9	33.2	35	69.6	9	30.4	35	67.9	9	29.7	35	68.2	9	34.1	35	70.2
10	35.0	36	68.2	10	32.0	36	65.4	10	30.2	36	67.6	10	32.3	36	70.0
11	35.7	37	66.6	11	33.6	37	63.3	11	32.6	37	66.4	11	33.5	37	68.3
12	38.4	38	64.9	12	31.9	38	62.8	12	35.9	38	65.7	12	36.6	38	67.2
13	38.8	39	61.2	13	33.3	39	62.0	13	37.7	39	66.7	13	38.8	39	65.0
14	40.1	40	59.5	14	37.8	40	61.6	14	40.6	40	64.6	14	40.5	40	63.7
15	42.3	41	58.6	15	39.0	41	60.5	15	43.2	41	61.3	15	43.4	41	63.3
16	44.5	42	56.9	16	40.3	42	58.8	16	45.1	42	61.5	16	46.4	42	61.0
17	45.6	43	55.5	17	42.0	43	56.8	17	46.9	43	59.5	17	48.4	43	55.9
18	47.2	44	53.5	18	43.7	44	54.3	18	49.4	44	55.7	18	50.5	44	53.6
19	47.7	45	51.9	19	45.5	45	51.0	19	51.3	45	53.1	19	52.4	45	53.5
20	49.8	46	50.7	20	48.5	46	47.5	20	53.5	46	48.0	20	55.0	46	51.1
21	53.6	47	47.3	21	49.5	47	44.2	21	54.5	47	46.6	21	56.5	47	47.9
22	56.1	48	47.6	22	50.8	48	42.1	22	56.4	48	45.5	22	59.2	48	45.3
23	59.6	49	43.0	23	56.2	49	40.0	23	59.2	49	44.1	23	61.6	49	41.4
24	60.0	50	43.3	24	59.4	50	39.3	24	60.9	50	38.6	24	65.6	50	41.9
25	63.0	51	40.4	25	60.6	51	38.5	25	62.3	51	36.6	25	65.5	51	38.2
26	64.0	52	36.4	26	61.9	52	37.3	26	63.9	52	33.1	26	66.7	52	35.9

Weekly mean ^{water} temperature record

1970			1971			1972			1973		
WEEK	TEMP.	TEMP.									
1	32.8	27 65.6	1	32.7	27 67.0	1	38.0	27 65.3	1	38.4	27 68.4
2	30.0	28 68.5	2	31.7	28 68.7	2	38.9	28 66.9	2	32.3	28 69.9
3	29.2	29 69.1	3	29.3	29 69.1	3	36.4	29 68.8	3	34.5	29 68.1
4	29.2	30 71.4	4	29.3	30 69.5	4	36.0	30 69.8	4	36.0	30 69.5
5	29.9	31 71.9	5	29.0	31 71.7	5	33.8	31 69.6	5	35.4	31 69.7
6	31.7	32 69.5	6	29.6	32 71.5	6	31.6	32 68.8	6	36.2	32 72.1
7	31.9	33 71.8	7	30.6	33 70.0	7	32.5	33 68.5	7	32.3	33 70.5
8	32.2	34 70.3	8	31.9	34 70.4	8	31.6	34 69.1	8	32.4	34 68.0
9	32.5	35 70.1	9	33.3	35 68.8	9	33.9	35 70.2	9	33.5	35 70.6
10	33.0	36 68.3	10	33.1	36 68.8	10	34.4	36 68.0	10	36.8	36 70.7
11	33.9	37 66.0	11	35.2	37 69.2	11	35.1	37 67.0	11	39.3	37 68.0
12	36.1	38 65.4	12	36.2	38 68.6	12	36.9	38 66.5	12	39.1	38 65.5
13	38.3	39 66.3	13	36.5	39 66.0	13	37.7	39 65.2	13	40.3	39 63.8
14	39.5	40 64.2	14	39.2	40 65.4	14	39.0	40 63.6	14	41.8	40 63.4
15	42.2	41 63.9	15	40.8	41 62.6	15	39.0	41 61.4	15	42.1	41 61.9
16	44.1	42 60.2	16	42.2	42 61.5	16	41.5	42 56.9	16	45.6	42 59.0
17	46.7	43 58.1	17	43.5	43 60.6	17	43.5	43 54.6	17	48.8	43 57.3
18	49.8	44 55.2	18	45.1	44 60.5	18	46.9	44 54.4	18	50.5	44 55.1
19	52.0	45 53.4	19	47.9	45 55.4	19	48.6	45 52.2	19	52.5	45 50.1
20	53.0	46 52.1	20	50.4	46 49.8	20	51.6	46 49.5	20	54.4	46 48.1
21	54.9	47 50.1	21	52.7	47 48.0	21	53.4	47 46.2	21	54.9	47 47.4
22	58.2	48 47.5	22	55.7	48 44.4	22	56.7	48 44.6	22	57.3	48 46.9
23	59.8	49 44.7	23	59.2	49 41.0	23	59.7	49 44.4	23	60.7	49 45.9
24	62.2	50 40.6	24	61.0	50 42.3	24	60.3	50 43.8	24	64.5	50 45.0
25	63.5	51 38.3	25	64.0	51 40.2	25	60.3	51 39.8	25	64.5	51 42.3
26	64.3	52 34.3	26	65.5	52 39.4	26	63.4	52 39.6	26	65.3	52 42.2

Weekly mean water temperature record

1974		1975		1976		1977									
DATE	TEMP	DATE	TEMP	DATE	TEMP	DATE	TEMP								
1	40.4	27	67.2	1	38.1	27	67.1	1	36.0	27	69.6	1	30.6	27	68.3
2	36.5	28	69.4	2	38.9	28	68.9	2	33.1	28	71.3	2	29.5	28	68.4
3	35.1	29	69.5	3	36.4	29	72.0	3	31.9	29	70.6	3	29.1	29	72.5
4	37.4	30	68.9	4	36.2	30	72.9	4	31.2	30	69.7	4	29.3	30	70.8
5	38.2	31	71.6	5	35.4	31	73.4	5	32.5	31	69.4	5	29.1	31	71.1
6	33.4	32	71.3	6	33.8	32	71.7	6	31.3	32	69.7	6	29.2	32	73.2
7	33.0	33	70.7	7	32.4	33	72.3	7	33.4	33	71.1	7	29.6	33	72.4
8	35.1	34	71.5	8	34.4	34	71.1	8	35.9	34	70.3	8	29.7	34	70.3
9	36.2	35	71.6	9	35.3	35	69.8	9	38.1	35	70.2	9	31.1	35	70.1
10	38.7	36	68.8	10	35.1	36	68.0	10	38.5	36	67.8	10	34.3	36	69.9
11	37.2	37	68.8	11	36.2	37	66.3	11	37.8	37	67.3	11	37.2	37	67.3
12	38.6	38	68.0	12	38.5	38	65.8	12	38.3	38	68.0	12	37.8	38	65.9
13	38.7	39	65.5	13	38.3	39	64.8	13	41.5	39	66.2	13	37.9	39	63.3
14	41.4	40	62.6	14	40.7	40	63.4	14	43.3	40	64.0	14	41.7	40	62.5
15	42.3	41	60.1	15	40.4	41	61.2	15	43.5	41	62.5	15	43.1	41	60.1
16	45.1	42	57.6	16	42.7	42	60.7	16	46.9	42	58.1	16	46.7	42	56.8
17	47.3	43	53.3	17	44.8	43	59.8	17	49.0	43	54.6	17	48.5	43	55.7
18	49.2	44	54.5	18	46.4	44	56.7	18	50.7	44	50.2	18	50.5	44	55.4
19	50.5	45	53.5	19	50.2	45	56.7	19	52.7	45	49.0	19	51.0	45	55.3
20	54.1	46	51.5	20	53.1	46	54.9	20	55.0	46	45.1	20	53.5	46	52.2
21	55.8	47	48.9	21	57.3	47	52.3	21	55.1	47	43.1	21	57.8	47	49.6
22	55.5	48	44.1	22	60.8	48	49.4	22	57.7	48	42.7	22	59.6	48	46.8
23	58.9	49	42.0	23	60.7	49	46.0	23	58.7	49	39.3	23	60.0	49	44.5
24	62.3	50	41.5	24	61.8	50	45.0	24	62.5	50	37.2	24	60.5	50	38.6
25	65.0	51	40.5	25	64.9	51	41.3	25	65.3	51	36.1	25	64.6	51	38.4
26	63.1	52	39.0	26	65.8	52	37.2	26	68.0	52	34.0	26	66.8	52	37.2

Weekly mean water temperature record

1978			1979			1980			1981						
WEEK	TEMP														
1	34.7	27	66.0	1	38.6	27	67.0	1	38.1	27	67.8	1	30.6	27	69.2
2	34.4	28	67.7	2	36.7	28	68.4	2	37.5	28	69.0	2	28.9	28	72.2
3	32.7	29	69.0	3	33.7	29	68.7	3	37.4	29	71.1	3	29.3	29	72.5
4	31.8	30	69.8	4	35.3	30	72.5	4	34.8	30	72.8	4	29.7	30	71.7
5	30.1	31	69.2	5	34.2	31	74.5	5	31.2	31	73.5	5	29.8	31	72.4
6	29.6	32	70.5	6	30.8	32	72.8	6	30.4	32	75.3	6	29.7	32	73.2
7	30.2	33	71.7	7	29.2	33	68.6	7	30.6	33	73.2	7	31.3	33	72.3
8	30.4	34	70.8	8	30.0	34	68.3	8	32.2	34	70.8	8	35.3	34	70.3
9	30.8	35	69.1	9	32.2	35	70.1	9	31.1	35	70.7	9	36.8	35	69.4
10	30.4	36	68.8	10	35.6	36	70.8	10	32.4	36	71.3	10	37.0	36	68.4
11	33.2	37	66.0	11	35.4	37	68.5	11	34.1	37	70.0	11	36.9	37	68.7
12	35.8	38	64.8	12	37.4	38	67.3	12	36.7	38	68.7	12	37.2	38	66.9
13	38.8	39	62.8	13	39.6	39	64.5	13	38.9	39	67.0	13	39.6	39	63.8
14	40.4	40	61.9	14	40.3	40	64.2	14	40.8	40	64.7	14	43.1	40	59.9
15	42.1	41	59.3	15	41.3	41	59.6	15	44.1	41	62.1	15	45.0	41	56.9
16	44.2	42	57.3	16	42.9	42	57.3	16	46.3	42	59.4	16	46.2	42	55.6
17	46.0	43	56.6	17	46.9	43	57.5	17	48.1	43	56.1	17	47.2	43	55.4
18	46.9	44	55.0	18	50.3	44	55.2	18	49.2	44	52.5	18	49.0	44	54.0
19	49.9	45	54.3	19	54.2	45	54.6	19	51.4	45	51.1	19	51.1	45	53.0
20	52.2	46	52.7	20	56.3	46	52.0	20	54.5	46	46.7	20	54.2	46	50.2
21	55.4	47	50.2	21	57.6	47	50.9	21	56.4	47	44.2	21	56.6	47	48.3
22	58.4	48	45.1	22	60.8	48	51.3	22	59.4	48	43.9	22	59.7	48	44.4
23	60.8	49	45.4	23	62.3	49	47.1	23	60.3	49	41.1	23	62.5	49	42.7
24	61.9	50	42.4	24	64.4	50	45.4	24	61.1	50	40.1	24	64.6	50	39.6
25	63.7	51	39.7	25	64.9	51	40.8	25	62.9	51	36.6	25	66.7	51	37.9
26	66.2	52	37.6	26	65.6	52	42.0	26	66.8	52	33.8	26	67.4	52	37.6