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The Climate Of Iowa  
C.R. Elford

Iowa  
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# THE CLIMATE OF IOWA

## Soil Temperatures at Ames



by **C. R. Elford and R. H. Shaw**

**Department of Agronomy**

and the

**Weather Bureau, United States Department of Commerce,  
cooperating**

## Special Report No. 24

**Agricultural and Home Economics Experiment Station**

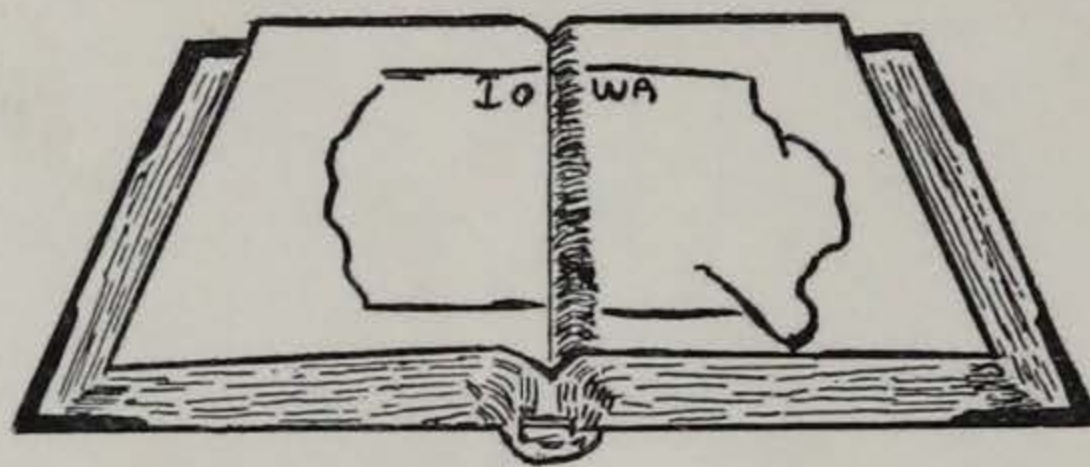
**Iowa State University** of Science and Technology

**Ames, Iowa – April 1960**

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# The Climate of Iowa<sup>1</sup>

## II. SOIL TEMPERATURES AT AMES

by C. R. Elford and R. H. Shaw<sup>2</sup>

The soil temperature observations summarized in this publication have been made possible through the cooperation of Iowa State University, the Iowa Department of Agriculture and the Weather Bureau, United States Department of Commerce. These observations constitute the only soil temperature record in Iowa of any appreciable length. Soil temperature measurements, however, have recently been initiated at Saratoga, Spencer, Council Bluffs and Burlington and are published currently by the United States Weather Bureau in the Climatological Data of Iowa (7).

### THE OBSERVATIONS

The thermometers used for the basic observations are mercury-in-glass instruments. The glass tube is protected by a wooden case measuring about 1 $\frac{3}{8}$ " in diameter. The thermometer is set in the ground vertically, with the bulb at the depth desired. The scale portion of the thermometer tube is a few inches above ground and is exposed for the reading where a portion of the wooden case has been removed. When exposed at the designed depth, no stem emergence correction is necessary. The scale is graduated in degrees Fahrenheit.

The site is a fairly level, open area at the Iowa State University Agronomy Farm, about 3 miles southwest of Ames. Most of the site is covered with sod, which is kept mowed during the summer. The soil thermometers are within a wire fence, which also encloses other meteorological equipment. The thermometers are set in Webster silty clay loam where the sod has been removed from the ground surface for an area around the thermometers of approximately 4 x 8 $\frac{1}{2}$  feet so that the readings represent an area which is not covered by a crop. The bare ground is kept cultivated to a depth of 2 inches. The exposure site is shown in fig. 1.

The thermometers were first installed on July 1, 1937, to measure temperatures at depths of 1, 6, 12, 48 and 72 inches. Observations were made at 7 a.m., noon and 7 p.m., Central Standard Time, on all but the 48- and 72-inch thermometers which were read only once each day (7 p.m.); between Feb. 9, 1942, and Sept. 29, 1945, however, the readings were made at 6 a.m., 11 a.m. and 6 p.m., Central Standard Time, because of the adoption of "War Time."

On April 1, 1946, another thermometer was added at a depth of 2 $\frac{1}{4}$  inches. This was the average of the estimates made of corn planting depths by various members of the agronomy staff. On Nov. 1, 1949, the thermometers were reset to provide readings at depths of 10, 20, 50 and 100 centimeters, established by the World Meteorological Organization. These depths (plus some desired locally) provide readings at 1, 2 $\frac{1}{4}$ , 4, 8, 20, 40 and 72 inches.

A soil thermograph also was operated from June 25, 1937, through March 18, 1946, to record temperatures at the 6-inch depth. From Oct. 2, 1950, to date it has been used to record temperatures at 2 $\frac{1}{4}$  inches. No data from the thermograph have been summarized for this report.

### THE PATTERNS OF SOIL TEMPERATURES

The purpose of these tabulations is to make the soil temperature data accumulated at Ames as useful as possible to persons who may have occasion to refer to them. To avoid confounding the data, we have separated the data for the 1- and 6-inch depths according to the times they were taken; i.e., the 1942 to 1945 data are in separate tables and figures. They have been combined, however, at the greater depths where the diurnal range is so slight that a 1-hour change in time of measurement makes an insignificant difference. All data through Dec. 31, 1956, have been summarized.

In using soil temperature information of this type, it is important to know what the observations mean in terms of daily maximum and minimum temperatures. Since movement of heat into the soil is accomplished largely by conduction, there is a necessarily increasing lag in the time of maximum and minimum temperatures with depth. On the average, the maximum and minimum temperatures would be expected to occur at about the times indicated in table 1 (Shaw, 5).

On cloudy days, the fluctuation in temperature during the day is much smaller than on a clear day. In the following section general comparisons will be made for clear days; on cloudy days the pattern would be similar, but the range would be less.

#### **Relation of 7 a.m., noon and 7 p.m. soil temperatures to maximum, minimum and average soil temperatures at the same depth.**

In most cases, those persons using soil temperatures are interested in the maximum, the minimum or the daily average. Unfortunately, in the observations presented here, these values are not always measured

<sup>1</sup>Project 1280 of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. Acknowledgment is made to Mr. C. N. Brown, Cooperative Observer, who has taken most of the observations used here, and Robert F. Dale, Area Climatologist, U. S. Weather Bureau, for assistance in editing and preparation of final manuscript.  
<sup>2</sup>Formerly State Climatologist, U. S. Weather Bureau, Des Moines, Iowa, now State Climatologist, U. S. Weather Bureau, San Francisco, California; and Professor of Agricultural Climatology, Iowa State University, respectively.

at the times the observations were taken, but generally these data can be used to estimate the particular temperature of interest.

At the 1-inch depth, the noon temperature is very close to the daily maximum temperature, and the 7 a.m. and 6 a.m. temperatures are close to the daily

TABLE 1. APPROXIMATE TIME OF OCCURRENCE OF THE MAXIMUM AND MINIMUM SOIL TEMPERATURE.

Depth in inches	Time of occurrence (Central Standard Time)	
	Maximum	Minimum
1.....	Noon-2 p.m.	Shortly after sunrise
2 $\frac{1}{4}$ .....	2-4 p.m.	1 hour after sunrise
4.....	4-6 p.m.	2 hours after sunrise
6.....	5-7 p.m.	3-4 hours after sunrise
8.....	6-8 p.m.	4-5 hours after sunrise
12.....	10-11 p.m.	7-8 hours after sunrise
20.....	Little daily fluctuation	
24.....	Little daily fluctuation	
40.....	Little daily fluctuation	
48.....	Little daily fluctuation	
72.....	Little daily fluctuation	

minimum temperature—except possibly in the summer when the temperature may already have risen several degrees by 7 a.m. The 11 a.m. temperature underestimates the maximum temperature. An aver-

age of the 7 a.m. and noon readings is not necessarily equal to the daily mean temperature but would not deviate greatly from it.

The noon temperature at 2 $\frac{1}{4}$  inches is lower than the maximum temperature by a few degrees but is the best estimate available from these data. The 7 a.m. temperature is within a few degrees of the minimum temperature. An average of the noon and 7 a.m. temperatures in all likelihood underestimates the daily mean but is probably the best combination to use to estimate daily means from the data presented in the tables.

At 4 inches the 7 a.m. reading is within a few degrees of the minimum temperature, and the 7 p.m. reading is slightly below the maximum temperature. The noon temperature alone is a good measure of the average daily temperature.

The 6-inch 7 a.m., or 6 a.m., temperatures are higher than the minimum temperature—except possibly around July 1, where it is close to the minimum temperature. The 7 p.m., or 6 p.m., temperature gives a good estimate of the maximum temperature. The noon temperature alone is a good estimate of the average daily temperature.

The daily temperature fluctuation at 8 inches is only 10 degrees or less on clear summer days. The 7 a.m. temperature overestimates the minimum temperature

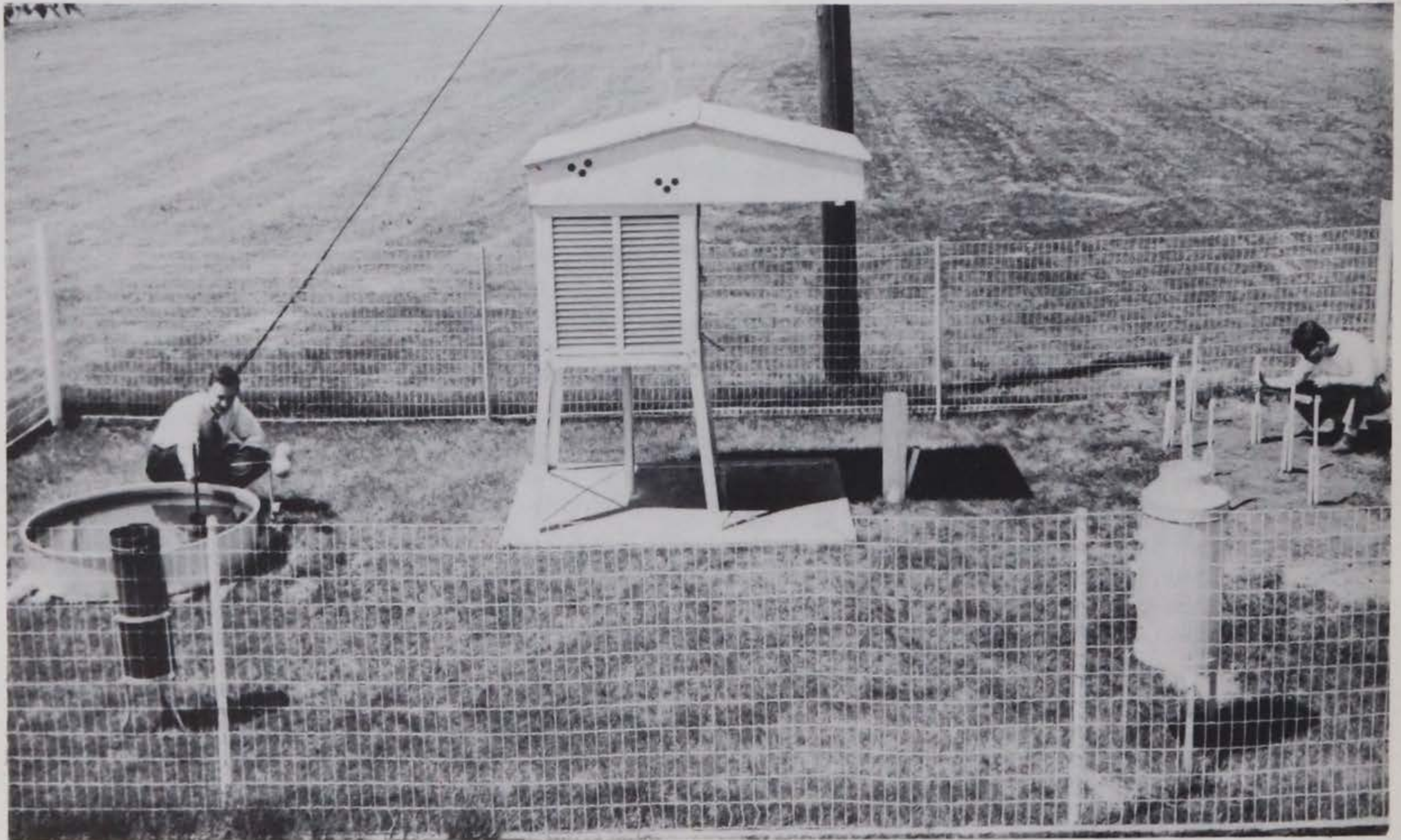


Figure 1. Weather station at Agronomy Farm, Ames. Soil thermometers are in upper right part of fenced area.

which occurs 4 to 5 hours after sunrise. Since the temperature change is small, however, it can be used to estimate the minimum temperature—particularly in the summertime when sunrise is very early. The maximum temperature occurs around 7 p.m. The noon temperature underestimates the average temperature by a slight amount on most days.

In the summertime the noon temperature at 12 inches is a good estimate of the minimum temperature at that depth. The 7 p.m. temperature underestimates the maximum temperature. An average of all three temperatures would not be far different from the average temperature. At this depth, however, the daily temperature fluctuation is only a few degrees from maximum to minimum.

At 20, 24, 40, 48 and 72 inches the daily temperature fluctuation is almost nonexistent, and the 7 p.m. temperature, or a temperature measured at any other time, can be used.

In fig. 2, the yearly pattern of the average 7 a.m., noon and 7 p.m. temperatures for the different depths is shown. These represent smoothed, eye-fit curves. The week numbers shown just below the month heading are for the climatological year (table 2). For this purpose, the year starts on March 1 and ends on Feb. 28 or 29. The lines shown on the graph connect points of equal temperature both for depth (ver-

tical axis) and time of year (horizontal axis).

The 7 a.m. temperature represents periods both before and after sunrise. Sunrise is about 6 a.m. in late March and September, but ranges from 4:40 a.m. in late June to 7:43 a.m. in late December. In the

TABLE 2. THE CLIMATOLOGICAL YEAR.

Week number	Beginning date	Ending date	Week number	Beginning date	Ending date
01	Mar. 1	Mar. 7	27	Aug. 30	Sept. 5
02	Mar. 8	Mar. 14	28	Sept. 6	Sept. 12
03	Mar. 15	Mar. 21	29	Sept. 13	Sept. 19
04	Mar. 22	Mar. 28	30	Sept. 20	Sept. 26
05	Mar. 29	Apr. 4	31	Sept. 27	Oct. 3
06	Apr. 5	Apr. 11	32	Oct. 4	Oct. 10
07	Apr. 12	Apr. 18	33	Oct. 11	Oct. 17
08	Apr. 19	Apr. 25	34	Oct. 18	Oct. 24
09	Apr. 26	May 2	35	Oct. 25	Oct. 31
10	May 3	May 9	36	Nov. 1	Nov. 7
11	May 10	May 16	37	Nov. 8	Nov. 14
12	May 17	May 23	38	Nov. 15	Nov. 21
13	May 24	May 30	39	Nov. 22	Nov. 28
14	May 31	June 6	40	Nov. 29	Dec. 5
15	June 7	June 13	41	Dec. 6	Dec. 12
16	June 14	June 20	42	Dec. 13	Dec. 19
17	June 21	June 27	43	Dec. 20	Dec. 26
18	June 28	July 4	44	Dec. 27	Jan. 2
19	July 5	July 11	45	Jan. 3	Jan. 9
20	July 12	July 18	46	Jan. 10	Jan. 16
21	July 19	July 25	47	Jan. 17	Jan. 23
22	July 26	Aug. 1	48	Jan. 24	Jan. 30
23	Aug. 2	Aug. 8	49	Jan. 31	Feb. 6
24	Aug. 9	Aug. 15	50	Feb. 7	Feb. 13
25	Aug. 16	Aug. 22	51	Feb. 14	Feb. 20
26	Aug. 23	Aug. 29	52	Feb. 21	Feb. 27
			53	Feb. 28	Feb. 29

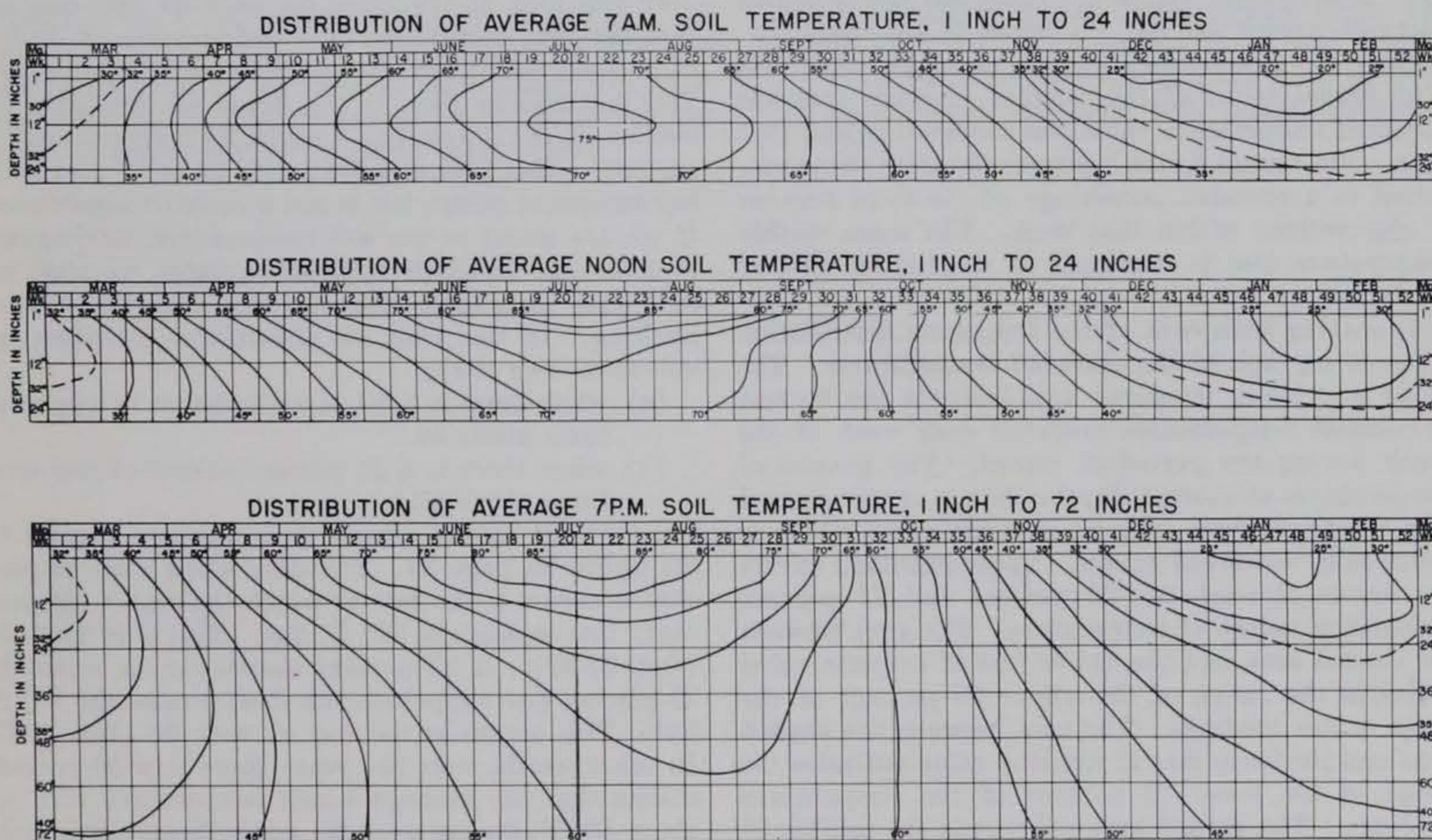


Figure 2. The annual pattern of 7 a.m., noon and 7 p.m. soil temperatures at Ames. Lines shown connect points of constant temperature at different depths (vertical axis) and different times (horizontal axis).

summertime, surface temperatures have already warmed considerably by 7 a.m. The noon (local time) reading comes very close to the time of maximum insolation, which occurs at noon (true solar time). The 7 p.m. temperature represents periods before sunset in the summer and considerably after sunset in the winter.

The average noon and 7 p.m. temperatures show a maximum of over 85° F. in late July at the shallow depths, as compared with the lowest average temperature of less than 20° F. in late January at 7 a.m. The temperature lag with depth through the year can be seen easily in fig. 2. The maximum temperature at the surface is reached in late July, but at 72 inches it is not reached until late August or early September. The minimum temperature, reached at the surface in late January, is not reached at 72 inches until late February or early March. An average 32° F. temperature occurs to depths just below 24 inches, although during the period of record this temperature was recorded as deep as 40 inches on individual days.

### FREQUENCY DISTRIBUTIONS OF SOIL TEMPERATURE

The frequency distributions for each depth, each time of day and each week of the year are given in the frequency distribution tables which follow the text. Temperature values are combined into 2-degree intervals, except for 32° F., which is set apart.

There are two values shown in each box. The first is an actual count of the number of times that the indicated temperature value was observed within that week. The second figure indicates the same value converted to a rounded percentage of the total number of observations within that week. The mean weekly temperature also is tabulated in the bottom row of the tables.

Appearing with each of the frequency distribution tables is a graph of the observed temperatures. The upper and lower irregular lines indicate the highest and lowest temperatures observed each week at the depth during the period of record. The graphs of temperatures at shallow depths show a center shaded area inside of these lines of extreme value which is bounded by smoothed curves. These smoothed curves are drawn through the 25 percent and 75 percent probability values of temperature. The area between the shaded zone and the upper line of extreme value indicates the range of the upper 25 percent of the temperature readings. The area between the shaded zone and the lower line of extreme value indicates the range of the lower 25 percent of the temperature readings. The shaded area represents the middle 50 percent of the temperature readings. The smoothed curve drawn through the shaded area represents the median (50 percent) value of the temperature for

each week. At greater depths where the range of temperature is less, the graphs show only the extreme values and a smoothed value of the median. Because of their narrowness, the indication of the 25 percent intervals is omitted in these graphs. The months are shown across the top, and the climatological week numbers from 1 through 52 are shown on the bottom of the graphs. On many of these graphs, a concentration of values at 32° F. is noted. The cause of this concentration is that as the soil cools it reaches 32° F. and begins freezing, but it does not go below 32° F. until the soil is completely frozen at that depth. Upon thawing, the same situation is true—the soil remains at a temperature of 32° F. until it is completely thawed and then rises in temperature.

To show how these tables and figures can be used, here are two practical problems:

(1) When should ammonium fertilizer be applied in the fall? When the soil temperature drops below 50° F. there is little oxidation of ammonium to nitrate, and it is less subject to leaching (4). Also late in the fall there is less chance of heavy rains to cause this leaching. Does a cold spell in early October mean that the soil has cooled enough so that fertilizer application should be made? Since this fertilizer is plowed down, we will use the 4-inch temperature to estimate the temperature of the layer where the fertilizer is present. The noon temperature gives a good estimate of the average daily temperature in this layer.

If you look at the table on page 29 you can see that the first occurrence of a temperature of 49-50° F. or lower in the fall has been in week 32 (Oct. 4-10). This can also be seen in the figure of this table by looking at the lowest line (minimum temperature reported). This indicates that such an early cool spell has happened before but is not a common occurrence. If we are going to use soil temperature information to determine fertilizer application dates, we must select some acceptable risk—in this case, the risk of leaching. In this case, for illustrative purposes, we will select two risks:

- (a) when there is a 50 percent chance of temperatures above 50.
- (b) when there is a 25 percent chance of temperatures above 50.

The simplest way to obtain these dates is to refer to the figure on page 29. The date when a 50 percent chance occurs is the date at which the center (50 percent) line crosses the 50° F. line. This is in week 35 (Oct. 25-31). A 25 percent chance occurs when the 25 percent line (upper smooth line) crosses the 50° F. line. This occurs at the end of week 36 (Nov. 1-7). In other words, over the years there is a 50 percent chance that the average 4-inch temperature will get above 50° F. during week 35, and a 25 percent chance by the end of week 36. Current forecasts must also be taken into consideration because they may indicate important changes in the present weather.

(2) Another example is that of a contractor who wants to start work in the spring as soon as there is a low probability of a 32° F. temperature in the soil. Certain phases of his construction operation will be damaged if soil freezing occurs. A late spring freeze, after the ground is thawed, will freeze to only a shallow depth; so we will consider the 1-inch depth as representative. The lowest temperature occurs in the morning, so for this problem we will use the 7 a.m. record. The construction work which would be damaged by a freeze can be protected, but it is expensive. The contractor has decided he will take a 1 in 10 chance (i.e., a 10 percent chance of a freeze). We cannot get this from the figure on page 9 because it gives the extreme value and the 25 percent value. We can go to the table, however, and add the probability of getting 32° F. or lower for individual weeks. In week 5, this is 33 percent (19 + 9 + 3 + 2 from the last column of week 5). It has changed to 10 percent in week 6, 12 percent in week 7 and 2 percent in week 8. This irregularity from trend is caused by variation in the data because of the relatively short period of record. Week 8 seems to be the start of the safe period, but the contractor might begin in weeks 6 or 7, using a short range weather forecast as a planning aid, if it is favorable.

#### MONTHLY MEAN TEMPERATURES

The original data for the most part have been published in the Climatological Data for Iowa (7). The monthly means for each month, time of day and depth are given in the table on pages 67-70. The average temperature for any particular month within any year of record can be found in these tables.

#### MICROCLIMATIC SOIL TEMPERATURE INFORMATION

The shape, texture and moisture content of the land surface are particularly important in determining soil temperature. The following literature citations give additional information and references on the microclimatic features of soil temperatures: Denisen *et al.* (1), Geiger (2), Hamid *et al.* (3), Shaw (5), Shaw *et al.* (6) and van Wijk (8).

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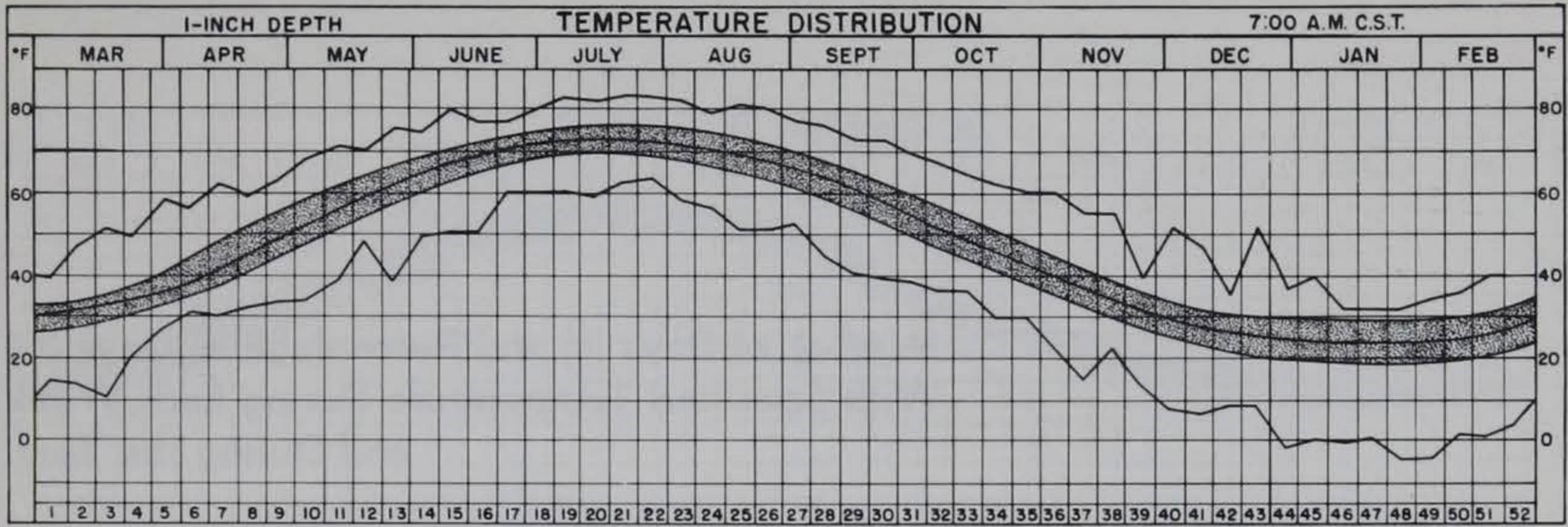
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

1-Inch Depth

7:00 a.m. CST, July 1, 1937—Feb. 8, 1942  
7:00 a.m. CST, Sept. 30, 1945—Dec. 31, 1956

Month	March					April					May					June					July					August				
	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			
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %			
105-6 103-4																														
101-2 99-00 97-98 95-96 93-94																														
91-92 89-90 87-88 85-86 83-84																			1 1			1 1	1 1							
81-82 79-80 77-78 75-76 73-74														1 1	1 1	1 1	4 4	4 4	6 5	2 2	3 3	2 2	1 1	1 1	1 1	1 1	2 2			
71-72 69-70 67-68 65-66 63-64									1 1		3 3	4 4	9 9	11 10	13 12	13 12	20 18	23 20	15 13	22 20	8 7	16 14	17 15	9 8	8 7	2 2				
61-62 59-60 57-58 55-56 53-54							2 2			3 3	3 3	9 8	3 3	7 7	8 8	18 17	5 5	12 11	5 5	1 1	1 1	1 1	1 1	1 1	5 4	3 3				
51-52 49-50 47-48 45-46 43-44			1 1			3 3	4 4	6 6	11 10	9 9	12 11	7 7	8 8	8 7	1 1	1 1	1 1								2 2	1 1				
41-42 39-40 37-38 35-36 33-34			2 2	3 3	7 7	7 7	4 4	5 5	4 4																					
32	39 37	43 41	28 26	24 22	21 19	8 8	8 8	2 2																						
30-31 28-29 26-27 24-25 22-23	14 13	17 16	16 15	13 12	9 9	2 2	3 3																							
20-21 18-19 16-17 14-15 12-13	8 8	4 4	2 2	1 1																										
10-11 8-9 6-7 4-5 2-3			2 2																											
0 1 -2 -1 -4 -3 -6 -5																														
Mean	28.8	29.5	30.8	33.8	36.6	38.3	41.7	45.7	49.6	51.0	53.1	57.8	59.6	62.4	64.7	67.0	69.1	70.1	71.8	71.4	71.3	72.1	70.7	69.0	66.8	67.0	64.8			
Total Obs.	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	109	112	112	112	112	112	112	112	112				

\* Less than 1%



Month	September				October				November				December				January				February				Year					
Week No.	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	53				
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6 103-4																														
101-2 99-00 97-98 95-96 93-94																														
91-92 89-90 87-88 85-86 83-84																													3 *	
81-82 79-80 77-78 75-76 73-74	3	3																										15 *		
71-72 69-70 67-68 65-66 63-64	6	5	4	4	3	3	1	1																				202		
61-62 59-60 57-58 55-56 53-54	7	6	16	14	3	3	9	8	9	8	4	3	1	1														175		
51-52 49-50 47-48 45-46 43-44	8	7	7	6	11	10	12	10	5	4	7	6	4	3	8	7	1	1	1	1	2	2						142		
41-42 39-40 37-38 35-36 33-34			1	1	1	1	7	6	11	9	8	7	10	8	14	12	14	11	1	1	7	6						109		
30-31 28-29 26-27 24-25 22-23																													299	
20-21 18-19 16-17 14-15 12-13																													137	
10-11 8-9 6-7 4-5 2-3																													31	
0-1 -2-1 -4-3 -6-5																													8 *	
Mean	61.9	59.2	55.1	52.7	51.1	47.2	44.9	42.7	38.4	34.1	35.6	28.8	29.5	26.9	23.9	25.5	23.7	21.6	23.5	20.5	19.0	22.2	22.9	25.2	25.2	26.7	45.4			
Total Obs.	112	112	112	116	119	119	119	119	119	119	119	124	126	126	126	122	112	112	112	112	112	107	105	105	19	5826				

\* Less than 1/4

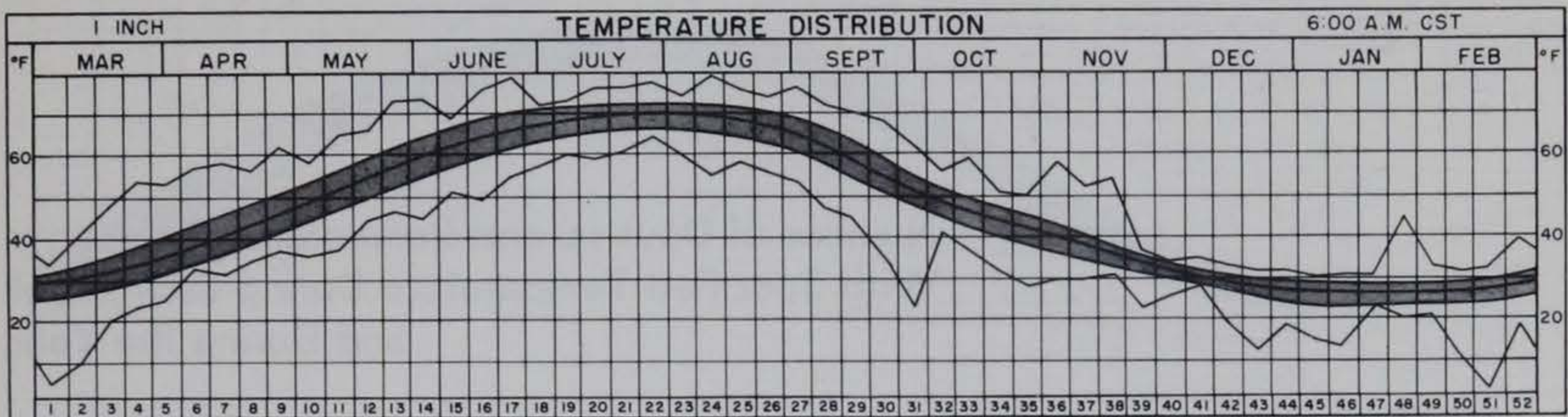
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

1-Inch Depth

6:00 a.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August						
	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
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		
105-6 103-4																											
101-2 99-00 97 98 95 96 93 94																											
91 92 89 90 87 88 85 86 83 84																											
81 82 79 80 77 78 75 76 73 74																	1 4 1 4					1 4		1 4 1 4 2 8		1 4 2 7	1 4
71 72 69 70 67 68 65 66 63 64													1 4 4 13 4 14	5 17 4 14	2 7 5 18	3 11 3 11	4 13 4 14	3 11 4 14	4 14 5 18	7 25 5 17	4 14 5 18	8 29 9 31	4 14 6 21	5 18 3 10	5 18 4 14	3 11 3 11	1 4 5 17
61 62 59 60 57 58 55 56 53 54																											
51 52 49 50 47 48 45 46 43 44																											
41 42 39 40 37 38 35 36 33 34																											
32	10 35	9 31	6 20	5 17	3 10	2 7																					
30 31 28 29 26 27 24 25 22 23	3 10 3 10	1 4 7 24	1 4 4 14	7 24 1 4	6 20 2 7		2 7																				
20 21 18 19 16 17 14 15 12 13	1 4 2 7		1 4																								
10 11 8 9 6 7 4 5 2 3	1 4 1 4	1 4																									
0 1 -2 -1 -4 -3 -6 -5																											
Mean	25.7	29.6	33.4	36.2	36.5	40.6	40.5	44.0	47.7	44.6	50.5	53.4	59.9	63.3	60.6	64.0	68.0	65.1	67.5	69.2	69.1	69.5	67.9	69.2	67.5	65.0	65.7
Total Obs.	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28

\* Less than 1%



Month	September					October					November					December					January					February					Year
Week No.	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	53	Year				
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %				
105-6 103-4																															
101-2 99-00 97 98 95 96 93 94																															
91 92 89 90 87 88 85 86 83 84																															
81 82 79 80 77 78 75 76 73 74																												2 * 3 * 16 1 25 2			
71 72 69 70 67 68 65 66 63 64	1 4 2 7 1 4 8 28 1 4	2 7 1 4 5 17 1 4	2 7 2 7																								56 4 65 5 65 5 71 6 45 3				
61 62 59 60 57 58 55 56 53 54	5 17 4 14 4 14 4 14	4 14 2 4 4 14 4 14	1 4 2 8 3 12 4 13 3 11	2 8 2 8 3 12 2 10 1 5		1 5					1 7																46 4 32 2 37 3 31 2 28 2				
51 52 49 50 47 48 45 46 43 44	1 4 1 4 1 4 1 4	2 7 3 11 2 7 2 7 1 4	3 11 2 7 4 18 4 18 3 11	4 18 2 8 5 23 7 32 2 10	1 5 1 5 4 21 5 27 2 11	1 5 2 14 4 30 1 7 3 21	1 7 2 14 4 30 1 7 1 7	1 7 1 7 4 30 1 7 1 7	1 7 1 7 1 5 4 29 1 5																	31 2 46 4 37 3 54 4 44 3					
41 42 39 40 37 38 35 36 33 34			2 7 2 7		2 10 2 8	3 16 1 5	1 7 1 7	1 7 2 14 1 7	4 30 3 16 3 16 1 5 2 10 1 7	1 7 3 16 3 16 1 5 2 10 4 29	1 7 3 16 3 16 1 5 2 10 4 21	4 19 8 38 1 5		1 5							2 10			1 4	41 3 20 2 29 2 24 2 54 4						
32				1 4			1 7 1 7				1 5 6 29 6 29	6 29 3 14 3 14	3 14 3 14 2 10 1 5	3 14 4 18 5 23 3 13 7 32 9 43	2 10 2 10 6 27 4 19 2 10 3 14 4 18 3 14 4 15 2 7 3 11	2 10 5 24 3 12 4 14 7 25												81 7			
30 31 28 29 26 27 24 25 22 23								1 7	2 14 2 14	1 5 3 14 1 5	3 14 7 33 3 14 1 5 1 5	6 29 3 14 3 14 1 5 1 5	3 14 4 18 5 23 5 24 6 28 5 24 2 10 3 14 4 18 3 14 4 15 2 7 3 11	2 10 2 10 6 27 4 19 2 10 3 14 4 18 3 14 4 15 2 7 3 11	2 10 7 26 2 8 3 11 3 11 1 20 70 5 40 3 32 2 30 2												94 8 70 5 40 3 32 2 30 2				
20 21 18 19 16 17 14 15 12 13														2 9 1 5	1 5 1 5	2 10 1 5	1 5 3 14	3 14 2 10				2 10			1 4 2 7 1 4 4 13 1 20	17 2 11 2 5 1 3 * 3 *					
10 11 8 9 6 7 4 5 2 3																								1 4		1 4 1 4 2 7	3 * 1 * 2 * 3 *				
0 1 -2 -1 -4 -3 -6 -5																															
Mean	60.8	58.5	50.1	50.4	47.4	46.5	44.6	41.9	40.6	40.1	39.5	32.3	30.8	31.6	27.1	26.4	26.8	25.8	25.4	27.9	28.8	28.1	26.1	22.7	27.6	27.2	47.0				
Total Obs.	28	28	28	24	21	19	14	14	14	14	19	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1297				

\* Less than 1%

## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

1-Inch Depth

12:00 CST, July 1, 1937—Feb. 8, 1942  
12:00 CST, Sept. 30, 1945—Dec. 31, 1956

Month	March				April				May				June				July				August								
	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		
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		
105-6 103-4																		2 2	2 2	2 2	2 2								
101-2 99-00 97 98 95 96 93 94																		1 1	4 4	4 4	3 3	3 3	1 1	1 1	1 1	2 2	3 3	2 2	2 2
91 92 89 90 87 88 85 86 83 84										1 1	1 1	2 2	1 1	4 4	6 6	5 5	7 7	10 9	8 7	7 6	11 10	11 10	8 7	7 6	6 5	5 4	4 3	4 3	2 2
81 82 79 80 77 78 75 76 73 74							1 1	2 2	3 3	6 6	9 8	5 5	7 7	17 16	11 10	5 5	14 13	8 7	5 4	6 5	4 4	6 5	8 7	5 4	7 6	8 7	10 9	10 9	13 12
71 72 69 70 67 68 65 66 63 64					1 1	1 1	5 5	2 2	8 7	8 7	9 8	13 12	5 5	10 9	9 8	3 3	6 6	2 2	2 2	1 1	1 1	2 2	2 2	4 4	6 5	3 3	6 5	5 4	9 8
61 62 59 60 57 58 55 56 53 54		1 1	1 1	5 5	2 2	2 2	4 4	5 5	6 6	12 11	8 8	2 2	4 4	3 3	2 2	1 1										1 1		1 1	1 1
51 52 49 50 47 48 45 46 43 44	1 1	2 2	4 4	4 4	5 5	8 7	8 7	11 10	1 1	3 3	5 5	3 3	1 1	2 2															
41 42 39 40 37 38 35 36 33 34	4 4	3 3	5 5	8 7	6 6	4 4	6 6	1 1	3 3			1 1																	
32	4 4	4 4	3 4	3 4	2 0	1 9	1 1																						
30 31 28 29 26 27 24 25 22 23	14 13	17 16	11 10	9 8	1 1																								
20 21 18 19 16 17 14 15 12 13																													
10 11 8 9 6 7 4 5 2 3																													
0 1 -2 -1 -4 -3 -6 -5																													
Mean	32.3	34.3	38.9	43.2	47.4	49.6	54.3	58.1	62.4	63.4	67.9	72.2	72.6	75.6	76.4	80.2	81.7	84.7	87.6	86.6	87.5	88.1	85.4	84.1	82.0	81.0	80.7		
Total Obs.	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	108	111	112	112	112	111	112	112	112	112		

\* Less than 1%



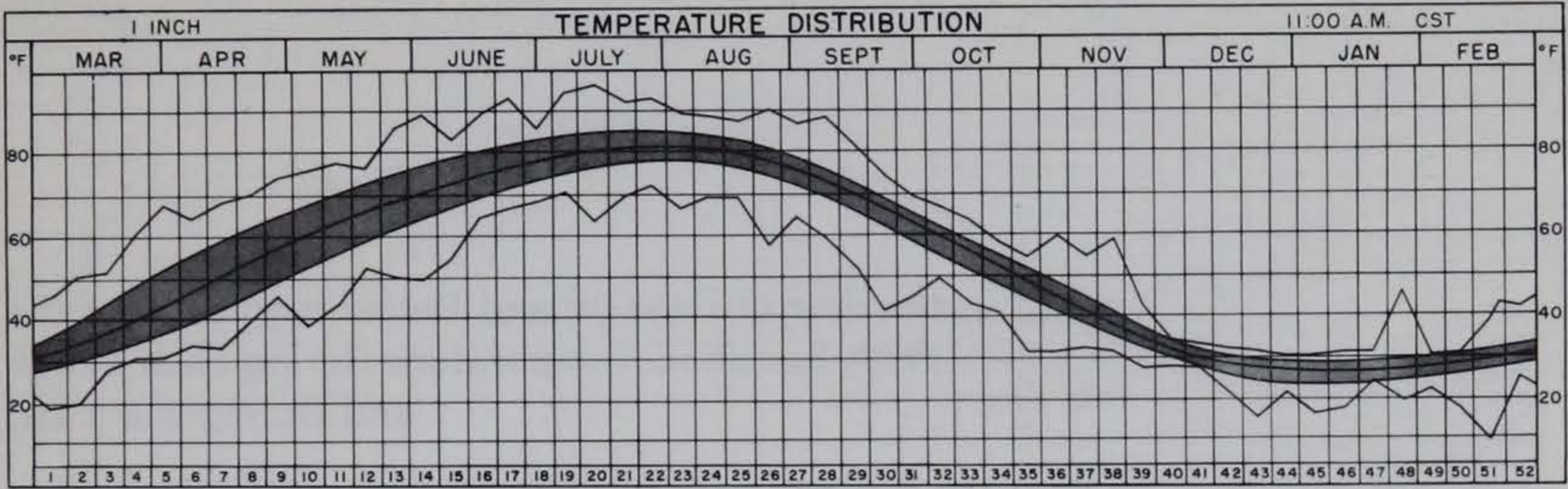
# Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

1-Inch Depth

11:00 a.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August							
	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	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
Temp.																												
105-6																												
103-4																												
101-2																												
99-00																												
97 98																												
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93 94																												
91 92																												
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87 88																												
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73 74																												
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49 50																												
47 48																												
45 46																												
43 44																												
41 42																												
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30 31																												
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16 17																												
14 15																												
12 13																												
10 11																												
8 9																												
6 7																												
4 5																												
2 3																												
0 1																												
-2 -1																												
-4 -3																												
-6 -5																												
Mean	31.1	34.9	37.6	44.8	47.1	50.4	49.6	54.7	58.8	56.7	61.5	67.0	73.0	72.5	67.9	75.4	80.1	78.2	83.0	82.8	81.8	83.2	80.8	82.8	78.7	75.8	77.8	
Total Obs.	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	

\* Less than 1%



Month	September					October					November					December					January					February					Year																					
	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	53																						
Week No.																																																				
Temp.																																																				
105-6 103-4																																																				
101-2 99-00 97 98 95 96 93 94																																																				
91 92 89 90 87 88 85 86 83 84																																																				
81 82 79 80 77 78 75 76 73 74																																																				
71 72 69 70 67 68 65 66 63 64																																																				
61 62 59 60 57 58 55 56 53 54																																																				
51 52 49 50 47 48 45 46 43 44																																																				
41 42 39 40 37 38 35 36 33 34																																																				
32																																																				
30 31 28 29 26 27 24 25 22 23																																																				
20 21 18 19 16 17 14 15 12 13																																																				
10 11 8 9 6 7 4 5 2 3																																																				
0 1 -2 -1 -4 -3 -6 -5																																																				
Mean	71.4	67.7	61.4	59.5	58.7	55.5	51.8	47.4	44.4	43.5	41.8	33.6	31.6	32.0	28.1	27.4	27.7	26.5	26.6	28.7	29.5	29.0	28.5	27.0	31.8	31.6	55.1																									
Total Obs.	28	28	28	24	21	19	14	14	14	14	19	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1297																									

\* Less than 1%







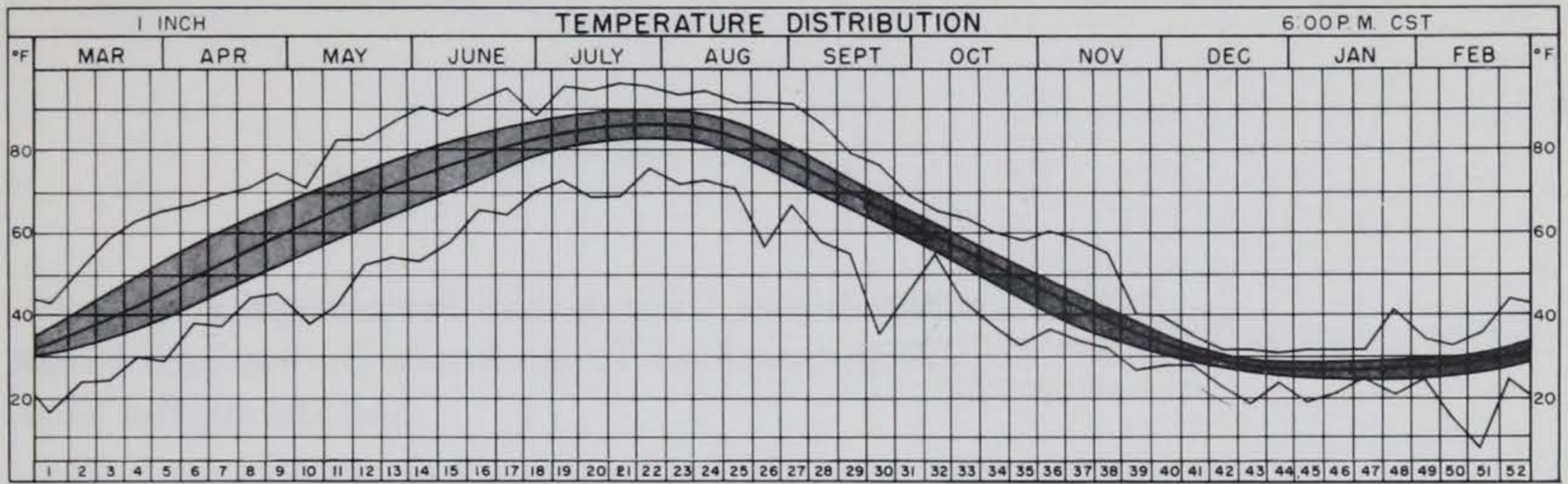
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

1-Inch Depth

6:00 p.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August							
	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	
Week No.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6																												
103-4																												
101-2																												
99-00																												
97 98																												
95 96																												
93 94																												
91 92																												
89 90																												
87 88																												
85 86																												
83 84																												
81 82																												
79 80																												
77 78																												
75 76																												
73 74																												
71 72																												
69 70																												
67 68																												
65 66																												
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53 54																												
51 52																												
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47 48																												
45 46																												
43 44																												
41 42																												
39 40																												
37 38																												
35 36																												
33 34																												
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30 31																												
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14 15																												
12 13																												
10 11																												
8 9																												
6 7																												
4 5																												
2 3																												
0 1																												
-2 -1																												
-4 -3																												
-6 -5																												
Mean	30.7	36.3	38.3	45.3	48.0	52.5	51.4	58.5	60.5	57.2	64.5	67.9	76.0	75.0	71.9	80.0	84.0	81.5	85.7	86.6	85.5	87.0	84.0	85.7	83.0	77.9	80.2	
Total Obs.	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	

\* Less than 1%



Month	September				October				November				December				January				February				Year			
Week No.	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	53		
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	
105-6 103-4																												
101-2 99-00 97 98 95 96 93 94																												1 *
91 92 89 90 87 88 85 86 83 84																												21 2 31 2 47 4 43 3 50 4
81 82 79 80 77 78 75 76 73 74																												51 4 41 3 35 3 32 2 23 2
71 72 69 70 67 68 65 66 63 64																												26 2 34 3 28 2 34 3 36 3
61 62 59 60 57 58 55 56 53 54																												45 3 46 4 39 3 29 2 23 2
51 52 49 50 47 48 45 46 43 44																												19 2 22 2 22 2 17 1 17 1
41 42 39 40 37 38 35 36 33 34																												27 2 16 1 25 2 27 2 37 3
32																												101 8
30 31 28 29 26 27 24 25 22 23																												81 6 59 4 34 3 24 2 6 1
20 21 18 19 16 17 14 15 12 13																												11 1 3 * 3 *
10 11 8 9 6 7 4 5 2 3																												1 * 1 *
0 1 -2 -1 -4 -3 -6 -5																												
Mean	72.3	69.4	61.1	60.0	59.6	57.4	53.0	49.5	45.4	44.7	42.1	33.9	31.9	32.0	28.7	28.5	28.5	27.3	28.1	29.4	29.8	29.9	28.3	26.5	32.6	31.8	56.9	
Total Obs.	28	28	28	24	21	18	14	14	14	14	19	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1296	

\* Less than 1%

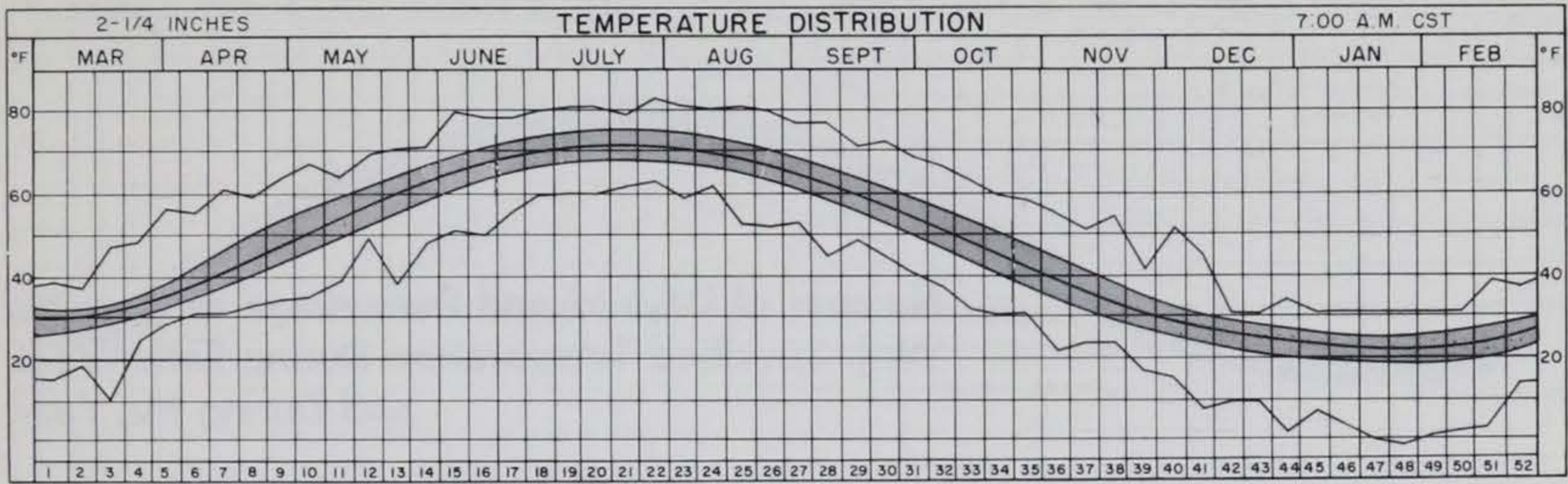
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

2 1/4-Inch Depth

7:00 a.m. CST, April 1, 1946—Dec. 31, 1956

Month	March				April				May				June				July				August							
	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	
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6																												
103-4																												
101-2																												
99-00																												
97-98																												
95-96																												
93-94																												
91-92																												
89-90																												
87-88																												
85-86																												
83-84																												
81-82																												
79-80																												
77-78																												
75-76																												
73-74																												
71-72																												
69-70																												
67-68																												
65-66																												
63-64																												
61-62																												
59-60																												
57-58																												
55-56																												
53-54																												
51-52																												
49-50																												
47-48																												
45-46																												
43-44																												
41-42																												
39-40																												
37-38																												
35-36																												
33-34																												
32	21	30	23	33	21	30	19	27	11	15																		
30	31	14	20	15	21	13	19	10	14	11	15	1	1	1	1													
28	29	7	10	8	11	8	12	3	4	2	3																	
26	27	6	9	5	7	5	7	2	3																			
24	25	8	12	2	3	3	5	4	6																			
22	23	7	10	5	7	1	1																					
20	21	3	5	3	4	1	1																					
18	19			5	7	1	1																					
16	17	1	1																									
14	15	1	1																									
12	13																											
10	11			1	1																							
8	9																											
6	7																											
4	5																											
2	3																											
0	1																											
-2	-1																											
-4	-3																											
-6	-5																											
Mean	28.3	28.7	30.8	33.0	36.4	39.2	40.7	46.3	49.6	50.6	52.7	57.0	58.4	60.7	65.3	67.0	68.6	70.4	71.0	71.6	70.6	72.3	70.0	68.9	67.8	68.3	64.3	
Total Obs.	70	70	70	70	74	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	

\* Less than 1%



Month	September					October					November					December					January					February					Year
Week No.	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	53	Year				
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%			
105-6 103-4																															
101-2 99-00 97-98 95-96 93-94																															
91-92 89-90 87-88 85-86 83-84																											1 *				
81-82 79-80 77-78 75-76 73-74	1 1 2 3 1 1			1 1																							10 * 32 1 52 1 67 2 112 3				
71-72 69-70 67-68 65-66 63-64	2 3 3 4 11 14 6 8	2 3 7 9 4 5 6 8	1 1 2 3 4 5 1 1	1 1 1 1 2 2 4 5																							132 3 157 4 170 4 160 4 136 3				
61-62 59-60 57-58 55-56 53-54	9 12 12 16 5 6 5 6	11 14 13 17 4 5 8 10	5 6 6 8 9 12 8 11	7 9 9 12 5 7 11 14	5 7 3 4 8 10 2 3	4 5 2 3 4 5 5 7	1 1 3 4 4 5 1 1																				123 3 125 3 105 3 149 4 108 3				
51-52 49-50 47-48 45-46 43-44	2 3 2 3 2 3 1 1	5 7 4 5 5 6 4 5	11 14 9 12 3 4 4 5	8 11 10 13 3 4 3 4	3 4 7 9 9 12 4 5	8 11 8 10 6 8 8 10	4 5 3 4 4 5 7 9	6 8 3 4 4 5 7 9	1 1 1 1 16 21 6 8	1 1 1 1 4 5 4 5			1 1														113 3 111 3 106 3 90 2 80 2				
41-42 39-40 37-38 35-36 33-34			4 5	6 8 3 4 1 1	5 7 4 5 2 3 1 1	6 8 8 10 7 9 6 8	8 10 3 4 7 9 9 12	10 13 5 6 7 9 4 5	3 4 6 8 7 9 10 13	5 6 9 12 5 6 3 4	1 1 1 1 1 1 2 3	2 2 2 2 1 1 2 2	2 2 2 2 2 2 3 4	1 1 3 4 1 1 2 3													76 2 73 2 98 2 99 2 141 4				
32					1 1		2 3	3 4	11 14	9 12	13 17	16 20	14 17	4 5	6 8	8 10	4 6	7 10	3 4	4 6	7 10	7 10	18 26	16 23	5 37	258 7					
30-31 28-29 26-27 24-25 22-23						1 1	2 3	3 4	7 9	4 5	18 23	19 23	16 19	12 14	15 18	5 6	5 7	11 16	3 4	5 7	6 8	9 13	9 13	4 6	2 15	221 6 150 4 147 4 133 3 128 3					
20-21 18-19 16-17 14-15 12-13												4 5	4 5	3 4	1 8	5 6	8 10	6 8	5 7	6 9	7 10	8 12	5 7		8 12	1 8	84 2				
10-11 8-9 6-7 4-5 2-3												2 3	3 4	1 1	2 2	5 6	4 5	1 1	1 1	5 7	7 10	9 13	1 1	4 6	1 1	1 8	50 1 48 1 46 1 20 1				
0-1 -2-1 -4-3 -6-5																						1 1					19 1 12 * 2 * 6 * 8 *				
Mean	61.6	59.9	54.9	54.4	51.8	49.0	45.8	43.6	39.3	34.9	36.7	30.1	29.5	27.9	23.9	25.3	24.5	23.5	23.8	20.5	18.9	22.4	23.9	27.3	27.1	27.5	46.2				
Total Obs.	77	77	77	77	77	77	77	77	77	77	77	82	84	84	84	80	70	70	70	70	70	70	70	70	13	3959					

\* Less than 1%

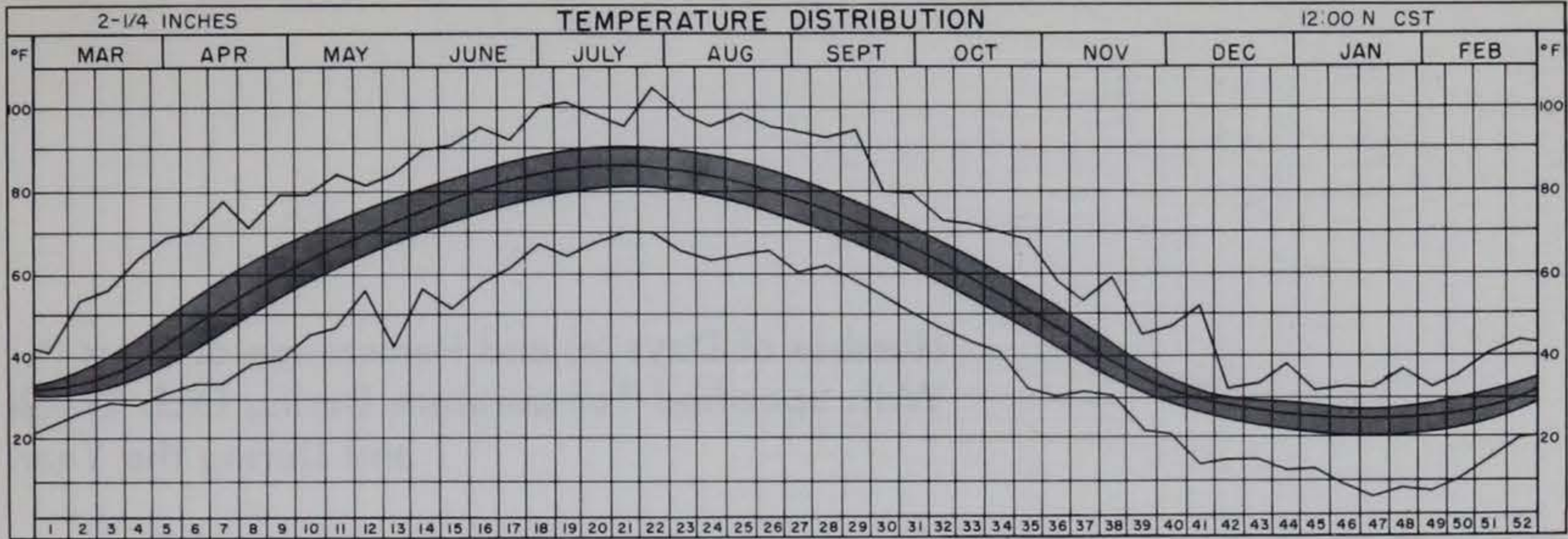
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

2 1/4-Inch Depth

12:00 CST, April 1, 1946—Dec. 31, 1956

Month	March				April				May				June				July				August							
	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	
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6																												
103-4																												
101-2																												
99-00																												
97-98																												
95-96																												
93-94																												
91-92																												
89-90																												
87-88																												
85-86																												
83-84																												
81-82																												
79-80																												
77-78																												
75-76																												
73-74																												
71-72																												
69-70																												
67-68																												
65-66																												
63-64																												
61-62																												
59-60																												
57-58																												
55-56																												
53-54																												
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47-48																												
45-46																												
43-44																												
41-42																												
39-40																												
37-38																												
35-36																												
33-34																												
32	23	33	20	29	24	34	17	24	8	11																		
30-31	18	26	15	22	13	19	6	9	1	1																		
28-29	6	9	12	17	1	1	1	2																				
26-27	10	15	3	4																								
24-25																												
22-23	1	1																										
20-21																												
18-19																												
16-17																												
14-15																												
12-13																												
10-11																												
8-9																												
6-7																												
4-5																												
2-3																												
0-1																												
-2-1																												
-4-3																												
-6-5																												
Mean	31.3	33.3	35.7	39.3	45.2	49.6	52.0	56.9	59.9	61.4	65.7	69.8	69.6	73.2	77.5	78.8	80.0	83.8	84.8	85.1	85.0	86.7	82.4	82.2	82.1	80.1	78.1	
Total Obs.	70	70	70	70	74	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	

\* Less than 1%



Month	September					October					November					December					January					February					Year			
	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	53								
Temp.	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
105-6 103-4																																		1 *
101-2 99-00 97-98 95-96 93-94																																		1 * 8 * 15 * 21 * 35 1
91-92 89-90 87-88 85-86 83-84	2 3 1 1 1 1 4 5 3 4	1 1 1 1 1 1 4 5 4 3																																59 2 84 2 69 2 126 3 116 3
81-82 79-80 77-78 75-76 73-74	3 4 4 5 13 17 10 13 9 12	1 1 6 8 6 8 12 16 9 12	2 3 3 4 7 9 5 6 6 8																															120 3 136 3 103 3 122 3 108 3
71-72 69-70 67-68 65-66 63-64	7 9 4 5 1 1 8 10 5 7	8 11 7 9 3 4 8 10 2 2	7 9 10 13 9 12 7 9 4 5	3 4 4 5 6 8 7 9 10 13	2 3 4 5 6 8 7 9 10 13	1 1 1 1 1 1 1 1 2 3																											121 3 135 3 96 2 122 3 99 3	
61-62 59-60 57-58 55-56 53-54	2 3 4 5 1 1 1 1 4 5	7 9 1 1 2 3 1 1 7 9	8 10 7 9 8 10 5 6 6 8	12 16 4 5 8 10 8 11 4 5	9 12 6 8 6 8 4 5 4 5	7 9 4 5 7 9 4 5 14 18	5 7 4 5 11 15 4 5 7 9			1 1 3 4 3 4	1 1 3 4 3 4																						99 3 75 2 89 2 65 2 98 3	
51-52 49-50 47-48 45-46 43-44																																	82 2 76 2 58 2 69 2 57 1	
41-42 39-40 37-38 35-36 33-34																																	65 2 52 1 55 1 46 1 89 2	
32																																	281 7	
30-31 28-29 26-27 24-25 22-23																																	268 7 151 4 144 4 98 3 71 2	
20-21 18-19 16-17 14-15 12-13																																	49 1 40 1 29 1 16 * 13 *	
10-11 8-9 6-7 4-5 2-3																																	10 * 3 * 2 *	
0-1 -2-1 -4-3 -6-5																																		
Mean	74.7	73.7	68.3	67.0	61.4	58.9	55.6	51.9	45.6	41.2	40.3	32.1	31.8	30.0	26.5	27.4	27.2	26.1	25.9	23.6	21.4	24.6	26.0	29.2	30.0	30.0	30.0					54.7		
Total Obs.	77	77	77	77	77	77	77	77	77	77	77	82	84	84	84	84	80	70	70	70	70	70	70	70	70	70	70	13					3959	

\* Less than 1%



## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

2 1/4-Inch Depth

7:00 p.m. CST, April 1, 1946—Dec. 31, 1956

Month	March				April				May				June				July				August							
	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	
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6																												
103-4																												
101-2																				1	1							
99-00																				2	3							
97-98																				1	1							
95-96																				2	3							
93-94															1	1				2	3							
91-92																				1	1							
89-90																				2	3							
87-88																				1	1							
85-86																				2	3							
83-84																				1	1							
81-82																												
79-80																												
77-78																												
75-76																												
73-74																												
71-72																												
69-70																												
67-68																												
65-66																												
63-64																												
61-62																												
59-60																												
57-58																												
55-56																												
53-54																												
51-52																												
49-50																												
47-48																												
45-46																												
43-44																												
41-42																												
39-40																												
37-38																												
35-36																												
33-34																												
32	27	39	23	33	24	35	17	24	6	8																		
30-31	11	16	16	23	13	19	2	3	1	1																		
28-29	12	18	6	9	1	1	2	3																				
26-27	4	6	1	1																								
24-25	1	1	4	6																								
22-23	1	1																										
20-21																												
18-19																												
16-17																												
14-15																												
12-13																												
10-11																												
8-9																												
6-7																												
4-5																												
2-3																												
0-1																												
-2-1																												
-4-3																												
-6-5																												
Mean	31.5	32.7	35.5	38.8	44.4	48.8	51.6	56.6	59.4	60.5	65.0	68.9	69.9	73.2	77.7	77.8	80.6	83.2	84.5	84.5	84.3	85.0	81.2	81.5	80.3	79.1	76.6	
Total Obs.	70	70	70	70	74	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	

\* Less than 1%



## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

4-Inch Depth

7:00 a.m. CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August							
	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	
Week No.	n		%		n		%		n		%		n		%		n		%		n		%		n		%	
105-6 103-4																												
101-2 99-00 97 98 95 96 93 94																												
91 92 89 90 87 88 85 86 83 84																												
81 82 79 80 77 78 75 76 73 74																												
71 72 69 70 67 68 65 66 63 64																												
61 62 59 60 57 58 55 56 53 54																												
51 52 49 50 47 48 45 46 43 44																												
41 42 39 40 37 38 35 36 33 34																												
32	25	51	20	41	23	47	17	35	12	25																		
30 31 28 29 26 27 24 25 22 23	5 10 6 13 4 8 5 10 1 2	8 17 5 10 6 12 1 2	9 19 2 4 1 2	3 6 4 8 1 2	1 2																							
20 21 18 19 16 17 14 15 12 13	1 2	2 4																										
10 11 8 9 6 7 4 5 2 3																												
0 1 -2 -1 -4 -3 -6 -5																												
Mean	29.9	30.1	32.6	33.6	36.8	40.3	42.0	47.2	49.5	51.3	54.1	58.8	60.6	61.6	66.4	69.8	70.5	71.9	70.8	73.1	73.2	74.9	71.5	69.8	68.4	69.5	66.0	
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	

\* Less than 1/4



# Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

4-Inch Depth

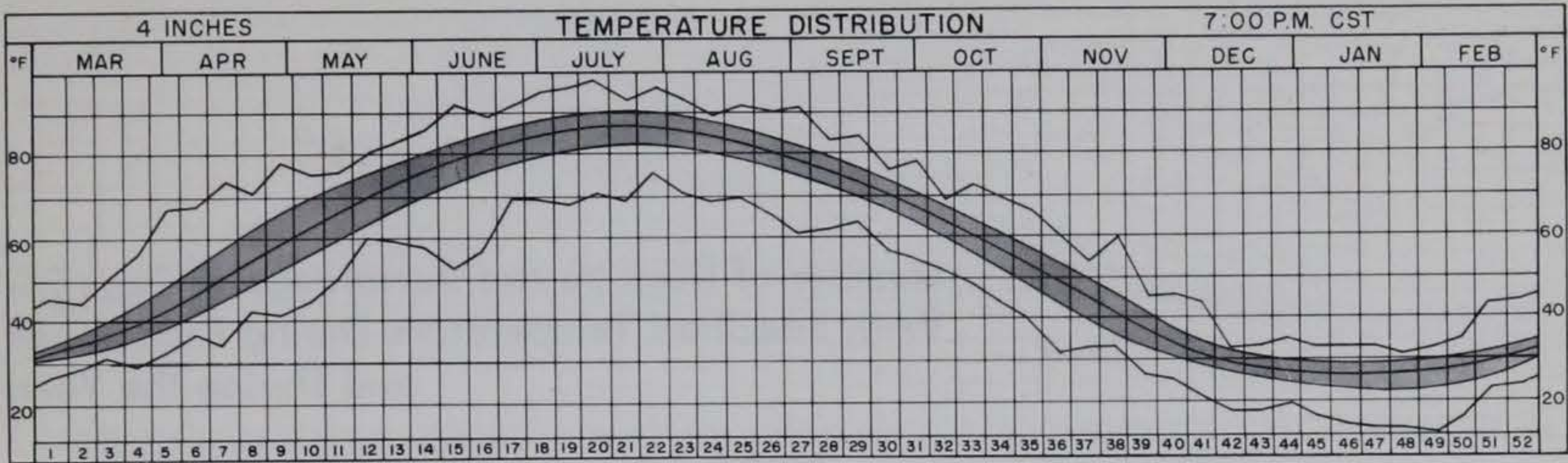
12:00 CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August								
	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		
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		
105-6 103-4																													
101-2 99-00 97-98 95-96 93-94																				2 4									
91-92 89-90 87-88 85-86 83-84															1 2	2 4	2 4	3 6	1 2	2 4	3 6	5 10	5 10	5 10	1 2				1 2
81-82 79-80 77-78 75-76 73-74															1 2	10 21	3 6	6 13	3 6	8 17	9 19	9 18	2 4	8 17	3 6	3 6	1 2		
71-72 69-70 67-68 65-66 63-64							1 2			3 6	1 2			3 6	5 10	8 17	7 15	2 4	5 10	2 4	3 6	1 2	2 4	2 4	7 15	3 6	9 19	5 10	5 11
61-62 59-60 57-58 55-56 53-54						1 2	5 10	1 2	2 4	5 10	12 25	4 8	4 8	2 4	1 2	1 2												1 2	
51-52 49-50 47-48 45-46 43-44			1 2		5 10	4 8	3 6	6 12	4 8	4 8	2 4																		
41-42 39-40 37-38 35-36 33-34		3 6	3 6	4 8	7 15	6 13	3 6			6 13																			
32	20 41	20 41	20 41	15 31	5 10																								
30-31 28-29 26-27 24-25 22-23	10 21	11 23	7 14	5 10																									
20-21 18-19 16-17 14-15 12-13																													
10-11 8-9 6-7 4-5 2-3																													
0-1 -2-1 -4-3 -6-5																													
Mean	30.8	32.7	34.1	35.8	41.7	46.4	48.2	52.7	55.1	57.9	61.6	66.3	66.4	68.3	72.7	76.2	76.1	79.0	78.1	80.1	80.2	82.3	77.6	76.4	75.3	75.2	73.2		
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49		

\* Less than 1%







Month	September				October				November				December				January				February				Year		
Week No.	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	53	
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
105-6 103-4																											
101-2 99-00 97-98 95-96 93-94																											1 *
91-92 89-90 87-88 85-86 83-84	1 2	4 8																									33 1 44 2 61 2 72 3 79 3
81-82 79-80 77-78 75-76 73-74	3 6	1 2																									77 3 84 3 82 3 86 3 81 3
71-72 69-70 67-68 65-66 63-64	3 6	6 12	7 14	7 15		1 2	2 4	2 4																			80 3 85 3 79 3 56 2 65 2
61-62 59-60 57-58 55-56 53-54	1 2	2 4	4 8	4 8	9 18	4 8	1 2	4 8	1 2		1 2																48 2 61 2 49 2 46 2 59 2
51-52 49-50 47-48 45-46 43-44				5 10	5 10	3 6	7 14	3 5	5 9	2 4																	54 2 40 1 60 2 45 2 40 2
41-42 39-40 37-38 35-36 33-34							1 2	7 12	7 12	3 5	2 4	1 1															51 2 41 2 48 2 44 2 62 2
32																											209 8
30-31 28-29 26-27 24-25 22-23									5 9			5 9	11 18	10 16	15 24	15 24	20 34	10 21	9 19	6 12	2 4	9 19	15 31	12 25	15 31	3 33	194 7 143 5 92 4 52 2 40 2
20-21 18-19 16-17 14-15 12-13														4 6	7 11	2 3	2 3	5 10	2 4	2 4	6 12	7 14					35 1 19 1 13 1 12 1 5 *
10-11 8-9 6-7 4-5 2-3																						1 2					1 *
0-1 -2-1 -4-3 -6-5																											
Mean	74.0	73.1	67.9	67.2	59.5	59.9	55.6	51.7	45.3	43.6	41.9	33.3	32.5	30.2	27.2	27.8	28.4	26.5	26.5	25.0	22.4	25.6	28.5	30.5	31.3	31.9	53.7
Total Obs.	49	49	49	49	49	49	49	49	56	56	56	56	61	63	63	63	59	49	49	49	49	49	49	49	9	2649	

\* Less than 1%



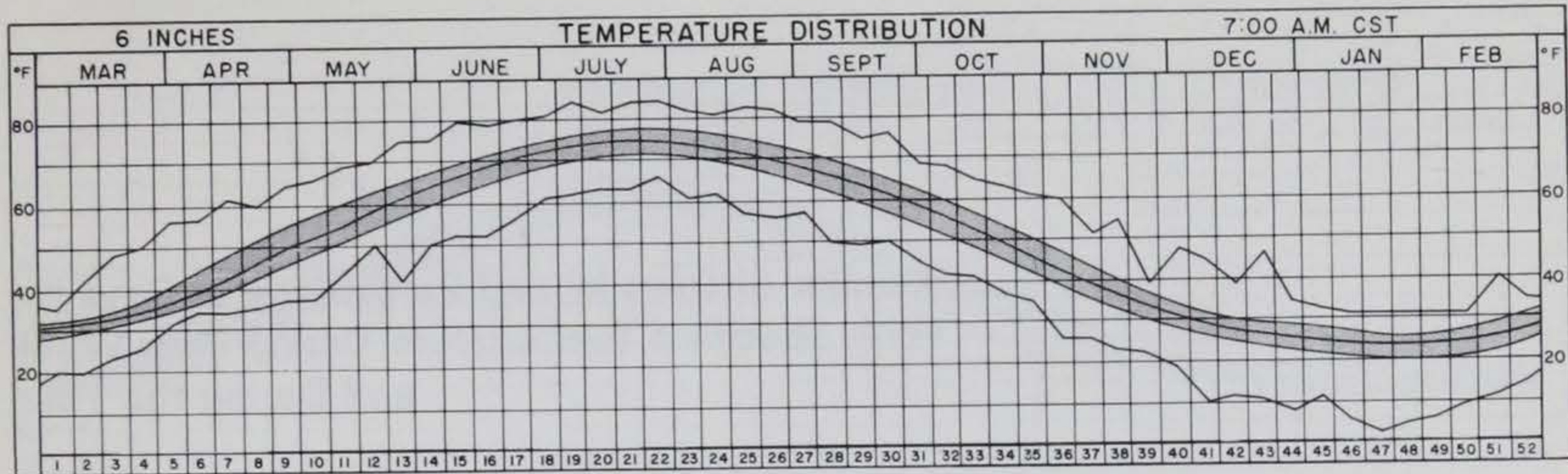
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

6-Inch Depth

7:00 a.m. CST, July 1, 1937—Feb. 8, 1942  
7:00 a.m. CST, Sept. 30, 1945—Oct. 31, 1949

Month	March				April				May				June				July				August									
	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			
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																														
101-2 99-00 97 98 95 96 93 94																														
91 92 89 90 87 88 85 86 83 84																			4 3		1 1	4 3				2 2				
81 82 79 80 77 78 75 76 73 74															1 1	1 1	4 4	1 1	9 8	4 3	6 5	6 5	9 8	5 4	2 1	2 1		1 1		
71 72 69 70 67 68 65 66 63 64														1 1	6 6	6 6	14 13	17 16	19 18	24 23	11 10	10 9	7 6	19 17	8 7	9 8	14 13	10 9	18 17	17 15
61 62 59 60 57 58 55 56 53 54							1 1		2 2	7 7	9 9	14 13	13 12	7 7	5 5	5 5	1 1	2 2	2 1					2 1	1 1	5 4	3 2	10 9		
51 52 49 50 47 48 45 46 43 44					2 2	1 1	7 7	7 7	12 11	12 11	10 9	7 7	3 3		1 1	1 1	1 1													
41 42 39 40 37 38 35 36 33 34		2 2	4 4	6 6	9 9	10 10	5 5	8 8	1 1	3 3			1 1																	
32	54 51	52 50	41 39	33 31	12 11																									
30 31 28 29 26 27 24 25 22 23	15 14	21 20	17 16	7 6	1 1																									
20 21 18 19 16 17 14 15 12 13	2 2	2 2																												
10 11 8 9 6 7 4 5 2 3																														
0 1 -2 -1 -4 -3 -6 -5																														
Mean	30.2	31.0	32.9	35.4	38.4	40.8	43.7	48.0	51.4	53.0	54.8	59.5	61.1	63.7	66.5	68.5	70.5	71.9	74.1	74.1	74.0	74.7	73.4	72.1	70.5	70.4	68.6			
Total Obs.	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	109	112	112	112	112	112	112	112	112	112	112		

\* Less than 1%



Month	September				October				November				December				January				February				Year						
Week No.	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	53					
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
105-6 103-4																															
101-2 99-00 97 98 95 96 93 94																															
91 92 89 90 87 88 85 86 83 84																													11 *		
81 82 79 80 77 78 75 76 73 74	1 1 3 2 6 5 6 5		4 3 1 1																										44 1 70 1 138 2 183 3 225 4		
71 72 69 70 67 68 65 66 63 64	13 12 14 13 11 10 14 13 10 9	7 6 7 6 9 8 12 11 9 8	4 3 10 9 5 4 16 14 9 8	1 1 1 1 1 1 2 1 9 8																									233 4 242 4 214 4 196 4 178 3		
61 62 59 60 57 58 55 56 53 54	16 15 8 7 2 1 5 4 1 1	16 15 12 11 11 10 5 4 3 2	12 11 14 12 17 16 12 11 10 9	7 6 16 14 10 8 9 8 11 9	4 3 8 7 9 8 16 14 9 8	5 4 7 6 9 8 11 9 7 6	1 1 1 1 2 1 7 6 6 5	1 1 4 3 1 1 1 1 3 3																						164 3 169 3 179 3 166 3 143 3	
51 52 49 50 47 48 45 46 43 44	1 1 1 1 1 1 2 1		10 9 10 9 4 3 2 1	8 7 16 13 7 6 6 5	12 10 17 15 15 13 11 9 7 6	18 15 17 13 10 8 13 11 13 11	11 9 17 13 10 8 13 11 14 12	14 12 21 18 14 12 12 10 17 14	4 3 13 11 10 9 17 14 8 7	1 1 3 3 4 3 5 4 8 6	1 1 1 1 4 3 1 1 11 9																	143 3 168 3 135 2 118 2 132 2			
41 42 39 40 37 38 35 36 33 34					1 1 4 3 7 6 4 3	4 3 7 6 10 8 4 3	7 6 10 8 16 14 9 8	9 8 17 14 16 13 21 18	11 9 21 18 16 13 25 21	14 12 12 10 16 13 26 22	12 10 5 4 3 3 8 6	5 4 4 3 3 3 11 9	5 4 4 3 3 2 6 5	4 3 3 2 1 1 5 4	1 1 1 1 2 2 8 6	1 1 1 1 5 4 10 8	1 1 1 1 1 1 11 9														113 2 136 2 131 2 194 3 188 3
32								4 3	5 4	4 3	21 18	44 36	25 20	11 9	13 10	15 12	12 11	15 13	6 5	13 12	11 10	15 14	23 22	19 18	7 36	455 8					
30 31 28 29 26 27 24 25 22 23								2 2	6 4	2 2	9 8	24 19	20 16	25 20	29 23	18 15	14 13	17 15	13 12	8 7	14 12	15 14	19 18	13 12	2 11	311 5					
20 21 18 19 16 17 14 15 12 13													1 1	7 6	3 2	4 3	5 4	3 3	12 11	14 13	10 9	12 11	4 4	4 4	1 5	88 2					
10 11 8 9 6 7 4 5 2 3														2 1		1 1	2 2		1 1	2 1	1 1	1 1	1 1	1 1	1 1	6 *					
0 1 -2 -1 -4 -3 -6 -5																										5 *					
Mean	66.1	63.6	60.2	57.3	55.3	51.9	49.4	47.0	42.7	38.3	38.5	32.5	32.2	30.1	27.3	27.7	26.8	25.3	25.8	23.6	22.1	24.3	25.3	27.7	27.4	28.4	48.2				
Total Obs.	112	112	112	116	119	119	119	119	119	119	119	124	126	126	126	122	112	112	112	112	112	107	105	105	19	5826					

\* Less than 1%

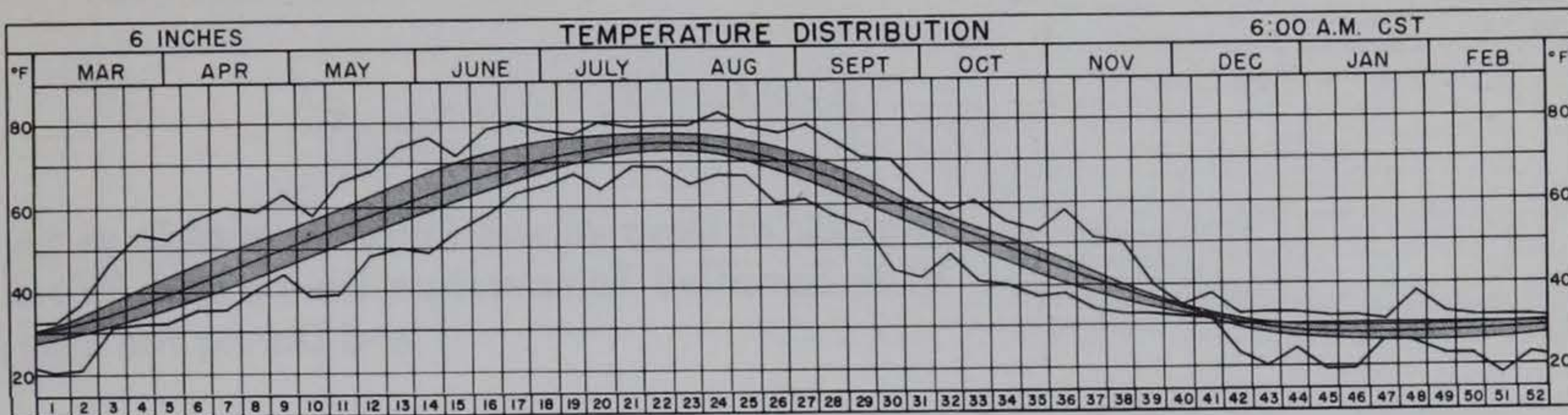
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

6-Inch Depth

6:00 a.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August							
	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	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
Temp.																												
105-6																												
103-4																												
101-2																												
99-00																												
97 98																												
95 96																												
93 94																												
91 92																												
89 90																												
87 88																												
85 86																												
83 84																												
81 82																												
79 80																												
77 78																												
75 76																												
73 74																												
71 72																												
69 70																												
67 68																												
65 66																												
63 64																												
61 62																												
59 60																												
57 58																												
55 56																												
53 54																												
51 52																												
49 50																												
47 48																												
45 46																												
43 44																												
41 42																												
39 40																												
37 38																												
35 36																												
33 34																												
32																												
30 31																												
28 29																												
26 27																												
24 25																												
22 23																												
20 21																												
18 19																												
16 17																												
14 15																												
12 13																												
10 11																												
8 9																												
6 7																												
4 5																												
2 3																												
0 1																												
-2 -1																												
-4 -3																												
-6 -5																												
Mean	29.5	31.0	35.2	38.5	39.5	44.2	44.2	38.0	51.1	49.5	53.9	57.1	62.9	66.7	63.1	67.8	71.9	70.1	72.6	74.0	74.3	74.4	72.9	74.5	72.5	69.4	70.3	
Total Obs.	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	

\* Less than 1%



Month	September				October				November				December				January				February				Year					
Week No.	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	53				
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6 103-4																														
101-2 99-00 97-98 95-96 93-94																														
91-92 89-90 87-88 85-86 83-84																														
81-82 79-80 77-78 75-76 73-74																													1 *	
71-72 69-70 67-68 65-66 63-64	2 7 3 11 6 21 2 7 3 11	1 4 5 18 2 7 3 11 2 7																											61 5 66 5 60 4 34 3 26 2	
61-62 59-60 57-58 55-56 53-54	5 18 2 7 2 7 2 6	5 18 4 14 5 18 4 14 7 24	1 4 4 17 5 18 2 8	3 13 4 17 3 14 5 21 2 8																								29 2 40 3 34 3 39 3 51 4		
51-52 49-50 47-48 45-46 43-44			1 4 1 4 2 7 1 4	1 4 1 5 1 5 3 13	3 14 4 18 3 14 1 5	1 5 2 10 3 14 2 10	8 37 2 10 3 14 2 10	3 13 2 10 5 24 2 10	1 5 2 10 2 10 2 10	1 5 3 14 2 10 4 19																	45 3 37 3 40 3 38 3 36 3			
41-42 39-40 37-38 35-36 33-34				1 4		2 10	1 5	5 24	4 19	1 5	4 19																	26 2 31 2 28 2 34 3 75 6		
32													1 5	1 5	7 32	4 19	3 14	1 5	3 14			5 24	9 42	5 19	5 18	9 32	2 40	105 8		
30-31 28-29 26-27 24-25 22-23																												89 7 52 4 35 2 20 1 9 1		
20-21 18-19 16-17 14-15 12-13																												7 *		
10-11 8-9 6-7 4-5 2-3																												5 *		
0-1 -2-1 -4-3 -6-5																														
Mean	65.9	63.0	56.3	55.2	53.9	51.0	50.0	45.9	43.0	40.7	40.9	36.0	33.5	33.7	30.6	28.7	29.0	27.6	27.5	29.8	29.7	29.7	29.8	27.1	29.8	30.2	50.5			
Total Obs.	28	28	28	24	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1329			

\* Less than 1/4

## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

6-Inch Depth

12:00 CST, July 1, 1937—Feb. 8, 1942  
12:00 CST, Sept. 30, 1945—Oct. 31, 1949

Month	March			April				May					June					July					August						
	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		
Temp.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		
105-6 103-4																													
101-2 99-00 97 98 95 96 93 94																				2 2									
91 92 89 90 87 88 85 86 83 84															1 1	2 2	2 2	3 3	5 4	2 2	3 3	9 8	5 4	7 6	2 2	1 1		1 1	
81 82 79 80 77 78 75 76 73 74										1 1	3 3	13 12	16 15	16 15	16 15	13 12	13 12	9 8	11 10	19 17	16 14	17 15	13 12	12 11	11 10	7 6	6 5	6 5	
71 72 69 70 67 68 65 66 63 64								3 3	1 1	10 9	12 11	14 13	14 13	9 9	11 10	9 8	5 4	5 4	5 4	4 4	3 3	10 9	7 6	18 16	16 14	10 9	10 9	10 9	
61 62 59 60 57 58 55 56 53 54					1 1	1 1	5 5	5 5	11 10	9 8	19 18	14 13	9 9	6 6	3 3	1 1	1 1											1 1	
51 52 49 50 47 48 45 46 43 44			1 1	3 3	7 7	7 7	9 8	16 15	6 6	6 6	5 5																		
41 42 39 40 37 38 35 36 33 34		3 3	5 5	7 7	16 15	13 12	14 4	1 1	6 6																				
32	47 45	52 50	42 40	26 25	5 5																								
30 31 28 29 26 27 24 25 22 23	22 21	22 21	15 14	7 7																									
20 21 18 19 16 17 14 15 12 13																													
10 11 8 9 6 7 4 5 2 3																													
0 1 -2 -1 -4 -3 -6 -5																													
Mean	31.0	32.5	34.5	37.8	42.2	45.2	48.7	52.6	56.3	57.9	60.6	65.1	66.1	69.2	71.2	73.5	75.1	77.2	79.4	79.1	79.4	80.0	78.0	77.0	75.4	74.5	73.7		
Total Obs.	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	108	111	112	112	112	111	112	112	112	112	112		

\* Less than 1%



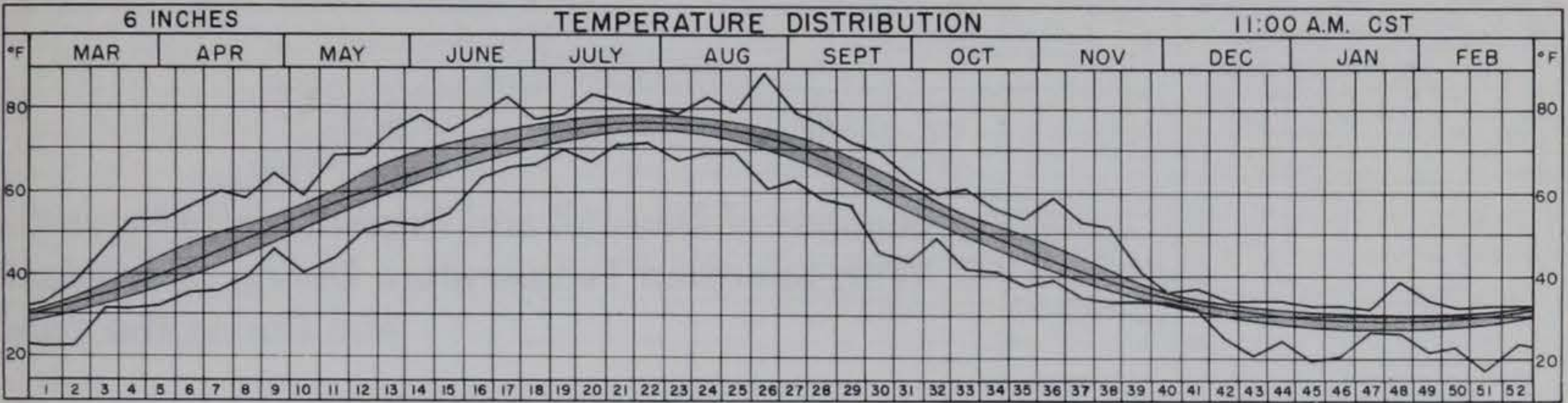
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

6-Inch Depth

11:00 a.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August								
	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		
Week No.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
105-6 103-4																													
101-2 99-00 97 98 95 96 93 94																													
91 92 89 90 87 88 85 86 83 84																				1 4							1 4		
81 82 79 80 77 78 75 76 73 74														2 7 4 14		3 11 1 4	2 7 5 18		6 21 7 25	1 4 6 21	2 7 11 39	1 3 5 18	5 18 6 21	8 29 7 25	2 7 10 36	4 14 5 18	1 3 3 11	2 7 4 14	2 7 4 14
71 72 69 70 67 68 65 66 63 64													1 4 1 4	1 4 4 15	2 7 4 14	2 7 6 21	3 11 5 18	8 28 3 11	8 29 1 4	1 4 2 7	5 18 3 11	3 11 2 7	5 18 1 3	1 4 4 14	5 18 6 21	2 7 8 28	8 28 4 14	2 7 3 11	8 28 4 14
61 62 59 60 57 58 55 56 53 54													1 4 4 14	2 7 4 14	6 21 6 21	2 7 3 11												2 7 1 4	1 4
51 52 49 50 47 48 45 46 43 44				1 3 3 11	1 3 4 14	1 4 1 4	1 4 5 18	2 7 3 11	2 7 7 25	5 18 5 18	3 11 5 18	5 18 3 11	2 7 1 4	1 3 1 3	1 3														
41 42 39 40 37 38 35 36 33 34			2 7 2 7	1 4 2 7	1 4 3 11	2 7 2 7	6 21 4 14	3 11 1 3					1 3 1 3																
32	13 46	16 57	11 39	5 18	1 3																								
30 31 28 29 26 27 24 25 22 23	5 18 1 4	2 7 1 4	2 7 2 7	2 7																									
20 21 18 19 16 17 14 15 12 13																													
10 11 8 9 6 7 4 5 2 3																													
0 1 -2 -1 -4 -3 -6 -5																													
Mean	29.6	31.4	35.4	38.8	40.1	44.5	44.5	48.2	52.2	50.6	55.4	58.8	64.2	67.6	63.9	68.9	73.0	71.2	74.1	75.5	75.2	75.5	74.0	75.6	73.4	70.6	71.1		
Total Obs.	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28		

\* Less than 1%



Month	September				October				November				December				January				February				Year					
Week No.	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	53	Year			
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
105-6 103-4																														
101-2 99-00 97-98 95-96 93-94																														
91-92 89-90 87-88 85-86 83-84																													1 *	
81-82 79-80 77-78 75-76 73-74																													1 *	
71-72 69-70 67-68 65-66 63-64																													7 1	
61-62 59-60 57-58 55-56 53-54																													20 2	
51-52 49-50 47-48 45-46 43-44																													42 3	
41-42 39-40 37-38 35-36 33-34																													70 5	
32																													82 6	
30-31 28-29 26-27 24-25 22-23																													56 4	
20-21 18-19 16-17 14-15 12-13																													58 4	
10-11 8-9 6-7 4-5 2-3																													49 4	
0-1 -2-1 -4-3 -6-5																													27 2	
Mean	66.4	63.4	57.1	55.8	54.6	51.3	50.0	45.8	43.0	40.6	41.0	36.0	33.7	33.7	30.7	28.8	28.9	27.7	27.5	29.6	29.7	29.8	29.7	27.1	29.9	30.4	51.1			
Total Obs.	28	28	28	24	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1329		

\* Less than 1%



## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

6-Inch Depth

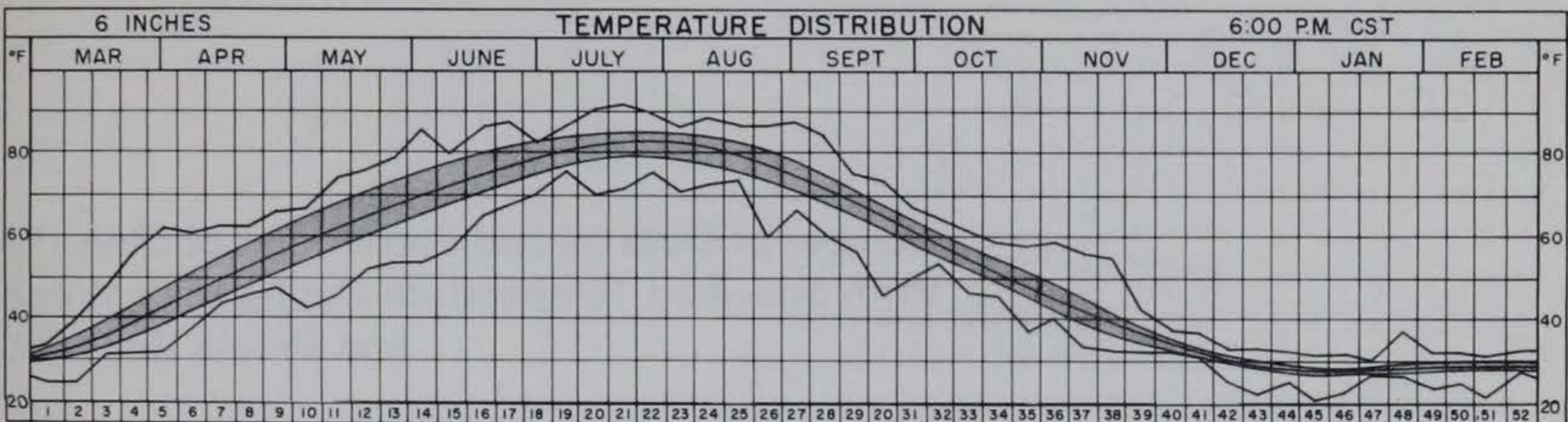
7:00 p.m. CST, July 1, 1937—Feb. 8, 1942  
7:00 p.m. CST, Sept. 30, 1945—Oct. 31, 1949

Month	March				April				May				June				July				August						
	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
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		
105-6 103-4																											
101-2 99-00 97 98 95 96 93 94																		1 1	3 3	2 2	1 1	2 2	6 5				
91 92 89 90 87 88 85 86 83 84														1 1	1 1	2 2	7 7	10 9	9 8	14 12	5 4	9 8	3 3	4 3	1 1	1 1	1 1
81 82 79 80 77 78 75 76 73 74													3 3	2 2	8 9	13 12	14 13	16 15	15 14	10 9	6 5	16 14	15 13	8 7	7 6	8 7	14 13
71 72 69 70 67 68 65 66 63 64								1 1	2 2	4 4	13 12	11 10	13 12	9 8	8 8	6 6	3 3	1 1	1 1	1 1	1 1	2 2	4 4	2 2	6 5	5 4	6 5
61 62 59 60 57 58 55 56 53 54				1 1	2 2	4 4	7 7	9 8	4 4	10 9	8 8	6 6	6 6	3 3	2 2	3 3											
51 52 49 50 47 48 45 46 43 44		1 1	4 4	5 5	3 3	10 9	10 9	6 6	4 4	3 3	4 4		1 1	1 1													
41 42 39 40 37 38 35 36 33 34	1 1	4 4	5 5	7 7	10 9	6 6	6 6	2 2	4 4																		
32	39 37	51 49	38 36	20 19	4 4																						
30 31 28 29 26 27 24 25 22 23	33 31	22 21	17 16	6 6																							
20 21 18 19 16 17 14 15 12 13																											
10 11 8 9 6 7 4 5 2 3																											
0 1 -2 -1 -4 -3 -6 -5																											
Mean	31.8	33.3	36.3	40.4	45.6	48.6	52.6	56.8	60.6	61.6	65.3	69.7	70.9	73.8	75.4	78.1	80.5	82.9	85.1	84.5	85.3	85.1	82.8	81.8	80.0	79.1	78.2
Total Obs.	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	109	112	112	112	112	112	112	112	112	112

\* Less than 1%







Month	September			October			November			December			January			February			Year									
	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	53	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																												
81-82 79-80 77-78 75-76 73-74	1 4																											
71-72 69-70 67-68 65-66 63-64	2 7	2 7																										
61-62 59-60 57-58 55-56 53-54	1 3	6 21	5 20	4 19	1 5																							
51-52 49-50 47-48 45-46 43-44		1 4	2 8	1 5	1 5	1 5																						
41-42 39-40 37-38 35-36 33-34																												
32																												
30-31 28-29 26-27 24-25 22-23																												
20-21 18-19 16-17 14-15 12-13																												
10-11 8-9 6-7 4-5 2-3																												
0 1 -2 -1 -4 -3 -6 -5																												
<b>Mean</b>	71.9	68.4	62.0	60.2	59.4	55.9	54.5	48.8	46.0	42.6	42.5	36.5	33.8	33.8	31.2	29.6	29.8	28.3	28.7	30.2	30.0	30.0	30.0	28.6	30.9	31.4	55.2	
<b>Total Obs.</b>	28	28	28	24	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	26	28	28	5	1329

\* Less than 1%

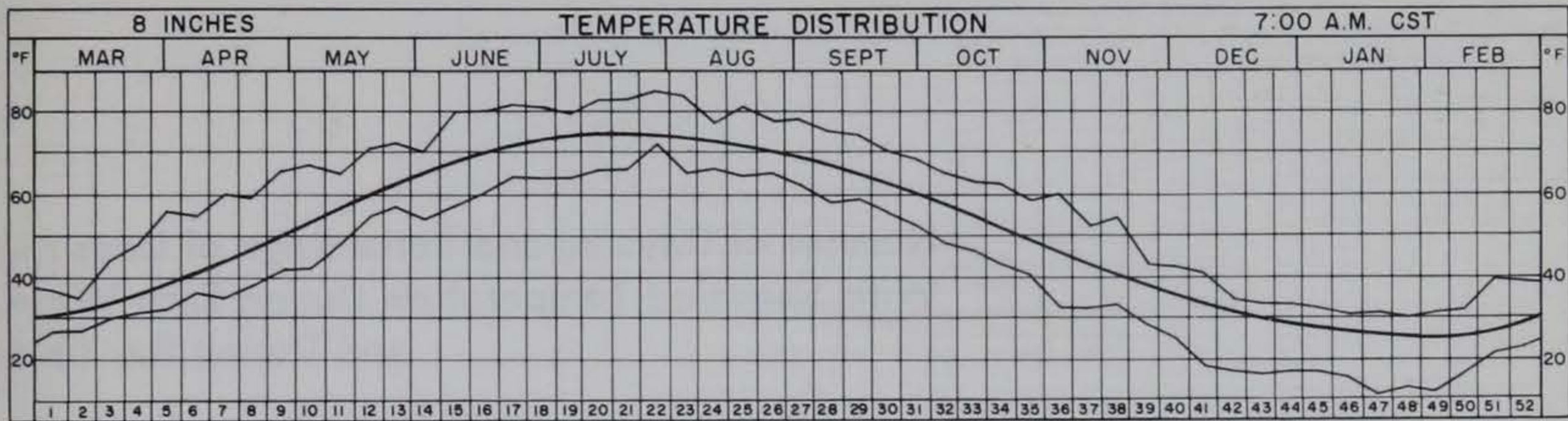
# Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

8-Inch Depth

7:00 a.m. CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August									
	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			
Temp.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																														
101-2 99-00 97 98 95 96 93 94																														
91 92 89 90 87 88 85 86 83 84																							1 2	1 2	2 4	3 6	4 8			
81 82 79 80 77 78 75 76 73 74																1 2	1 2	4 8	1 2	4 8	4 8	5 10	4 8	3 6	3 6	1 2	1 2			
71 72 69 70 67 68 65 66 63 64												2 4	1 2	2 4	4 8	10 21	12 25	4 8	8 16	2 4	6 12	3 6	12 25	10 21	9 19	9 19	6 12			
61 62 59 60 57 58 55 56 53 54										1 2	3 6	2 4	7 14	8 16	5 10	11 23	4 8	3 6	1 2	1 2								1 2		
51 52 49 50 47 48 45 46 43 44					1 2	2 4	7 15	6 12	5 10	6 12	6 12																			
41 42 39 40 37 38 35 36 33 34			1 2	2 4	6 12	7 14	3 6	2 4	7 14	1 2																				
32	17 35	26 53	22 45	25 51	6 12																									
30 31 28 29 26 27 24 25 22 23	16 33	11 23	8 17	1 2																										
20 21 18 19 16 17 14 15 12 13																														
10 11 8 9 6 7 4 5 2 3																														
0 1 -2 -1 -4 -3 -6 -5																														
Mean	31.1	31.4	33.3	35.0	38.5	43.1	44.9	50.0	51.6	54.0	56.9	61.5	62.8	64.1	68.2	71.6	72.5	74.1	73.5	75.2	75.5	77.1	74.0	72.6	71.6	72.0	69.6			
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49			

\* Less than 1%



Month	September				October				November				December				January				February				Year			
	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	53	
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																												2 * 9 *
81-82 79-80 77-78 75-76 73-74	2 4		3 6																								23 1 46 2 58 2 96 4 114 4	
71-72 69-70 67-68 65-66 63-64	4 8 12 25 9 18 12 25 5 10	3 6 3 6 9 19 12 24 9 19	2 4 1 2 7 14 7 14	6 12 6 12 6 12 10 21	1 2 1 2 1 2 2 4	2 4 4 8 8 17 8 17	7 15 3 6 4 8 4 8		2 3 2 3 2 4 4 7																		107 4 111 4 94 4 106 4 82 3	
61-62 59-60 57-58 55-56 53-54	1 2 3 6 1 2	5 10 5 10	11 23 9 18 7 14 2 4	8 16 4 8 5 10 2 4	2 4 4 8 8 17 8 17	4 8 11 22 8 17 4 8	7 15 3 6 4 8 4 8		2 3 2 3 2 4 4 7																		76 3 93 3 80 3 53 2 57 2	
51-52 49-50 47-48 45-46 43-44			1 2	7 14 5 10 1 2	6 12 4 8 3 6	3 6 9 19 6 12 3 6	10 21 4 8 6 12 5 10	6 11 2 4 6 12 8 14	1 2 1 2 1 2 7 12	2 4 1 2 1 2 7 12																	69 3 53 2 73 3 44 2 62 2	
41-42 39-40 37-38 35-36 33-34							5 10 1 2	3 5 4 7	8 15 4 7	5 9 15 27	2 3 3 5	2 3 3 5	2 3 2 3									1 2					54 2 63 2 65 3 87 3 92 4	
32								2 4	2 3		4 7	3 5	5 8	11 17	11 17	9 15	5 10					5 10	11 23	3 6	3 34	170 6		
30-31 28-29 26-27 24-25 22-23											3 5 8 14	10 16 5 8	5 8 8 12	22 35 7 11	18 29 13 21	13 22 15 26	5 10 13 27	10 20 14 29	9 19 11 22	1 2 5 10	12 25 2 4	16 33 10 21	9 18 12 25	17 35 11 23	1 11 2 22	187 7 144 5 93 4 61 2 43 2		
20-21 18-19 16-17 14-15 12-13													3 5 1 2	3 5 1 2	1 2 2 3	4 7 2 3		6 12 1 2	2 4 1 2	7 14 2 4	5 10 2 4	1 2 2 4	2 4 2 4	2 4 2 4		34 1 25 1 16 1 2 * 4 *		
10-11 8-9 6-7 4-5 2-3																				1 2						1 *		
0-1 -2-1 -4-3 -6-5																												
Mean	66.8	65.7	61.8	61.7	56.2	55.5	52.4	49.0	44.8	41.7	42.1	34.9	33.4	31.3	28.6	28.2	27.7	26.7	26.1	24.9	22.9	24.2	27.4	29.2	30.0	30.7	49.3	
Total Obs.	49	49	49	49	49	49	49	49	56	56	56	56	61	63	63	63	59	49	49	49	49	49	49	49	9	2649		

\* Less than 1%

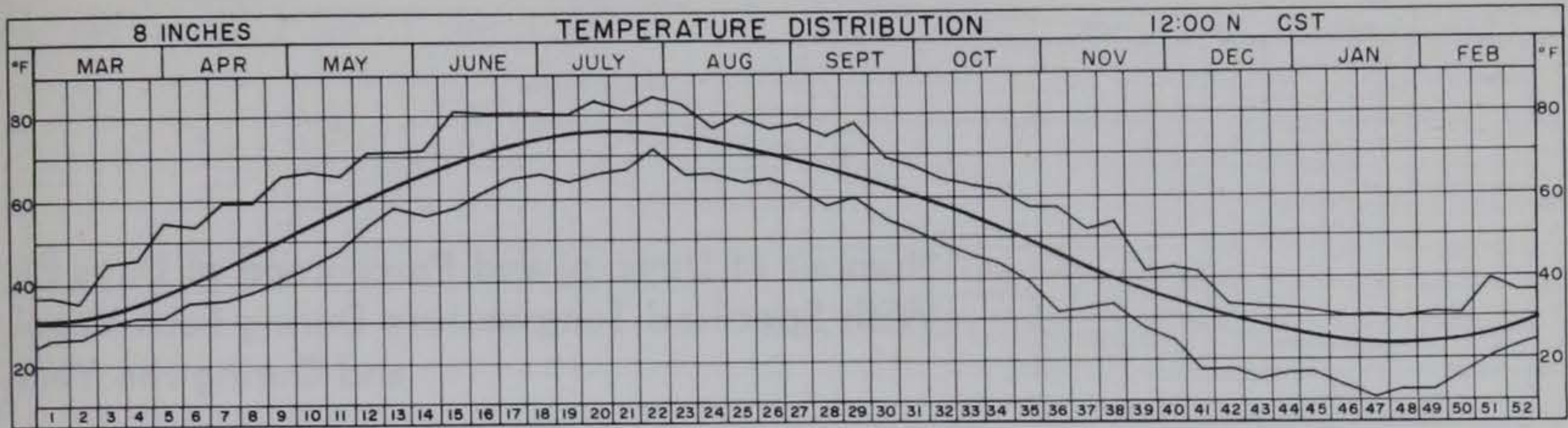
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

8-Inch Depth

12:00 CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August										
	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				
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %				
105-6 103-4																															
101-2 99-00 97-98 95-96 93-94																															
91-92 89-90 87-88 85-86 83-84																				2 4			1 2 4 8	4 8							
81-82 79-80 77-78 75-76 73-74															1 2	1 2	1 2	3 6	2 4	4 8	6 12	6 12	1 2								
71-72 69-70 67-68 65-66 63-64															2 4	2 4	3 6	4 8	7 14	6 12	6 12	7 14	3 6	6 12	3 6	11 23	8 16	6 12	11 23	8 17	
61-62 59-60 57-58 55-56 53-54															2 4	2 4	3 6	4 8	7 14	6 12	7 14	3 6	6 12	3 6	3 6	1 2	8 16	9 18	12 25	5 10	11 23
51-52 49-50 47-48 45-46 43-44															3 6	3 6	5 10	5 10	8 16	8 16	1 2	2 4									1 2
41-42 39-40 37-38 35-36 33-34															1 2	3 6	5 10	5 10	8 16	8 16	1 2	2 4									
32	18 37	27 55	24 49	22 45	4 8																										
30 31 28 29 26 27 24 25 22 23	12 25	8 17	6 12																												
20 21 18 19 16 17 14 15 12 13																															
10 11 8 9 6 7 4 5 2 3																															
0 1 -2 -1 -4 -3 -6 -5																															
Mean	31.2	31.5	33.4	35.1	38.8	43.4	45.2	50.0	52.0	54.4	57.6	62.0	63.3	64.6	68.7	71.9	72.6	74.5	73.9	75.4	75.7	77.3	74.2	72.9	71.9	72.1	69.7				
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49		

\* Less than 1%



Month	September				October				November				December				January				February				Year			
	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	53	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
Temp.																												
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																												1 *
81-82 79-80 77-78 75-76 73-74			1 2																									10 1
71-72 69-70 67-68 65-66 63-64	4 8	3 6																										25 1
61-62 59-60 57-58 55-56 53-54	1 2	6 12	11 23	11 23	4 8	3 6	7 15																				44 2	
51-52 49-50 47-48 45-46 43-44				1 2	5 10	3 6	4 8	11 23	4 7	1 2	2 3																64 2	
41-42 39-40 37-38 35-36 33-34					6 12	10 20	4 8	4 7	1 2	1 2																59 2		
32						3 6	5 10	6 12	9 16	7 12	8 14															55 2		
30 31 28 29 26 27 24 25 22 23						1 2	7 15	5 10	6 11	6 11	6 11															56 2		
20 21 18 19 16 17 14 15 12 13								4 8	3 5	9 16	6 11	3 5	1 2	1 2												60 2		
10 11 8 9 6 7 4 5 2 3								1 2	3 5	6 11	14 25	3 5	3 5	1 2												56 2		
0 1 -2 -1 -4 -3 -6 -5									4 7	7 12	6 11	11 20	7 11												65 3			
Mean	66.9	65.8	61.8	61.8	56.2	55.6	52.5	49.0	44.7	41.6	41.9	34.8	33.5	31.4	28.7	28.2	27.9	26.6	26.2	25.1	22.8	24.5	27.5	29.2	30.0	30.4	49.5	
Total Obs.	49	49	49	49	49	49	49	49	56	56	56	56	61	63	63	63	59	49	49	49	49	49	49	49	9	2649		

\* Less than 1%



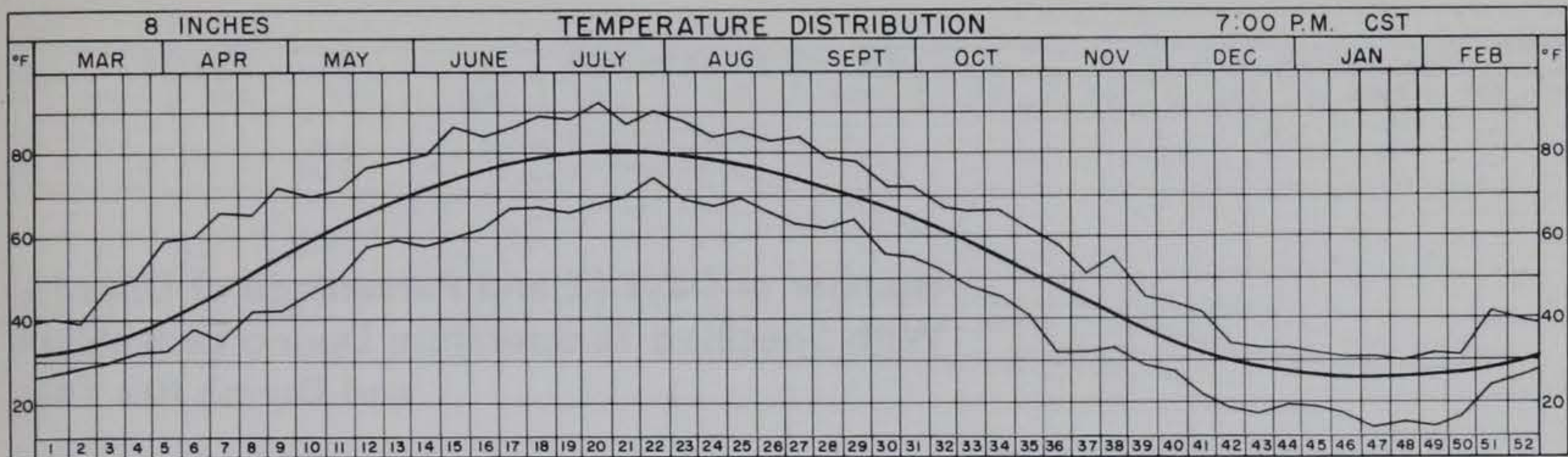
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

8-Inch Depth

7:00 p.m. CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August							
	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	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																		1 2 4 8	4 8	4 8	1 2 3 6	4 8	4 8	1 2				
81-82 79-80 77-78 75-76 73-74																		2 4 1 2	4 8	5 10	4 8	4 8	4 8	2 4 5 10	4 8	4 8	1 2	1 2 4 8
71-72 69-70 67-68 65-66 63-64																												
61-62 59-60 57-58 55-56 53-54																												
51-52 49-50 47-48 45-46 43-44																												
41-42 39-40 37-38 35-36 33-34																												
32	18 37	26 53	21 43	22 45	1 2																							
30-31 28-29 26-27 24-25 22-23	16 33 4 8	13 27 2 4	7 15																									
20-21 18-19 16-17 14-15 12-13																												
10-11 8-9 6-7 4-5 2-3																												
0-1 -2 -1 -4 -3 -6 -5																												
Mean	31.6	32.2	34.7	36.7	42.1	47.3	49.5	53.8	55.8	58.2	62.2	66.6	67.2	68.9	73.6	76.4	77.3	79.7	79.1	80.4	80.8	82.4	78.2	77.6	76.6	76.3	74.1	
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	

\* Less than 1%



Month	September				October				November				December				January				February				Year							
Week No.	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	53	Year					
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
105-6 103-4																																
101-2 99-00 97-98 95-96 93-94																																
91-92 89-90 87-88 85-86 83-84																													1 8 19 44 47	*		
81-82 79-80 77-78 75-76 73-74	1 2 2 4 6 12 11 22																												91 84 102 102 89	4 3 4 4 3		
71-72 69-70 67-68 65-66 63-64	9 19 9 19 4 8 3 6 3 6	9 19 6 12 14 29 8 16 2 4	2 4 7 14 12 25 13 27 8 16	1 2 11 23 8 16 7 14 10 21																										82 99 82 96 61	3 4 3 4 2	
61-62 59-60 57-58 55-56 53-54	1 2		2 4 3 6 1 2 1 2	6 12 3 6 1 2 2 4	9 18 6 12 8 17 8 17 6 12	10 21 10 21 3 6 5 10 10 21	2 4 4 8 4 8 5 10 10 21	1 2 1 2 6 12 8 17 7 12																							73 60 59 59 61	3 2 2 2 2
51-52 49-50 47-48 45-46 43-44					2 4 2 4 1 2 1 2	5 10 6 13 5 10 3 6	4 8 6 13 6 12 9 17	7 14 3 6 7 12 10 18 7 12	5 9 6 11 6 11 9 17 3 5	3 5 6 11 6 11 10 18 3 5	4 7 6 11 2 4 10 18 1 2																			54 48 57 64 35	2 2 2 2 1	
41-42 39-40 37-38 35-36 33-34							3 6	2 4 1 2 3 5 3 5 3 5	8 14 4 7 4 7 4 7 2 4	11 20 7 12 7 12 15 27 4 7	3 5 4 7 12 21 15 27 5 9		1 2 1 2 2 3 8 12																54 52 51 59 92	2 2 2 2 4		
32								2 4 1 2	1 2			5 9 3 5	5 8 16 25	12 19 9 15	3 6							1 2 7 14	7 14 6 12	3 34 168	6							
30-31 28-29 26-27 24-25 22-23												4 7 6 11	12 20 6 10	7 11 9 14	21 33 9 14	16 25 16 25	20 34 12 20	10 20 15 31	14 29 17 35	7 15 17 34	1 2 6 12	11 23 5 10	17 35 9 19	10 21 14 29	17 35 12 25	2 22 2 22	205 161	8 6				
20-21 18-19 16-17 14-15 12-13														3 5 1 2	1 2 1 2	2 3 2 3	2 4 2 4	2 4 1 2	3 6 1 2	10 26 10 20	10 20 1 2	1 2 3 6							31 14 6 5	1 1 * *		
10-11 8-9 6-7 4-5 2-3																																
0-1 -2-1 -4-3 -6-5																																
Mean	71.2	69.8	65.6	65.1	58.9	58.6	55.3	51.6	46.2	43.6	42.9	35.3	33.8	31.8	28.9	28.5	28.6	27.3	27.1	25.8	23.6	25.2	28.0	29.8	30.8	31.3	52.2					
Total Obs.	49	49	49	49	49	49	49	49	56	56	56	56	61	63	63	63	59	49	49	49	49	49	49	49	9	2649						

\* Less than 1%





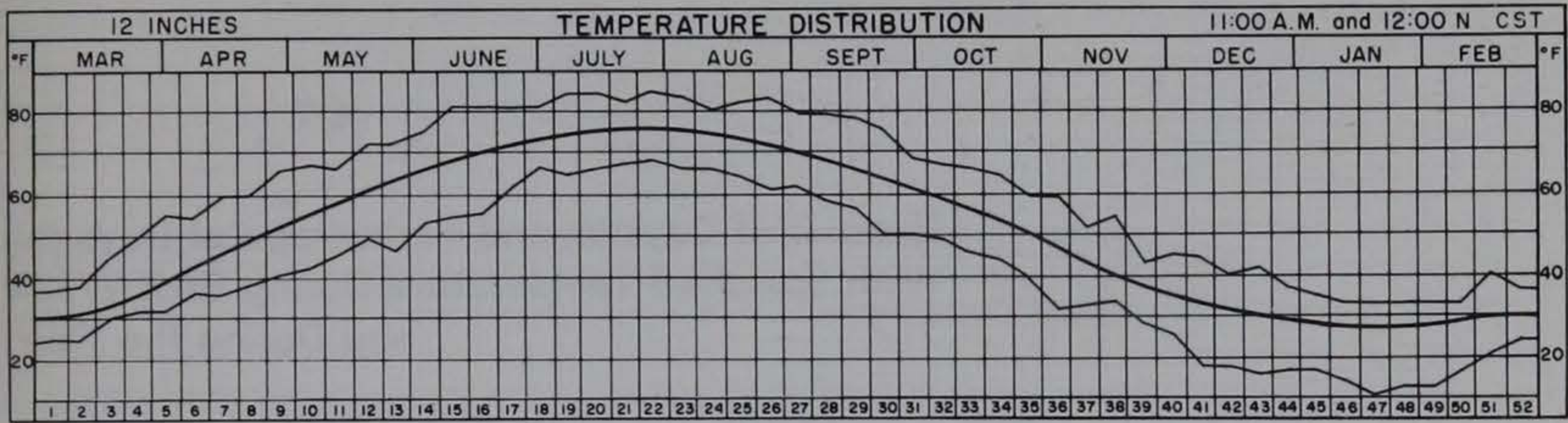
# Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

12-Inch Depth

Noon CST, July 1, 1937—Feb. 8, 1942 and Sept. 30, 1945—Oct. 31, 1949  
11:00 a.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month Week No.	March				April				May				June				July				August								
	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		
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %		
105-6 103-4																													
101-2 99-00 97 98 95 96 93 94																													
91 92 89 90 87 88 85 86 83 84																			3 2	2 2			1 1 4 3	4 3		1 1			
81 82 79 80 77 78 75 76 73 74														1 1	1 1	1 1	3 2	5 4	4 3	8 6	6 4	1 1		2 2	2 1	2 1	1 1		
71 72 69 70 67 68 65 66 63 64														2 1	4 3	14 11	12 9	15 11	20 15	25 19	22 16	20 14	20 14	16 11	17 12	20 14	25 18	26 19	25 18
61 62 59 60 57 58 55 56 53 54														3 2	1 1														
51 52 49 50 47 48 45 46 43 44																													
41 42 39 40 37 38 35 36 33 34																													
32	52 39	72 54	65 49	55 41	4 3																								
30 31 28 29 26 27 24 25 22 23	44 33	33 25	20 15																										
20 21 18 19 16 17 14 15 12 13																													
10 11 8 9 6 7 4 5 2 3																													
0 1 -2 -1 -4 -3 -6 -5																													
Mean	30.8	31.5	34.0	36.5	39.8	43.5	45.6	49.7	52.8	54.2	56.6	60.5	62.6	65.5	66.9	69.2	71.3	72.6	74.7	75.0	75.1	75.8	74.1	74.1	72.9	72.0	71.1		
Total Obs.	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	136	139	140	140	140	139	140	140	140	140		

\* Less than 1%



Month	September				October				November				December				January				February				Year																				
Week No.	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	53																			
Temp.	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%															
105-6 103-4																																													
101-2 99-00 97-98 95-96 93-94																																													
91-92 89-90 87-88 85-86 83-84																															1 *														
81-82 79-80 77-78 75-76 73-74	1	1																													34 *														
71-72 69-70 67-68 65-66 63-64	18	13	9	6	6	4																									316 4														
61-62 59-60 57-58 55-56 53-54	2	1	12	8	30	20	35	24	21	15	7	5	13	9															215 3																
51-52 49-50 47-48 45-46 43-44					5	4	9	6	22	16	16	11	29	20	15	11	3	2	3	2									196 3																
41-42 39-40 37-38 35-36 33-34													4	3	5	4	25	18	17	12	16	11	4	3	4	3	2	1																	
32									2	1																		475 7																	
30-31 28-29 26-27 24-25 22-23													2	1	11	8	10	7	34	23	41	28	39	27	39	29	40	30	40	30	22	17	31	23	34	26	40	30	52	39	6	25	538 8		
20-21 18-19 16-17 14-15 12-13																	2	1	2	2	2	1	4	3	1	1	5	4	5	4	15	11	5	4	4	3	1	1							46 1
10-11 8-9 6-7 4-5 2-3																																			1 *										
0-1 -2-1 -4-3 -6-5																																													
Mean	68.7	66.4	63.0	60.5	58.4	55.9	53.3	50.4	46.8	42.6	42.0	36.7	35.2	33.7	31.2	30.3	29.7	28.5	28.2	27.3	26.0	26.9	28.0	29.2	29.7	30.3																			
Total Obs.	140	140	140	140	140	140	140	140	140	140	140	140	145	147	147	147	143	133	133	133	133	133	133	133	133	24	7152																		

\* Less than 1/4

## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

12-Inch Depth

7:00 p.m. CST, July 1, 1937—Feb. 8, 1942 and Sept. 30, 1945—Oct. 31, 1949  
6:00 p.m. CST, Feb. 9, 1942—Oct. 29, 1945

Month	March				April				May				June				July				August						
	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
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
105-6 103-4																											
101-2 99-00 97-98 95-96 93-94																											
91-92 89-90 87-88 85-86 83-84																		1 1	1 1		1 1						
81-82 79-80 77-78 75-76 73-74																		2 1	1 1	4 3	5 4	8 6	5 4	4 3	4 3	4 3	3 2
71-72 69-70 67-68 65-66 63-64																		1 1	8 6	7 5	5 4	16 11	14 10	17 12	13 9	8 6	18 13
61-62 59-60 57-58 55-56 53-54																		1 1	4 3	6 4	7 5	10 7	12 9	12 9	13 9	8 6	18 13
51-52 49-50 47-48 45-46 43-44																											
41-42 39-40 37-38 35-36 33-34																											
32	51 38	68 51	62 47	54 41	2 2																						
30 31 28 29 26 27 24 25 22 23	51 38	41 31	22 17																								
20 21 18 19 16 17 14 15 12 13																											
10 11 8 9 6 7 4 5 2 3																											
0 1 -2 -1 -4 -3 -6 -5																											
Mean	31.1	31.8	34.6	37.5	41.6	45.6	48.0	51.9	55.1	56.3	59.3	63.1	65.2	68.1	69.3	71.8	74.0	75.5	77.6	77.7	77.9	78.5	76.9	76.6	75.5	74.1	73.5
Total Obs.	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	137	140	140	140	140	140	140	140	140	140

\* Less than 1%





# Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

20-Inch Depth

7:00 p.m. CST, Nov. 1, 1949—Dec. 31, 1956

Month	March				April				May				June				July				August												
	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						
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %						
105-6 103-4																																	
101-2 99-00 97 98 95 96 93 94																																	
91 92 89 90 87 88 85 86 83 84																																	
81 82 79 80 77 78 75 76 73 74																1 2	9 18	7 14	5 10	7 15	2 4	8 16	5 10	1 2	5 10	6 12	2 4	3 6	7 14	5 10			
71 72 69 70 67 68 65 66 63 64									1 2		2 4		2 4	4 8	9 18	12 25	8 16	3 6	5 10	11 23	14 29	10 21	7 15	5 10	5 10	1 2	6 12	6 12	12 25	17 35	12 25	10 20	10 20
61 62 59 60 57 58 55 56 53 54										1 2	6 12	2 4	16 33	22 45	9 18	3 6	10 20	11 23	10 21	3 6													
51 52 49 50 47 48 45 46 43 44						1 2	3 6	8 17	7 14	7 14	9 18																						
41 42 39 40 37 38 35 36 33 34			2 4	5 10	10 21	6 12	9 19	8 17																									
32	20 41	10 21	10 20	6 12																													
30 31 28 29 26 27 24 25 22 23	7 14	7 14																															
20 21 18 19 16 17 14 15 12 13																																	
10 11 8 9 6 7 4 5 2 3																																	
0 1 -2 -1 -4 -3 -6 -5																																	
Mean	32.9	33.0	34.3	35.9	38.4	42.2	44.2	47.7	49.9	51.9	54.3	58.0	59.7	61.2	63.7	67.0	68.3	70.0	70.5	71.2	72.0	73.1	71.7	70.9	70.3	70.1	69.3						
Total Obs.	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49		

\* Less than 1%



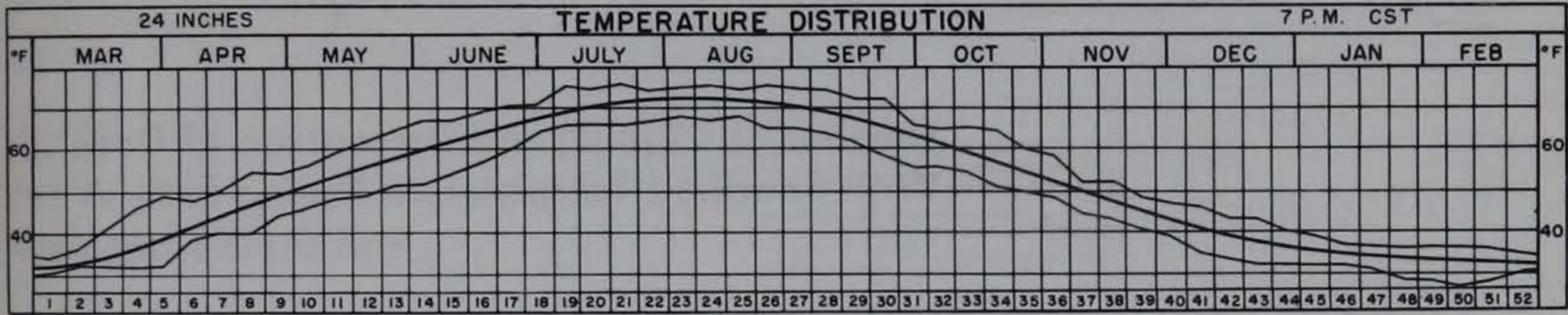
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

24-Inch Depth

7:00 p.m. CST, July 1, 1937—Oct. 31, 1949  
6:00 p.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August									
	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			
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																														
101-2 99-00 97-98 95-96 93-94																														
91-92 89-90 87-88 85-86 83-84																														
81-82 79-80 77-78 75-76 73-74																														
71-72 69-70 67-68 65-66 63-64																														
61-62 59-60 57-58 55-56 53-54																														
51-52 49-50 47-48 45-46 43-44																														
41-42 39-40 37-38 35-36 33-34																														
32	50	60	47	56	25	30	12	14	1	1																				
30-31 28-29 26-27 24-25 22-23	6	7																												
20-21 18-19 16-17 14-15 12-13																														
10-11 8-9 6-7 4-5 2-3																														
0-1 -2-1 -4-3 -6-5																														
Mean	32.4	32.7	34.1	36.1	38.8	41.7	43.8	46.2	49.5	51.1	52.3	55.2	57.1	60.5	61.1	62.7	65.5	67.1	69.2	70.2	70.4	70.7	71.2	71.2	70.7	69.5	69.4			
Total Obs.	84	84	84	84	84	84	84	84	84	84	84	48	84	84	84	84	88	91	90	91	91	91	91	91	91	91	91			

\* Less than 1%



Month	September					October					November					December					January					February					Year
Week No.	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	53					
Temp.	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n				
105-6 103-4																															
101-2 99-00 97-98 95-96 93-94																															
91-92 89-90 87-88 85-86 83-84																															
81-82 79-80 77-78 75-76 73-74																													17 1 140 3		
71-72 69-70 67-68 65-66 63-64	20 22 18 20 21 23 23 25 1 1	9 9 16 18 18 20 27 30 18 20	2 2 6 6 21 23 18 20 25 28																										297 7 345 8 236 5 224 5 192 4		
61-62 59-60 57-58 55-56 53-54		3 3	11 12 7 8 1 1	26 29 17 19 6 7	29 32 29 32 9 10	3 3 24 27 23 25	6 7 8 9 2 2																						152 3 148 3 133 3 183 4 146 3		
51-52 49-50 47-48 45-46 43-44							3 3	20 22 3 3	19 23 22 27	15 18 21 26 8 9	2 2 9 11 33 39																	156 4 146 3 148 3 115 3 146 3			
41-42 39-40 37-38 35-36 33-34												27 32	42 50 23 28	19 24 34 40	13 15 22 27	7 9 6 7													196 4 149 3 153 3 248 6 414 9		
32																													6 7 7 8 3 3 10 12 16 19 12 14 6 7 14 17 29 34 31 37 8 54 277 7		
30-31 28-29 26-27 24-25 22-23																													7 8 11 13 10 12 13 15 16 19 20 25 22 27 2 13 106 2 37 1 1 *		
20-21 18-19 16-17 14-15 12-13																															
10-11 8-9 6-7 4-5 2-3																															
0-1 -2-1 -4-3 -6-5																															
Mean	68.5	66.2	64.4	61.3	60.7	58.0	55.7	53.6	51.5	48.0	45.9	43.3	41.1	39.9	38.0	36.7	35.6	34.5	33.8	33.3	32.5	32.0	31.7	31.6	32.0	31.8	50 6				
Total Obs.	91	91	91	91	91	91	91	91	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	15	4505				

\* Less than 1/4





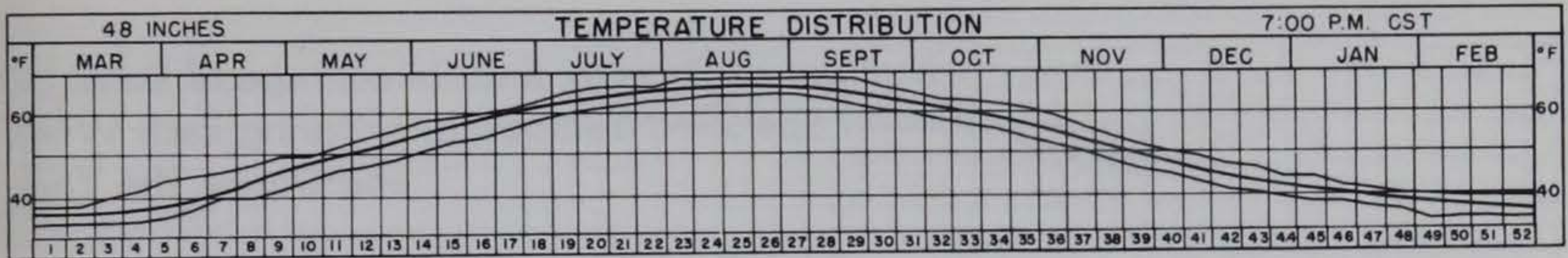
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

48-Inch Depth

7:00 p.m. CST, July 1, 1937—Oct. 31, 1949  
6:00 p.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March				April				May				June				July				August							
	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	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																												
81-82 79-80 77-78 75-76 73-74																												
71-72 69-70 67-68 65-66 63-64																					17 19	29 32	33 36	31 34	30 33			
61-62 59-60 57-58 55-56 53-54																					4 4	25 28	41 45	57 63	66 72	55 60	53 58	56 62
51-52 49-50 47-48 45-46 43-44																					1 1	39 43	52 57	45 50	34 37	8 9	7 8	5 6
41-42 39-40 37-38 35-36 33-34																					6 7	26 31	56 64	39 43	14 15	5 5		
31-32 29-30 27-28 25-26 23-24																					18 21	42 50	39 47	11 13	5 6			
21-22 19-20 17-18 15-16 13-14																					10 12	28 33	19 23	21 25	2 2			
11-12 9-10 7-8 5-6 3-4																					11 13	35 42	29 35	16 19				
1-2 -1 -2 -3 -4 -5																					8 9	25 30	32 38	25 30	10 12			
Mean	36.0	35.9	36.2	37.2	38.5	40.2	41.9	43.7	45.7	47.6	49.0	50.7	52.6	54.8	56.2	57.6	59.3	60.8	62.3	63.7	64.4	65.0	65.7	66.1	66.2	66.1	65.9	
Total Obs.	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	88	91	91	91	91	91	91	91	91		

\* Less than 1%



Month	September					October					November					December					January					February					Year
	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	53					
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %				
Temp.																															
105-6																															
103-4																															
101-2																															
99-00																															
97-98																															
95-96																															
93-94																															
91-92																															
89-90																															
87-88																															
85-86																															
83-84																															
81-82																															
79-80																															
77-78																															
75-76																															
73-74																															
71-72																															
69-70																															
67-68	29 32	13 14																													
65-66	42 46	35 38	31 34	3 3																											
63-64	20 22	39 43	35 39	40 44	12 13	6 7																									
61-62	4 5	24 26	32 35	37 41	13 14	13 14	2 2																								
59-60	1 1	16 18	39 43	51 56	14 16	12 13	2 2																								
57-58			3 3	21 23	52 57	22 24	16 19																								
55-56					12 13	51 56	31 37	14 17																							
53-54					4 5	34 41	35 42	10 12																							
51-52					1 1	33 39	51 61	10 12																							
49-50					2 2	20 24	47 56	13 15	5 6																						
47-48					3 3	25 30	45 54	12 14	2 2																						
45-46					2 2	26 31	50 60	34 41	10 12																						
43-44							17 20	38 45	37 44	11 13	4 5																				
41-42									10 12	29 35	52 62	36 43	9 11	5 6																	
39-40											8 9	21 25	42 50	50 59	39 46	29 35	15 17	7 8	7 8	2 2											
37-38													2 2	25 30	40 48	43 51	34 41	42 50	34 41	25 30	4 27										
35-36																	12 14	34 41	29 35	36 43	50 60	8 53	402 9								
33-34																			1 1	6 7	7 8	7 8	3 20	44 1							
32																															
30-31																															
28-29																															
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-6-5																															
Mean	65.6	64.7	63.7	62.2	60.9	59.7	58.1	56.7	55.2	53.0	51.1	49.1	47.3	45.6	44.2	42.8	41.5	40.4	39.4	38.7	37.9	37.2	36.6	36.3	36.0	35.8	51.3				
Total Obs.	91	91	91	91	91	91	91	91	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	15	4506					

\* Less than 1%



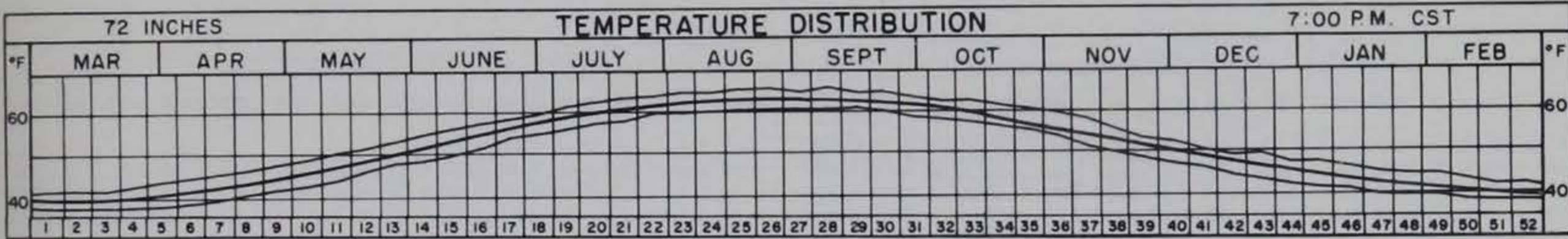
## Number of Days (n) and Percentage of Days (%) With Specified Temperature During Each Week and During the Year.

72-Inch Depth

7:00 p.m. CST, July 1, 1937—Dec. 31, 1956  
6:00 p.m. CST, Feb. 9, 1942—Sept. 29, 1945

Month	March			April			May			June			July			August			27									
	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	
Week No.	n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %		n %			
Temp.																												
105-6																												
103-4																												
101-2																												
99-00																												
97-98																												
95-96																												
93-94																												
91-92																												
89-90																												
87-88																												
85-86																												
83-84																												
81-82																												
79-80																												
77-78																												
75-76																												
73-74																												
71-72																												
69-70																												
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20-21																												
18-19																												
16-17																												
14-15																												
12-13																												
10-11																												
8-9																												
6-7																												
4-5																												
2-3																												
0-1																												
-2-1																												
-4-3																												
-6-5																												
Mean	39.9	39.8	39.8	40.1	40.7	41.5	42.6	43.7	45.1	46.4	47.8	49.1	50.5	52.0	53.5	54.9	56.4	57.6	59.0	60.0	61.0	61.8	62.3	62.9	63.3	63.4	63.4	
Total Obs.	119	119	119	125	126	126	127	133	133	133	133	133	133	133	133	133	133	137	140	140	140	140	140	140	140	140		

\* Less than 1%



Month	September			October			November			December			January			February			Year									
Week No.	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	53		
Temp.	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	
105-6 103-4																												
101-2 99-00 97-98 95-96 93-94																												
91-92 89-90 87-88 85-86 83-84																												
81-82 79-80 77-78 75-76 73-74																												
71-72 69-70 67-68 65-66 63-64	28 20 67 48	13 9 62 44	1 1 64 46	44 31 9 7	1 1																						120 2 681 10	
61-62 59-60 57-58 55-56 53-54	45 32 65 47	68 48 7 5	65 47 31 22	55 41 70 52	32 25 16 12	14 11 52 41	4 3 75 60	11 9 45 35	16 13 64 51	32 25 6 5	58 46 30 24	8 6														796 12 558 8 416 6 388 6 366 5		
51-52 49-50 47-48 45-46 43-44										2 1 2 2	11 9 7 6	61 48 41 32	75 57 7 5	18 13 38 28	49 37 62 47	10 8 71 53	25 19 76 59	6 5 70 57	3 2 41 33	14 11 70 56	6 5 41 32	1 1 36 29	14 12 14 12	7 6 7 6	3 2 3 2			334 5 383 6 428 6 464 7 512 8
41-42 39-40 37-38 35-36 33-34																		6 5	21 17	41 32 1 1	64 51 15 12	56 44 33 26	56 44 66 54	49 40 70 59	46 39 13 62	8 38	645 9 709 10	
32																												
30-31 28-29 26-27 24-25 22-23																												
20-21 18-19 16-17 14-15 12-13																												
10-11 8-9 6-7 4-5 2-3																												
0-1 -2-1 -4-3 -6-5																												
Mean	63.3	63.0	62.5	61.6	60.8	59.9	59.0	58.0	56.6	55.2	53.8	52.3	50.9	49.3	48.0	46.8	45.6	44.7	44.0	43.1	42.3	41.6	41.0	40.5	40.3	40.0	51.9	
Total Obs.	140	140	140	140	134	130	126	126	126	126	126	126	131	133	133	133	129	123	126	126	126	126	126	122	119	21	6842	

\* Less than 1%



2 1/4-inch Depth 7 p.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1946 to 1956 and an average row.

6-inch Depth 7 a.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1937 to 1949 and an average row.

4-inch Depth 7 a.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1949 to 1956 and an average row.

6-inch Depth 12 noon

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1937 to 1949 and an average row.

4-inch Depth 12 noon

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1949 to 1956 and an average row.

6-inch Depth 7 p.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1937 to 1949 and an average row.

4-inch Depth 7 p.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1949 to 1956 and an average row.

8-inch Depth 7 a.m.

Table with 13 columns: Year, Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec., Annl. Rows include years from 1949 to 1956 and an average row.



## 48-inch Depth 7 p.m.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annl
1937							63.2	65.9	65.7	59.1	50.8	42.1	
1938	37.6	35.2	37.5	43.2	50.4	57.9	64.4	67.1	65.4	61.7	53.5	44.9	51.6
1939	40.3	37.2	35.7	40.7	51.2	58.6	64.4	65.3	65.2	59.0	51.0	45.4	51.2
1940	38.2	35.1	36.2	41.6	48.7	58.1	63.8	66.1	64.3	59.9	51.9	43.3	50.6
1941	39.6	36.9	35.3	41.8	51.8	58.2	63.6	67.2	65.0	59.7	51.9	46.5	51.4
1942	41.5	39.0	38.5	44.1	51.0	58.7	63.4	65.9	64.3	58.1	51.4	44.5	51.7
1943	40.0	36.9	35.7	40.0	47.2	55.6	62.5	65.8	63.0	57.6	49.8	43.5	49.8
1944	38.4	37.1	37.0	40.0	48.9	58.5	63.4	65.6	63.3	58.3	53.2	45.1	50.7
1945	39.5	37.6	38.8	45.2	48.8	54.9	61.5	64.4	63.9	57.4	51.2	42.9	50.5
1946	37.9	35.8	37.6	45.8	50.6	57.1	63.3	64.8	62.9	58.4	52.0	44.9	50.9
1947	39.9	37.6	36.0	40.3	48.6	54.9	62.3	66.8	66.7	61.6	53.1	43.9	51.0
1948	38.4	34.3	34.5	42.1	50.6	58.4	64.4	66.2	66.4	59.0	52.0	44.0	50.9
1949	38.8	35.2	35.0	40.5	50.5	57.9	65.0	67.2	63.5	58.8	--	--	--
Av.	39.2	36.5	36.5	42.1	49.9	57.4	63.5	66.0	64.6	59.1	51.8	44.3	50.9

## 72-inch Depth 7 p.m.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annl
1937							59.8	63.3	63.9	59.9	53.6	47.0	--
1938	42.6	40.2	40.4	44.0	49.3	55.0	61.0	64.3	64.4	61.8	56.2	49.2	52.4
1939	44.9	42.0	40.2	42.4	49.2	55.6	60.7	62.8	63.1	59.6	53.8	49.1	52.0
1940	43.7	41.1	40.5	43.0	47.9	54.7	60.2	63.3	62.8	60.2	54.8	48.1	51.7
1941	44.6	41.9	40.2	42.6	49.9	55.7	60.8	64.1	63.8	60.3	54.7	50.0	52.4
1942	46.1	43.1	42.1	45.1	50.1	56.3	60.7	63.8	63.4	59.3	54.0	48.7	52.7
1943	45.0	41.6	39.6	41.5	46.6	52.8	59.0	62.8	61.9	57.8*	51.5*	47.9*	50.7
1944	--	--	--	--	47.5	55.3	60.0	62.8	62.1	59.0	55.0	49.3	--
1945	44.6	42.3	41.8	45.6	48.6	53.1	58.5	61.7	62.4	58.3	53.6	47.6	51.5
1946	43.0	40.5	40.5	45.4	49.5	54.6	60.2	62.4	61.9	59.1	54.5	48.8	51.7
1947	44.5	41.8	40.2	41.8	47.4	52.9	58.8	63.4	64.7	61.7	56.0	48.5	51.8
1948	43.5	39.9	38.8	42.4	48.8	55.0	60.3	62.8	63.8	--	--	--	--
1949	--	--	--	41.4	48.1	54.6	60.5	63.5	62.0	59.1	54.1	48.2	--
1950	43.1	39.6	38.3	40.5	46.1	53.2	58.6	60.7	60.7	58.4	54.0	46.7	50.0
1951	41.7	39.3	38.8	40.3	46.9	53.6	58.0	61.5	61.4	58.2	51.6	46.1	49.8
1952	41.6	39.4	38.8	41.1	48.1	54.4	60.1	62.0	61.9	58.2	53.1	47.5	50.5
1953	43.3	40.6	39.6	42.4	47.1	54.4	59.8	62.4	62.3	59.8	55.2	49.4	51.4
1954	43.2	39.9	40.3	43.7	49.0	55.0	62.4	64.1	64.4	60.3	54.3	48.5	52.1
1955	44.0	41.0	39.8	43.7	50.7	55.7	61.2	65.1	64.1	60.5	53.9	46.3	52.2
1956	41.7	39.4	39.7	43.3	47.9	55.4	60.7	62.7	61.7	59.6	54.9	47.9	51.2
Av.	43.6	40.8	40.0	42.8	48.4	54.6	60.1	63.0	62.8	59.5	54.1	48.1	51.5

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