

climate of
FREZE
in Alabama

NOAA / NATIONAL WEATHER SERVICE
ENVIRONMENTAL STUDIES SERVICE CENTER
AGRICULTURAL EXPERIMENT STATION AUBURN UNIVERSITY
R. DENNIS ROUSE, DIRECTOR AUBURN, ALABAMA
NOVEMBER 1979 WEATHER SERIES NO. 17

CONTENTS

	Page
List of Tables and Figures	3-5
Introduction	7
Cold Climate in Alabama	7
Freeze Classification and Meteorological Conditions	7
Freeze Injury to Plants	8
Source of Data	9
The Growing Season	10
Freeze Probabilities	10
Freeze Maps	11
Climatological Probabilities and Forecasts	11
References	11
Appendix Table I	33

Information contained herein is available to all without regard to race, color, or national origin.

FIGURES

	Page
1. Locations of 74 Temperature Reporting Stations and 8 Climatic Divisions	12
2. Average Length of the Growing Season (days)	13
3. Mean Date of First 32°F Freeze in the Fall	22
4. Dates in the Fall Before Which There Is a 20 Percent Chance of a 32°F Freeze	23
5. Mean Date of Last 32°F Freeze in the Spring	24
6. Dates in the Spring After Which There Is a 20 percent chance of a 32°F freeze	25
7. Mean Date of First 28°F Freeze in the Fall	26
8. Dates in the Fall Before Which There Is a 20 percent chance of a 28°F Freeze	27
9. Mean Date of Last 28°F Freeze in the Spring	28
10. Dates in Spring After Which There Is a 20 Percent Chance of a 28°F Freeze	29
11. Probability of a 24°F Freeze or Colder Occurring Sometime During Cold Season	30
12. Probability of a 20°F Freeze or Colder Occurring Sometime During Cold Season	31
13. Probability of a 16°F Freeze or Colder Occurring Sometime During Cold Season	32

TABLES

Cold Temperature Danger Points for Certain Fruits	8
Critical Temperatures of the Blossoms and Young Fruits of Berries at Different Stages of Development	9
Resistance of Crops to Freeze at Different Stages of Development	9
Station Location and Elevation	9-10
Freeze Data (32°F)	14-15
Probability of Spring and Fall Temperature Thresholds	15-21
Mean Day Number, Standard Deviation, and Probability of Temperature Occurrence	33-36

CLIMATE OF FREEZE IN ALABAMA

Jere R. Gallup

Agricultural Meteorologist

INTRODUCTION

THE CLIMATE of freeze for any geographical area determines what crops can be grown, the scheduling of planting, and the ending of harvest. Few climatic influences place greater constraints on agriculture or require more timely planning and decision-making by the farmer than the occurrence of freezing temperatures. The "growing season," often defined as the interval between the last and first occurrence of 32 degrees Fahrenheit, sets the climatic limitations within which the agriculturalist must work. He must give consideration to possible losses from a late freeze in the spring or the risk of a similar occurrence early in the fall. Vegetable and fruit growers are the most concerned with a freeze. However, some field crops such as cotton, corn, peanuts, and small grains may also be damaged or killed by unseasonal freezes.

The use of climatology in operating a farm or any other weather sensitive business allows more precise judgement and reduces reliance on subjective appraisals about the future effects of weather. Familiarity with the cold season climate, therefore, can be important when evaluating long-term plans and decisions. For example, the probable dates of last spring or first fall freeze occurrence can be used to establish the normal chances that a freeze will follow a certain date in the spring or arrive before a particular date in the fall.

The purpose of this publication is to provide an analysis of freeze occurrence in Alabama. In addition to freeze probabilities, information about extreme dates of freeze occurrence and average length of freeze-free period (growing season) is provided.

COLD CLIMATE IN ALABAMA

Winters in Alabama are relatively mild due to the State's southerly latitude and its proximity to the Gulf of Mexico. Severely cold weather seldom occurs. Even in the northern third of the State, temperatures of zero or lower are generally rare and occur only when there is snow on the ground. Arctic air masses are often diverted eastward before penetrating as far south as Alabama. Temperatures of 10° F. or less are usually reached only once in a season across central Alabama, and only on occasional years do temperatures reach the teens as far south as Mobile. Even during very cold outbreaks, southern states normally are spared the brunt of frigid temperatures. Also, at latitudes as far south as Alabama, longer days, a more vertical sun angle, and the greater uptake of warmth from the earth's surface help to rapidly modify the severity of cold air masses.

The Gulf of Mexico affects the climate throughout Alabama during the winter months. Although cold air usually

predominates, periodic swings to a southerly wind flow can bring mild and sometimes warm temperatures northward into the Tennessee Valley. For much of the time, however, frontal systems moving through the State effectively limit the Gulf's influence from spreading very much north of coastal areas. More cloudiness over the north probably results in slower warming trends as well as increased chances for icy conditions or snow. Sunshine is more the rule on the coastal plain where the Gulf has its strongest influence on temperatures. Even as far south as the Gulf Coast, however, freezing temperatures will occur regularly during any winter season.

Characteristic weather patterns during the early fall and late spring become most influential in determining the distribution of growing seasons within Alabama. During these months, weaker systems of cold air fail to produce freezing temperatures as deeply southward into the State. Frontal systems often become positioned across the State separating the milder Gulf currents from colder air to the north. An earlier fall freeze over northern areas may cut the growing season short, while on the coastal plain temperatures have only added a chill to the air. A late spring in the northeastern valleys may keep fruit buds from showing, while farther southward temperatures have not been cold enough to restrict bloom. Thus, freeze patterns evolve from north to south within the State as the seasons make their transitions.

FREEZE CLASSIFICATION AND METEOROLOGICAL CONDITIONS

Some distinction between the meanings of frost and freeze is needed with the day to day usage of these terms. Frost forms as a deposit of ice crystals on the ground and other surfaces which have cooled to below 32°F. The process involves the conversion of water vapor in the air directly to ice crystals while bypassing the intermediate liquid state. When air having a dew point below freezing is chilled to saturation, usually by contact with cold surfaces, frost often forms as a surface deposit. During frost conditions, air temperatures at standard observation height (5 feet above ground) often are above freezing. The term freeze applies to air temperatures at standard measurement height that have fallen to 32°F or lower. A freeze may be observed with or without the occurrence of frost.

Freezing temperatures are usually classified according to the general severity levels at which agricultural crops and ornamental plants suffer damage when subjected to varying temperature ranges below 32°F. The severity of damage depends upon the characteristics of the given crop. Major damage to growing plants occurs within a broad range of

temperatures below freezing. Some plants are killed by temperatures slightly below freezing while others may survive at much lower temperatures. Freeze damage may range from injury to different plant parts to plant death.

Crops have been classified as tender, semi-hardy, and hardy according to their general abilities to withstand low temperature. The severity of a freeze and its associated temperature may, therefore, be judged by how widespread the damage is within these categories of plant hardiness. In general, cool season, winter-hardy plants can survive much lower temperatures than warm season types.

The following freeze classification has been adopted by agricultural meteorologists:

Light Freeze. Air temperature ranges between 28°F and 32°F. Tender plants such as watermelons, tomatoes, beans, and peppers may be killed. There is little or no damage to most other plants.

Moderate Freeze. Air temperature ranges between 25°F and 28°F. There is heavy damage to fruit blossoms and semi-hardy plants. Most plants suffer some damage with tender plants usually destroyed.

Severe Freeze. Air temperature is 24°F or below. There is heavy damage to most plants. Annual plants are destroyed. Ground is usually frozen.

A freeze may also be classified according to the atmospheric processes under which it occurs. The passage of cold frontal systems with strong northerly winds and rapidly falling temperatures are typical conditions during an advective type freeze. Winds transport cold air having below freezing temperatures into a region where warmer air is being displaced. This results in temperatures falling to the freezing point in response to the arrival of progressively colder air.

A radiation freeze develops under characteristically different atmospheric conditions. In these situations cold, dry air becomes established over an area producing clear skies and light or calm winds. These conditions are suitable for a net loss of terrestrial heat energy outward through the earth's atmosphere. During the night, when the energy lost is not being replaced by solar radiation, the earth's surface and the layer of air above it cool steadily. If the air is sufficiently dry and potentially cold enough as the cooling process begins, temperatures may fall below freezing.

Under radiation conditions, nighttime temperatures drop most rapidly within the shallow layer of air just above ground level. This can result in a more severe freeze for plants grown at field height and in low-lying areas. On such nights the colder, more dense air tends to accumulate and flow into lower pockets and valleys across the landscape. Such areas are more susceptible to radiation freeze.

Environmental changes that result in more cloudiness or water vapor in the atmosphere may retard terrestrial radiation. Such conditions can prevent temperatures from lowering to the freeze point. Wind movement also becomes important as a modifier of temperature if it is sufficient to cause mixing of the temperature stratified air above the surface. On a freeze night this may result in raising temperatures by a few degrees as the warmer air above is mixed with colder air near the surface. To some extent, air temperature will be modified by other environmental factors such as warm or damp soils, local water bodies, or differences in vegetative cover.

FREEZE INJURY TO PLANTS

Since resistance to freeze injury varies greatly among different kinds and varieties of plants, the farmer or home gardener should be familiar with the freeze characteristics of his particular crops. The temperatures that become critical to a plant's survival are usually the basis for the planning

and carrying out of freeze protection. They are also used for determining safe dates for planting field and vegetable crops through the use of freeze probability tables contained in this publication.

Several meteorological factors increase a plant's susceptibility to freeze damage. The amount of chilling necessary to produce damage depends on the duration of a critically low temperature. Plants are likely to survive temporary exposure to a damaging freeze that results in only minor injury to plant parts. However, when a plant is subjected to critical temperatures for any length of time, the plant usually dies. The rate at which temperatures fall is often important when describing the effects of a freeze. With a sudden onset of freeze, some plants experience greater trauma and damage than would otherwise occur with slowly dropping temperatures, even though the same minimum temperature levels may be reached in both cases. Desiccating winds that often accompany severe outbreaks of cold weather can also increase damage considerably.

The temperature environment before freeze occurrence may either condition the plant to better withstand the effects of freeze or cause the plant to be more susceptible to freeze injury. Several days of unseasonably warm weather in the winter or early spring may cause perennials to come out of dormancy early and become especially vulnerable to freeze. Warm and wet conditions may stimulate new growth of tender vegetation which is later killed back with greater severity.

On the other hand, a period of cool weather is likely to condition a plant to become more frost tolerant. A plant may develop its own natural protection from freeze in response to its temperature environment. For example, a cool spring usually results in slower plant growth and more frost resistant or woody tissue exposed to freezing temperatures. Fruit trees will delay bloom during an unseasonably cool spell.

Fruit production reaches a critical stage for freeze damage during the bloom and fruiting period. Many fruits gage the beginning of their bloom by a sufficient accumulation of chill hours (hours the temperature is $\leq 45^\circ\text{F}$). When a sufficient number of chill hours are reached during dormancy, bloom will be triggered by a measured period of accumulated warm temperature. Unseasonal weather fluctuations in the winter or spring may complicate this timing of bloom so that it arrives while a significant freeze danger still exists. Critical temperatures during the bloom period for various fruit and berry crops are listed in tables 1 and 2 taken from Eichmeier et al. (1965).

Table 1. Cold Temperature Danger Points for Certain Fruits

Fruit	Stage of development				
	Glassy green stage	Petals closed but visible	Full bloom	Petal fall	14-18 days after bloom
		°F	°F	°F	
Apple		25-28	28-30	28-30	28-30
Apricot		24-26	26-28	26-28	28-30
Blueberry		25	26	26	27
Grape		29-31	29-31	29-31	29-31
Peach		24-26	26-28	26-28	28-30
Pear		25-27	28-30	28-30	28-30
Plum		24-26	26-28	28-30	28-30
Red Tart (sour)					
Cherry	28-29	26-28	28-30	28-30	28-30
Stanley Prune .		25-27	28-30	28-30	28-30
Sweet Cherry .	27-28	25-27	28-30	28-30	28-30

Table 2. Critical Temperatures of the Blossoms and Young Fruits of Berries at Different Stages of Development (Temperatures Are Approximate Only)

Kind of fruit	Tight bud	Balloon bud	Full bloom	Green fruit
	°F	°F	°F	°F
Strawberries ...	22	28	31	28
Red raspberries	25	27	29	27
Black raspberries	26	28	30	28

Resistance to freeze damage varies considerably among different vegetable and field crops. In table 3, adapted from Ventskevich (1961), 27 of these crops are classified according to their freeze resistance. Critical temperatures were based on the harmful effects of freeze that occurred during various stages of crop development.

Table 3. Resistance of Crops to Freeze at Different Stages of Development (Harmful Temperatures °F.)

Crop	Germination	Flowering	Fruiting
Highest resistance to freeze			
Spring wheat	14-16	28-30	25-28
Oats	16-18	28-30	25-28
Barley	17-19	28-30	25-28
Peas	17-19	26-28	25-27
Resistance to freeze			
Lupine	17-21	25-27	25-27
Spring vetch	19-21	25-27	25-28
Beans	21-23	26-28	25-27
Sunflower	21-23	26-28	26-28
Safflower	21-25	26-28	25-27
Beets	19-21	26-28	--
Carrot	19-21	--	--
Turnip	19-21	--	--
Medium resistance to freeze			
Cabbage	19-23	26-28	16-21
Soybeans	25-27	26-28	26-28
Low resistance to freeze			
Corn	26-28	28-30	26-28
Millet	26-28	28-30	26-28
Sudangrass	26-28	28-30	26-28
Sorghum	26-28	28-30	26-28
Potatoes	26-28	28-30	28-30
No resistance to freeze			
Buckwheat	28-30	28-30	28-31
Cotton	28-30	28-30	26-28
Melons	30-31	30-31	30
Rice	30-31	30-31	30-31
Peanuts	30-31	--	--
Cucumbers	30-31	--	--
Tomatoes	30-32	30-32	30-32
Tobacco	30-32	30-32	30-32

SOURCE OF DATA

Official National Weather Service minimum temperature records for the 20- to 30-year period ending in 1976 were used in this study. There was a total of 74 National Weather Service climatological stations in Alabama from which the freeze probabilities and analysis were prepared. Of these, 19 stations had freeze probabilities already computed. These were extracted from the Environmental Data and Information Service publication *Climatology of the United States No. 20*. All temperature observations were made in standard instrument shelters approximately 5 feet above ground.

Stations used in the analysis were selected based on their length and quality of record, station exposure, and geographical location. For analysis purposes, geographical loca-

tion was important to ensure an adequate distribution of data points and as much uniformity as possible in the representative exposure of meteorological sites. The latitude, longitude, and elevation for these stations are listed in table 4. The stations are numbered consecutively and grouped by climatological division. Temperature data for these stations are published monthly and annually in the Environmental Data and Information Service publication *Climatological Data (Alabama Section)*.

Table 4. Station Location and Elevation

Station	County	Latitude	Longitude	Elevation
Northern Valley				
1. Athens	Limestone	34°48'	86°59'	720
2. Belle Mina	Limestone	34°42'	86°53'	600
3. Falkville	Morgan	34°22'	86°53'	625
4. Florence	Lauderdale	34°48'	87°41'	578
5. Madison	Madison	34°42'	86°45'	580
6. Moulton	Lawrence	34°29'	87°18'	645
7. Muscle Shoals	Colbert	34°45'	87°37'	540
8. Red Bay	Franklin	34°26'	88°08'	680
9. Redstone Arsenal	Madison	34°35'	86°36'	573
10. Russellville	Franklin	34°31'	87°44'	880
11. Waterloo	Lauderdale	34°55'	88°04'	457
Appalachian Mountain				
12. Albertville	Marshall	34°14'	86°10'	1,140
13. Bessemer	Jefferson	33°22'	87°01'	540
14. Birmingham	Jefferson	33°34'	86°45'	620
15. Bridgeport	Jackson	34°57'	85°43'	615
16. Crossville	DeKalb	34°17'	85°58'	1,195
17. Guntersville	Marshall	34°20'	86°19'	578
18. Oneonta	Blount	33°57'	86°29'	870
19. Saint Bernard	Cullman	34°10'	86°49'	802
20. Scottsboro	Jackson	34°41'	86°03'	615
21. Valley Head	DeKalb	34°34'	85°37'	1,040
Upper Plains				
22. Bankhead L&D	Tuscaloosa	33°27'	87°21'	280
23. Centreville	Bibb	32°54'	87°15'	456
24. Clanton	Chilton	32°51'	86°38'	580
25. Double Springs	Winston	34°10'	87°24'	800
26. Fayette	Fayette	33°41'	87°49'	365
27. Haleyville	Winston	34°15'	87°37'	950
28. Hamilton	Marion	34°06'	87°59'	435
29. Prattville	Autauga	32°29'	86°29'	295
30. Tuscaloosa	Tuscaloosa	33°14'	87°37'	169
31. Vernon	Lamar	33°48'	88°07'	265
Eastern Valley				
32. Anniston	Calhoun	33°35'	85°51'	611
33. Calera	Shelby	33°05'	86°47'	540
34. Centre	Cherokee	34°07'	85°44'	620
35. Childersburg	Talladega	33°17'	86°20'	418
36. Gadsden	Etowah	34°02'	86°00'	565
37. Sylacauga	Talladega	33°12'	86°12'	490
38. Talladega	Talladega	33°26'	86°05'	555
Piedmont Plateau				
39. Auburn	Lee	32°37'	85°29'	652
40. Ashland	Clay	33°15'	85°50'	1,091
41. Camp Hill	Tallapoosa	32°50'	85°39'	680
42. Heflin	Cleburn	33°39'	85°36'	850
43. Lafayette	Chambers	32°54'	85°24'	830
44. Martin Dam	Elmore	32°40'	85°55'	340
45. Rockford	Coosa	32°54'	86°14'	670
46. Rock Mills	Randolph	33°09'	85°18'	745
Prairie				
47. Dayton	Marengo	32°22'	87°39'	230
48. Demopolis L&D	Marengo	32°31'	87°50'	100
49. Greensboro	Hale	32°42'	87°35'	220
50. Livingston	Sumter	32°35'	88°12'	160
51. Marion Junction	Dallas	32°28'	87°13'	200
52. Minter	Dallas	32°06'	87°03'	370
53. Montgomery	Montgomery	32°18'	86°24'	221
54. Selma	Dallas	32°25'	87°00'	147
55. Union Springs	Bullock	32°06'	85°43'	460
Coastal Plain				
56. Andalusia	Covington	31°19'	86°30'	242

(Cont'd)

Table 4. (Cont'd) Station Location and Elevation

Station	County	Latitude	Longitude	Elevation
57. Brewton	Escambia	31°04'	87°03'	85
58. Brantley	Crenshaw	31°35'	86°16'	274
59. Chatom	Washington	31°32'	88°15'	285
60. Clayton	Barbour	31°53'	85°28'	596
61. Frisco City . . .	Monroe	31°26'	87°24'	410
62. Geneva	Geneva	31°02'	85°51'	110
63. Greenville . . .	Butler	31°49'	86°38'	445
64. Headland	Henry	31°21'	85°20'	370
65. Highland Home	Crenshaw	31°57'	86°19'	594
66. Ozark	Dale	31°31'	85°41'	470
67. Thomasville . .	Clark	31°55'	87°44'	405
68. Troy	Pike	31°49'	85°59'	580
Gulf				
69. Bay Minette . .	Baldwin	30°53'	87°47'	268
70. Coden	Mobile	30°23'	88°14'	12
71. Fairhope	Baldwin	30°33'	87°53'	23
72. Fort Morgan . .	Baldwin	30°14'	88°01'	10
73. Mobile	Mobile	30°41'	88°15'	211
74. Robertsedale . .	Baldwin	30°34'	87°44'	155

A climatological base map for Alabama is shown in figure 1 with outlines of the eight climatological divisions and the numbered weather stations for which freeze data is presented in this publication.

THE GROWING SEASON

The true growing season may be defined as the period of the year during which temperatures remain high enough to permit a crop to grow. No clear standard for measuring an exact growing season has been established. Observed dates of last and first killing frost can be used; however, shelter temperatures that have reached freezing are more applicable to a wider area and more useful in describing the growing season than subjective observations of frost damage to vegetation. Frost formation is often influenced by factors such as soil temperature, differences in elevation, and radiative exposure. Frost kill can also vary with the type of vegetation and its susceptibility to freeze damage. Often, this presents a problem in judging whether a frost has been severe enough to end a growing season or delay its beginning.

On relatively calm, clear nights, temperatures at ground level are typically colder than at the standard 5 feet shelter height. Scattered frost damage may occur near the ground even though shelter temperatures are observed several degrees above freezing. Therefore, for a frost to be widespread enough to halt a growing season, temperatures at shelter height as well as at ground level are likely to have reached freezing.

Table 5 contains data pertinent to growing season analysis. Included in this table are the years of freeze record used in this study, the mean and extreme dates of last spring and first fall freeze (32°F or lower), and the mean freeze-free period or growing season length for each station. The extreme occurrence dates are applicable only for the periods of record used in this study.

In figure 2, a map shows the statewide distribution of average length of growing season in days. The lines are of equal freeze-free period based on the average year. As we would expect, freezing temperatures occur both earlier in the fall and later in the spring over north Alabama. Across the Tennessee Valley the growing season runs an average of around 200 days. From there southward to the Gulf Coast, the transition from colder to warmer climate occurs with a 50- to 100-day geographic variation in length of growing

season. Between Huntsville and Mobile, for instance, the climatic difference in growing season averages about 70 days. Over interior areas, the growing season changes most rapidly along a 30- to 50-mile wide temperature belt that spans the midsection of the State and closely parallels the northern edge of the coastal plain. Possibly because of elevation differences along this zone, the growing season may differ by as much as 30 days over a distance of only 30 miles. Only in southwestern counties does the length of growing season change so rapidly toward the coast. The warmest climate within Alabama is found in the extreme southwestern counties. Near Mobile Bay and the Gulf Coast the yearly growing season averages almost 300 days, and the influence of a warm, marine environment becomes quite pronounced.

FREEZE PROBABILITIES

Freeze occurrences were tabulated from past years of record contained in the Environmental Data and Information Service publication *Climatological Data* (Alabama Section). Analysis was made to derive a climatic distribution for dates of first and last freeze. For the climatological stations used, the probabilities of a freeze occurring before certain dates in the fall and after certain dates in the spring were computed at temperature thresholds of 32°, 28°, 24°, 20°, and 16°F. Table 6 lists these dates by station and temperature level for which selected freeze probabilities of 10%, 30%, 50%, 70%, and 90% apply for the spring and fall season.

Alabama's temperature climate is such that during all of the years examined, temperatures dropped to at least 28°F for stations selected over interior parts of the State. At temperatures below 28°F, however, the freeze records often contain a series of both freeze and freezeless years. This was especially true in southern portions of the State where, during unusually warm winters, coastal areas may miss a freeze entirely.

Thom and Shaw (1958) have shown that freeze dates follow a normal frequency distribution and that statistical methods may be applied to determine probabilities for a freeze arriving before a certain date in the fall and after a certain date in the spring. The normal distribution of freeze dates is valid only when the particular temperature threshold is reached sometime during the season of each year. As mentioned above, this is not always the case for certain years in Alabama. A mixture of freeze and freezeless years occurs commonly with some of the colder temperature thresholds and the more southern stations within the State.

The failure of a particular temperature threshold being reached during one or more of the years of record results in an incomplete series of freeze dates. Therefore, the conditional probability that for some years a freeze may not occur at all must also be considered. Thom's (1959) method for determining freeze probabilities from a series of both freeze and freezeless years was used in this study.

For some stations with an incomplete series of freeze years, the probability of a particular temperature threshold being reached at all during the fall or spring season was less than the selected probability value. Therefore, a date corresponding to that selected probability did not exist. In these cases, the date column in table 6 contains an asterisk.

Dates corresponding to selected probabilities for the fall were sometimes calculated as occurring after January 1 of the following year. These were not ignored, but included in the freeze data to adequately describe the cold season climate. Therefore, the selected probability of a first fall freeze may occur after January 1. Similarly, when the calculated data for the spring season was before January 1, the date was entered accordingly.

A listing of statistical parameters used in the probability computations for each of the stations is given in Appendix I. The mean occurrence date is expressed as a day number beginning with January 1 as day number 1 and extending to values greater than 365 where some of the fall means occurred later in the cold season than December 31. The standard deviation and probability of temperature occurrence during the year were also included for computing other risk factors if desired.

FREEZE MAPS

Accompanying the freeze probability tables are maps which provide a seasonal analysis of freeze risk for selected temperatures and probabilities. These maps give a geographic description of the freeze climate within the State. Patterns and trends which show up on the maps may be further supplemented by the user's own knowledge of local meteorological factors.

In figures 3 through 10, maps were analyzed for the 50 and 20 percent levels of freeze risk (1 year in 2 and 1 year in 5) for 32° and 28°F temperatures. Lines were drawn to represent average dates of the particular freeze risk during the fall and spring seasons. For one's own area, intermediate dates between the lines may have to be interpolated.

The map that is selected for any operational decision should depend on the amount of risk the user is willing to take. For example, figure 3 represents the average dates (50% chance) of first occurring 32°F freeze in the fall. Similarly, figure 5 is the analysis for the average dates of last occurring 32°F freeze in the spring. Based on past records, half of the time a 32°F freeze or colder (either first occurring in the fall or last occurring in the spring) will be experienced earlier and half of the time later than the date indicated on the map. This 50 percent risk usually represents a greater chance than a farmer or other user is willing to take. It involves the operational threat that a 32°F freeze or lower would occur on the average of 1 out of every 2 years.

For more precaution, the individual may decide that economically it is allowable for him to risk freeze damage during only 1 year out of 5. Figures 4 and 6 represent this 20 percent level of risk that an unseasonal freeze will affect his operations in the fall or spring.

Similar risk levels were analyzed for the 28°F freeze threshold and presented in figures 7 through 10. For many industrial and farm interests, a 28°F temperature is more significant for scheduling operations and planning freeze alertness.

Cold temperature extremes and their frequency of occurrence can provide some definition to the severity of cold climate for a particular area. In figures 11, 12, and 13, the probability of a severe freeze occurrence during the cold season is analyzed for the freezing levels of 24°, 20°, and 16°F. In these cases the probability lines represent the likelihood of a given temperature level occurring at all during the cold season. Plans and decisions are often based on temperatures not falling below certain levels at anytime during the year. Such restrictions usually involve conditions of severe freeze. When building contractors lay pipe, for example, usually they must consider the freeze line, the depth of which depends largely upon the severity of wintertime temperatures. In agriculture, the economic feasibility of certain farming practices may also depend upon how probable severe freeze conditions are for an area.

CLIMATOLOGICAL PROBABILITIES AND FORECASTS

Decisions about freeze protection are usually made from available weather forecasts and climatological information.

Freeze probabilities based on climatology can be useful in planning operations a month or more in advance. However, for short range planning and where climatic vagaries are apparent, climatological probabilities of freeze should be supplemented or replaced by temperature forecasts for an immediate period of days or weeks.

Probability dates are based on the climatology of past freeze occurrences whose dates were averaged over a period of years. When planning for the seasonal arrival of or end to freezing temperatures, the use of these dates implies that the temperature climate will continue to respond with about the same timing as in past years. This assumption may hold true only for most years. For example, a temporary trend toward shortened growing seasons within an abnormally cold cycle of years will often not be properly represented by climatological statistics. Since climate is composed of many variations and an average is in reality only a statistical tool, some emphasis should be placed with using shorter term forecasts that are available for the period in which decisions will apply.

Temperature forecasts are intended to describe conditions representative of a general area as measured from an instrument shelter 5 feet above ground. Local environments may require some adjustment to these forecasts. A particular farm's location may be consistently colder or warmer than a generalized area forecast would indicate. A field that is naturally colder than surrounding countryside might be prone to a more severe frost kill than would be indicated by the predicted minimum temperature. Likewise, crops grown on high ground might suffer less freeze injury than would be expected due to their warm exposure. Similar considerations also need to be used when applying freeze probability analysis to one's particular location.

REFERENCES

- Carter, H.S. 1973. Spring and Fall Freezing Temperatures in Georgia. Ga. Agr. Exp. Sta. Res. Report 162. Athens, Ga., 34 pp.
- Cry, G.W. 1968. Freeze Probabilities in Louisiana. La. Coop. Ext. Svc. Pub. 1531. Baton Rouge, La., 31 pp.
- Curry, B.R. 1971. Freezing Temperatures in Oklahoma. Okla. Coop. Ext. Svc., Stillwater, Okla., 23 pp.
- Eichmeier, A.H., et al. 1965. Michigan freeze bulletin. Mich. Ag. Exp. Sta. Res. Report 26. East Lansing, Mich., 40 pp.
- Geiger, R. 1965. *The climate near the ground*. Harvard University Press, Cambridge, Mass., 611 pp.
- Kish, A.J. 1975. The Probabilities of Spring and Fall Freezing temperatures in South Carolina. S.C. Ag. Exp. Sta. Bull. 588. Clemson, S.C., 29 pp.
- Thom, H.C.S. and R.H. Shaw 1958. Climatological Analysis of Freeze Data for Iowa. *Monthly Weather Review*, 86, 251-252.
- Thom, H.C.S. 1959. The Distribution of Freeze-Data and Freeze-Free Period for Climatological Series with Freezeless Years. *Monthly Weather Review*, 87, 136-144.
- U.S. Dept. of Comm. 1947-1976. *Climatological Data* (Alabama Section). NOAA, Environmental Data and Information Svc., Asheville, N.C.
- U.S. Dept. of Comm. 1975-1976. *Climatology of the United States* No. 20. NOAA, Environmental Data and Information Svc., Asheville, N.C.
- U.S. Dept. of Comm. 1959. *Climatology of the United States* No. 60-1. NOAA, Environmental Data and Information Svc., Asheville, N.C.
- Ventskevich, G.Z. 1961. *Agrometeorology* (translated from Russian). Israel Program for Scientific Translation, Jerusalem. 300 pp.

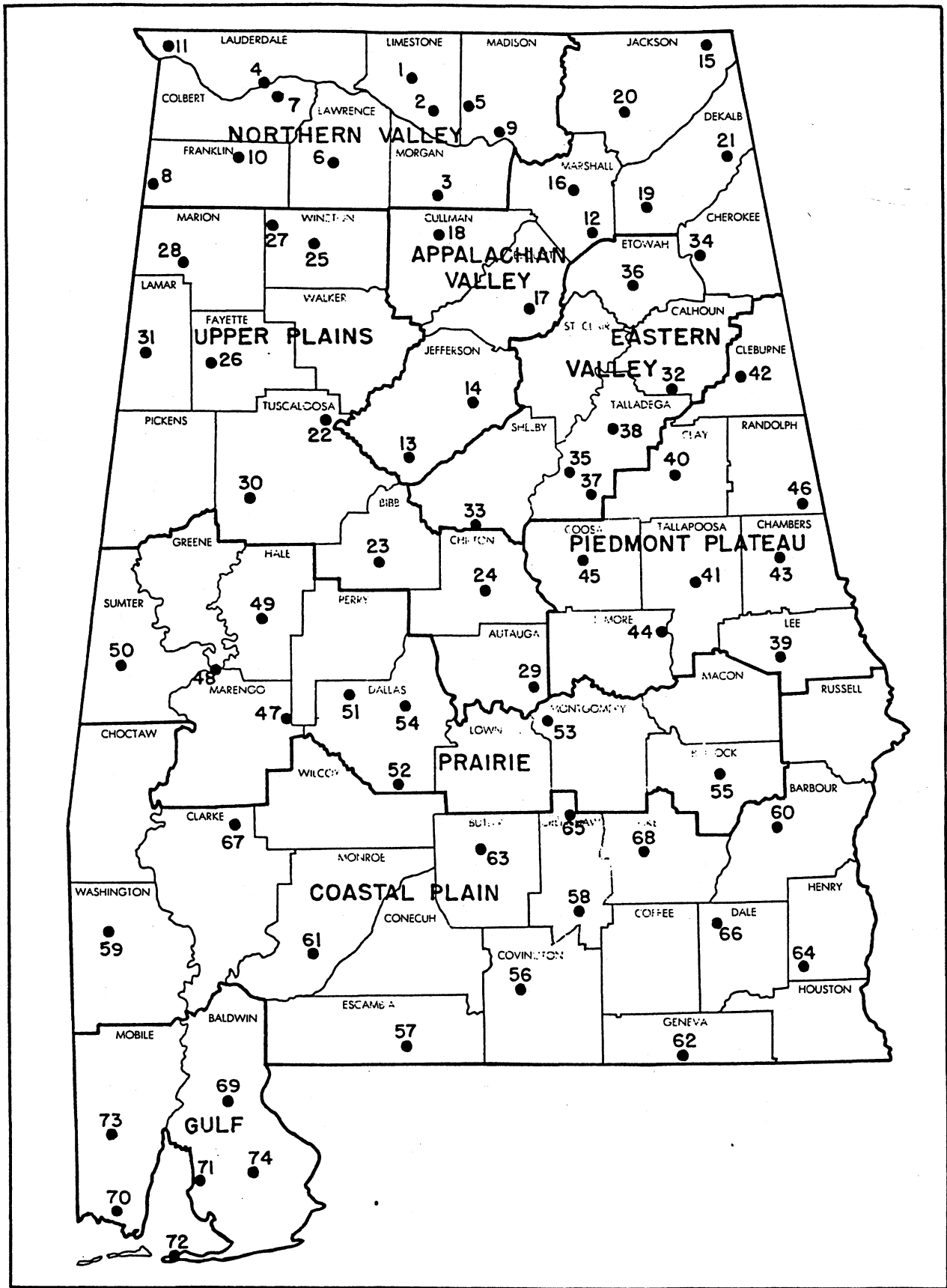


FIG. 1. Location of 74 temperature reporting stations and 8 climatic divisions.

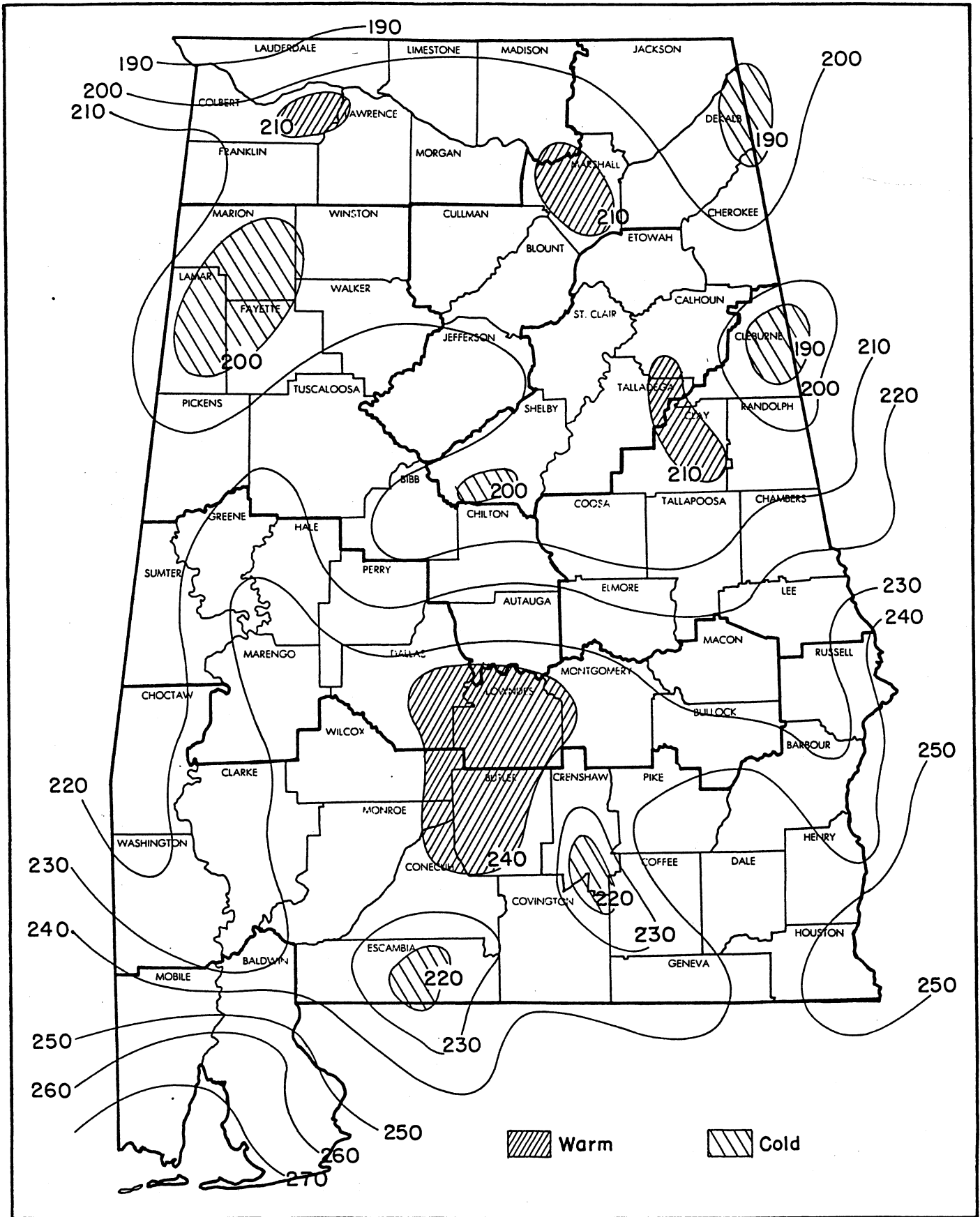


FIG. 2. Average length of the growing season, (days).

TABLE 5. FREEZE DATA (32°F)

Station	Years of record	Mean date		Extreme dates				Mean freeze free period
		Spring	Fall	Last in spring		First in fall		
				Earliest	Latest	Earliest	Latest	Days
Northern Valley								
1. Athens	22	Apr. 8	Oct. 28	Mar. 22	May 4	Oct. 3	Dec. 1	202
2. Belle Mina	25	Apr. 4	Oct. 30	Feb. 18	Apr. 19	Oct. 3	Nov. 16	208
3. Falkville	21	Apr. 8	Oct. 27	Mar. 22	Apr. 21	Oct. 3	Nov. 14	201
4. Florence	23	Apr. 6	Oct. 24	Mar. 16	May 3	Oct. 3	Nov. 9	200
5. Madison	29	Apr. 6	Oct. 30	Mar. 18	Apr. 21	Oct. 18	Nov. 14	206
6. Moulton	20	Apr. 7	Oct. 27	Mar. 22	Apr. 16	Oct. 3	Nov. 14	202
7. Muscle Shoals	26	Mar. 26	Nov. 2	Feb. 18	Apr. 16	Oct. 18	Nov. 27	220
8. Red Bay	20	Apr. 3	Nov. 6	Mar. 17	Apr. 17	Oct. 21	Nov. 20	216
9. Redstone Arsenal	23	Apr. 6	Oct. 27	Mar. 18	May 16	Oct. 3	Nov. 14	203
10. Russellville	23	Apr. 14	Oct. 27	Mar. 24	May 13	Sept. 29	Nov. 18	195
11. Waterloo	20	Apr. 15	Oct. 21	Mar. 23	May 10	Sept. 29	Nov. 14	188
Appalachian Mountain								
12. Albertville	25	Apr. 3	Oct. 31	Mar. 20	Apr. 22	Oct. 3	Nov. 27	210
13. Bessemer	23	Apr. 2	Nov. 2	Feb. 23	Apr. 18	Oct. 19	Nov. 17	213
14. Birmingham	25	Mar. 31	Nov. 4	Mar. 10	Apr. 21	Oct. 20	Nov. 27	217
15. Bridgeport	22	Apr. 12	Oct. 24	Mar. 22	Apr. 29	Oct. 3	Nov. 14	194
16. Crossville	25	Apr. 6	Oct. 29	Mar. 22	Apr. 21	Oct. 3	Nov. 14	205
17. Guntersville	23	Apr. 1	Nov. 5	Mar. 9	Apr. 28	Oct. 25	Nov. 21	217
18. Oneonta	26	Apr. 9	Oct. 27	Mar. 18	May 2	Sept. 30	Nov. 12	200
19. Saint Bernard	25	Apr. 9	Oct. 29	Mar. 19	May 4	Oct. 3	Nov. 21	202
20. Scottsboro	25	Apr. 9	Oct. 27	Mar. 19	May 4	Oct. 3	Nov. 17	200
21. Valley Head	26	Apr. 21	Oct. 21	Apr. 1	May 10	Sept. 30	Nov. 9	182
Upper Plains								
22. Bankhead L&D	20	Mar. 31	Nov. 5	Mar. 11	Apr. 16	Oct. 20	Nov. 29	218
23. Centreville	26	Apr. 4	Nov. 1	Mar. 18	Apr. 21	Oct. 16	Nov. 16	210
24. Clanton	26	Mar. 31	Oct. 31	Feb. 12	Apr. 21	Oct. 14	Nov. 16	213
25. Double Springs	20	Apr. 8	Oct. 30	Mar. 18	Apr. 29	Oct. 9	Nov. 27	204
26. Fayette	25	Apr. 7	Oct. 27	Mar. 22	May 4	Oct. 3	Nov. 14	202
27. Haleyville	26	Apr. 7	Oct. 30	Mar. 19	Apr. 21	Oct. 16	Nov. 21	205
28. Hamilton	18	Apr. 14	Oct. 22	Mar. 23	May 5	Sept. 29	Nov. 7	190
29. Prattville	25	Mar. 21	Nov. 6	Feb. 18	Apr. 12	Oct. 20	Nov. 29	229
30. Tuscaloosa	26	Mar. 27	Nov. 2	Mar. 10	Apr. 21	Oct. 18	Nov. 21	219
31. Vernon	21	Apr. 12	Oct. 24	Mar. 23	May 4	Oct. 3	Nov. 14	194
Eastern Valley								
32. Anniston	25	Apr. 1	Nov. 2	Mar. 9	Apr. 21	Oct. 17	Nov. 17	214
33. Calera	22	Apr. 10	Oct. 28	Mar. 18	May 13	Oct. 7	Nov. 16	200
34. Centre	21	Apr. 3	Oct. 28	Mar. 10	Apr. 16	Oct. 3	Nov. 15	207
35. Childersburg	20	Apr. 5	Oct. 29	Mar. 18	Apr. 17	Oct. 4	Nov. 16	206
36. Gadsden	24	Apr. 7	Oct. 30	Mar. 18	Apr. 21	Oct. 12	Nov. 17	205
37. Sylacauga	22	Apr. 8	Oct. 29	Mar. 22	Apr. 21	Sept. 30	Nov. 24	203
38. Talladega	26	Apr. 8	Oct. 29	Mar. 18	May 4	Oct. 7	Nov. 11	203
Piedmont Plateau								
39. Auburn	26	Mar. 28	Nov. 5	Mar. 6	Apr. 21	Oct. 19	Dec. 1	221
40. Ashland	20	Apr. 4	Nov. 4	Mar. 18	Apr. 16	Oct. 20	Nov. 29	213
41. Camp Hill	25	Apr. 6	Oct. 27	Mar. 11	May 4	Sept. 30	Nov. 9	204
42. Heflin	21	Apr. 18	Oct. 21	Mar. 22	May 17	Sept. 30	Nov. 9	185
43. Lafayette	29	Mar. 29	Nov. 5	Mar. 9	Apr. 24	Oct. 7	Nov. 29	220
44. Martin Dam	26	Mar. 26	Nov. 12	Feb. 28	Apr. 21	Oct. 21	Dec. 19	230
45. Rockford	23	Apr. 6	Oct. 30	Mar. 18	Apr. 21	Oct. 4	Nov. 18	206
46. Rock Mills	26	Apr. 10	Oct. 29	Mar. 22	May 5	Sept. 30	Nov. 9	201
Prairie								
47. Dayton	25	Mar. 20	Nov. 6	Feb. 18	Apr. 11	Oct. 25	Nov. 29	230
48. Demopolis L&D	25	Mar. 19	Nov. 6	Feb. 12	Apr. 21	Oct. 22	Dec. 1	231
49. Greensboro	25	Mar. 22	Nov. 8	Feb. 18	Apr. 16	Oct. 25	Nov. 29	230
50. Livingston	23	Mar. 28	Nov. 2	Mar. 10	Apr. 21	Oct. 4	Dec. 1	218
51. Marion Junction	27	Mar. 22	Nov. 3	Feb. 18	Apr. 16	Oct. 20	Nov. 29	225
52. Minter	20	Mar. 16	Nov. 11	Feb. 10	Apr. 3	Oct. 24	Dec. 7	239
53. Montgomery	26	Mar. 11	Nov. 9	Feb. 11	Mar. 31	Oct. 26	Nov. 29	242
54. Selma	26	Mar. 13	Nov. 11	Feb. 11	Apr. 7	Oct. 26	Dec. 26	242
55. Union Springs	25	Mar. 19	Nov. 9	Feb. 18	Apr. 11	Oct. 16	Nov. 30	234

(Cont'd)

TABLE 5. (Cont'd) FREEZE DATA (32°F)

Station	Years of record	Mean date		Extreme dates				Mean freeze free period
		Spring	Fall	Last in spring Earliest	Latest	First in fall Earliest	Latest	
Coastal Plain								
56. Andalusia	25	Mar. 21	Nov. 9	Feb. 18	Apr. 11	Oct. 25	Dec. 15	232
57. Brewton	26	Mar. 30	Oct. 29	Mar. 10	Apr. 21	Sept. 30	Nov. 10	212
58. Brantley	21	Mar. 30	Oct. 30	Mar. 1	Apr. 17	Sept. 30	Nov. 14	213
59. Chatom	25	Mar. 30	Nov. 6	Feb. 28	Apr. 21	Oct. 17	Nov. 22	220
60. Clayton	21	Mar. 14	Nov. 14	Feb. 9	Apr. 11	Oct. 25	Dec. 1	244
61. Frisco City	25	Mar. 17	Nov. 11	Feb. 7	Apr. 11	Oct. 28	Dec. 15	238
62. Geneva	26	Mar. 19	Nov. 7	Feb. 18	Apr. 7	Oct. 11	Dec. 7	232
63. Greenville	26	Mar. 16	Nov. 14	Feb. 2	Apr. 11	Oct. 28	Dec. 26	242
64. Headland	25	Mar. 18	Nov. 12	Dec. 26	Mar. 31	Oct. 28	Dec. 17	248
65. Highland Home	25	Mar. 18	Nov. 11	Feb. 18	Apr. 11	Oct. 27	Dec. 15	237
66. Ozark	24	Mar. 12	Nov. 13	Jan. 31	Mar. 29	Nov. 2	Dec. 15	245
67. Thomasville	26	Mar. 24	Nov. 8	Feb. 18	Apr. 14	Oct. 18	Nov. 29	228
68. Troy	26	Mar. 18	Nov. 15	Feb. 19	Apr. 11	Oct. 26	Dec. 15	241
Gulf								
69. Bay Minette	26	Mar. 4	Nov. 20	Feb. 1	Mar. 29	Oct. 28	Jan. 5	260
70. Coden	21	Mar. 5	Nov. 18	Jan. 10	Mar. 27	Oct. 27	Dec. 6	257
71. Fairhope	29	Feb. 27	Nov. 23	Jan. 19	Mar. 29	Nov. 2	Dec. 26	268
72. Fort Morgan*	27	Jan. 31	Dec. 28	Dec. 16	Mar. 27	Nov. 24	Feb. 12	330
73. Mobile	25	Feb. 28	Nov. 26	Jan. 17	Mar. 27	Oct. 28	Jan. 5	270
74. Robertsdale	29	Mar. 8	Nov. 19	Feb. 5	Mar. 31	Oct. 28	Jan. 6	255

*Temperatures did not reach freezing in all years.

TABLE 6. PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Northern Valley											
1. Athens (22 years)	32°	Mar. 26	Apr. 3	Apr. 8	Apr. 14	Apr. 22	Oct. 13	Oct. 22	Oct. 28	Nov. 3	Nov. 11
	28°	Mar. 18	Mar. 24	Mar. 28	Apr. 1	Apr. 8	Oct. 19	Oct. 29	Nov. 5	Nov. 12	Nov. 22
	24°	Feb. 21	Mar. 5	Mar. 14	Mar. 23	Apr. 4	Nov. 1	Nov. 9	Nov. 14	Nov. 19	Nov. 27
	20°	Feb. 1	Feb. 14	Feb. 24	Mar. 6	Mar. 20	Nov. 12	Nov. 24	Dec. 3	Dec. 11	Dec. 24
	16°	Jan. 12	Jan. 30	Feb. 11	Feb. 23	Mar. 13	Nov. 26	Dec. 8	Dec. 16	Dec. 25	Jan. 6
2. Belle Mina (25 years)	32°	Mar. 19	Mar. 29	Apr. 4	Apr. 10	Apr. 20	Oct. 17	Oct. 24	Oct. 30	Nov. 4	Nov. 12
	28°	Feb. 23	Mar. 10	Mar. 20	Mar. 30	Apr. 14	Oct. 24	Oct. 31	Nov. 5	Nov. 10	Nov. 17
	24°	Jan. 30	Feb. 17	Mar. 1	Mar. 13	Mar. 31	Nov. 1	Nov. 10	Nov. 16	Nov. 22	Dec. 1
	20°	Jan. 19	Feb. 4	Feb. 15	Feb. 26	Mar. 14	Nov. 14	Nov. 26	Dec. 4	Dec. 13	Dec. 25
	16°	Dec. 25	Jan. 17	Jan. 31	Feb. 13	Mar. 5	Nov. 29	Dec. 13	Dec. 24	Jan. 3	Jan. 20
3. Falkville (21 years)	32°	Mar. 29	Apr. 4	Apr. 8	Apr. 12	Apr. 18	Oct. 12	Oct. 21	Oct. 27	Nov. 2	Nov. 10
	28°	Mar. 12	Mar. 21	Mar. 27	Apr. 2	Apr. 11	Oct. 21	Oct. 30	Nov. 6	Nov. 12	Nov. 21
	24°	Feb. 5	Feb. 21	Mar. 4	Mar. 15	Mar. 30	Nov. 4	Nov. 12	Nov. 18	Nov. 23	Dec. 2
	20°	Jan. 28	Feb. 10	Feb. 20	Mar. 1	Mar. 14	Nov. 15	Nov. 27	Dec. 5	Dec. 13	Dec. 24
	16°	Jan. 12	Jan. 28	Feb. 8	Feb. 19	Mar. 7	Nov. 28	Dec. 12	Dec. 21	Dec. 30	Jan. 13
4. Florence (23 years)	32°	Mar. 21	Mar. 30	Apr. 6	Apr. 13	Apr. 23	Oct. 13	Oct. 19	Oct. 24	Oct. 29	Nov. 5
	28°	Mar. 11	Mar. 21	Mar. 28	Apr. 4	Apr. 14	Oct. 21	Oct. 31	Nov. 7	Nov. 14	Nov. 23
	24°	Feb. 17	Mar. 3	Mar. 13	Mar. 24	Apr. 7	Nov. 1	Nov. 10	Nov. 16	Nov. 22	Dec. 1
	20°	Jan. 28	Feb. 14	Feb. 25	Mar. 8	Mar. 24	Nov. 12	Nov. 22	Nov. 30	Dec. 7	Dec. 18
	16°	Jan. 14	Jan. 30	Feb. 10	Feb. 21	Mar. 9	Nov. 17	Dec. 4	Dec. 16	Dec. 28	Jan. 14
5. Madison (29 years)	32°	Mar. 26	Apr. 2	Apr. 6	Apr. 11	Apr. 18	Oct. 21	Oct. 27	Oct. 30	Nov. 3	Nov. 9
	28°	Mar. 5	Mar. 16	Mar. 23	Mar. 30	Apr. 9	Oct. 25	Nov. 1	Nov. 5	Nov. 10	Nov. 17
	24°	Feb. 7	Feb. 23	Mar. 7	Mar. 18	Apr. 4	Nov. 3	Nov. 13	Nov. 19	Nov. 25	Dec. 5
	20°	Jan. 19	Feb. 6	Feb. 18	Mar. 3	Mar. 20	Nov. 9	Nov. 22	Dec. 1	Dec. 9	Dec. 22
	16°	Jan. 2	Jan. 26	Feb. 7	Feb. 19	Mar. 7	Nov. 21	Dec. 5	Dec. 15	Dec. 25	Jan. 14
6. Moulton (20 years)	32°	Mar. 28	Apr. 3	Apr. 7	Apr. 11	Apr. 17	Oct. 12	Oct. 21	Oct. 27	Nov. 2	Nov. 11
	28°	Mar. 11	Mar. 18	Mar. 23	Mar. 28	Apr. 4	Oct. 25	Nov. 2	Nov. 7	Nov. 12	Nov. 19
	24°	Feb. 10	Feb. 23	Mar. 5	Mar. 14	Mar. 27	Nov. 2	Nov. 10	Nov. 16	Nov. 21	Nov. 30
	20°	Feb. 3	Feb. 15	Feb. 23	Mar. 3	Mar. 15	Nov. 14	Nov. 25	Dec. 3	Dec. 11	Dec. 22
	16°	Jan. 13	Jan. 28	Feb. 6	Feb. 16	Mar. 3	Nov. 24	Dec. 7	Dec. 16	Dec. 25	Jan. 7
7. Muscle Shoals (26 years)	32°	Mar. 10	Mar. 19	Mar. 26	Apr. 1	Apr. 10	Oct. 21	Oct. 28	Nov. 2	Nov. 6	Nov. 13
	28°	Feb. 28	Mar. 10	Mar. 16	Mar. 22	Apr. 1	Oct. 24	Nov. 1	Nov. 7	Nov. 13	Nov. 22
	24°	Jan. 21	Feb. 9	Feb. 22	Mar. 7	Mar. 25	Nov. 2	Nov. 15	Nov. 23	Dec. 2	Dec. 15
	20°	Jan. 7	Jan. 28	Feb. 10	Feb. 22	Mar. 12	Nov. 10	Nov. 26	Dec. 7	Dec. 19	Jan. 7
	16°	Dec. 19	Jan. 15	Jan. 28	Feb. 9	Feb. 25	Nov. 29	Dec. 18	Jan. 1	Jan. 17	*

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Northern Valley (Cont'd)											
8. Red Bay (20 years)	32°	Mar. 22	Mar. 29	Apr. 3	Apr. 7	Apr. 14	Oct. 26	Nov. 2	Nov. 6	Nov. 10	Nov. 16
	28°	Mar. 5	Mar. 13	Mar. 18	Mar. 24	Mar. 31	Nov. 3	Nov. 9	Nov. 14	Nov. 18	Nov. 25
	24°	Feb. 13	Feb. 25	Mar. 5	Mar. 14	Mar. 25	Nov. 6	Nov. 18	Nov. 25	Dec. 3	Dec. 14
	20°	Feb. 2	Feb. 14	Feb. 22	Mar. 2	Mar. 14	Nov. 21	Dec. 1	Dec. 8	Dec. 15	Dec. 25
	16°	Jan. 14	Jan. 28	Feb. 7	Feb. 17	Mar. 3	Nov. 27	Dec. 13	Dec. 24	Jan. 4	Jan. 19
9. Redstone Arsenal (23 years)	32°	Mar. 21	Mar. 30	Apr. 6	Apr. 13	Apr. 22	Oct. 14	Oct. 22	Oct. 27	Nov. 1	Nov. 9
	28°	Feb. 28	Mar. 13	Mar. 21	Mar. 30	Apr. 11	Oct. 24	Oct. 31	Nov. 4	Nov. 8	Nov. 15
	24°	Feb. 12	Feb. 26	Mar. 8	Mar. 18	Apr. 1	Oct. 30	Nov. 8	Nov. 14	Nov. 20	Nov. 29
	20°	Jan. 25	Feb. 8	Feb. 18	Feb. 28	Mar. 15	Nov. 13	Nov. 24	Dec. 3	Dec. 11	Dec. 22
	16°	Jan. 4	Jan. 24	Feb. 5	Feb. 17	Mar. 5	Nov. 18	Nov. 30	Dec. 8	Dec. 17	Dec. 29
10. Russellville (23 years)	32°	Mar. 30	Apr. 9	Apr. 16	Apr. 23	May 2	Oct. 10	Oct. 19	Oct. 26	Nov. 1	Nov. 11
	28°	Mar. 18	Mar. 26	Mar. 31	Apr. 5	Apr. 13	Oct. 21	Oct. 28	Nov. 1	Nov. 6	Nov. 12
	24°	Mar. 8	Mar. 15	Mar. 20	Mar. 25	Apr. 1	Oct. 27	Nov. 4	Nov. 9	Nov. 15	Nov. 23
	20°	Feb. 4	Feb. 20	Mar. 3	Mar. 13	Mar. 29	Oct. 31	Nov. 13	Nov. 22	Nov. 30	Dec. 13
	16°	Jan. 24	Feb. 9	Mar. 2	Mar. 3	Mar. 18	Nov. 10	Nov. 23	Dec. 2	Dec. 12	Dec. 25
11. Waterloo (20 years)	32°	Mar. 31	Apr. 9	Apr. 15	Apr. 22	May 1	Oct. 6	Oct. 15	Oct. 21	Oct. 27	Nov. 5
	28°	Mar. 23	Mar. 30	Apr. 4	Apr. 9	Apr. 16	Oct. 13	Oct. 23	Oct. 30	Nov. 7	Nov. 17
	24°	Feb. 23	Mar. 9	Mar. 18	Mar. 27	Apr. 10	Oct. 29	Nov. 7	Nov. 14	Nov. 20	Nov. 29
	20°	Jan. 27	Feb. 13	Feb. 25	Mar. 8	Mar. 25	Nov. 3	Nov. 17	Nov. 28	Dec. 8	Dec. 22
	16°	Jan. 19	Feb. 4	Feb. 16	Feb. 28	Mar. 16	Nov. 19	Dec. 1	Dec. 10	Dec. 19	Jan. 1
Appalachian Mountain											
12. Albertville (25 years)	32°	Mar. 22	Mar. 29	Apr. 3	Apr. 8	Apr. 15	Oct. 17	Oct. 25	Oct. 31	Nov. 6	Nov. 15
	28°	Mar. 5	Mar. 14	Mar. 20	Mar. 26	Apr. 5	Oct. 27	Nov. 4	Nov. 10	Nov. 15	Nov. 24
	24°	Feb. 4	Feb. 20	Mar. 3	Mar. 14	Mar. 30	Nov. 1	Nov. 14	Nov. 23	Dec. 2	Dec. 14
	20°	Jan. 20	Feb. 6	Feb. 18	Mar. 2	Mar. 19	Nov. 15	Nov. 27	Dec. 6	Dec. 15	Dec. 28
	16°	Dec. 27	Jan. 19	Feb. 1	Feb. 15	Mar. 6	Nov. 26	Dec. 13	Dec. 25	Jan. 7	Jan. 27
13. Bessemer (23 years)	32°	Mar. 17	Mar. 27	Apr. 2	Apr. 9	Apr. 18	Oct. 22	Oct. 28	Nov. 2	Nov. 6	Nov. 12
	28°	Mar. 2	Mar. 12	Mar. 18	Mar. 25	Apr. 4	Oct. 24	Oct. 31	Nov. 5	Nov. 10	Nov. 18
	24°	Feb. 13	Feb. 25	Mar. 6	Mar. 14	Mar. 26	Oct. 31	Nov. 13	Nov. 22	Nov. 30	Dec. 13
	20°	Jan. 17	Feb. 4	Feb. 17	Mar. 1	Mar. 19	Nov. 15	Nov. 30	Dec. 10	Dec. 19	Jan. 3
	16°	Dec. 21	Jan. 14	Jan. 29	Feb. 12	Mar. 5	Nov. 30	Dec. 18	Jan. 1	Jan. 14	Feb. 6
14. Birmingham (25 years)	32°	Mar. 17	Mar. 25	Mar. 31	Apr. 6	Apr. 15	Oct. 24	Oct. 31	Nov. 4	Nov. 8	Nov. 15
	28°	Feb. 16	Mar. 2	Mar. 13	Mar. 23	Apr. 6	Oct. 28	Nov. 6	Nov. 12	Nov. 18	Nov. 26
	24°	Jan. 28	Feb. 13	Feb. 24	Mar. 6	Mar. 22	Nov. 8	Nov. 20	Nov. 28	Dec. 6	Dec. 17
	20°	Dec. 29	Jan. 22	Feb. 5	Feb. 19	Mar. 11	Nov. 26	Dec. 9	Dec. 19	Dec. 29	Jan. 15
	16°	*	Jan. 3	Jan. 22	Feb. 5	Feb. 24	Dec. 5	Dec. 23	Jan. 5	Jan. 23	*
15. Bridgeport (22 years)	32°	Mar. 31	Apr. 7	Apr. 12	Apr. 17	Apr. 24	Oct. 10	Oct. 18	Oct. 24	Oct. 30	Nov. 8
	28°	Mar. 21	Mar. 28	Apr. 2	Apr. 7	Apr. 14	Oct. 22	Oct. 28	Nov. 1	Nov. 6	Nov. 12
	24°	Feb. 25	Mar. 8	Mar. 16	Mar. 24	Apr. 4	Oct. 30	Nov. 8	Nov. 14	Nov. 20	Nov. 29
	20°	Feb. 3	Feb. 18	Feb. 28	Mar. 10	Mar. 25	Nov. 9	Nov. 17	Nov. 23	Nov. 29	Dec. 7
	16°	Jan. 20	Feb. 4	Feb. 14	Feb. 25	Mar. 12	Nov. 19	Dec. 2	Dec. 11	Dec. 20	Jan. 2
16. Crossville (25 years)	32°	Mar. 26	Apr. 1	Apr. 6	Apr. 10	Apr. 16	Oct. 16	Oct. 24	Oct. 29	Nov. 3	Nov. 10
	28°	Mar. 11	Mar. 20	Mar. 26	Mar. 31	Apr. 9	Oct. 20	Oct. 30	Nov. 5	Nov. 11	Nov. 20
	24°	Feb. 6	Feb. 20	Mar. 2	Mar. 13	Mar. 27	Oct. 29	Nov. 6	Nov. 12	Nov. 17	Nov. 26
	20°	Jan. 20	Feb. 7	Feb. 20	Mar. 4	Mar. 23	Nov. 13	Nov. 25	Dec. 4	Dec. 13	Dec. 26
	16°	Jan. 1	Jan. 24	Feb. 7	Feb. 21	Mar. 13	Nov. 19	Dec. 4	Dec. 15	Dec. 25	Jan. 12
17. Guntersville (23 years)	32°	Mar. 18	Mar. 26	Apr. 1	Apr. 7	Apr. 16	Oct. 25	Oct. 31	Nov. 5	Nov. 9	Nov. 15
	28°	Feb. 21	Mar. 7	Mar. 17	Mar. 27	Apr. 10	Oct. 28	Nov. 7	Nov. 13	Nov. 19	Nov. 29
	24°	Feb. 4	Feb. 19	Mar. 2	Mar. 12	Mar. 28	Nov. 8	Nov. 19	Nov. 26	Dec. 4	Dec. 14
	20°	Jan. 20	Feb. 4	Feb. 14	Feb. 25	Mar. 12	Nov. 22	Dec. 1	Dec. 8	Dec. 14	Dec. 24
	16°	Jan. 1	Jan. 19	Feb. 1	Feb. 14	Mar. 5	Nov. 29	Dec. 17	Dec. 30	Jan. 12	Jan. 30
18. Oneonta (26 years)	32°	Mar. 27	Apr. 4	Apr. 9	Apr. 15	Apr. 23	Oct. 13	Oct. 21	Oct. 27	Nov. 1	Nov. 9
	28°	Mar. 16	Mar. 24	Mar. 29	Apr. 4	Apr. 12	Oct. 23	Oct. 30	Nov. 4	Nov. 10	Nov. 17
	24°	Feb. 18	Mar. 1	Mar. 9	Mar. 17	Mar. 28	Oct. 26	Nov. 7	Nov. 16	Nov. 24	Dec. 6
	20°	Jan. 15	Feb. 3	Feb. 16	Mar. 1	Mar. 20	Nov. 6	Nov. 23	Dec. 5	Dec. 16	Jan. 3
	16°	*	Jan. 10	Jan. 29	Feb. 14	Mar. 9	Nov. 23	Dec. 11	Dec. 23	Jan. 6	*
19. Saint Bernard (25 years)	32°	Mar. 27	Apr. 4	Apr. 9	Apr. 14	Apr. 22	Oct. 17	Oct. 24	Oct. 29	Nov. 3	Nov. 10
	28°	Mar. 15	Mar. 23	Mar. 29	Apr. 4	Apr. 12	Oct. 25	Nov. 1	Nov. 6	Nov. 12	Nov. 19
	24°	Feb. 23	Mar. 6	Mar. 13	Mar. 21	Apr. 1	Oct. 30	Nov. 10	Nov. 17	Nov. 24	Dec. 4
	20°	Jan. 27	Feb. 12	Feb. 24	Mar. 7	Mar. 24	Nov. 10	Nov. 23	Dec. 1	Dec. 10	Dec. 22
	16°	Jan. 5	Jan. 27	Feb. 9	Feb. 22	Mar. 12	Nov. 19	Dec. 4	Dec. 14	Dec. 25	Jan. 12
20. Scottsboro (25 years)	32°	Mar. 27	Apr. 4	Apr. 9	Apr. 15	Apr. 22	Oct. 12	Oct. 21	Oct. 27	Nov. 2	Nov. 11
	28°	Mar. 12	Mar. 21	Mar. 27	Apr. 3	Apr. 12	Oct. 23	Oct. 30	Nov. 3	Nov. 8	Nov. 14
	24°	Feb. 24	Mar. 6	Mar. 14	Mar. 21	Apr. 1	Oct. 28	Nov. 6	Nov. 12	Nov. 19	Nov. 28
	20°	Jan. 31	Feb. 14	Feb. 24	Mar. 5	Mar. 20	Nov. 4	Nov. 17	Nov. 25	Dec. 4	Dec. 16
	16°	Jan. 9	Jan. 28	Feb. 8	Feb. 19	Mar. 7	Nov. 15	Dec. 1	Dec. 12	Dec. 24	Jan. 11

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Appalachian Mtn. (Con't)											
21. Valley Head (26 years)	32°	Apr. 7	Apr. 15	Apr. 21	Apr. 26	May 5	Oct. 8	Oct. 16	Oct. 21	Oct. 26	Nov. 3
	28°	Mar. 28	Apr. 4	Apr. 9	Apr. 14	Apr. 21	Oct. 19	Oct. 26	Oct. 30	Nov. 3	Nov. 10
	24°	Mar. 8	Mar. 19	Mar. 27	Apr. 4	Apr. 15	Oct. 24	Oct. 31	Nov. 5	Nov. 10	Nov. 18
	20°	Feb. 12	Feb. 25	Mar. 7	Mar. 16	Mar. 30	Oct. 31	Nov. 11	Nov. 19	Nov. 26	Dec. 7
	16°	Jan. 14	Feb. 2	Feb. 15	Mar. 1	Mar. 20	Nov. 8	Nov. 25	Dec. 6	Dec. 18	Jan. 3
Upper Plains											
22. Bankhead L&D (20 years)	32°	Mar. 18	Mar. 26	Mar. 31	Apr. 6	Apr. 13	Oct. 23	Oct. 31	Nov. 5	Nov. 10	Nov. 17
	28°	Feb. 22	Mar. 5	Mar. 14	Mar. 22	Apr. 2	Oct. 30	Nov. 9	Nov. 16	Nov. 23	Dec. 3
	24°	Feb. 13	Feb. 24	Mar. 3	Mar. 10	Mar. 21	Nov. 13	Nov. 25	Dec. 3	Dec. 11	Dec. 23
	20°	Jan. 13	Feb. 1	Feb. 14	Feb. 27	Mar. 17	Nov. 25	Dec. 8	Dec. 17	Dec. 26	Jan. 9
	16°	*	Jan. 19	Feb. 1	Feb. 12	Feb. 28	Dec. 6	Dec. 22	Jan. 2	Jan. 13	Feb. 3
23. Centreville (26 years)	32°	Mar. 23	Mar. 30	Apr. 4	Apr. 10	Apr. 17	Oct. 21	Oct. 27	Nov. 1	Nov. 5	Nov. 11
	28°	Feb. 28	Mar. 9	Mar. 16	Mar. 22	Mar. 31	Oct. 23	Nov. 3	Nov. 10	Nov. 17	Nov. 27
	24°	Jan. 22	Feb. 10	Feb. 23	Mar. 8	Mar. 26	Nov. 4	Nov. 17	Nov. 25	Dec. 4	Dec. 17
	20°	Jan. 3	Jan. 30	Feb. 12	Feb. 23	Mar. 12	Nov. 16	Nov. 29	Dec. 8	Dec. 18	Jan. 8
	16°	*	Jan. 14	Jan. 30	Feb. 13	Mar. 5	Nov. 21	Dec. 11	Dec. 26	Jan. 13	*
24. Clanton (26 years)	32°	Mar. 18	Mar. 25	Mar. 31	Apr. 5	Apr. 12	Oct. 20	Oct. 27	Oct. 31	Nov. 5	Nov. 11
	28°	Feb. 20	Mar. 4	Mar. 13	Mar. 22	Apr. 4	Oct. 26	Nov. 3	Nov. 8	Nov. 13	Nov. 21
	24°	Feb. 8	Feb. 20	Feb. 28	Mar. 9	Mar. 21	Oct. 31	Nov. 14	Nov. 23	Dec. 3	Dec. 16
	20°	Jan. 1	Jan. 21	Feb. 5	Feb. 19	Mar. 12	Nov. 19	Nov. 30	Dec. 8	Dec. 15	Dec. 27
	16°	Dec. 22	Jan. 10	Jan. 22	Feb. 3	Feb. 20	Dec. 1	Dec. 20	Jan. 2	Jan. 16	Feb. 8
25. Double Springs (20 years)	32°	Mar. 27	Apr. 3	Apr. 8	Apr. 13	Apr. 20	Oct. 16	Oct. 24	Oct. 30	Nov. 5	Nov. 14
	28°	Mar. 18	Mar. 26	Apr. 1	Apr. 6	Apr. 14	Oct. 25	Nov. 2	Nov. 7	Nov. 12	Nov. 19
	24°	Feb. 24	Mar. 7	Mar. 14	Mar. 22	Apr. 2	Nov. 1	Nov. 11	Nov. 18	Nov. 25	Dec. 4
	20°	Feb. 1	Feb. 16	Feb. 26	Mar. 8	Mar. 23	Nov. 11	Nov. 23	Dec. 1	Dec. 8	Dec. 20
	16°	Jan. 22	Feb. 6	Feb. 16	Feb. 27	Mar. 14	Nov. 23	Dec. 6	Dec. 15	Dec. 24	Jan. 5
26. Fayette (25 years)	32°	Mar. 25	Apr. 2	Apr. 7	Apr. 13	Apr. 21	Oct. 15	Oct. 22	Oct. 27	Nov. 1	Nov. 9
	28°	Feb. 28	Mar. 11	Mar. 19	Mar. 27	Apr. 7	Oct. 23	Nov. 1	Nov. 6	Nov. 12	Nov. 21
	24°	Feb. 12	Feb. 24	Mar. 4	Mar. 12	Mar. 24	Nov. 1	Nov. 10	Nov. 16	Nov. 22	Nov. 30
	20°	Jan. 17	Feb. 4	Feb. 16	Feb. 28	Mar. 18	Nov. 11	Nov. 24	Dec. 4	Dec. 13	Dec. 27
	16°	Dec. 8	Jan. 11	Jan. 26	Feb. 10	Mar. 2	Nov. 23	Dec. 9	Dec. 21	Jan. 2	Jan. 29
27. Haleyville (26 years)	32°	Mar. 26	Apr. 2	Apr. 7	Apr. 12	Apr. 19	Oct. 18	Oct. 25	Oct. 30	Nov. 4	Nov. 11
	28°	Mar. 7	Mar. 16	Mar. 22	Mar. 29	Apr. 7	Oct. 26	Nov. 3	Nov. 9	Nov. 15	Nov. 24
	24°	Feb. 15	Feb. 27	Mar. 7	Mar. 16	Mar. 28	Nov. 4	Nov. 14	Nov. 22	Nov. 29	Dec. 9
	20°	Jan. 22	Feb. 9	Feb. 21	Mar. 5	Mar. 23	Nov. 8	Nov. 24	Dec. 4	Dec. 15	Dec. 30
	16°	*	Jan. 21	Feb. 5	Feb. 19	Mar. 10	Nov. 23	Dec. 6	Dec. 16	Dec. 27	*
28. Hamilton (18 years)	32°	Apr. 2	Apr. 9	Apr. 14	Apr. 19	Apr. 26	Oct. 7	Oct. 16	Oct. 22	Oct. 28	Nov. 6
	28°	Mar. 16	Mar. 25	Mar. 31	Apr. 6	Apr. 15	Oct. 23	Oct. 30	Nov. 4	Nov. 9	Nov. 16
	24°	Feb. 20	Mar. 7	Mar. 17	Mar. 27	Apr. 10	Oct. 26	Nov. 5	Nov. 11	Nov. 17	Nov. 27
	20°	Feb. 7	Feb. 21	Mar. 3	Mar. 13	Mar. 26	Nov. 4	Nov. 13	Nov. 19	Nov. 25	Dec. 4
	16°	Feb. 4	Feb. 17	Feb. 25	Mar. 6	Mar. 18	Nov. 17	Dec. 2	Dec. 12	Dec. 22	Jan. 6
29. Prattville (25 years)	32°	Mar. 7	Mar. 16	Mar. 21	Mar. 27	Apr. 4	Oct. 24	Nov. 1	Nov. 6	Nov. 11	Nov. 18
	28°	Feb. 9	Feb. 24	Mar. 7	Mar. 17	Apr. 2	Nov. 2	Nov. 12	Nov. 19	Nov. 26	Dec. 5
	24°	Jan. 16	Feb. 3	Feb. 16	Mar. 1	Mar. 19	Nov. 11	Nov. 22	Dec. 1	Dec. 9	Dec. 21
	20°	Dec. 28	Jan. 16	Jan. 29	Feb. 10	Feb. 27	Nov. 23	Dec. 9	Dec. 20	Jan. 1	Jan. 19
	16°	*	*	Jan. 13	Jan. 30	Feb. 14	Dec. 13	Jan. 5	Jan. 30	*	*
30. Tuscaloosa (26 years)	32°	Mar. 13	Mar. 21	Mar. 27	Apr. 2	Apr. 11	Oct. 22	Oct. 28	Nov. 2	Nov. 6	Nov. 12
	28°	Feb. 20	Mar. 4	Mar. 12	Mar. 20	Mar. 31	Oct. 24	Nov. 4	Nov. 11	Nov. 19	Nov. 29
	24°	Jan. 20	Feb. 5	Feb. 17	Feb. 28	Mar. 16	Nov. 8	Nov. 21	Nov. 30	Dec. 10	Dec. 23
	20°	Dec. 22	Jan. 15	Jan. 30	Feb. 14	Mar. 6	Nov. 21	Dec. 6	Dec. 16	Dec. 27	Jan. 13
	16°	*	Dec. 22	Jan. 15	Jan. 29	Feb. 15	Dec. 7	Dec. 25	Jan. 10	*	*
31. Vernon (21 years)	32°	Mar. 28	Apr. 6	Apr. 12	Apr. 18	Apr. 27	Oct. 11	Oct. 19	Oct. 24	Oct. 30	Nov. 6
	28°	Mar. 12	Mar. 21	Mar. 27	Apr. 3	Apr. 12	Oct. 22	Oct. 29	Nov. 2	Nov. 7	Nov. 13
	24°	Feb. 12	Feb. 26	Mar. 8	Mar. 18	Apr. 1	Oct. 28	Nov. 6	Nov. 12	Nov. 18	Nov. 27
	20°	Jan. 27	Feb. 12	Feb. 23	Mar. 6	Mar. 21	Nov. 7	Nov. 19	Nov. 27	Dec. 5	Dec. 17
	16°	Jan. 17	Feb. 3	Feb. 15	Feb. 26	Mar. 15	Nov. 22	Dec. 4	Dec. 12	Dec. 20	Jan. 1
Eastern Valley											
32. Anniston (25 years)	32°	Mar. 18	Mar. 26	Apr. 1	Apr. 7	Apr. 15	Oct. 22	Oct. 28	Nov. 2	Nov. 6	Nov. 12
	28°	Mar. 1	Mar. 11	Mar. 19	Mar. 26	Apr. 6	Oct. 26	Nov. 3	Nov. 9	Nov. 15	Nov. 23
	24°	Jan. 31	Feb. 16	Feb. 27	Mar. 9	Mar. 25	Nov. 2	Nov. 14	Nov. 23	Dec. 2	Dec. 14
	20°	Jan. 8	Jan. 28	Feb. 9	Feb. 21	Mar. 10	Nov. 16	Nov. 29	Dec. 8	Dec. 18	Jan. 3
	16°	*	Jan. 9	Jan. 23	Feb. 5	Feb. 22	Dec. 3	Dec. 21	Jan. 2	Jan. 17	*

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Eastern Valley (Cont'd)											
33. Calera (22 years)	32°	Mar. 23	Apr. 3.	Apr. 10	Apr. 17	Apr. 27	Oct. 15	Oct. 23	Oct. 28	Nov. 3	Nov. 10
	28°	Mar. 12	Mar. 21	Mar. 27	Apr. 3	Apr. 12	Oct. 21	Oct. 30	Nov. 5	Nov. 11	Nov. 19
	24°	Feb. 17	Mar. 2	Mar. 10	Mar. 18	Mar. 30	Oct. 29	Nov. 7	Nov. 14	Nov. 21	Dec. 1
	20°	Jan. 28	Feb. 12	Feb. 22	Mar. 4	Mar. 19	Nov. 11	Nov. 23	Dec. 1	Dec. 9	Dec. 21
	16°	Jan. 2	Jan. 22	Feb. 4	Feb. 18	Mar. 10	Nov. 22	Dec. 8	Dec. 20	Dec. 31	Jan. 17
34. Centre (21 years)	32°	Mar. 21	Mar. 29	Apr. 3	Apr. 9	Apr. 17	Oct. 15	Oct. 23	Oct. 28	Nov. 2	Nov. 10
	28°	Mar. 9	Mar. 18	Mar. 25	Mar. 31	Apr. 9	Oct. 26	Nov. 2	Nov. 7	Nov. 12	Nov. 19
	24°	Feb. 6	Feb. 21	Mar. 4	Mar. 15	Mar. 31	Nov. 2	Nov. 11	Nov. 18	Nov. 25	Dec. 5
	20°	Jan. 24	Feb. 5	Feb. 14	Feb. 23	Mar. 8	Nov. 12	Nov. 26	Dec. 5	Dec. 15	Dec. 28
	16°	Jan. 1	Jan. 21	Feb. 3	Feb. 14	Mar. 3	Nov. 29	Dec. 14	Dec. 25	Jan. 6	Feb. 10
35. Childersburg (20 years)	32°	Mar. 24	Mar. 31	Apr. 5	Apr. 10	Apr. 18	Oct. 14	Oct. 23	Oct. 29	Nov. 4	Nov. 12
	28°	Feb. 27	Mar. 12	Mar. 20	Mar. 29	Apr. 10	Oct. 25	Nov. 1	Nov. 6	Nov. 11	Nov. 18
	24°	Feb. 14	Feb. 26	Mar. 6	Mar. 14	Mar. 26	Nov. 2	Nov. 11	Nov. 17	Nov. 23	Dec. 2
	20°	Jan. 28	Feb. 9	Feb. 18	Feb. 26	Mar. 10	Nov. 14	Nov. 26	Dec. 5	Dec. 13	Dec. 26
	16°	Jan. 13	Jan. 29	Feb. 9	Feb. 19	Mar. 7	Nov. 28	Dec. 15	Dec. 26	Jan. 7	Jan. 23
36. Gadsden (24 years)	32°	Mar. 24	Apr. 1	Apr. 7	Apr. 12	Apr. 20	Oct. 19	Oct. 26	Oct. 30	Nov. 4	Nov. 11
	28°	Mar. 4	Mar. 14	Mar. 21	Mar. 28	Apr. 6	Oct. 25	Nov. 1	Nov. 6	Nov. 10	Nov. 17
	24°	Feb. 13	Feb. 26	Mar. 7	Mar. 16	Mar. 29	Oct. 30	Nov. 9	Nov. 15	Nov. 22	Dec. 2
	20°	Jan. 12	Jan. 30	Feb. 11	Feb. 24	Mar. 13	Nov. 14	Nov. 27	Dec. 6	Dec. 15	Dec. 27
	16°	Dec. 21	Jan. 18	Jan. 30	Feb. 11	Feb. 26	Nov. 29	Dec. 21	Jan. 6	Jan. 25	*
37. Sylacauga (22 years)	32°	Mar. 28	Apr. 4	Apr. 8	Apr. 12	Apr. 19	Oct. 13	Oct. 22	Oct. 29	Nov. 5	Nov. 14
	28°	Mar. 3	Mar. 13	Mar. 20	Mar. 26	Apr. 5	Oct. 23	Nov. 2	Nov. 8	Nov. 15	Nov. 24
	24°	Feb. 16	Feb. 27	Mar. 7	Mar. 15	Mar. 27	Nov. 3	Nov. 12	Nov. 18	Nov. 25	Dec. 4
	20°	Jan. 26	Feb. 10	Feb. 20	Mar. 2	Mar. 16	Nov. 8	Nov. 21	Nov. 30	Dec. 9	Dec. 22
	16°	Jan. 15	Jan. 30	Feb. 9	Feb. 20	Mar. 6	Nov. 27	Dec. 14	Dec. 25	Jan. 6	Jan. 23
38. Talladega (26 years)	32°	Mar. 24	Apr. 2	Apr. 8	Apr. 14	Apr. 23	Oct. 18	Oct. 24	Oct. 29	Nov. 2	Nov. 8
	28°	Mar. 13	Mar. 21	Mar. 27	Apr. 2	Apr. 11	Oct. 21	Oct. 31	Nov. 7	Nov. 14	Nov. 24
	24°	Feb. 11	Feb. 26	Mar. 8	Mar. 18	Apr. 2	Oct. 31	Nov. 11	Nov. 19	Nov. 27	Dec. 8
	20°	Jan. 12	Jan. 30	Feb. 11	Feb. 23	Mar. 13	Nov. 16	Nov. 27	Dec. 5	Dec. 13	Dec. 25
	16°	*	Jan. 15	Feb. 2	Feb. 18	Mar. 12	Nov. 28	Dec. 18	Jan. 2	Jan. 18	*
Piedmont Plateau											
39. Auburn (26 years)	32°	Mar. 14	Mar. 22	Mar. 28	Apr. 3	Apr. 11	Oct. 23	Oct. 31	Nov. 5	Nov. 11	Nov. 19
	28°	Feb. 12	Feb. 28	Mar. 10	Mar. 21	Apr. 6	Oct. 25	Nov. 7	Nov. 16	Nov. 25	Dec. 7
	24°	Jan. 26	Feb. 10	Feb. 21	Mar. 4	Mar. 19	Nov. 8	Nov. 21	Nov. 30	Dec. 10	Dec. 23
	20°	Jan. 6	Jan. 25	Feb. 8	Feb. 21	Mar. 12	Nov. 15	Dec. 2	Dec. 14	Dec. 26	Jan. 12
	16°	*	Dec. 30	Jan. 19	Feb. 1	Feb. 22	Nov. 29	Dec. 19	Jan. 3	Jan. 24	*
40. Ashland (20 years)	32°	Mar. 23	Mar. 30	Apr. 4	Apr. 9	Apr. 16	Oct. 23	Oct. 30	Nov. 4	Nov. 9	Nov. 17
	28°	Mar. 3	Mar. 15	Mar. 22	Mar. 30	Apr. 10	Oct. 28	Nov. 6	Nov. 12	Nov. 19	Nov. 28
	24°	Feb. 10	Feb. 24	Mar. 6	Mar. 16	Mar. 30	Nov. 4	Nov. 15	Nov. 23	Dec. 1	Dec. 13
	20°	Jan. 31	Feb. 12	Feb. 20	Mar. 1	Mar. 13	Nov. 20	Dec. 1	Dec. 8	Dec. 16	Dec. 27
	16°	Jan. 13	Jan. 27	Feb. 6	Feb. 16	Mar. 3	Nov. 24	Dec. 8	Dec. 18	Dec. 28	Jan. 11
41. Camp Hill (25 years)	32°	Mar. 21	Mar. 31	Apr. 6	Apr. 12	Apr. 22	Oct. 15	Oct. 22	Oct. 27	Nov. 2	Nov. 9
	28°	Feb. 23	Mar. 10	Mar. 20	Mar. 31	Apr. 15	Oct. 26	Nov. 2	Nov. 7	Nov. 12	Nov. 19
	24°	Feb. 3	Feb. 19	Mar. 2	Mar. 14	Mar. 30	Nov. 1	Nov. 12	Nov. 19	Nov. 27	Dec. 8
	20°	Jan. 15	Feb. 2	Feb. 14	Feb. 26	Mar. 15	Nov. 15	Nov. 27	Dec. 5	Dec. 13	Dec. 25
	16°	Dec. 31	Jan. 22	Feb. 5	Feb. 18	Mar. 8	Nov. 25	Dec. 14	Dec. 27	Jan. 10	Feb. 1
42. Heflin (21 years)	32°	Mar. 31	Apr. 10	Apr. 18	Apr. 25	May 6	Oct. 7	Oct. 15	Oct. 21	Oct. 27	Nov. 4
	28°	Mar. 21	Mar. 30	Apr. 5	Apr. 12	Apr. 21	Oct. 22	Oct. 27	Oct. 31	Nov. 4	Nov. 10
	24°	Feb. 26	Mar. 10	Mar. 19	Mar. 27	Apr. 9	Oct. 28	Nov. 4	Nov. 8	Nov. 13	Nov. 20
	20°	Feb. 11	Feb. 23	Mar. 4	Mar. 13	Mar. 26	Nov. 2	Nov. 12	Nov. 19	Nov. 27	Dec. 7
	16°	Jan. 24	Feb. 7	Feb. 17	Feb. 27	Mar. 13	Nov. 24	Dec. 3	Dec. 9	Dec. 15	Dec. 25
43. Lafayette (29 years)	32°	Mar. 14	Mar. 23	Mar. 29	Apr. 5	Apr. 14	Oct. 23	Oct. 30	Nov. 5	Nov. 10	Nov. 17
	28°	Feb. 18	Mar. 3	Mar. 12	Mar. 21	Apr. 2	Oct. 30	Nov. 5	Nov. 9	Nov. 14	Nov. 20
	24°	Jan. 19	Feb. 7	Feb. 20	Mar. 5	Mar. 23	Nov. 14	Nov. 26	Dec. 5	Dec. 13	Dec. 26
	20°	Jan. 5	Jan. 28	Feb. 11	Feb. 25	Mar. 17	Nov. 21	Dec. 3	Dec. 12	Dec. 21	Jan. 5
	16°	*	Jan. 6	Jan. 24	Feb. 8	Mar. 1	Nov. 28	Dec. 19	Jan. 4	Jan. 22	*
44. Martin Dam (26 years)	32°	Mar. 8	Mar. 19	Mar. 26	Apr. 2	Apr. 12	Oct. 27	Nov. 6	Nov. 12	Nov. 19	Nov. 29
	28°	Feb. 10	Feb. 23	Mar. 4	Mar. 13	Mar. 26	Nov. 3	Nov. 16	Nov. 25	Dec. 4	Dec. 17
	24°	Jan. 16	Feb. 2	Feb. 15	Feb. 27	Mar. 17	Nov. 23	Dec. 7	Dec. 16	Dec. 25	Jan. 8
	20°	*	Jan. 6	Jan. 21	Feb. 4	Feb. 23	Dec. 4	Dec. 20	Jan. 1	Jan. 14	*
	16°	*	*	Jan. 9	Jan. 26	Feb. 12	Dec. 15	Jan. 4	Jan. 23	*	*
45. Rockford (23 years)	32°	Mar. 23	Mar. 31	Apr. 6	Apr. 11	Apr. 19	Oct. 16	Oct. 24	Oct. 30	Nov. 4	Nov. 13
	28°	Mar. 9	Mar. 17	Mar. 23	Mar. 29	Apr. 6	Oct. 24	Nov. 1	Nov. 6	Nov. 12	Nov. 20
	24°	Feb. 17	Feb. 28	Mar. 8	Mar. 16	Mar. 28	Nov. 1	Nov. 12	Nov. 20	Nov. 28	Dec. 9
	20°	Jan. 21	Feb. 7	Feb. 19	Mar. 3	Mar. 21	Nov. 14	Nov. 27	Dec. 6	Dec. 15	Dec. 27
	16°	Jan. 8	Jan. 26	Feb. 7	Feb. 19	Mar. 8	Nov. 21	Dec. 9	Dec. 23	Jan. 5	Jan. 24

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Piedmont Plateau (Cont'd)											
46. Rock Mills (26 years)	32°	Mar. 27	Apr. 4	Apr. 10	Apr. 15	Apr. 24					
	28°	Mar. 9	Mar. 18	Mar. 24	Mar. 30	Apr. 9	Oct. 17	Oct. 24	Oct. 29	Nov. 2	Nov. 9
	24°	Feb. 13	Feb. 26	Mar. 7	Mar. 16	Mar. 29	Oct. 27	Nov. 2	Nov. 6	Nov. 10	Nov. 16
	20°	Jan. 5	Jan. 30	Feb. 15	Mar. 2	Mar. 23	Nov. 1	Nov. 11	Nov. 18	Nov. 24	Dec. 4
	16°	Dec. 18	Jan. 16	Jan. 30	Feb. 12	Mar. 3	Nov. 11	Nov. 23	Dec. 2	Dec. 11	Dec. 26
Prairie											
47. Dayton (25 years)	32°	Mar. 5	Mar. 14	Mar. 20	Mar. 26	Apr. 4					
	28°	Feb. 7	Feb. 21	Mar. 3	Mar. 13	Mar. 27	Oct. 26	Nov. 2	Nov. 6	Nov. 11	Nov. 17
	24°	Jan. 15	Feb. 2	Feb. 15	Feb. 28	Mar. 18	Nov. 3	Nov. 13	Nov. 19	Nov. 26	Dec. 6
	20°	Dec. 29	Jan. 19	Feb. 2	Feb. 17	Mar. 9	Nov. 10	Nov. 22	Dec. 1	Dec. 9	Dec. 21
	16°	*	*	Jan. 15	Jan. 29	Feb. 13	Nov. 25	Dec. 11	Dec. 23	Jan. 3	Jan. 19
48. Demopolis L&D (25 years)	32°	Feb. 28	Mar. 11	Mar. 19	Mar. 26	Apr. 7					
	28°	Feb. 5	Feb. 20	Mar. 2	Mar. 11	Mar. 24	Oct. 24	Oct. 31	Nov. 6	Nov. 11	Nov. 19
	24°	Jan. 6	Jan. 29	Feb. 12	Feb. 26	Mar. 17	Oct. 27	Nov. 8	Nov. 17	Nov. 25	Dec. 8
	20°	Dec. 18	Jan. 10	Jan. 24	Feb. 6	Feb. 25	Nov. 5	Nov. 21	Dec. 2	Dec. 13	Dec. 30
	16°	*	*	Jan. 4	Jan. 22	Feb. 9	Nov. 17	Dec. 5	Dec. 18	Dec. 30	Jan. 17
49. Greensboro (25 years)	32°	Mar. 6	Mar. 16	Mar. 22	Mar. 29	Apr. 8					
	28°	Feb. 13	Feb. 25	Mar. 5	Mar. 13	Mar. 25	Oct. 27	Nov. 3	Nov. 8	Nov. 13	Nov. 20
	24°	Jan. 21	Feb. 7	Feb. 19	Mar. 3	Mar. 20	Nov. 2	Nov. 15	Nov. 24	Dec. 3	Dec. 16
	20°	Dec. 29	Jan. 21	Feb. 5	Feb. 21	Mar. 16	Nov. 14	Nov. 26	Dec. 4	Dec. 12	Dec. 24
	16°	*	*	Jan. 8	Jan. 24	Feb. 11	Nov. 23	Dec. 9	Dec. 20	Dec. 31	Jan. 15
50. Livingston (23 years)	32°	Mar. 8	Mar. 22	Mar. 28	Apr. 3	Apr. 11					
	28°	Feb. 2	Feb. 24	Mar. 6	Mar. 15	Mar. 28	Oct. 17	Oct. 26	Nov. 2	Nov. 9	Nov. 25
	24°	Jan. 13	Feb. 7	Feb. 18	Mar. 1	Mar. 15	Oct. 29	Nov. 7	Nov. 14	Nov. 21	Dec. 6
	20°	Dec. 12	Jan. 15	Jan. 31	Feb. 14	Mar. 6	Nov. 6	Nov. 19	Nov. 27	Dec. 7	Dec. 27
	16°	*	Dec. 29	Jan. 14	Jan. 26	Feb. 10	Nov. 15	Nov. 28	Dec. 7	Dec. 17	Jan. 8
51. Marion Junction (27 years)	32°	Mar. 6	Mar. 15	Mar. 22	Mar. 29	Apr. 8					
	28°	Feb. 16	Feb. 27	Mar. 7	Mar. 15	Mar. 27	Oct. 23	Oct. 30	Nov. 3	Nov. 8	Nov. 15
	24°	Jan. 25	Feb. 10	Feb. 20	Mar. 2	Mar. 15	Oct. 30	Nov. 7	Nov. 12	Nov. 17	Nov. 25
	20°	Dec. 24	Jan. 15	Jan. 29	Feb. 12	Mar. 3	Nov. 1	Nov. 15	Nov. 24	Dec. 4	Dec. 18
	16°	*	*	Jan. 13	Jan. 28	Feb. 14	Nov. 14	Nov. 28	Dec. 8	Dec. 18	Jan. 1
52. Minter (20 years)	32°	Feb. 25	Mar. 8	Mar. 16	Mar. 24	Apr. 4					
	28°	Feb. 12	Feb. 24	Mar. 5	Mar. 13	Mar. 25	Oct. 27	Nov. 5	Nov. 11	Nov. 16	Nov. 25
	24°	Feb. 2	Feb. 16	Feb. 25	Mar. 6	Mar. 20	Nov. 2	Nov. 12	Nov. 19	Nov. 25	Dec. 5
	20°	*	Jan. 15	Jan. 29	Feb. 11	Feb. 28	Nov. 14	Nov. 26	Dec. 4	Dec. 12	Dec. 24
	16°	*	Jan. 3	Jan. 22	Feb. 4	Feb. 19	Nov. 19	Dec. 7	Dec. 20	Jan. 4	*
53. Montgomery (26 years)	32°	Feb. 21	Mar. 4	Mar. 11	Mar. 18	Mar. 28					
	28°	Jan. 30	Feb. 13	Feb. 22	Mar. 4	Mar. 17	Oct. 28	Nov. 4	Nov. 9	Nov. 14	Nov. 21
	24°	Jan. 7	Jan. 25	Feb. 6	Feb. 18	Mar. 8	Nov. 4	Nov. 15	Nov. 23	Dec. 1	Dec. 12
	20°	*	Jan. 2	Jan. 18	Jan. 31	Feb. 16	Nov. 14	Nov. 28	Dec. 7	Dec. 17	Dec. 31
	16°	*	*	*	Jan. 19	Feb. 5	Dec. 5	Dec. 22	Jan. 4	Jan. 21	*
54. Selma (26 years)	32°	Feb. 23	Mar. 6	Mar. 13	Mar. 21	Apr. 1					
	28°	Jan. 23	Feb. 8	Feb. 19	Mar. 2	Mar. 18	Oct. 26	Nov. 5	Nov. 11	Nov. 18	Nov. 28
	24°	Dec. 13	Jan. 15	Jan. 30	Feb. 14	Mar. 7	Nov. 3	Nov. 16	Nov. 25	Dec. 4	Dec. 17
	20°	*	Dec. 25	Jan. 13	Jan. 26	Feb. 11	Nov. 16	Dec. 1	Dec. 12	Dec. 24	Jan. 18
	16°	*	*	Jan. 18	Feb. 4		Dec. 5	Dec. 24	Jan. 8	Feb. 3	*
55. Union Springs (25 years)	32°	Mar. 2	Mar. 12	Mar. 19	Mar. 26	Apr. 4					
	28°	Feb. 4	Feb. 17	Feb. 27	Mar. 9	Mar. 22	Oct. 26	Nov. 3	Nov. 9	Nov. 14	Nov. 22
	24°	Jan. 21	Feb. 5	Feb. 16	Feb. 26	Mar. 14	Nov. 3	Nov. 13	Nov. 20	Nov. 27	Dec. 7
	20°	Dec. 22	Jan. 11	Jan. 27	Feb. 11	Mar. 5	Nov. 15	Nov. 28	Dec. 8	Dec. 17	Dec. 30
	16°	*	*	Jan. 11	Jan. 25	Feb. 12	Nov. 25	Dec. 13	Dec. 25	Jan. 6	Jan. 24
Coastal Plain											
56. Andalusia (25 years)	32°	Feb. 28	Mar. 12	Mar. 21	Mar. 29	Apr. 10					
	28°	Feb. 4	Feb. 19	Mar. 2	Mar. 12	Mar. 27	Oct. 24	Nov. 2	Nov. 9	Nov. 15	Nov. 25
	24°	Jan. 4	Jan. 26	Feb. 10	Feb. 26	Mar. 20	Nov. 2	Nov. 12	Nov. 19	Nov. 26	Dec. 7
	20°	*	Jan. 17	Jan. 31	Feb. 12	Feb. 27	Nov. 12	Nov. 25	Dec. 3	Dec. 12	Dec. 25
	16°	*	*	*	Jan. 24	Feb. 8	Nov. 28	Dec. 17	Dec. 31	Jan. 17	*
57. Brewton (26 years)	32°	Mar. 17	Mar. 25	Mar. 30	Apr. 5	Apr. 13					
	28°	Feb. 8	Feb. 26	Mar. 9	Mar. 21	Apr. 7	Oct. 18	Oct. 24	Oct. 29	Nov. 2	Nov. 9
	24°	Jan. 15	Feb. 3	Feb. 16	Mar. 1	Mar. 20	Oct. 25	Nov. 3	Nov. 9	Nov. 15	Nov. 24
	20°	Dec. 12	Jan. 13	Jan. 29	Feb. 12	Mar. 4	Nov. 5	Nov. 18	Nov. 28	Dec. 7	Dec. 20
	16°	*	*	Jan. 15	Jan. 28	Feb. 10	Nov. 15	Dec. 1	Dec. 13	Dec. 26	Jan. 23

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall				
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%
Coastal Plain (Cont'd)											
58. Brantley (21 years)	32°	Mar. 16	Mar. 24	Mar. 30	Apr. 5	Apr. 13	Oct. 18	Oct. 25	Oct. 30	Nov. 4	Nov. 12
	28°	Feb. 16	Mar. 1	Mar. 10	Mar. 18	Mar. 31	Oct. 26	Nov. 3	Nov. 8	Nov. 13	Nov. 20
	24°	Jan. 30	Feb. 14	Feb. 23	Mar. 5	Mar. 19	Nov. 3	Nov. 16	Nov. 25	Dec. 5	Dec. 18
	20°	Jan. 23	Feb. 4	Feb. 12	Feb. 20	Mar. 4	Nov. 15	Nov. 30	Dec. 11	Dec. 22	Jan. 7
	16°	Dec. 16	Jan. 14	Jan. 24	Feb. 2	Feb. 15	Nov. 25	Dec. 16	Dec. 31	Jan. 16	Feb. 12
59. Chatom (25 years)	32°	Mar. 14	Mar. 24	Mar. 30	Apr. 5	Apr. 15	Oct. 24	Nov. 1	Nov. 6	Nov. 11	Nov. 19
	28°	Feb. 9	Feb. 25	Mar. 9	Mar. 20	Apr. 6	Oct. 28	Nov. 7	Nov. 14	Nov. 21	Dec. 1
	24°	Jan. 23	Feb. 8	Feb. 20	Mar. 3	Mar. 20	Nov. 7	Nov. 21	Nov. 30	Dec. 10	Dec. 23
	20°	Jan. 1	Jan. 18	Jan. 31	Feb. 12	Mar. 1	Nov. 17	Dec. 5	Dec. 17	Dec. 30	Jan. 17
	16°	*	*	Jan. 9	Jan. 24	Feb. 10	Dec. 10	Dec. 29	Jan. 15	*	*
60. Clayton (21 years)	32°	Feb. 22	Mar. 6	Mar. 14	Mar. 22	Apr. 2	Nov. 1	Nov. 9	Nov. 14	Nov. 20	Nov. 27
	28°	Feb. 7	Feb. 19	Feb. 28	Mar. 9	Mar. 21	Nov. 7	Nov. 19	Nov. 28	Dec. 7	Dec. 19
	24°	Jan. 25	Feb. 6	Feb. 14	Feb. 22	Mar. 5	Nov. 24	Dec. 8	Dec. 17	Dec. 27	Jan. 10
	20°	Dec. 30	Jan. 19	Jan. 31	Feb. 11	Feb. 27	Dec. 3	Dec. 20	Jan. 1	Jan. 14	Feb. 4
	16°	*	*	Jan. 3	Jan. 25	Feb. 10	Dec. 23	Jan. 11	Jan. 31	*	*
61. Frisco City (25 years)	32°	Feb. 27	Mar. 10	Mar. 17	Mar. 24	Apr. 4	Oct. 27	Nov. 5	Nov. 11	Nov. 18	Nov. 26
	28°	Jan. 28	Feb. 13	Feb. 24	Mar. 7	Mar. 23	Nov. 4	Nov. 17	Nov. 25	Dec. 3	Dec. 16
	24°	Jan. 4	Jan. 22	Feb. 5	Feb. 18	Mar. 8	Nov. 14	Nov. 27	Dec. 5	Dec. 14	Dec. 27
	20°	Dec. 7	Jan. 8	Jan. 22	Feb. 4	Feb. 23	Nov. 27	Dec. 15	Dec. 27	Jan. 9	Feb. 7
	16°	*	*	Jan. 22	Jan. 22	Feb. 5	Dec. 25	Jan. 15	*	*	*
62. Geneva (26 years)	32°	Mar. 4	Mar. 13	Mar. 19	Mar. 25	Apr. 3	Oct. 23	Nov. 1	Nov. 7	Nov. 13	Nov. 22
	28°	Jan. 29	Feb. 14	Feb. 25	Mar. 7	Mar. 23	Nov. 3	Nov. 16	Nov. 24	Dec. 3	Dec. 16
	24°	Dec. 27	Jan. 17	Jan. 29	Feb. 10	Feb. 28	Nov. 20	Dec. 2	Dec. 10	Dec. 19	Jan. 2
	20°	*	Jan. 2	Jan. 17	Jan. 29	Feb. 13	Dec. 2	Dec. 23	Jan. 9	Jan. 30	*
	16°	*	*	Jan. 17	Jan. 19	Feb. 3	Dec. 31	Jan. 25	*	*	*
63. Greenville (26 years)	32°	Feb. 22	Mar. 7	Mar. 16	Mar. 25	Apr. 7	Oct. 27	Nov. 7	Nov. 14	Nov. 21	Dec. 2
	28°	Jan. 26	Feb. 13	Feb. 25	Mar. 10	Mar. 27	Nov. 7	Nov. 18	Nov. 26	Dec. 3	Dec. 15
	24°	Dec. 30	Jan. 23	Feb. 7	Feb. 21	Mar. 14	Nov. 13	Nov. 27	Dec. 7	Dec. 17	Jan. 3
	20°	*	Jan. 8	Jan. 22	Feb. 3	Feb. 20	Nov. 25	Dec. 17	Jan. 1	Jan. 18	*
	16°	*	*	Jan. 8	Jan. 25	Feb. 7	Dec. 24	Jan. 15	*	*	*
64. Headland (26 years)	32°	Feb. 10	Feb. 25	Mar. 8	Mar. 19	Apr. 4	Oct. 28	Nov. 6	Nov. 12	Nov. 19	Nov. 28
	28°	Jan. 22	Feb. 8	Feb. 19	Mar. 2	Mar. 18	Nov. 8	Nov. 21	Nov. 30	Dec. 9	Dec. 23
	24°	Jan. 1	Jan. 21	Feb. 2	Feb. 14	Mar. 3	Nov. 24	Dec. 9	Dec. 19	Dec. 29	Jan. 16
	20°	*	*	Jan. 19	Jan. 29	Feb. 9	Dec. 12	Jan. 2	Jan. 20	*	*
	16°	*	*	*	*	Feb. 2	Dec. 18	*	*	*	*
65. Highland Home (25 years)	32°	Mar. 3	Mar. 12	Mar. 18	Mar. 25	Apr. 2	Oct. 27	Nov. 5	Nov. 11	Nov. 17	Nov. 26
	28°	Feb. 4	Feb. 18	Feb. 28	Mar. 10	Mar. 24	Nov. 5	Nov. 17	Nov. 26	Dec. 5	Dec. 18
	24°	Jan. 21	Feb. 6	Feb. 18	Mar. 1	Mar. 17	Nov. 13	Nov. 25	Dec. 4	Dec. 12	Dec. 25
	20°	Dec. 8	Jan. 12	Jan. 28	Feb. 12	Mar. 5	Nov. 25	Dec. 15	Dec. 28	Jan. 12	Feb. 14
	16°	*	*	Jan. 13	Jan. 30	Feb. 17	Dec. 22	Jan. 10	Jan. 28	*	*
66. Ozark (24 years)	32°	Feb. 22	Mar. 5	Mar. 12	Mar. 20	Mar. 30	Oct. 31	Nov. 8	Nov. 13	Nov. 19	Nov. 27
	28°	Jan. 31	Feb. 15	Feb. 26	Mar. 8	Mar. 23	Nov. 5	Nov. 17	Nov. 25	Dec. 4	Dec. 15
	24°	Jan. 9	Jan. 26	Feb. 8	Feb. 20	Mar. 9	Nov. 15	Dec. 2	Dec. 14	Dec. 26	Jan. 15
	20°	*	Jan. 15	Jan. 27	Feb. 7	Feb. 22	Dec. 3	Dec. 23	Jan. 7	Jan. 26	*
	16°	*	*	*	Jan. 18	Feb. 4	Dec. 10	Jan. 13	*	*	*
67. Thomasville (26 years)	32°	Mar. 9	Mar. 18	Mar. 24	Mar. 30	Apr. 8	Oct. 26	Nov. 3	Nov. 8	Nov. 13	Nov. 21
	28°	Jan. 26	Feb. 13	Feb. 26	Mar. 11	Mar. 30	Nov. 2	Nov. 14	Nov. 22	Dec. 1	Dec. 13
	24°	Jan. 7	Jan. 29	Feb. 13	Feb. 28	Mar. 22	Nov. 9	Nov. 25	Dec. 6	Dec. 17	Jan. 1
	20°	Dec. 7	Jan. 9	Jan. 24	Feb. 8	Feb. 28	Nov. 24	Dec. 11	Dec. 23	Jan. 5	Jan. 31
	16°	*	*	Jan. 14	Jan. 29	Feb. 14	Dec. 10	Jan. 1	Jan. 25	*	*
68. Troy (26 years)	32°	Mar. 5	Mar. 12	Mar. 18	Mar. 23	Mar. 31	Oct. 28	Nov. 7	Nov. 15	Nov. 22	Dec. 2
	28°	Jan. 26	Feb. 11	Feb. 23	Mar. 7	Mar. 23	Nov. 7	Nov. 19	Nov. 27	Dec. 5	Dec. 16
	24°	Dec. 22	Jan. 23	Feb. 7	Feb. 21	Mar. 13	Nov. 14	Nov. 27	Dec. 7	Dec. 17	Jan. 7
	20°	*	Jan. 8	Jan. 22	Feb. 3	Feb. 20	Nov. 26	Dec. 17	Jan. 2	Jan. 19	*
	16°	*	*	*	Jan. 23	Feb. 10	Dec. 19	Jan. 23	*	*	*
Gulf											
69. Bay Minette (26 years)	32°	Feb. 13	Feb. 24	Mar. 4	Mar. 12	Mar. 24	Oct. 30	Nov. 11	Nov. 20	Nov. 29	Dec. 12
	28°	Jan. 18	Feb. 4	Feb. 16	Feb. 28	Mar. 17	Nov. 9	Nov. 23	Dec. 2	Dec. 11	Dec. 25
	24°	Dec. 13	Jan. 13	Jan. 28	Feb. 10	Mar. 2	Nov. 23	Dec. 10	Dec. 22	Jan. 4	Jan. 31
	20°	*	*	Jan. 5	Jan. 23	Feb. 9	Dec. 9	Jan. 4	Feb. 1	*	*
	16°	*	*	*	*	Feb. 1	Jan. 14	*	*	*	*
70. Coden (21 years)	32°	Feb. 11	Feb. 24	Mar. 5	Mar. 13	Mar. 26	Nov. 3	Nov. 12	Nov. 18	Nov. 24	Dec. 3
	28°	Jan. 20	Feb. 6	Feb. 18	Mar. 2	Mar. 19	Nov. 10	Nov. 24	Dec. 3	Dec. 13	Dec. 27
	24°	Dec. 28	Jan. 14	Jan. 26	Feb. 6	Feb. 24	Nov. 26	Dec. 11	Dec. 21	Dec. 31	Jan. 15
	20°	*	Dec. 14	Jan. 11	Jan. 25	Feb. 10	Dec. 17	Jan. 2	Jan. 14	Feb. 2	*
	16°	*	*	*	*	Feb. 1	Dec. 28	*	*	*	*

(Cont'd)

TABLE 6. (Cont'd) PROBABILITY OF SPRING AND FALL TEMPERATURE THRESHOLDS

Station	Temp.	Percent probability of indicated temperature (or lower) occurring after date in spring					Percent probability of indicated temperature (or lower) occurring before date in fall					
		90%	70%	50%	30%	10%	10%	30%	50%	70%	90%	
Gulf (Cont'd)												
71. Fairhope (29 years)	32°	Feb. 2	Feb. 17	Feb. 27	Mar. 8	Mar. 23						
	28°	Jan. 3	Jan. 25	Feb. 8	Feb. 21	Mar. 12	Nov. 3	Nov. 15	Nov. 23	Dec. 1	Dec. 13	
	24°	*	Jan. 6	Jan. 20	Feb. 2	Feb. 21	Nov. 15	Nov. 28	Dec. 7	Dec. 17	Jan. 2	
	20°	*	*	*	Jan. 17	Feb. 4	Nov. 25	Dec. 15	Dec. 30	Jan. 15	*	
	16°	*	*	*	*	Jan. 26	Dec. 26	Jan. 16	*	*	*	
72. Fort Morgan (27 years)	32°	*	Jan. 3	Jan. 27	Feb. 13	Mar. 7	Nov. 29	Dec. 20	Jan. 5	Jan. 26	*	
	28°	*	*	Dec. 22	Jan. 18	Feb. 9	Dec. 11	Jan. 4	Feb. 3	*	*	
	24°	*	*	*	*	Jan. 24	Dec. 28	*	*	*	*	
	20°	*	*	*	*	Jan. 23	*	*	*	*	*	
	16°	*	*	*	*	Jan. 17	*	*	*	*	*	
73. Mobile (25 years)	32°	Feb. 6	Feb. 19	Feb. 28	Mar. 9	Mar. 21	Nov. 3	Nov. 17	Nov. 26	Dec. 5	Dec. 19	
	28°	Jan. 10	Jan. 27	Feb. 8	Feb. 19	Mar. 8	Nov. 12	Nov. 28	Dec. 9	Dec. 20	Jan. 5	
	24°	*	Jan. 4	Jan. 17	Jan. 28	Feb. 12	Dec. 1	Dec. 18	Dec. 31	Jan. 16	*	
	20°	*	*	*	Jan. 9	Feb. 1	Dec. 20	Jan. 11	*	*	*	
	16°	*	*	*	*	Jan. 29	Jan. 25	*	*	*	*	
74. Robertsdale (29 years)	32°	Feb. 15	Feb. 27	Mar. 8	Mar. 17	Mar. 29	Oct. 26	Nov. 9	Nov. 19	Nov. 28	Dec. 12	
	28°	Jan. 23	Feb. 9	Feb. 21	Mar. 4	Mar. 21	Nov. 7	Nov. 21	Nov. 30	Dec. 10	Dec. 24	
	24°	*	Jan. 7	Jan. 22	Feb. 5	Feb. 24	Nov. 22	Dec. 9	Dec. 21	Jan. 3	*	
	20°	*	*	*	Jan. 22	Feb. 4	Dec. 9	*	*	*	*	
	16°	*	*	*	*	Jan. 31	*	*	*	*	*	

*Selected probability value greater than probability of temperature threshold being reached at all during the season.

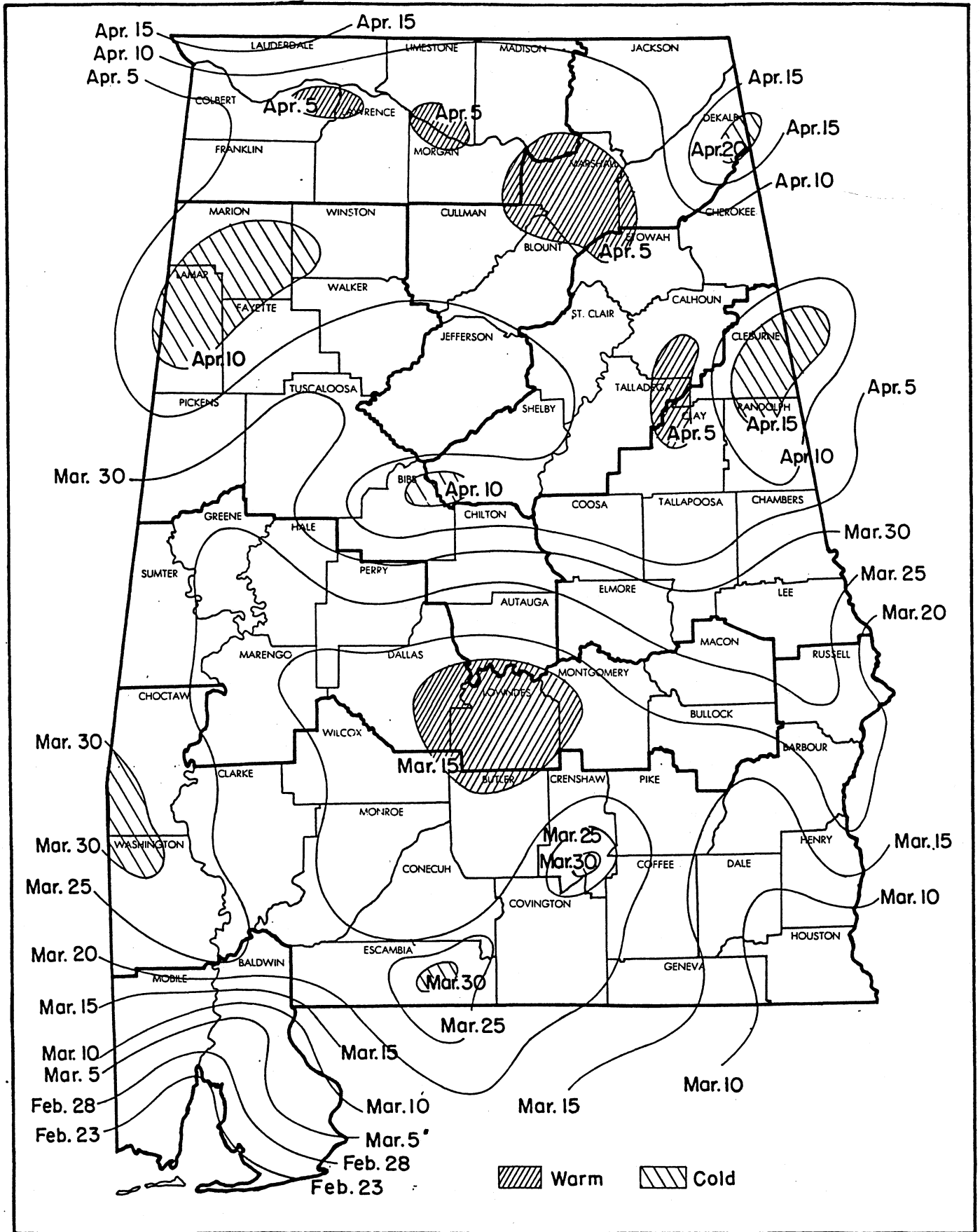


FIG. 5. Mean date of last 32°F freeze in the spring.

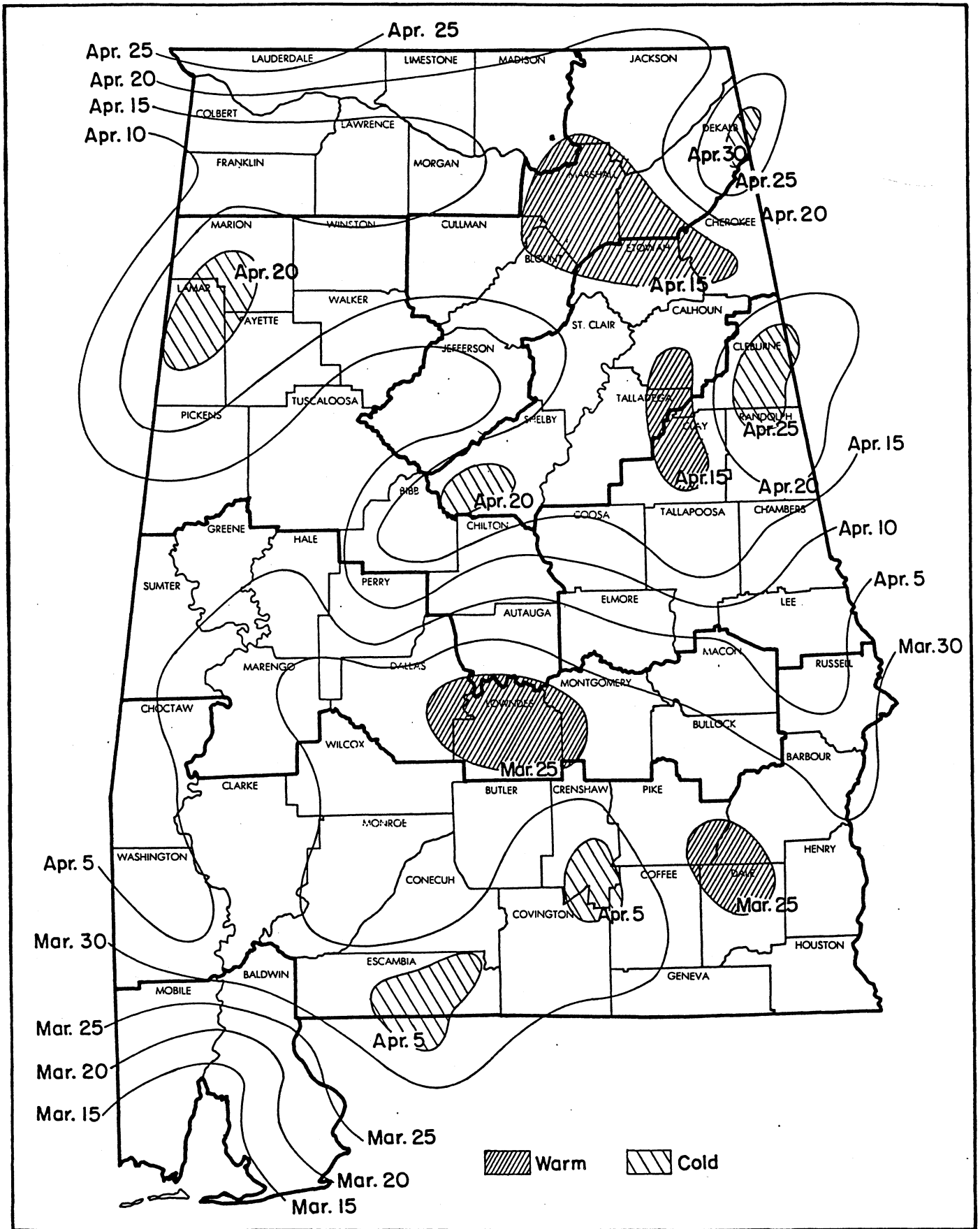


FIG. 6. Dates in the spring after which there is a 20 percent chance of a 32°F freeze.

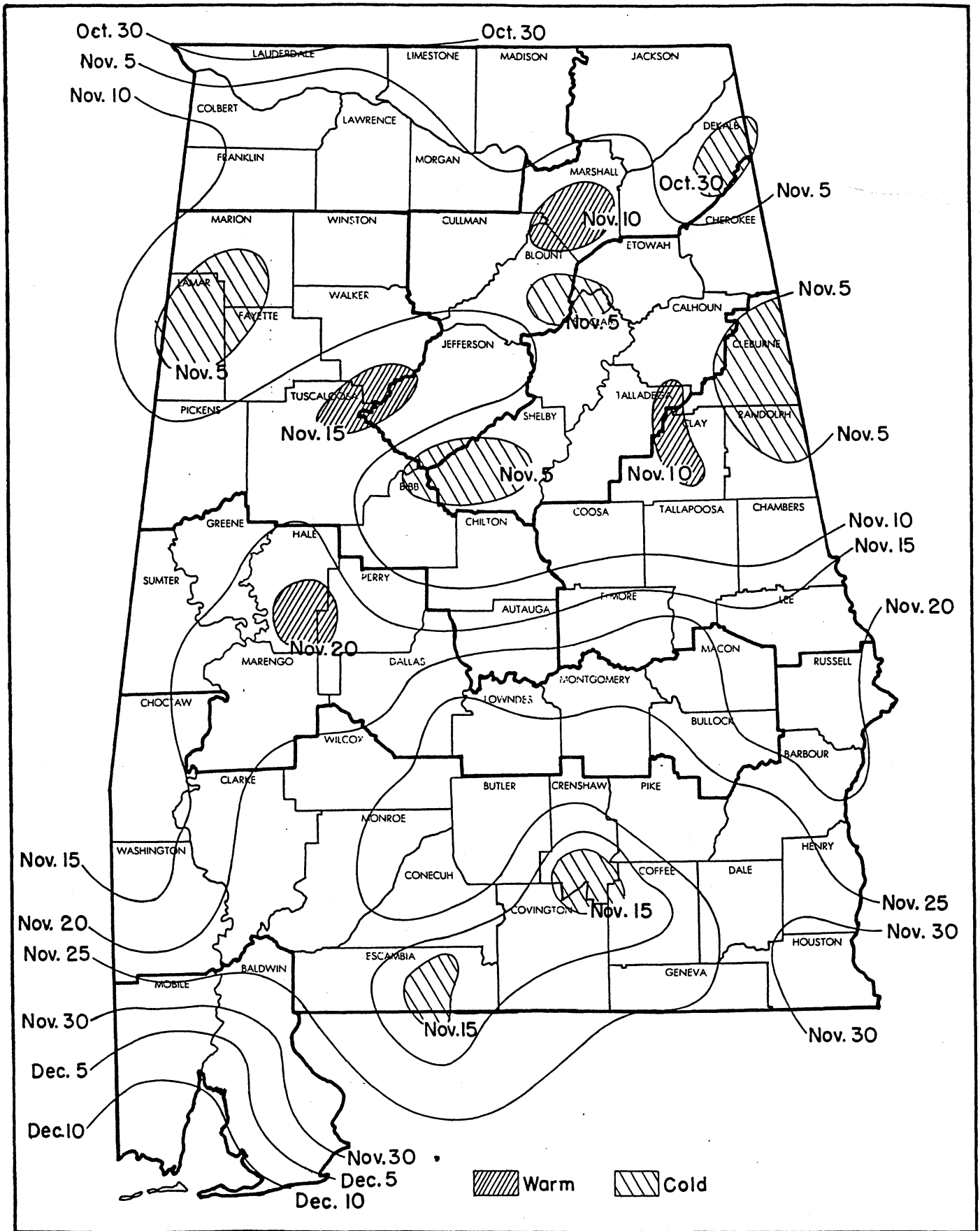


FIG. 7. Mean date of first 28°F freeze in the fall.

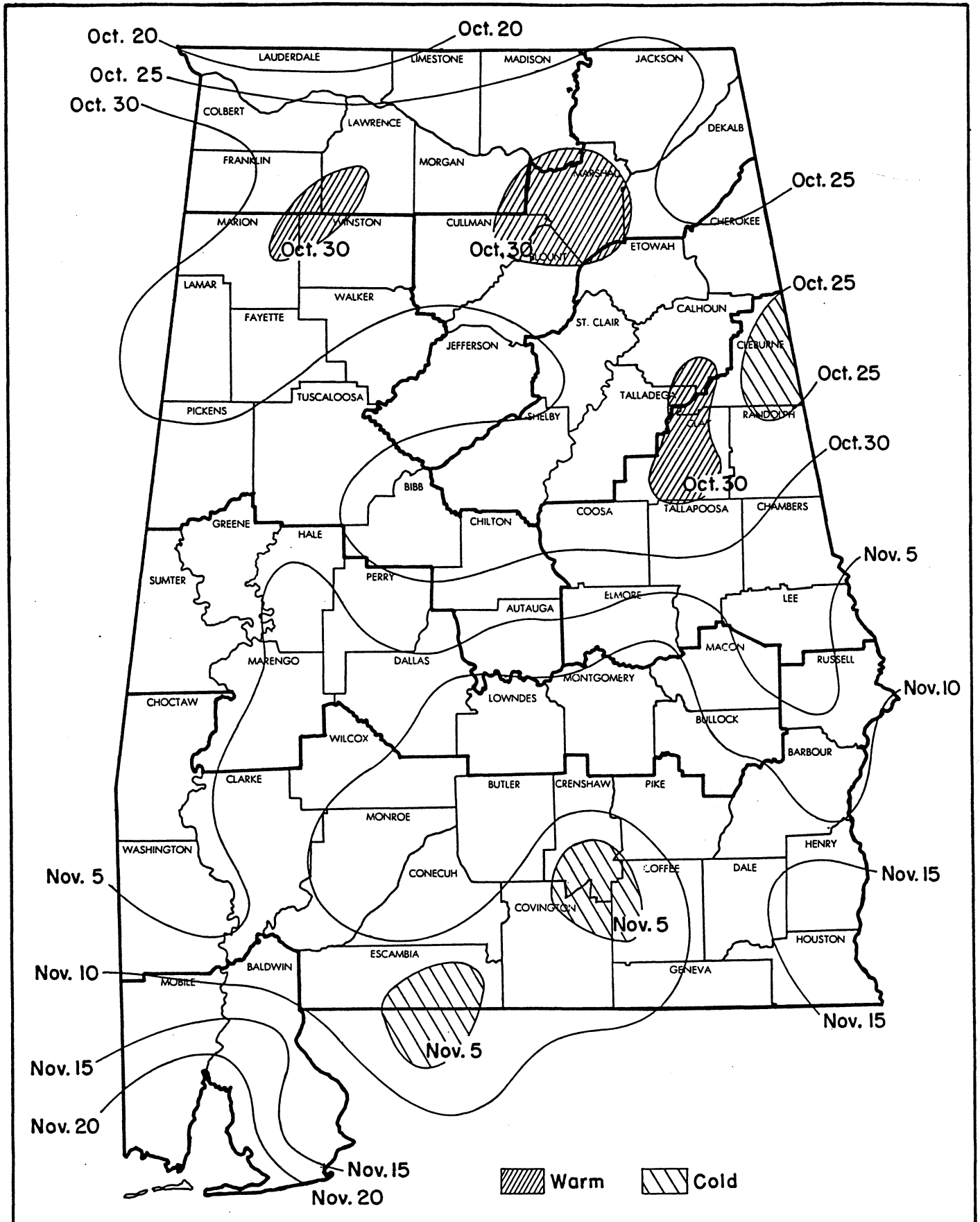


FIG. 8. Dates in the fall before which there is a 20 percent chance of a 28°F freeze.

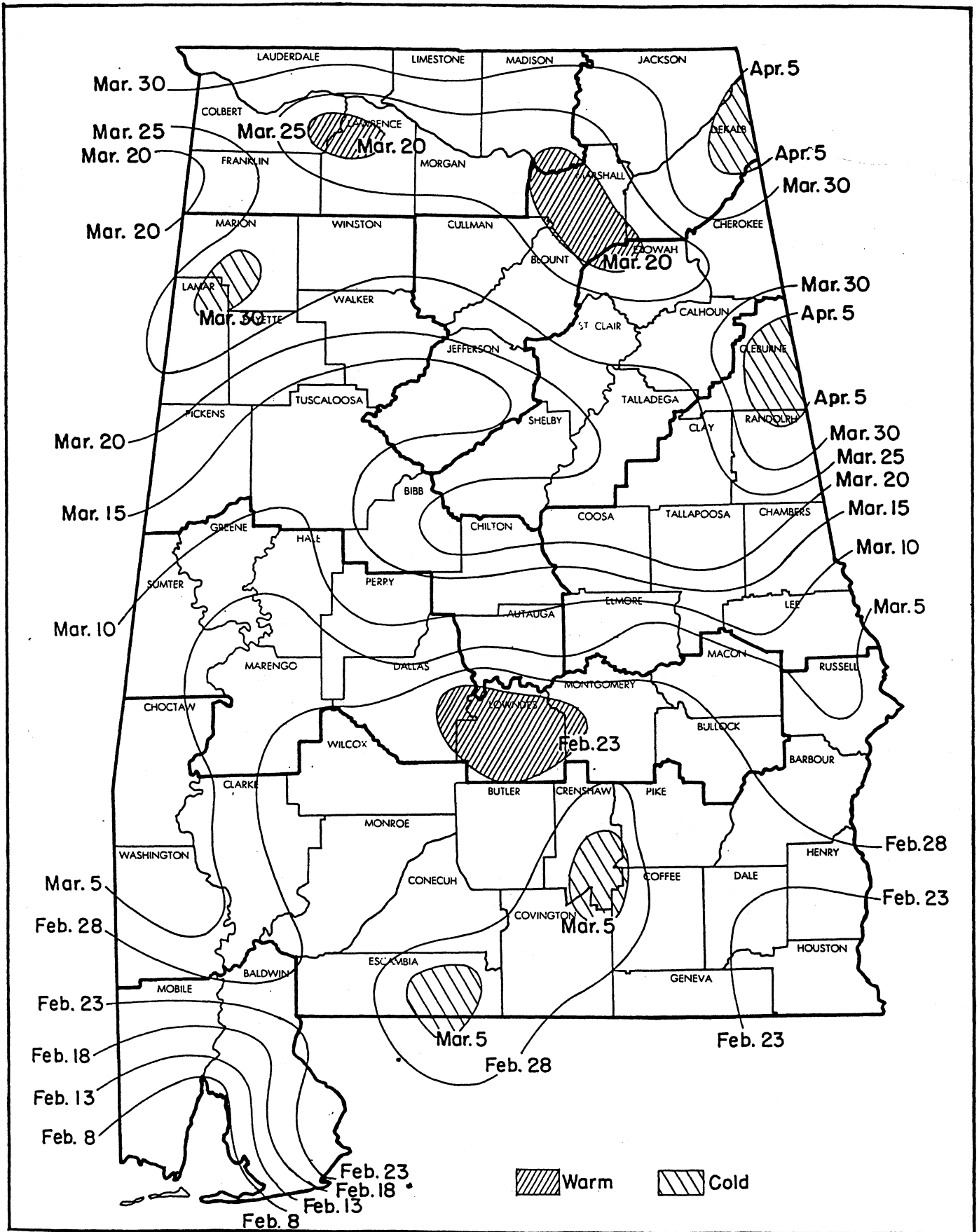


FIG. 9. Mean date of last 28°F freeze in the spring.

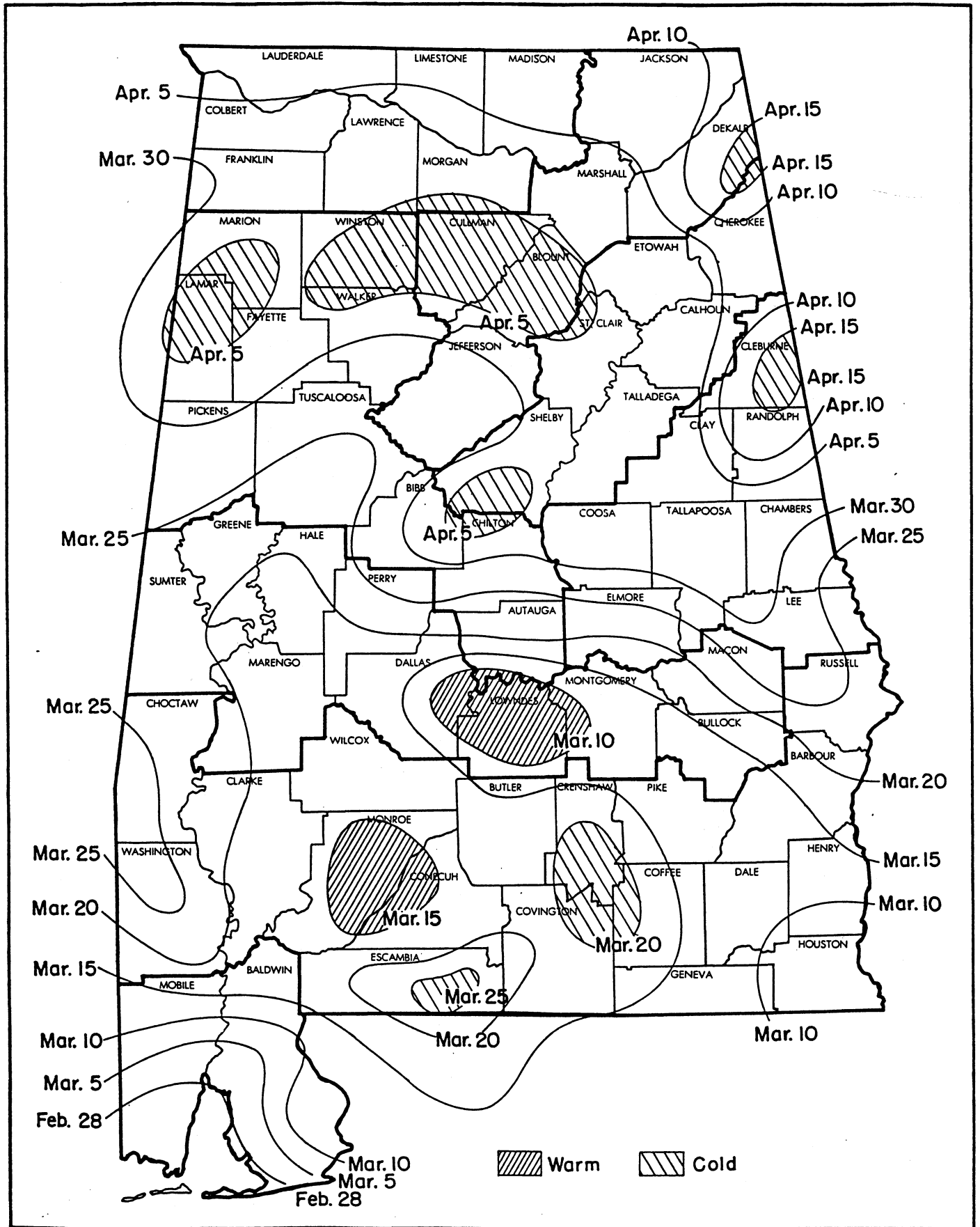


FIG. 10. Dates in spring after which there is a 20 percent chance of a 28°F freeze.

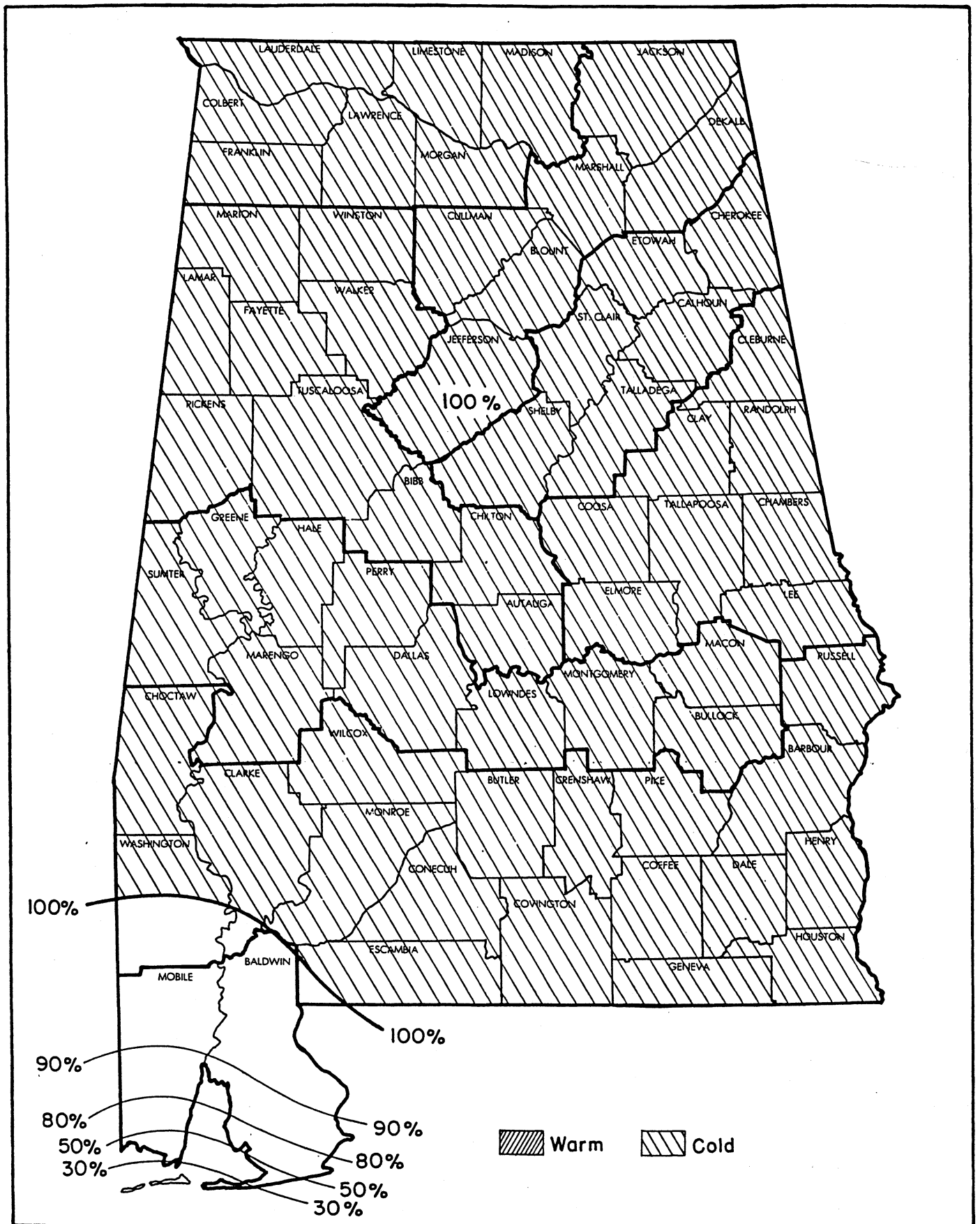


FIG. 11. Probability of a 24°F freeze or colder occurring sometime during cold season.

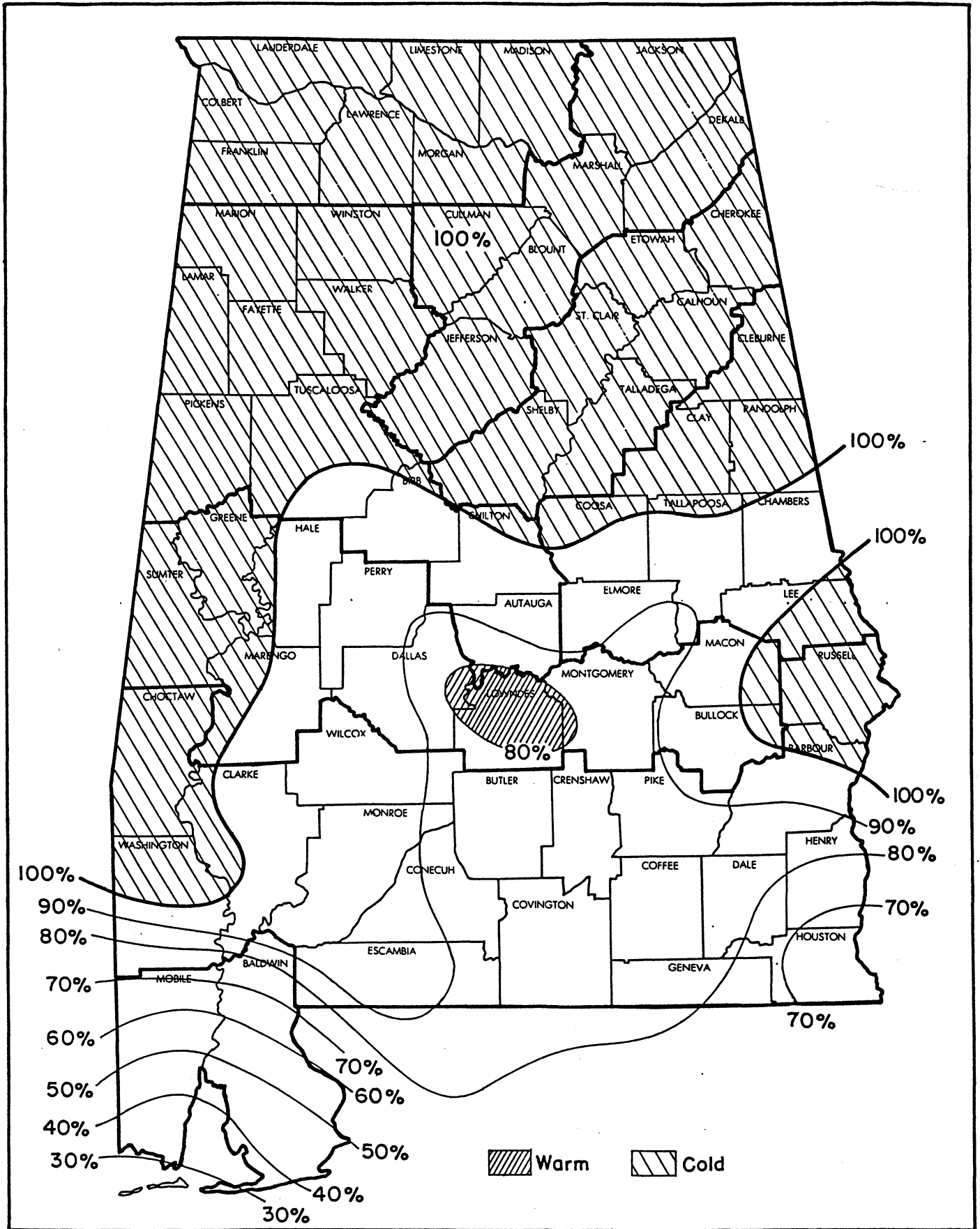


FIG. 12. Probability of a 20°F freeze or colder occurring sometime during cold season.

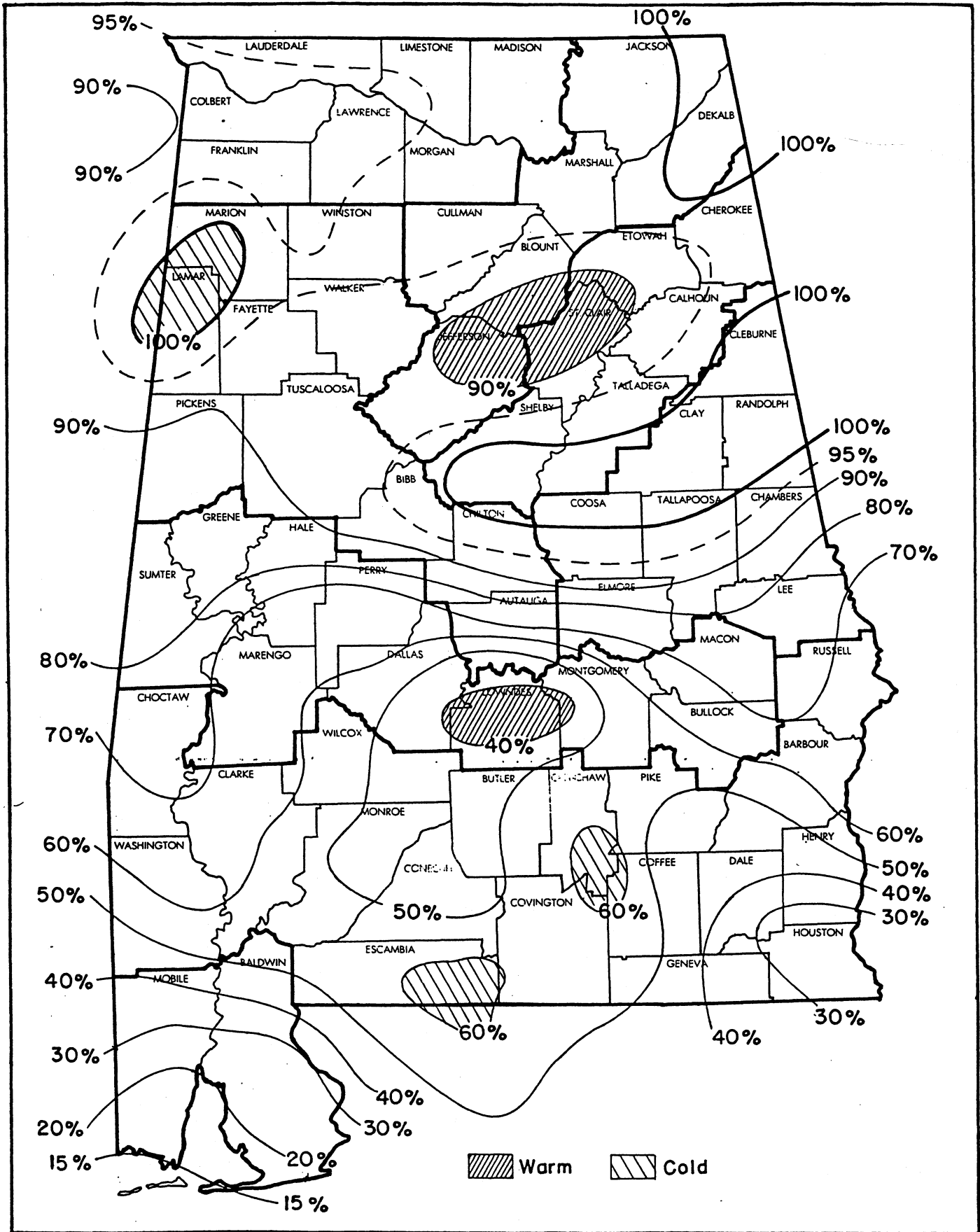


FIG. 13. Probability of a 16°F freeze or colder occurring sometime during cold season.

APPENDIX I

Appendix Table 1. Mean Day Number, Standard Deviation, and Probability of Temperature Occurrence

Station		Last in spring					First in fall				
		16°	20°	24°	28°	32°	32°	28°	24°	20°	16°
Northern Valley											
1. Athens	Mean	41.8	55.1	73.1	87.1	98.3	300.6	309.3	317.9	336.8	350.4
	SD	23.4	18.4	16.7	8.2	10.4	11.3	13.2	10.2	16.6	16.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2. Belle Mina	Mean	32.2	45.8	60.0	79.0	94.1	302.6	309.3	320.2	338.4	356.6
	SD	24.9	21.2	23.8	19.2	12.2	10.1	9.3	11.7	16.3	18.7
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960
3. Falkville	Mean	38.6	50.7	62.6	85.8	98.2	299.7	309.6	321.9	338.7	355.0
	SD	21.0	17.7	20.9	11.6	7.9	11.5	12.0	10.8	15.2	17.8
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4. Florence	Mean	41.1	55.8	72.4	87.1	96.3	297.1	310.8	319.9	333.8	350.0
	SD	20.8	21.4	19.3	13.2	13.0	9.0	12.8	11.7	14.0	22.9
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5. Madison	Mean	40.1	49.2	65.6	81.6	96.3	303.5	309.4	322.9	334.6	346.9
	SD	20.7	23.5	21.9	13.5	9.1	7.6	9.2	12.2	16.6	17.4
	P	0.931	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.931
6. Moulton	Mean	37.5	54.1	63.6	81.7	96.9	300.1	310.7	319.6	337.0	350.1
	SD	18.9	15.6	17.7	9.5	7.9	11.5	9.7	10.9	14.6	17.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
7. Muscle Shoals	Mean	29.9	41.9	52.7	75.0	84.6	305.7	311.3	327.3	340.2	362.2
	SD	21.3	22.9	24.8	12.2	12.3	8.9	11.5	16.6	21.0	24.4
	P	0.923	0.962	1.000	1.000	1.000	1.000	1.000	1.000	0.962	0.885
8. Red Bay	Mean	38.0	52.9	64.4	77.4	92.5	309.8	317.8	329.4	342.1	357.8
	SD	18.6	15.5	15.6	10.2	9.1	20.7	13.0	14.8	8.8	8.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9. Redstone Arsenal	Mean	37.3	49.2	67.1	80.2	95.9	300.0	308.0	318.1	336.5	342.4
	SD	21.4	19.0	18.9	16.4	12.8	10.0	8.5	11.5	15.6	16.2
	P	0.957	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10. Russellville ...	Mean	50.6	61.6	78.9	90.0	105.9	298.7	305.2	313.2	325.7	336.4
	SD	20.9	20.7	9.3	10.1	12.9	12.6	8.4	10.6	16.6	17.7
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
11. Waterloo	Mean	47.0	55.6	77.0	94.2	105.5	294.3	303.4	317.6	331.6	344.3
	SD	22.1	22.4	17.8	9.3	12.2	11.6	13.7	11.9	19.4	17.0
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Appalachian Mtn.											
12. Albertville	Mean	33.8	48.8	61.9	79.2	92.9	304.2	313.8	326.9	340.2	357.8
	SD	24.6	22.6	21.3	12.0	9.1	11.5	10.7	16.8	16.7	22.4
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960
13. Bessemer	Mean	30.5	47.7	64.6	77.4	92.4	305.5	309.1	325.7	343.5	364.1
	SD	26.5	23.7	16.1	12.8	12.5	8.1	9.8	16.6	18.9	24.2
	P	0.957	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.957
14. Birmingham ..	Mean	29.0	37.8	54.6	71.5	90.3	308.0	315.6	331.8	352.1	363.3
	SD	22.8	25.8	20.6	19.4	11.4	8.4	11.2	15.2	17.9	21.2
	P	0.800	0.960	1.000	1.000	1.000	1.000	1.000	1.000	0.960	0.800
15. Bridgeport	Mean	45.3	59.3	75.0	92.0	102.1	297.3	305.4	318.0	326.9	345.4
	SD	19.8	19.4	15.0	9.7	9.5	11.6	8.3	12.0	10.8	17.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16. Crossville	Mean	39.8	50.8	61.4	84.5	95.7	301.6	308.8	315.8	338.2	347.5
	SD	25.6	24.1	19.3	11.3	8.0	9.5	12.0	10.8	16.8	19.1
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960
17. Guntersville ..	Mean	32.3	45.4	60.5	76.0	91.4	308.7	317.0	330.2	341.9	363.8
	SD	24.6	20.2	20.3	18.4	11.5	8.2	12.2	14.1	12.6	24.3
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18. Oneonta	Mean	33.2	47.2	68.0	88.1	99.3	299.7	308.3	319.5	338.5	353.5
	SD	28.4	25.2	15.2	10.5	10.6	10.4	9.9	16.1	22.6	21.6
	P	0.885	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.885
19. Saint Bernard	Mean	41.3	54.8	72.4	87.8	99.1	302.0	310.4	320.7	335.2	347.2
	SD	23.7	22.1	14.6	11.0	10.2	9.3	10.0	13.5	16.5	19.2
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960

(Cont'd)

Appendix Table 1. (Con't) Mean Day Number, Standard Deviation, and Probability of Temperature Occurrence

Station		Last in spring					First in fall				
		16°	20°	24°	28°	32°	32°	28°	24°	20°	16°
20. Scottsboro	Mean	40.4	54.6	72.8	86.4	99.3	299.9	307.4	316.3	329.3	345.0
	SD	20.6	18.7	14.1	12.3	10.1	11.4	8.6	11.9	16.3	20.5
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960
21. Valley Head ..	Mean	46.3	65.7	86.0	98.2	110.9	293.9	303.0	309.2	322.5	340.3
	SD	25.4	17.9	14.7	9.2	10.6	10.3	8.4	9.9	14.8	21.8
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Upper Plains											
22. Bankhead L&D	Mean	34.3	44.8	62.0	72.5	90.2	308.6	319.6	336.9	351.4	365.6
	SD	20.1	24.7	14.1	15.4	10.4	9.5	13.3	15.8	17.4	20.3
	P	0.900	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.950
23. Centreville ...	Mean	33.9	44.9	53.8	74.6	94.5	304.6	313.8	329.3	340.7	354.4
	SD	24.9	21.2	24.6	11.9	10.0	8.3	13.8	16.8	16.7	25.0
	P	0.885	0.923	1.000	1.000	1.000	1.000	1.000	1.000	0.923	0.846
24. Clanton	Mean	23.3	35.7	59.3	72.0	89.7	304.3	312.0	327.1	341.6	366.1
	SD	22.1	27.7	15.8	16.8	10.0	25.0	14.7	18.1	10.2	8.6
	P	0.962	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.962
25. Double Springs	Mean	47.4	57.0	73.5	90.6	97.7	303.5	310.5	321.7	334.6	348.9
	SD	20.0	19.3	14.2	10.8	9.3	11.4	9.5	13.1	15.1	16.7
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
26. Fayette	Mean	29.1	47.0	63.3	78.0	97.4	300.2	310.5	319.6	337.9	352.7
	SD	25.8	23.5	15.7	14.7	10.3	9.8	11.4	11.5	18.2	20.6
	PL	0.920	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.920
27. Haleyville	Mean	40.3	52.0	66.2	81.3	96.7	303.2	313.3	325.5	338.4	347.1
	SD	24.1	23.5	16.0	12.1	9.3	9.6	11.2	13.7	20.2	16.6
	P	0.885	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.885
28. Hamilton	Mean	56.1	61.9	75.7	89.8	103.9	295.1	308.1	315.1	323.0	345.7
	SD	16.1	18.3	19.3	11.6	9.6	11.6	9.7	12.2	11.5	19.5
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
29. Prattville	Mean	30.5	29.6	47.0	65.9	80.5	309.8	322.7	334.7	353.0	368.9
	SD	15.6	22.2	24.4	20.1	10.9	23.6	20.7	15.7	13.0	9.6
	P	0.577	0.962	1.000	1.000	1.000	1.000	1.000	1.000	0.962	0.577
30. Tuscaloosa	Mean	24.5	31.6	47.7	70.6	86.2	305.5	315.2	334.5	349.3	362.6
	SD	19.6	26.6	21.6	15.3	11.4	8.2	14.1	17.7	19.0	20.3
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
31. Vernon	Mean	45.6	53.6	66.7	86.2	101.9	297.3	306.4	315.9	331.1	345.7
	SD	22.0	20.9	18.9	12.0	11.7	10.2	8.6	11.8	15.9	15.6
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Eastern Valley											
32. Anniston	Mean	26.9	41.3	57.6	77.7	91.0	305.5	313.1	327.0	341.5	363.7
	SD	22.0	21.8	20.5	13.9	10.8	8.5	10.7	16.5	17.2	21.8
	P	0.880	0.960	1.000	1.000	1.000	1.000	1.000	1.000	0.960	0.880
33. Calera	Mean	35.2	53.2	69.0	86.5	99.6	301.0	309.0	318.2	334.9	353.7
	SD	26.1	19.5	16.0	12.1	13.5	10.5	11.3	12.9	15.9	21.7
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
34. Centre	Mean	34.9	45.2	63.2	83.8	93.5	301.1	310.7	322.1	339.4	356.8
	SD	21.5	16.8	20.5	12.2	10.7	9.9	9.2	13.0	17.9	19.4
	P	0.952	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.905
35. Childersburg ..	Mean	39.6	48.6	64.9	79.1	95.4	301.7	310.2	321.1	338.9	360.1
	SD	20.6	16.3	15.4	16.2	9.5	11.5	9.2	11.4	16.1	21.9
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
36. Gadsden	Mean	32.5	42.2	65.6	79.8	96.7	303.2	309.6	319.5	339.8	366.5
	SD	20.2	23.5	17.1	13.0	10.5	8.9	9.2	12.7	17.0	27.8
	P	0.917	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.875
37. Sylacauga	Mean	40.3	50.6	66.2	78.6	98.0	301.9	312.3	322.3	334.1	359.5
	SD	19.5	19.2	15.2	12.7	8.3	12.6	12.5	12.0	17.0	22.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
38. Talladega	Mean	37.5	42.2	67.1	86.2	97.8	301.5	311.2	323.1	339.3	362.5
	SD	27.5	23.3	19.3	11.3	11.4	8.3	13.1	14.7	15.3	25.1
	P	0.885	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.885

(Cont'd)

Appendix Table 1. (Cont'd) Mean Day Number, Standard Deviation, and Probability of Temperature Occurrence

Station		Last in spring					First in fall				
		16°	20°	24°	28°	32°	32°	28°	24°	20°	16°
Piedmont Plateau											
39. Auburn	Mean	27.8	38.7	52.0	69.5	87.0	309.3	319.9	334.5	347.9	358.9
	SD	22.1	25.3	20.4	20.3	11.1	10.7	16.8	17.3	22.7	22.7
	P	0.769	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.769
40. Ashland	Mean	37.3	51.4	64.8	81.3	94.0	308.3	316.3	327.4	342.5	351.8
	SD	19.1	16.0	18.6	14.7	9.4	9.9	12.2	15.3	14.5	18.9
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
41. Camp Hill	Mean	36.8	44.8	61.4	79.4	96.0	300.4	310.9	323.4	338.8	359.8
	SD	24.3	22.9	21.4	20.1	12.2	10.0	9.6	14.3	15.6	24.4
	P	0.960	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.960
42. Heflin	Mean	48.0	63.2	77.8	95.4	107.5	294.0	304.4	312.3	323.5	343.1
	SD	18.8	16.9	16.3	11.9	14.0	11.0	7.7	9.0	13.5	12.1
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.952
43. LaFayette	Mean	28.9	43.6	50.8	70.8	88.5	308.5	313.4	338.9	345.4	363.5
	SD	25.7	26.0	24.6	16.9	12.0	26.1	16.5	16.1	8.2	9.7
	P	0.862	0.966	1.000	1.000	1.000	1.000	1.000	1.000	0.966	0.862
44. Martin Dam	Mean	25.0	25.4	45.7	62.9	84.9	316.4	328.6	350.0	362.5	369.8
	SD	18.0	23.9	23.3	17.0	13.6	13.1	17.2	18.0	20.4	21.1
	P	0.615	0.885	1.000	1.000	1.000	1.000	1.000	1.000	0.885	0.615
45. Rockford	Mean	37.8	50.4	67.4	82.3	95.6	302.8	310.2	323.9	339.7	356.5
	SD	23.1	22.9	15.2	11.1	10.5	10.8	10.6	15.0	16.9	25.0
	P	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
46. Rock Mills	Mean	32.5	47.1	65.8	83.2	99.6	301.6	310.2	321.7	335.3	359.0
	SD	23.4	27.7	17.3	12.0	10.9	8.9	7.7	12.8	16.2	24.3
	P	0.923	0.962	1.000	1.000	1.000	1.000	1.000	1.000	0.962	0.923
Prairie											
47. Dayton	Mean	27.9	33.1	46.0	62.3	79.3	310.3	323.2	334.8	356.7	370.5
	SD	16.4	27.6	24.1	18.8	11.7	8.5	12.8	15.9	21.6	17.7
	P	0.640	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.640
48. Demopolis L&D	Mean	21.9	24.8	44.5	61.6	77.8	309.7	320.7	336.4	351.6	366.0
	SD	18.7	24.5	24.9	16.9	14.6	10.0	16.4	21.2	24.1	16.5
	P	0.640	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.640
49. Greensboro ..	Mean	21.0	36.5	50.3	64.0	81.4	312.1	328.0	338.2	353.9	359.8
	SD	20.2	29.7	22.6	15.6	12.8	9.5	17.2	15.4	20.7	17.0
	P	0.680	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.680
50. Livingston	Mean	20.0	33.4	51.2	66.7	88.1	304.7	316.5	329.7	339.6	358.9
	SD	18.6	25.8	18.7	16.8	10.5	11.9	11.5	15.7	16.5	20.0
	P	0.870	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.870
51. Marion Junction	Mean	25.8	30.2	51.8	66.3	81.1	307.3	316.1	328.5	341.9	357.0
	SD	18.9	25.2	17.8	15.2	12.9	8.8	10.2	18.6	18.7	19.8
	P	0.667	0.963	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.704
52. Minter	Mean	30.1	32.2	55.9	63.6	74.9	314.5	322.5	338.2	351.3	365.3
	SD	18.0	22.0	17.8	15.9	14.9	11.1	12.7	15.8	22.8	17.7
	P	0.750	0.900	1.000	1.000	1.000	1.000	1.000	1.000	0.900	0.800
53. Montgomery ..	Mean	28.1	24.4	36.8	53.2	69.9	313.0	327.0	341.4	362.7	378.9
	SD	12.0	19.8	23.4	17.8	13.5	9.4	15.1	18.4	20.8	21.9
	P	0.385	0.808	1.000	1.000	1.000	1.000	1.000	1.000	0.808	0.385
54. Selma	Mean	25.7	20.3	33.1	50.2	72.5	315.4	329.2	344.0	362.6	376.9
	SD	13.3	19.4	26.3	21.0	14.3	12.8	17.4	19.7	21.2	25.7
	P	0.423	0.769	0.923	1.000	1.000	1.000	1.000	0.923	0.731	0.385
55. Union Springs	Mean	22.2	26.6	46.8	58.0	77.7	312.6	323.8	341.6	359.2	367.9
	SD	19.5	29.0	20.2	18.1	13.0	21.1	23.4	17.4	13.5	10.7
	P	0.692	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.654
Coastal Plain											
56. Andalusia	Mean	28.0	35.5	41.4	60.5	79.6	312.9	323.4	337.3	359.4	369.3
	SD	13.2	19.4	29.2	20.2	16.1	12.6	13.5	16.6	23.1	22.8
	P	0.480	0.840	1.000	1.000	1.000	1.000	1.000	1.000	0.840	0.440
57. Brewton	Mean	27.8	31.2	46.7	68.4	89.4	301.9	312.8	331.7	345.2	369.0
	SD	13.9	25.4	25.0	22.0	10.7	8.7	11.8	17.7	21.6	24.5
	P	0.615	0.923	1.000	1.000	1.000	1.000	1.000	1.000	0.923	0.577
58. Brantley	Mean	26.1	43.3	54.4	68.5	89.0	303.3	311.7	329.2	345.2	363.4
	SD	16.6	15.5	18.8	17.1	11.2	9.9	9.7	17.7	20.8	27.7
	P	0.905	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.952

(Cont'd)

Appendix Table 1. (Cont'd) Mean Day Number, Standard Deviation, and Probability of Temperature Occurrence

Station		Last in spring					First in fall				
		16°	20°	24°	28°	32°	32°	28°	24°	20°	16°
59. Chatom	Mean	20.7	30.5	50.6	67.8	89.1	310.2	317.6	334.3	351.3	366.2
	SD	19.4	22.9	21.8	21.8	12.2	10.0	13.2	18.0	23.9	21.5
	P	0.680	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.680
60. Clayton	Mean	28.2	32.0	45.0	59.0	72.5	318.3	332.1	351.5	364.8	374.4
	SD	15.0	21.1	15.2	16.4	15.3	10.2	16.6	18.3	21.9	19.0
	P	0.524	0.952	1.000	1.000	1.000	1.000	1.000	1.000	0.952	0.571
61. Frisco City	Mean	25.8	24.4	35.5	55.0	76.1	315.4	329.0	339.5	358.7	374.4
	SD	13.0	23.9	24.9	20.9	13.8	11.7	16.1	17.1	22.1	18.6
	P	0.480	0.920	1.000	1.000	1.000	1.000	1.000	1.000	0.920	0.480
62. Geneva	Mean	25.4	22.6	30.4	55.6	78.0	311.1	328.4	343.5	365.8	376.8
	SD	11.4	18.5	22.5	20.5	11.8	11.5	16.9	15.3	26.1	17.7
	P	0.423	0.808	0.962	1.000	1.000	1.000	1.000	0.962	0.808	0.385
63. Greenville	Mean	26.5	25.5	39.4	56.3	75.4	317.9	329.7	339.6	361.6	375.3
	SD	12.8	21.3	26.4	23.3	17.2	14.1	14.7	18.3	26.6	20.4
	P	0.538	0.885	0.962	1.000	1.000	1.000	1.000	0.962	0.885	0.500
64. Headland	Mean	26.4	27.0	34.5	49.9	67.4	316.5	334.3	351.9	370.3	359.9
	SD	18.0	12.6	22.1	21.5	20.8	12.0	17.3	18.8	22.9	22.5
	P	0.280	0.680	0.960	1.000	1.000	1.000	1.000	0.960	0.680	0.280
65. Highland Home	Mean	28.3	31.0	48.5	59.1	77.4	315.1	330.2	337.8	359.8	376.9
	SD	19.6	26.7	21.5	18.8	11.7	11.8	16.8	16.3	24.7	21.1
	P	0.640	0.920	1.000	1.000	1.000	1.000	1.000	1.000	0.920	0.640
66. Ozark	Mean	23.8	30.8	38.6	56.6	71.4	317.4	329.5	346.7	366.3	362.9
	SD	13.8	18.8	23.3	19.6	14.0	10.8	15.6	21.6	24.6	26.4
	P	0.458	0.875	1.000	1.000	1.000	1.000	1.000	0.958	0.833	0.417
67. Thomasville ...	Mean	28.8	27.2	44.1	57.3	82.9	312.0	326.4	339.8	354.7	365.2
	SD	16.7	25.9	28.7	24.6	11.6	9.8	16.0	20.5	21.2	22.4
	P	0.615	0.923	1.000	1.000	1.000	1.000	1.000	1.000	0.923	0.577
68. Troy	Mean	28.9	25.4	40.8	54.1	76.8	318.7	330.7	339.0	362.5	372.8
	SD	15.3	21.2	25.6	22.1	10.3	13.8	15.4	17.0	26.5	27.8
	P	0.462	0.885	0.923	1.000	1.000	1.000	1.000	0.923	0.885	0.423
Gulf											
69. Bay Minette	Mean	28.1	22.0	30.1	47.3	63.4	324.2	336.0	353.6	367.5	382.7
	SD	11.2	18.6	24.6	22.7	15.4	16.8	17.6	21.7	26.3	22.5
	P	0.269	0.615	0.923	1.000	1.000	1.000	1.000	0.923	0.577	0.231
70. Coden	Mean	29.4	20.9	25.5	49.0	63.7	322.2	337.5	355.1	371.7	369.8
	SD	11.6	18.9	22.8	22.3	16.8	11.6	18.2	19.7	18.6	19.7
	P	0.238	0.714	1.000	1.000	1.000	1.000	1.000	1.000	0.762	0.286
71. Fairhope	Mean	25.8	23.5	23.5	40.1	57.5	327.0	340.6	360.3	373.5	383.2
	SD	8.9	14.9	23.1	24.7	18.8	15.9	17.5	25.5	17.6	20.0
	P	0.207	0.448	0.897	0.966	1.000	1.000	0.966	0.897	0.448	0.207
72. Fort Morgan ..	Mean	21.3	24.2	20.6	21.4	35.7	361.2	365.4	368.9	372.5	353.5
	SD	8.0	8.5	15.1	21.1	26.2	24.5	22.6	26.0	36.1	9.2
	P	0.160	0.227	0.318	0.682	0.880	0.846	0.577	0.269	0.080	0.077
73. Mobile	Mean	29.2	17.7	21.2	38.6	58.9	330.0	343.2	360.2	365.0	381.3
	SD	11.4	18.4	18.2	22.3	16.7	17.6	21.1	21.2	16.1	27.3
	P	0.200	0.440	0.840	1.000	1.000	1.000	1.000	0.840	0.400	0.160
74. Robertsdale ..	Mean	28.4	25.5	25.5	51.8	66.9	322.7	334.4	351.6	339.6	363.7
	SD	10.6	12.0	24.3	22.3	16.7	18.5	18.0	21.3	15.5	29.7
	P	0.241	0.483	0.897	1.000	1.000	1.000	1.000	0.897	0.172	0.103

Mean - Mean Day Number beginning with January 1 as Day Number 1 (Occasionally extending to values greater than 365 for low thresholds in the Fall)

SD - Standard Deviation

P - Probability of Temperature Occurrence during the year.

