

others highly susceptible. This, coupled with the rolling topography, the frequent downpour of rains, and the fact that cotton and corn—the principal crops—are intertilled, has led to general sheet erosion and considerable gullying throughout the area. Parts of fields and, in some cases, entire fields, have been removed from cultivation due to severe erosion.

Moisture penetration of the subsoils is moderate with the exception of White Store, Creedmoor, and Orange, where it is slow and Iredell-Mecklenburg, where it is very slow. All retain moisture well.

On heavy or clay soils, the range of moisture conditions suitable for tillage is more limited than for sandy soils. The narrowest range occurs in the Iredell-Mecklenburg group. These conditions limit suitable periods of tillage as well as opportunities for late fall, winter, and early spring grazing of small grains. The soil is often too wet to allow cattle to range on the fields.

Crops best adapted generally to these soils are cotton, corn, small grains, and lespedeza. Sandy loams are suitable for sweet potatoes. With proper practices, alfalfa and clovers are adapted to all of the soil groups except White Store-Creedmoor, the more poorly drained Iredell-Mecklenburg, and the shallower phases of the Georgeville - Herndon - Alamance - Orange.

**Climate and Weather:** The climate is suited to the production of corn, cotton, small grain, lespedeza, hays, pastures, and to many other crops not adapted to the soils. Based on weather data from the Charlotte Station, normal annual rainfall is 46 inches fairly well distributed throughout the year (Figure 3). Winter rains usually are fairly slow and last for several hours or days, whereas summer rains often occur as thundershowers that are downpours. The latter result in considerable runoff, particularly on the slopes.

The chances that several consecutive days suited to harvesting of hay and grain will occur when needed are of major concern to farmers and to those who are investigating possibilities for adding new enterprises or changing farm practices. Normally, the number of clear days that occur in any one month is highest in October, November, and September, respectively, and lowest in July, June and August.

From June 2 through the third week in August, the critical harvesting period for alfalfa, hay and small grains, the chances of three or more consecutive days of harvest weather occurring within any one week are two or three out of ten. During September, when annual legume hays are harvested, the chances become 40 to 50 per cent (Figure 4). During this period, September is the only month in which the probability of seven or more consecutive days of harvest weather is greater than 20 per cent. These data indicate that risks of losing hay due to weather damage are much greater during late spring and summer than during early fall.

Probable dates of the last frost in the spring and the first frost in the fall are of major importance in planning farm operations. Although the average date of the last killing frost in the spring is March 25, frost has occurred as late as April 26. The average date of the first killing frost in the fall is November 11, but frosts have occurred as early as October 8 (Figure 5).

The chances are nine in ten that one or more killing frosts will occur after March 5. Twenty days later, March 25, chances of another killing frost are reduced to five in ten or 50 per cent. By April 6, this figure has fallen to 20 per cent. In the fall, chances are only two in ten that a killing frost will occur before October 31, but in eight out of ten years the first killing frost occurs before November 18. These data are more useful than

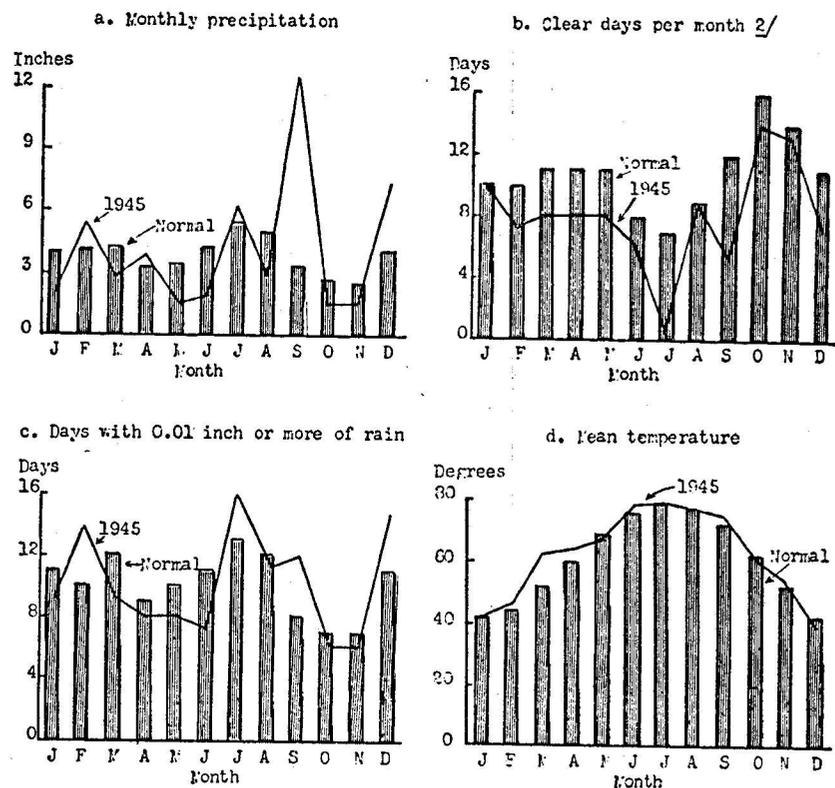


Figure 3. Monthly Precipitation and Temperatures, Normal and 1945, Charlotte, North Carolina.<sup>1</sup>

<sup>1</sup> Source: U. S. Department of Commerce, Weather Bureau. Normal is the 1878-1944 average.  
<sup>2</sup> Number of partly cloudy days is usually high between April and September.

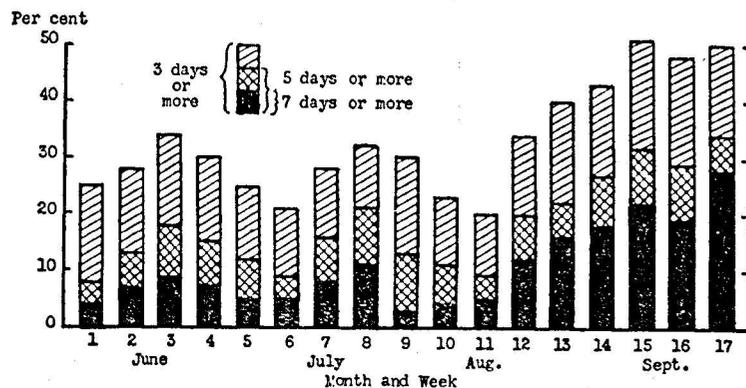


Figure 4. Percentage Probability of Consecutive Harvest Weather Days<sup>1</sup> by Weeks, during Period June 2 to September 28, Charlotte, North Carolina.<sup>2</sup>

<sup>1</sup> Days with no rain, plus days clear or partly cloudy, with 0.01 inch or trace of rain.  
<sup>2</sup> Source: U. S. Department of Commerce, Weather Bureau, records from 1896 to 1945.