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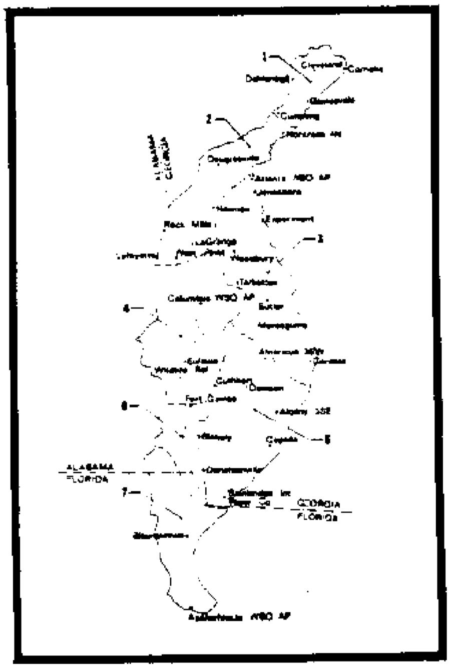

# ANALYSIS OF CLIMATOLOGY DATA FOR THE APALACHICOLA, CHATTAHOOCHEE AND FLINT RIVER BASINS

by

William G. Nichols
Acting Head, Department of Computer Science

and

Donald C. Raney
Professor of Engineering Mechanics



Prepared for
Mississippi-Alabama Sea Grant Consortium

May 1984
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# 1. INTRODUCTION

The Apalachicola-Chattahoochee-Flint River (ACF) basin drains portions of Georgia, Alabama and Florida. There are a number of reservoirs in the ACF basin providing flow regulation, water supplies, hydroelectric power, recreation, navigation and fish and wildlife habitat. Additional climatology data are required as input to the study directed at development of an improved water management policy for the ACF basin. This portion of the overall study is directed at providing a general description of weather patterns in the ACF basin, determining the availability of specific climatic data for the basin and providing extensive statistical analysis of precipitation data for the basin.

## 2. CLIMATE AND ITS CAUSES

### A. Basic Concepts

Although many of the exact details are still unknown, the underlying cause of weather and climate are heat from the sun and the rotation of the earth. The radiant energy from the sun and the constant rotation of the earth about its axis serve to establish circulation patterns within the atmosphere. These circulation patterns carry heat and moisture from the equator to the poles, across land of various topography and over open bodies of water. The earth's orbit around the sun is elliptic, thus its distance from the sun varies. In addition, the earth's axis of rotation is not normal to the orbit plane around the sun. Due to the inclination of the axis of rotation, the northern hemisphere is tipped toward the sun and receives more direct radiation during the summer while the southern hemisphere is tipped toward the sun and receives more direct radiation during the winter. The elliptic orbit and inclination of the axis of rotation produce a condition whereby the amount of radiant energy received from the sun varies with location and season.

Weather sequences tend to follow the same general pattern year after year at any location on the earth. However, there are certain variations in the normal climatic cycle. Many questions exist concerning the exact nature of variations in basic weather patterns; however, contributing factors include: (1) transient events on the sun, (2) large scale air-sea interactions, (3) land surface evaporation and transpiration patterns, and (4) variations in geomagnetic activity. Some of the climatic variation also occur as randomized events rather than resulting from completely deterministic forces.

### B. Regional Climatic Controls

The primary driving forces for weather patterns are the sun's radiation and the rotation of the earth about its axis. These driving forces interact with regional or local factors to produce the very complex system of weather which the earth experiences. Climatic regimes are controlled by factors such as latitude, source of moisture, prevailing winds, ocean currents, and topography. These factors interact to produce the regional climatic controls and the characteristic weather patterns for the region.

1. Latitude

Radiant energy from the sun reaches the earth after passing through approximately 93 million miles of space. As illustrated in Figure 2.1,

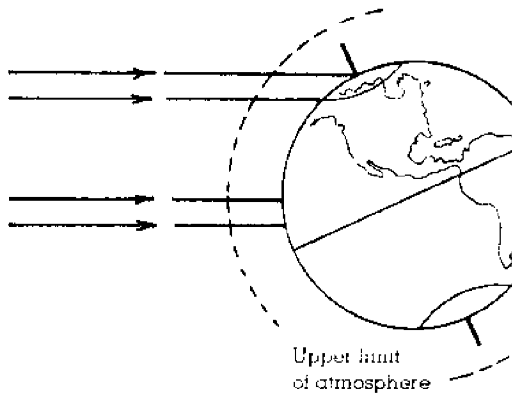



Figure 2.1 Sun Rays Passing Through Earth's Atmosphere at Different Latitudes

the rays reaching the equator appear to come from more directly overhead. At points nearer the poles the sun appears lower in the sky. Sunlight that reaches the earth's surface in the higher latitudes has passed through a thicker layer of absorbing, scattering, and reflecting atmosphere than has sunlight that reaches the earth's surface at the lower latitudes. The result is warm climates in the equatorial regions and successively cooler climates at high latitudes. Seasons modify the latitude effect because of the tilt of the axis of the earth. This is illustrated by the typical summer and winter earth-sun orientation shown in Figure 2.2.

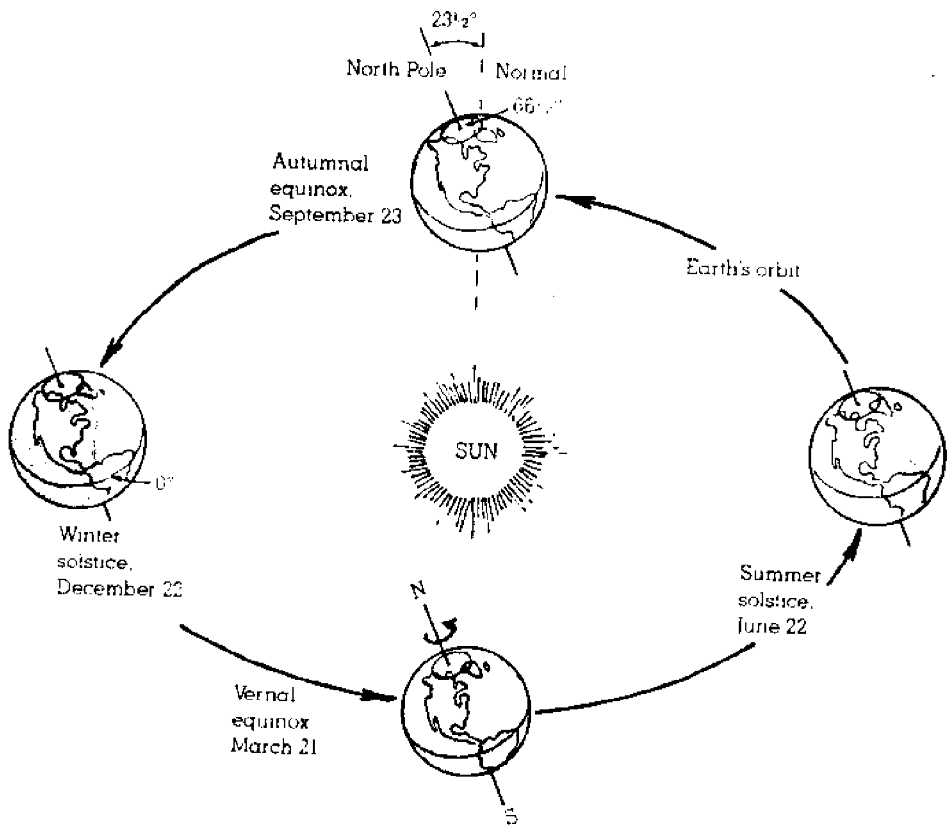



Figure 2.2 Typical earth-sun orientation (Summer and Winter)

## 2. Continentality and Sources of Moisture

Land and water surfaces react differently to the incoming rays of the sun. In general, land surfaces absorb the solar radiation, but conducts heat to the interior very slowly. The surface temperature increases rapidly but the heat does not penetrate deeply into the earth. Land surfaces will then cool rapidly at night or under cloudy conditions. On the other hand, heat input to a water body is transmitted more readily to the interior by conduction and convection. The overall water temperature rises slowly but a larger quantity of heat has been absorbed. The water will then cool more slowly than the land surface. The net effect is that the surface layer of air over land is warmer in summer and colder in winter than over bodies of water. Since warm air rises, permitting air from cooler regions to flow in to replace it, there is a net inflow of cool ocean air onto continents in summer and an outflow from the continents in winter.

Sources of moisture have a profound influence on the climate of an area. A dynamic process occurs continuously at the surface of water. Molecules with enough speed (and traveling in the right direction) break away from the liquid surface and enter the atmosphere. These molecules change from the liquid state into the vapor state in a process called evaporation. While some water molecules are leaving the liquid, others are returning. Those returning are going from the vapor state to the liquid state. This process in called condensation. Hence, at the surface of the liquid, some molecules are always evaporating (escaping) and others condensing (returning).

When a cover is placed just above the exposed water surface, the total number of molecules escaping from the liquid is quickly balanced by the number returning. At this point the air above the water contains the maximum number of water vapor molecules that it is capable of holding. When this condition exists, the air is said to be saturated with water vapor at that particular air temperature. For every molecule that evaporates, one must condense and no net loss of liquid or vapor molecules results.

If one removes the cover and blows across the top of the water, some of the vapor molecules already in the air above would be blown away, creating a difference between the actual number of vapor molecules and the total number required for saturation. This would help prevent saturation from occurring and would allow for a greater amount of evaporation. Wind, therefore, enhances evaporation.

Water temperature also influences evaporation. All else being equal, warm water will evaporate more rapidly than cool water. Heating water increases its average molecular speed. Hence, the warmer the water, the greater the rate of evaporation, provided the air above does not become saturated.

The air temperature above the water has an additional effect on the rate of evaporation. In the atmosphere, water vapor molecules are constantly moving around, bumping into other molecules. When these gas molecules collide, they tend to bounce off one another, constantly changing in speed and direction. However, the speed lost by one molecule is gained by another, and so the average speed of all the molecules does not change. Consequently, the temperature of the air does not change. Mixed in with all of the air molecules are microscopic bits of dust, smoke, and other particles called condensation nuclei. In warm air, fast-moving vapor molecules strike the nuclei with such impact that the vapor molecules simply bounce away. In cold air, however, the slower-moving vapor molecules are more apt to stick to the nuclei. When many billions of these molecules condense on the floating particle, a liquid droplet forms.

Since condensation occurs when the air is saturated, condensation is most likely to happen as the air cools and the speed of the vapor molecules decreases. Therefore, with the same number of water vapor molecules, saturation is more likely to occur in cool air than in warm air. Put another way, warm air can hold more water vapor molecules before becoming saturated than can cold air. Hence, as the air temperature above a wet surface increases, the evaporation rate increases because the air above the surface can hold more water vapor. The amount of water vapor in the air compared to its capacity is called the relative humidity.

In summary, the main factors that influence the rate of evaporation from water surfaces are:

1. wind
2. temperature of the water
3. air temperature above the water
4. degree of saturation

Over land surfaces moisture is also added to the atmosphere through transpiration from plants. The water absorbed by a plant's root system moves upward through the stem and emerges from the plant through numerous small openings on the underside of the leaf. It is estimated that evaporation and transpiration from continental areas amount to only about 15 percent of the water vapor that annually enters the atmosphere; the remaining 85 percent evaporates from the oceans. Evaporation and transpiration are often lumped together and simply referred to as evaporation.

The measurement of evaporation presents difficult problems. When all other factors contributing to the hydrologic or water balance for a given area are known, evaporation may be estimated as a residual. The hydrologic balance may be expressed as

$$P = R + S + E$$

P being precipitation, R the surface runoff of water, S the seepage of water into the ground, and E the combined effect of evaporation and transpiration. Adequate measurement of P and R presents problems in sampling over the area in question and S is obviously a difficult term to assess.

Because of the difficulties in directly measuring evaporation for large regions, a somewhat artificial method to measure evaporation is in common usage. This method, called pan evaporation, measures the evaporation from specially designed pans. The results from such observations are usually analyzed by means of a formula

$$E = C(e_w - e_a)$$

where E is the rate of evaporation, $e_w$ is the saturation water vapor pressure at the surface temperature of the water, $e_a$ the vapor pressure in the air, and C a factor which incorporates the effects of wind speed, barometric pressure and other variables such as exposure.

Such measurements, if they can be related to water losses from larger water bodies such as reservoirs and from freely transpiring vegetation, are of obvious importance. Unfortunately, the thermal response of bodies of water or land will be significantly influenced by size and geometry. Consideration of the basic dependence of pan evaporation on the size, design and exposure of the pan and its comparatively rapid response to changing atmospheric conditions emphasizes the difficulty of this approach. Each water body and land region will generally have its own "pan coefficient," and this is likely to vary with the season. Nevertheless, pan evaporation data have a useful role to play in assessing the comparative evaporative needs of different regions, even though their quantitative indications must be interpreted with caution.

The heat energy required to change a substance from one state to another is called latent heat. Latent heat is an important source of atmospheric energy. Once vapor molecules become separated from the earth's surface, they are swept away by the wind like dust before a broom. Rising to high altitudes where the air is cold, the vapor changes into liquid and ice cloud particles. During these processes a tremendous amount of heat is released. This heat provides energy for storms, such as hurricanes, middle-latitude cyclones, and thunderstorms. Water vapor evaporated from warm, tropical water can be carried into polar regions, where it condenses and gives up its heat. Thus, evaporation--transportation--condensation is an important mechanism for the relocation of heat (as well as water) in the atmosphere.

### 3. Prevailing Winds

The non-uniform heating of the earth by the sun is the main cause of wind systems. The equatorial regions receive more solar heat than do the polar regions. The warm equatorial surface air rises and is replaced by cooler surface air flowing in from the higher latitudes. This effect combines with the earth's rotation to produce a general global atmospheric circulation. Surface winds in the northern hemisphere are arranged in three broad belts: the northeast trade winds in the Tropics and Sub-tropics, the prevailing westerlies in the middle latitudes and the polar easterlies in the polar region. Of course, actual local winds at any one place and any given time depend on a multitude of complex factors and may vary considerably from general circulation patterns.

The rotation of the earth about its axis causes winds to be deflected to the right in the northern hemisphere. This deflection, called the Coriolis effect, results in winds moving with net counterclockwise rotation in low pressure regions and net clockwise rotation in high pressure regions. This is illustrated in Figure 2.3.

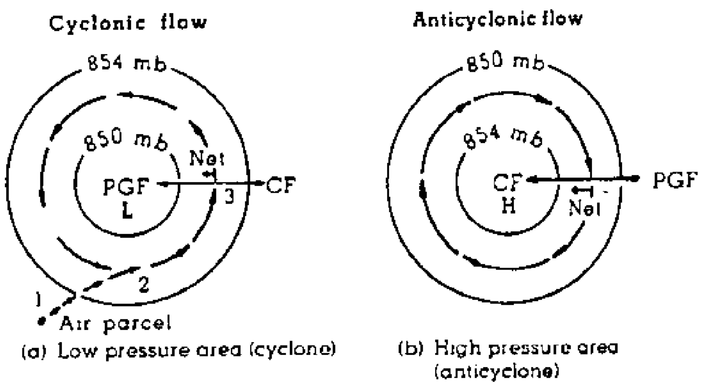



Figure 2.3 Winds and Related Forces Around Low and High Pressure Regions in the Northern Hemisphere

Consider a parcel of air initially at rest at position 1 in Figure 2.3(a). The pressure gradient force accelerates this air inward toward the center of the low pressure region and the Coriolis force deflects the air to the right. The deflection of the air to the right continues until the air is moving along a line of constant pressure (isobar) at position 2. The isobars are basically circular around established low or high pressure regions. At point 2 equilibrium exists between the pressure gradient force, the Coriolis force and the centripetal acceleration of the air moving along the curved path. The air will now continue to move along the generally circular path. The pressure gradient force causes air to move outward from a high pressure region. The air is deflected to the right by the Coriolis force resulting in net clockwise flows around high pressure regions as illustrated in Figure 2.3(b). High and low pressure regions migrate producing changing weather patterns. There are, however, locations of semipermanent high or low pressure regions. A semipermanent pressure area is one dominated by either high or low pressure. The semipermanent pressure systems in the Atlantic are the Icelandic Low and the Bermuda High.

The air masses that prevail over an area determine its climate. For example, the southeastern states are dominated in summer by a moist tropical air mass associated with a semi-permanent high pressure region located offshore (the Bermuda High). The southerly winds on the west side of this high pressure region bring warm humid air into the region. In winter, with the net movement of air from the continent toward the water, Canadian air masses invade these states bringing cold fronts across the area. Local storms are superimposed on the general climatic pattern.

4. Ocean Currents

Well-established ocean currents have great effect on the climate of coastal areas. For example, the Gulf Stream carries warm water from the Florida Straits northward along the Atlantic Coast and then northeastward and eastward to the British Isles. Without the Gulf Stream, Great Britain and probably most of Western Europe would have a much colder climate. Small changes or meanderings of these established currents can significantly affect weather patterns. Much of the rain and coastal storm activity on the California coast during the past few years has been attributed to variations in the warm ocean currents (El Nino) off the South American coastline. Winds blowing over these warm streams of water pick up heat and moisture and bring it over land. The moisture and energy is dissipated on the land occasionally with very damaging results. Winds blowing over cold ocean currents can produce the foggy, clouded conditions such as are encountered along portions of the Pacific coast during the summer. Warm, moist air from the Pacific Ocean is advected by westerly winds over the cold, coastal waters. Chilled from below, the air temperature drops to the dew point and fog is produced. As summer winds carry the fog inland over the warmer land, the fog near the ground dissipates leaving a sheet of low-lying gray clouds that block out the sun. Further inland, the air is sufficiently warmed so that even these low clouds evaporate and disappear. Conditions such as these produce the very cool summers of San Francisco while a relatively short distance inland significantly higher temperatures exist.

5. Topography

Temperature in the atmosphere decreases with increasing elevation at the approximate rate of 3.3°F per 1000 ft change in elevation. This rate of decrease of temperature with elevation is called the lapse rate. In addition, atmospheric pressure decreases rapidly in a non-linear manner with increasing elevation. Thus, at 10,000 feet in a mountain range the temperature and pressure are about 33°F and 4.6 psi lower than conditions at sea level. Horizontally moving air will obviously have to rise to go over a large obstacle such as a mountain range. Forced lifting along a topographic barrier is called orographic uplift. This uplifting produces cooling as the air proceeds up the slope of the mountain range. If the air is humid, clouds form and precipitation may occur. On the downwind side of the mountain barrier the air sinks and warms. The clouds evaporate and the air mass has lost much of its moisture content. Some of the "rainiest" places in the world are located on the windward side of mountains. On the other hand, regions downwind of mountain ranges often have relatively small precipitation rates.

A very important physical feature of the mountain ranges in the United States is their orientation. Most are oriented in approximately north-south lines and tend to block the flow of the prevailing westerlies. In the east, the Appalachian Mountains tend to block the flow of Atlantic air into the interior. Their orientation, on the other hand, permits the free passage of cold arctic air masses from Canada into the central and eastern two-thirds of the United States. The location of mountain ranges and the lack of an east-west mountain barrier also permits the unhampered northward flow of warm tropical air from the Gulf of Mexico far northward into the interior of the continent. This zone of free flow through the center of the continent is the meeting place of cold and warm air masses; fronts and storms form in this area as the air masses clash.

## 3. AVAILABILITY OF CLIMATIC DATA

There is a wealth of climatic data available from the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense (DOD), other government agencies, academic institutions, and private sources. NOAA publishes a report "Selective Guide to Climatic Data Sources" which outlines most of the data which are available. Much of the climatic data can be obtained from the National Climatic Center (NCC), a part of NOAA. A number of the NCC publications are periodicals with weekly, monthly or yearly distribution.

Basic climatological data such as precipitation, temperature, relative humidity, evaporation, wind, soil temperature, snowfall, heating degree days, etc. are available in monthly and annual publications. These data are published for each state or combination of states as well as for many specific locations. Generally, each state is subdivided with data presented for climatic divisions which represent approximate homogeneous climatic regimes. The basic data are available in various forms: high values, low values, mean daily values, mean monthly values, mean yearly values, etc. Historical climatological data are also available for states or regions where long weather records exist.

Publications are also available presenting specialized information such as storm data. In a chronological listing, by states, occurrences of storms and unusual weather phenomena are presented. Other similar publications exist examining specific climatic variables.

Despite the overall magnitude of available data there may be a shortage of applicable data when a specific site and climatic variable is considered. Sufficient data may be available to establish general state or regional patterns yet be insufficient to establish variations within a specific study area. For example, in the ACF basin there appears to be an adequate supply of most climatic data, however, evaporation data for the basin appears to be scarce. NOAA in its report "Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States" lists only eight data locations for the State of Georgia. Only three of these data locations may be considered as representing data for the ACF basin.

4. THE STUDY AREA

A. General Description

The approximate drainage basin for the Apalachicola, Chattahoochee and Flint River (ACF) system is shown in Figure 4.1 superimposed on a map indicating the general land regions of Georgia, Alabama and a portion of Florida. The ACF system has its origin in the Blue Ridge Mountain region of northern Georgia and terminus in Apalachicola Bay, Florida. Along the way it drains approximately 13,000 square miles of Georgia, 2800 square miles of Alabama and 3000 square miles of Florida.

1. Georgia Drainage Area

In Georgia, the ACF system drains portions of all the regions except the Appalachian Plateau and the Atlantic Coastal Plains.

The Blue Ridge rises in the northeastern part of the state. The peaks vary from 2,000 to nearly 5,000 feet above sea level. Hardwoods and pine trees cover the slopes of these mountains.

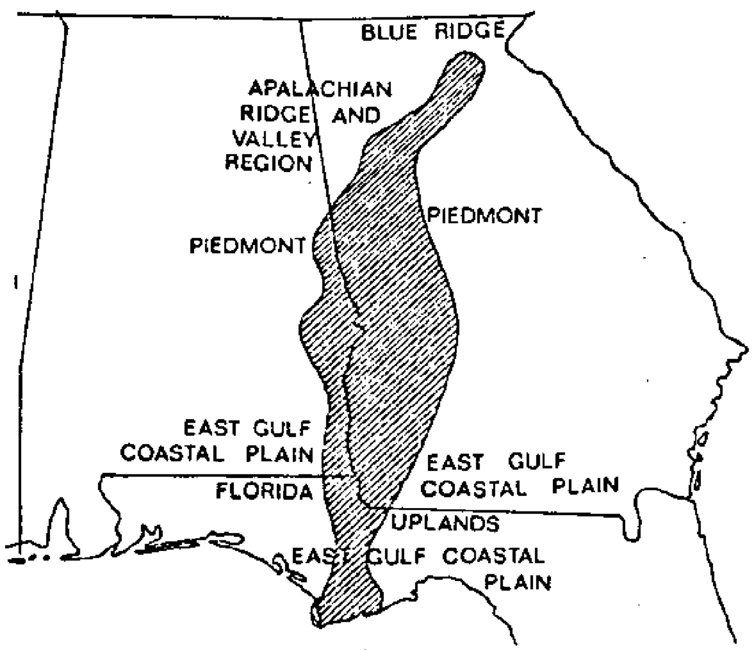



Figure 4.1 Approximate Drainage for Apalachicola, Chattahoochee and Flint River System

The Appalachian Ridge and Valley Region, in northwestern Georgia, has several broad, fertile valleys separated by long, parallel ridges. Pine and hardwood forests once covered these valleys. Today, the rich soils produce cotton, fruits, grains, and vegetables. Beef cattle graze in the valley pastures.

The Piedmont has gently rolling hills. The northern edge of the region meets the Appalachian areas at about 1,500 feet above sea level. The Piedmont gradually slopes down toward the south, where it meets the coastal plains at an elevation of less than 400 feet. The region's big cities--Atlanta, Augusta, Columbus, and Macon--help make it the most heavily populated section of Georgia. The southern boundary of the Piedmont is known as the "fall line". As rivers flow from the Piedmont to the softer ground of the coastal plains, falls and rapids occur.

The East Gulf Coastal Plain covers almost a fourth of Georgia in the southwest. This flatland has a rich sandy loam soil that produces large agricultural crops.

2. <u>Alabama Drainage Area</u>

In Alabama, the ACF system drains portions of the Piedmont and East Gulf Coastal Plains.

The Piedmont, in east-central Alabama, is an area of low hills and ridges separated by sandy valleys. The clay soils of these hills and ridges have been badly eroded. Most of the land is forested. Cheaha Mountain, the highest point in Alabama, rises 2,407 feet on the northwestern edge of the Piedmont.

Deposits of coal, iron ore, limestone, and marble, together with electric power from projects on the Coosa and Tallapoosa rivers, make the Piedmont an important manufacturing area. Textile production is the main industry in many small cities of the region.

The East Gulf Coastal Plain is Alabama's largest land region. It covers the entire southern two-thirds of the states except for a narrow strip of land called the Black Belt. In western Alabama, the plain extends north almost to Tennessee. The southeastern part of the plain is called the Wiregrass section. It is named for a tough grass that once grew there in the pine forests. Today, the Wiregrass area is an important farming region. The northern part of the plain is often called the Central Pine Belt because many pine forests cover its low, rolling hills. In the western part of this section, the soils are gravelly and sandy, and are not good for growing crops.

3. Florida Drainage Area

In Florida, portions of the Florida Uplands and the East Gulf Coastal Plains are drained by the ACF system.

The East Gulf Coastal Plain is part of a larger land region. It begins at the Gulf of Mexico and extends as far west as western Mississippi and as far north as southern Illinois. Long, narrow islands extend along the Gulf of Mexico coastline. Large coastal swamps stretch far inland.

The Florida Uplands extends across the northern portion of the state with a section extending down the center of the state toward the southern tip of the peninsula.

B. General ACF Basin Climatic and Precipitation Patterns

General air mass movements for the United States are shown in Figure 4.2. The ACF drainage basin is dominated by air mass movement from two regions, warm moist air from the Gulf of Mexico and a cooler, dryer air movement from Canada. The interaction of these two flows are

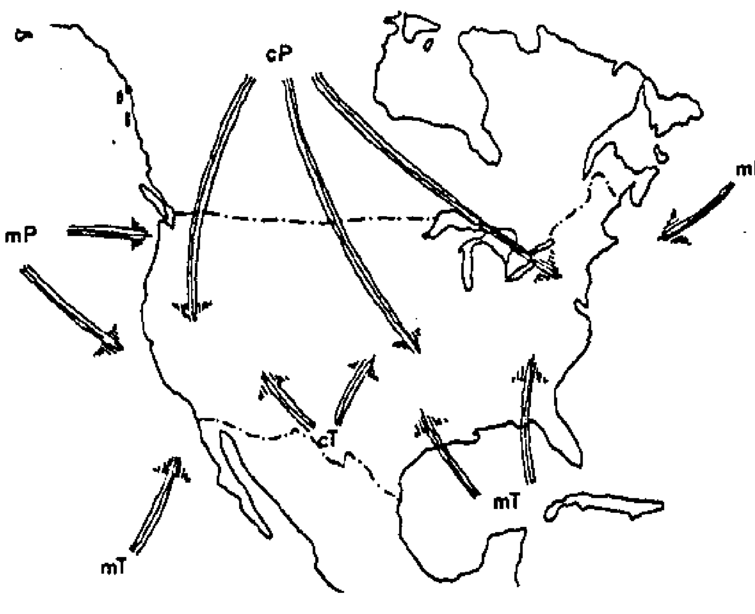



Figure 4.2 General Air Mass Movements in the United States

the major climatic controls in the study air. A warm moist flow from the Gulf of Mexico tends to dominate the weather pattern during the summer while a cold dry air flow from Canada often enters the region during the winter months. The region experiences fairly well-distributed precipitation throughout the year although August through November are generally the periods of minimum precipitation.

The semi-permanent Bermuda High produces a clockwise air flow. On the western side of the high, air flows northward into the southeast United States. Summers are hot and humid, characteristic of the air mass moving from the Gulf of Mexico. The summer air masses originating in Canada, where long summer days melt snow and warm the land, are moderately cool and relatively moist. A summertime air mass flow from Canada usually brings relief from the heat patterns. Air mass movement from Canada during the summer is relatively infrequent since flows generally tend to be from the Gulf northward into the continent.

The winter climatic patterns in the ACF basin are more influenced by the Canadian air mass movements. Very cold, dry air moves southward from a high pressure region in Canada. This flow is augmented by the warmer air in the Gulf region rising allowing the cooler air to move into the region. There are no topographic barriers to restrain north-south movement so the air mass may penetrate deeply into the southeastern states. The air mass temperature is moderated as it moves over warmer land to the south however cold wave warnings and frigid temperatures accompany the movement. Between cold waves the flow from the Bermuda high strongly influences the weather pattern.

A "front" is the transition zone between two air masses with different properties. The meeting of air masses produces the "fronts" or severe weather conditions which are encountered in the ACF drainage basins especially in the spring months.

### C. Average Climatic and Precipitation Data for the ACF Basin

Average winter temperatures in the ACF basin are generally higher in the coastal areas and gradually decrease in the interior of the basin. The decrease in average winter temperature is particularly apparent at the higher altitudes in the northern part of the basin. Average summer temperatures in the coastal areas are also generally higher, however, the variation in temperature within the basin is considerably less in summer than in the winter months. Variations of average monthly temperature within the ACF basin is illustrated in Table 4.1.

There are only small variations in average relative humidity within the ACF basin. The variation with season within the basin is also relatively small. Figures 4.3 and 4.4 present mean daily relativity humidity data for January and July. The average relative humidity is observed to be approximately 80% in the near coastal portion of the ACF basin both in January and in July. The relative humidity decreases inland. However, the entire interior of the ACF basin has an average relative humidity between 70 and 80% throughout the year.

| | TEMPERATURE (°F) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Average Above Buford Dam | Average between Buford Dam and West Point Dam | Average between West Point Dam and Walter F.George Dam | Average between Walter F.George Dam and Jim Woodruff Dam | Average for ACF Basin Above Jim Woodruff Dam | Average between Apalachicola and Jim Woodruff Dam | Average for ACF Basin Above Apalachicola | ACF Basin Normal |
| Jan | 35.8 | 40.7 | 49.3 | 49.0 | 43.7 | 52.6 | 45.5 | 44.5 |
| Feb | 45.5 | 47.8 | 55.9 | 56.4 | 51.4 | 59.1 | 52.9 | 47.1 |
| Mar | 53.9 | 57.8 | 63.2 | 62.0 | 49.2 | 61.7 | 59.7 | 54.3 |
| Apr | 56.4 | 59.3 | 64.8 | 65.6 | 61.5 | 66.8 | 62.6 | 63.1 |
| May | 68.6 | 70.8 | 74.4 | 73.9 | 71.9 | 73.4 | 72.2 | 70.2 |
| Jun | 72.7 | 76.4 | 80.1 | 80.1 | 77.3 | 80.6 | 77.9 | 76.4 |
| Jul | 76.6 | 79.8 | 79.9 | 80.4 | 79.2 | 80.4 | 79.4 | 79.1 |
| Aug | 74.2 | 79.0 | 80.0 | 80.3 | 78.4 | 81.2 | 78.9 | 78.7 |
| Sep | 67.8 | 72.7 | 74.8 | 75.9 | 72.8 | 76.8 | 73.6 | 73.9 |
| Oct | 59.5 | 63.6 | 68.0 | 68.5 | 65.0 | 70.2 | 66.0 | 63.2 |
| Nov | 52.4 | 54.8 | 62.2 | 62.7 | 58.0 | 63.9 | 59.2 | 53.4 |
| Dec | 48.7 | 51.1 | 56.5 | 57.7 | 53.5 | 59.9 | 54.8 | 46.6 |
| Ann. | 59.4 | 62.8 | 67.4 | 67.7 | 64.3 | 68.9 | 65.2 | 62.6 |

Table 4.1 Average Monthly Temperatures Within the ACF Basin for 5 Years and Normals for 1951-1980

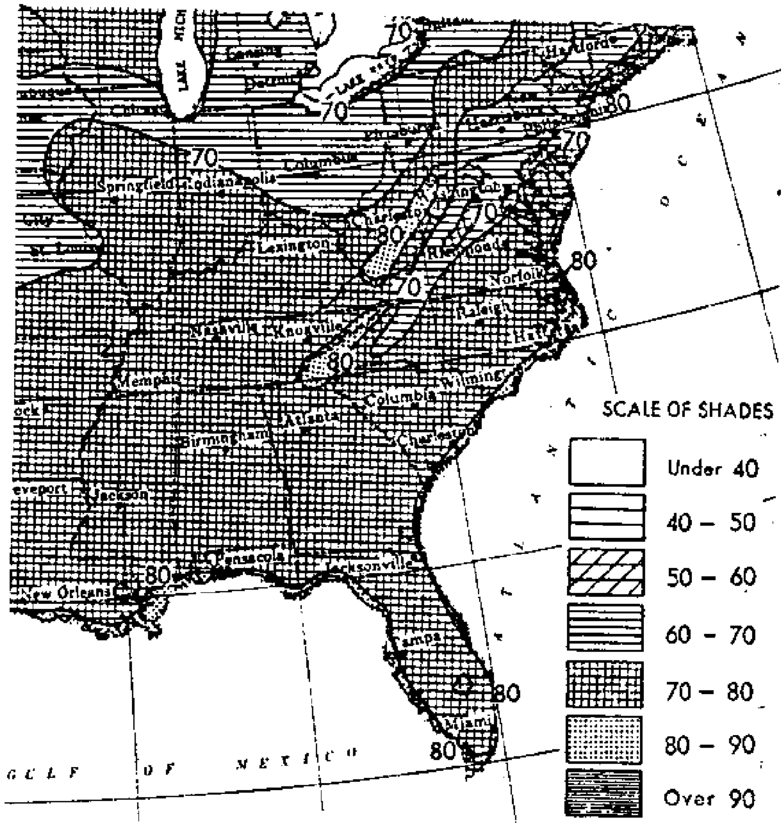



Figure 4.3 Mean Daily Relative Humidity (%) for July

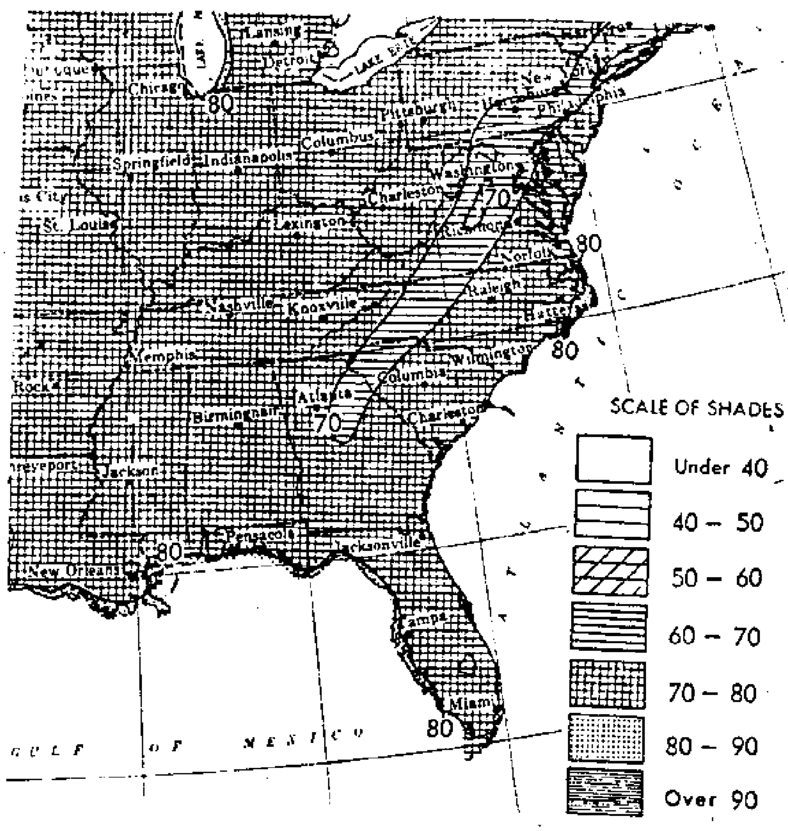



Figure 4.4 Mean Daily Relative Humidity (%) for January

As indicated in Figure 4.5, the average annual precipitation within the ACF drainage basin varies from about 47 inches/year to above 60 inches/year. Starting in the northern portion of the drainage basin the average rainfall is over 60 inches/year. Moving southward, the annual rainfall decreases to below 50 inches/year, then increases in the Columbus, Georgia area to around 54 inches/year. The average rainfall rate then decreases followed by an increase back to around 60 inches/year in the coastal region.

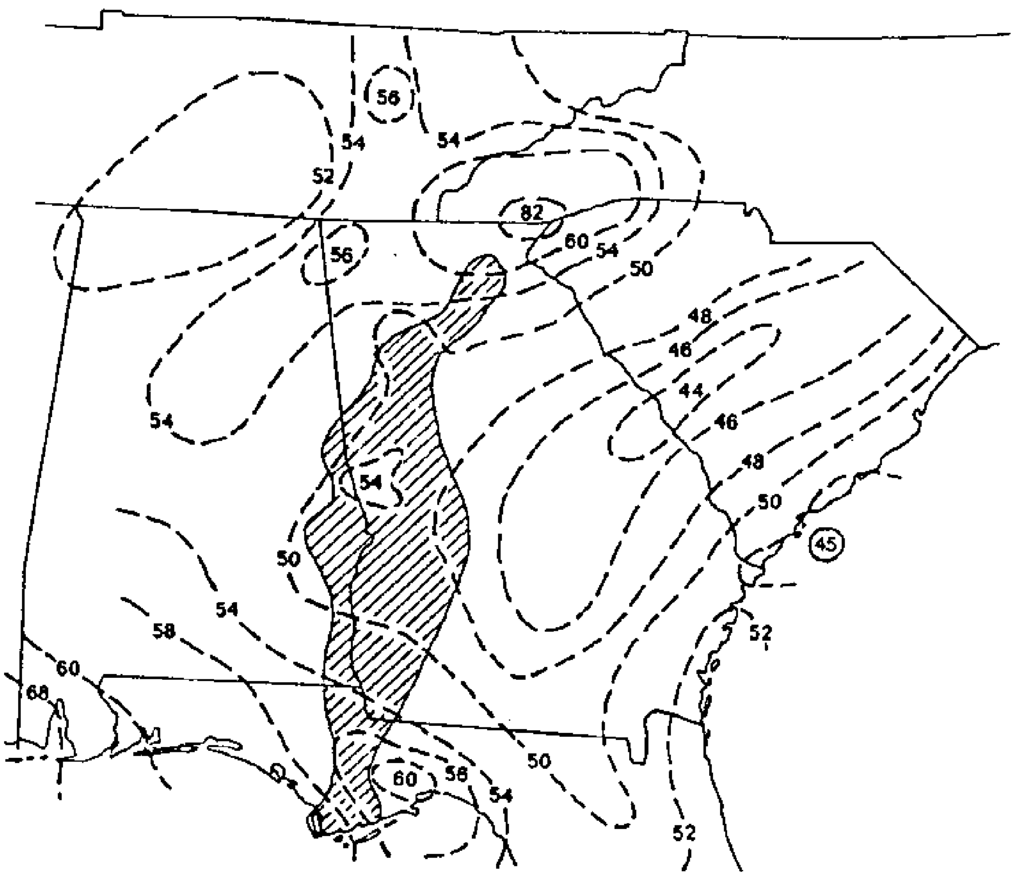



Figure 4.5 Average Precipitation (inches/year) for Apalachicola, Chattahoochee and Flint River System

This variation in rainfall within the ACF basin to a large extent can be attributed to topography differences and the location of the basin relative to the Gulf of Mexico and the Atlantic Ocean. The Bermuda High will bring moist ocean air into the coastal regions of the Southeastern United States. As the moist air moves inland over the hot continent, it warms, rises and frequently produces afternoon showers and thunderstorms. The amount of precipitation will generally decrease with distance away from the coast. This effect is clearly observed in Figure 4.5. The increased rainfall in the northeastern section of Alabama and the northwestern section of Georgia is due to orographic uplift along the mountain ranges of this region. As previously discussed, the air masses will rise to clear the mountain range, cooling will occur as a result of the increase in elevation and precipitation may result generally on the windward side of the mountain. An apparent abnormality is observed to occur on the state line between Alabama and Georgia in the central portion of the states. This area of abnormally high precipitation is also probably due to orographic uplift associated with the Pine Mountain Range and Oak Mountain Range, both located in this general area. These mountain ranges extend up to 500 feet above the surroundings. Dowdell Knob, the highest elevation in the area, has an elevation of 1,395 feet.

Pan evaporation data are available for only three stations in or adjacent to the ACF basin. Average monthly and annual values for these three stations are presented in Table 4.2. Only a small variation in the annual pan evaporation data exists between the three stations. Mean annual pan evaporation data are also shown in Figure 4.6. The variation in pan evaporation rate would appear to be relatively uniform in the ACF basin.

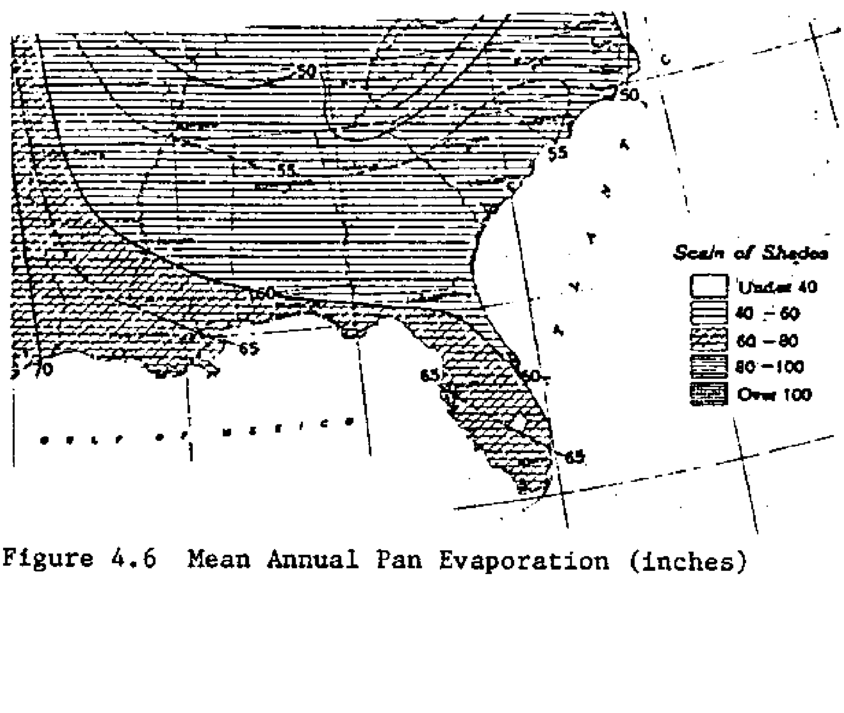



Figure 4.6 Mean Annual Pan Evaporation (inches)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual *** | Record Began Mo/Yr | Latest Data Mo/Yr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Athens College of Agric | 2.76 | 3.20 | 4.82 | 6.12 | 7.13 | 7.49 | 7.63 | 6.83 | 5.65 | 4.21 | 3.03 | 2.53 | 61.40 | 6/53 | 6/71 |
| (Athens) | 14 | 15 | 17 | 16 | 17 | 18 | 16 | 17 | 17 | 18 | 17 | 18 | | | |
| 33°55', 83°21' | 14 | 18 | 14 | 10 | 11 | 12 | 9 | 11 | 17 | 14 | 14 | 18 | 3 | | |
| Experiment | 2.57 | 3.10 | 4.78 | 6.26 | 7.53 | 7.96 | 7.58 | 6.95 | 5.61 | 4.32 | 3.04 | 2.36 | 62.06 | 10/36 | 11/79 |
| 33°16', 84°17' | 30 | 32 | 36 | 43 | 43 | 41 | 43 | 42 | 43 | 44 | 41 | 35 | | | |
| | **** | 16 | 14 | 11 | 13 | 14 | 11 | 10 | 12 | 12 | 9 | 12 | 5 | | |
| Tifton Exp Sta (Tifton) | 2.22 | 2.78 | 4.53 | 6.00 | 7.08 | 6.97 | 6.81 | 6.32 | 5.13 | 4.24 | 2.80 | 2.17 | 57.05 | 5/37 | 12/79 |
| 31°29', 83°32' | 36 | 40 | 40 | 39 | 42 | 42 | 41 | 42 | 42 | 41 | 42 | 40 | | | |
| | 18 | 12 | 12 | 10 | 14 | 10 | 10 | 7 | 11 | 18 | 13 | 12 | 7 | | |

* First line of data in the table for each station is mean evaporation in inches; second line is the number of years of record per month; and third line is the coefficient of variation in percent (computed only where there are 10 years or more of record during 1956-1970).

*** Sum of monthly means.

**** Insufficient data between 1956-70 to compute the coefficient of variation.

Table 4.2 Mean Monthly, Seasonal, and Annual Class A Pan Evaporation (Inches) for Stations in ACF Basin with 10 Years or More of Record for Best Month*

A problem exists, however, in relating pan evaporation rates to actual evaporation rates from lakes or from freely transpiring vegetation. As indicated previously, it may be difficult to correlate pan evaporation rates with actual evaporation rates. This is illustrated in Figure 4.7 where average annual lake evaporation for 1946-55 is given for Georgia. Comparison of Figures 4.6 and 4.7 indicate the difficulty in correlating pan evaporation rates and actual evaporation rates.

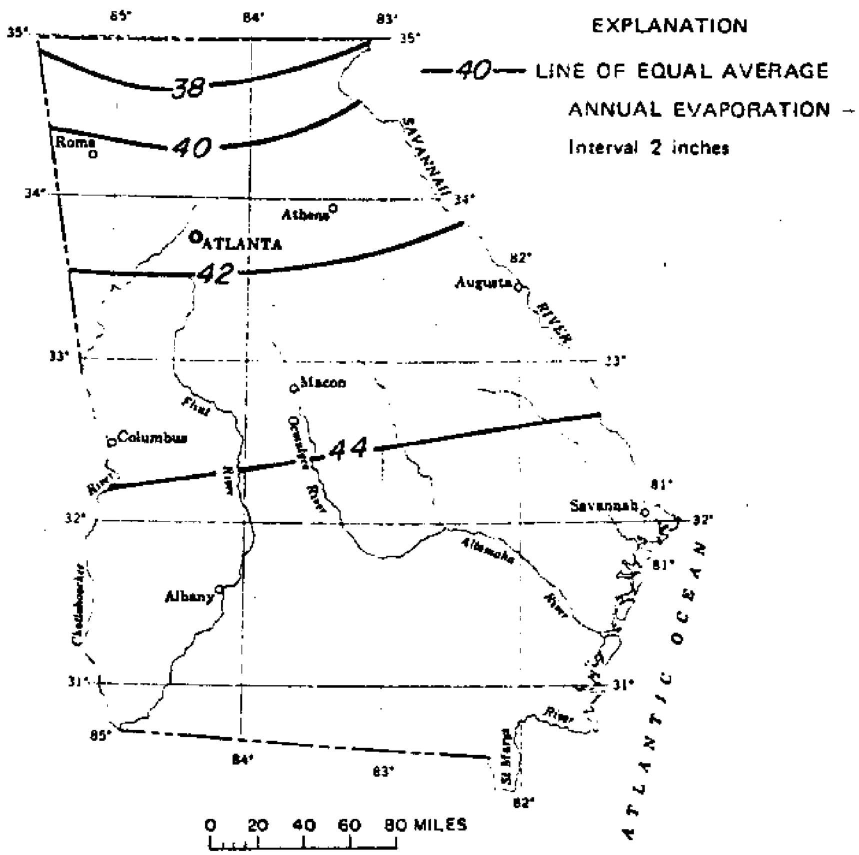



Figure 4.7 Average Lake Evaporation for 1946-55

## 5. THE PRECIPITATION DATA

### A. ACF Subbasins and Study Plan

For the purpose of this study the ACF was divided into 7 subbasins as indicated in Figure 5.1. Each subbasin, except the one which discharges in Apalachicola Bay, terminates at a dam where flow regulation for the subbasin can be accomplished. The drainage area represented by each subbasin is shown in Table 5.1.

Table 5.1

DRAINAGE AREA FOR ACF SUBBASINS

| Subbasin | Drainage Area (square miles) |
|---|---|
| 1 | 1046 |
| 2 | 2558 |
| 3 | 3664 |
| 4 | 3791 |
| 5 | 4362 |
| 6 | 1101 |
| 7 | 2277 |

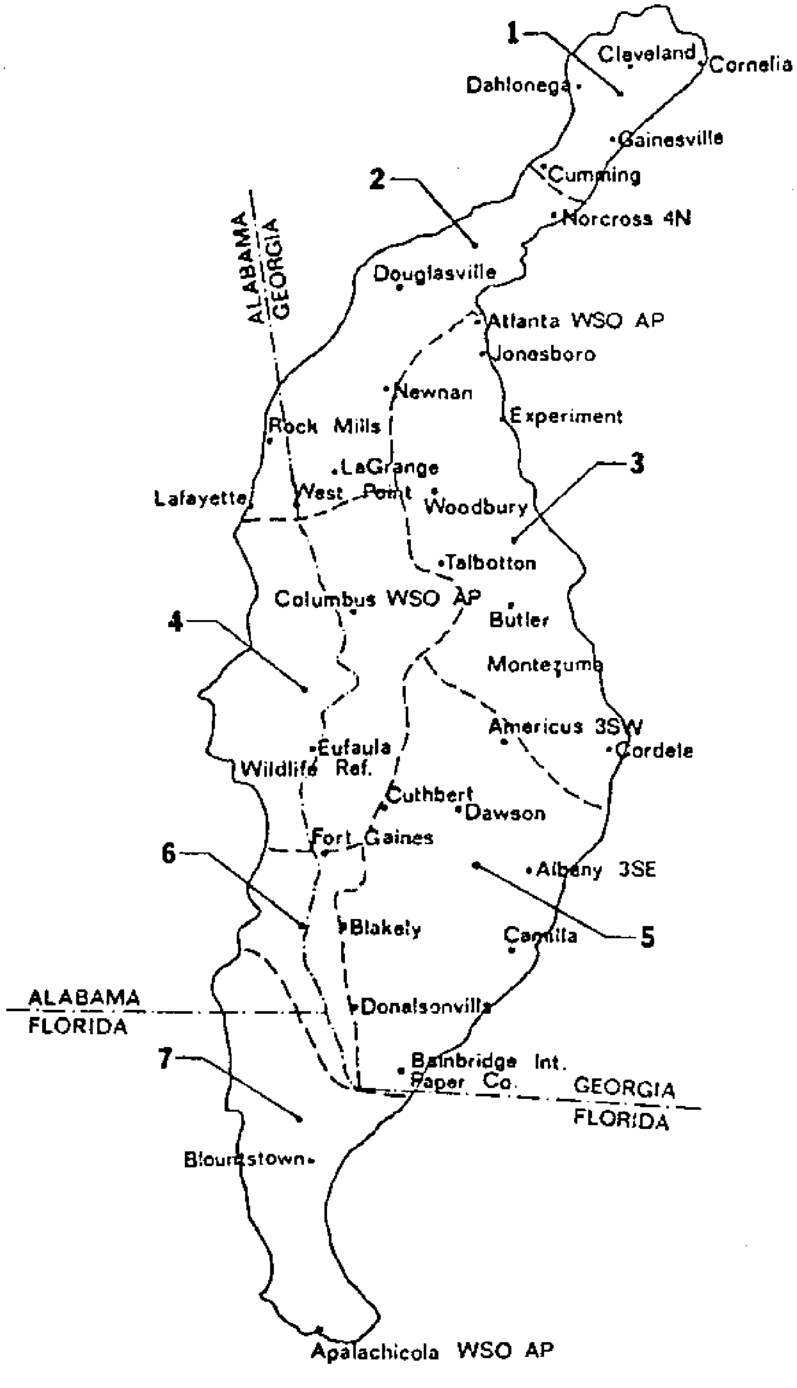



Figure 5.1 ACF Subbasins

Precipitation data from 33 rain gages in the ACF basin are to be analyzed. The locations of each of these rain gages is shown in Figure 5.1. Monthly and yearly precipitation totals and monthly and annual average precipitations for the period of available record will be calculated.

A smaller subset of rain gages representative of the ACF subbasins will be selected for more extensive statistical analysis. Nonexceedence probabilities, recurrence intervals and other standard statistical parameters will be computed for 1, 2, 3, 4, 6, 12 and 24 month time intervals. These data will be presented in suitable tabular and graphical formats.

The precipitation data was provided by the National Climatic Data Center(NCC) in Asheville, North Carolina, on three 2400-foot magnetic tapes - one tape for each state in the ACF river basin. Each record was 186 characters long. The first eight fields, the identification portion of the record, describe the characteristics of the entire record (station, time interval, element type, number of observations). The last five fields, the data portion of the record, contain information about each element value reported. This portion is repeated for as many values as occur in the given time interval.

Each meteorological station is identified by an eight digit identifier assigned by NCC. This eight digit identifier is further divided into a two digit state code, a four digit cooperative network index number (called station number in this report) and a two digit cooperative network division number. The division number for a station can change through time and is not important for this report.

Since the data from NCC contained much more climatic information than was needed for this project on total precipitation, a computer program was written to search for those records marked TPCP, for total monthly precipitation, and copy them to new files. (This program is included as Appendix B.) These files were then merged into one file, printed out, and examined. It was found that most stations in Alabama and Georgia had a division number change during the year 1956 creating two records for the same year. One record showed missing data for September through December while the next record showed missing data for January through August. One station in Florida had three records for 1955. All such multiple records were merged together and division number 00 was assigned to these new records.

### B. Choosing Representative Stations

The representative stations were chosen based on the period of record, the amount of missing data, and the geographical locations of the stations within the subbasins.

#### 1. Subbasin Number 1

This is the region along the Chatahoochee River north of Buford Dam. It contains five meteorological stations at Dahlonega (092475), Cleveland (092006), Cornelia (092283), Gainsville (093621), and Cumming (092408). There are 52 complete years of data from Dahlonega starting with 1931. From Cleveland we have almost 40 years of data starting with April 1943. The data from Cornelia starts with 1931 but several months in 1943, 1944, 1946, 1947, 1949, and 1950 are missing; therefore, this station should probably not be considered as a representative station. The data from Gainsville also starts with 1931 with only April 1936 and November 1947 missing. These two months would not be statistically significant. The data from Cumming starts with June 1937 but November 1937 to January 1938 are missing along with the data for June and July 1955. Therefore, this station should probably not be considered as representative for the subbasin. Cleveland was chosen as the representative station based on its completeness and its central location within the subbasin.

#### 2. Subbasin Number 2

This is a long and narrow region along the Chattahoochee River starting at Buford Dam on the north and ending with West Point Dam on the south. It contains seven meteorological stations - Norcross (096407), Douglasville (092791), Newnan (096335), LaGrange (094949), and West Point (099291) in Georgia and Rock Mills (017025) and Lafayette (014502) in Alabama.

The data from Norcross starts with 1931, but July 1933 to December 1938 are missing. There are 44 complete years of data starting with 1939. Forty-two and one-half years of data are available from Douglasville starting with July 1940. The data from Newnan consists of 52 complete years starting with 1931. From LaGrange we have 48 years of data starting in 1935 with only December 1945 missing; and from West

Point we have 52 complete years starting in 1931. The data from Rock Mills, Alabama starts with 1948 but the data for all of 1950, August 1951, and June 1980 to February 1982 are missing. This would not be a good station to choose for representative data. For Lafayette, Alabama the data starts with 1948 but May-October 1948 are missing. Also the entire year 1950 is missing. If we started with 1951 we would have 32 years of good data; but neither Alabama station provides really good data. Douglasville, Georgia was chosen as representative of this subbasin.

3. Subbasin Number 3

This long narrow subbasin goes from Atlanta on the northern tip to Crisp County Power Dam on the Flint River at the southern tip. It includes meteorological stations at Atlanta (090451), Jonesboro (094700), Experiment (093271), Woodbury (099506), Talbotton (098535), Butler (091425), Montezuma (095979), and Cordele (092266).

Thirty-three years of data starting with 1950 are available from the Atlanta meteorological station. The data from Jonesboro, Georgia starts with July 1940 but December 1943, September-December 1944, March 1951, January-June 1977, and November 1982 are missing; therefore, this station probably should not be considered as representative of the subbasin. Over 48 years of data starting with December 1934 are available from Experiment, Georgia. Fifty-two years of data starting in 1931 are available from Woodbury, Georgia with only February, 1951 missing. The data from Talbotton also starts with 1931 but May 1933, August 1934, July 1935-June 1936, August 1949, and July 1951 are missing. It would be possible to consider this station in view of the 46 years of data starting with 1937. The data from Butler starts with 1931 but over nine years of data from August 1933 to August 1942 are missing. Also several months during 1946 to 1951 are missing. This station should be ignored. There are 52 complete years of data starting with 1931 available from Montezuma. The data from Cordele starts with July 1934 but December 1945-February 1946, and several months in 1948-51 and 1957 are missing; therefore, this station should probably not be used.

Most of the stations in this subbasin are on or very near the boundary of the subbasin. Only Woodbury, Talbotton, Butler, and

Montezuma can be considered to be located centrally. Woodbury was chosen as representative because of its location further upstream.

4. Subbasin Number 4

This region along the Chattahoochee River and around Columbus, Georgia includes meteorological stations at Columbus (092166) and at Eufaula, Alabama (012730). The station at Fort Gaines, Georgia is at the southern terminus of the subbasin.

There are 35 complete years of data available from Columbus starting with 1948. There are only 16 years of data from Eufaula, Alabama starting with February 1967. Due to its more northerly location and the length of the period of record, the station at Columbus, Georgia was chosen as representative of this subbasin.

5. Subbasin Number 5

This region along the Flint River in southwestern Georgia includes eight meteorological stations. Two of these - Blakely and Donalsonville - are on the western border and will be considered as in subbasin 6. The other stations are at Cuthbert (092450), Americus (090253), Albany (090140), Camilla (091500), Bainbridge (090586), and Dawson (092570).

The data from Cuthbert starts with May 1945 but October 1947 and May-August 1948 are missing. There are 34 complete years of data starting in 1949. The data from Americus starts with 1931 but much of 1976 and 1979 are missing. There are 52 complete years of data from Albany starting with 1931. The data from Camilla starts with February 1938. November 1940 to May 1941, February 1950, June 1951, and August 1951 are all missing. The 41 years of data starting with 1942 could be used without much problem statistically. Only five and one-quarter years of data starting with October 1977 are available from Bainbridge. Statistically this station should be ignored.

Forty-one and one-half complete years of data starting with July 1941 are available from Dawson. Due to its central location and the completeness of the data available, this station was chosen as representative of the subbasin.

6. Subbasin Number 6

This region along the Chattahoochee River in the extreme southeastern corner of Alabama including a little of Florida and Georgia includes meteorological stations at Fort Gaines (093516), Blakely

(090979), and Donalsonville (092736), Georgia. The Fort Gaines data starts with 1931 with only December 1938, November 1941, and June 1947 missing. These three months would not be significant statistically. Fifty-two years of data starting with 1931 with only May 1949 missing are available from Blakely, Georgia. The data from Donalsonville starts with August 1941 but December 1941-March 1942 and November 1943-February 1944 are missing. Also several months in 1945 to 1947 are missing. There are 35 complete years of data starting with 1948.

Actually all three weather stations are on the boundaries of this subbasin. Fort Gaines is on the northern boundary and Blakely and Donalsonville are on the eastern border. Fort Gaines was chosen as representative because of its central location on the northern boundary of the subbasin.

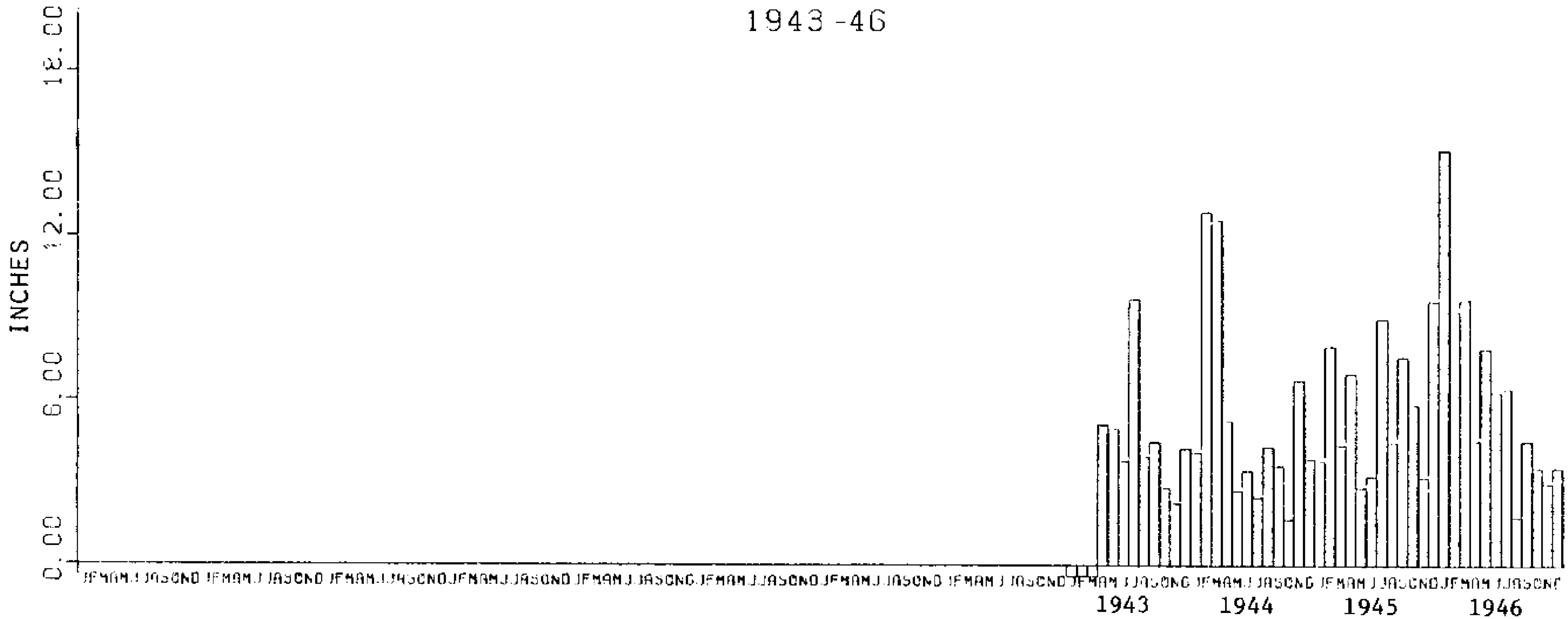
### 7. Subbasin Number 7

This Florida region along the Apalachicola River includes meteorological stations at Apalachicola (080211) and Blountstown (080804). The data for Apalachicola starts with June 1948 but most of 1948 and 1949 are missing. There are 33 complete years starting with 1950. The data for Blountstown starts in 1931 but January and March-August 1971 are missing. This station was chosen as representative because of the longer period of record and because of its geographical location in the center of the subbasin.

## C. Histograms of Precipitation Data

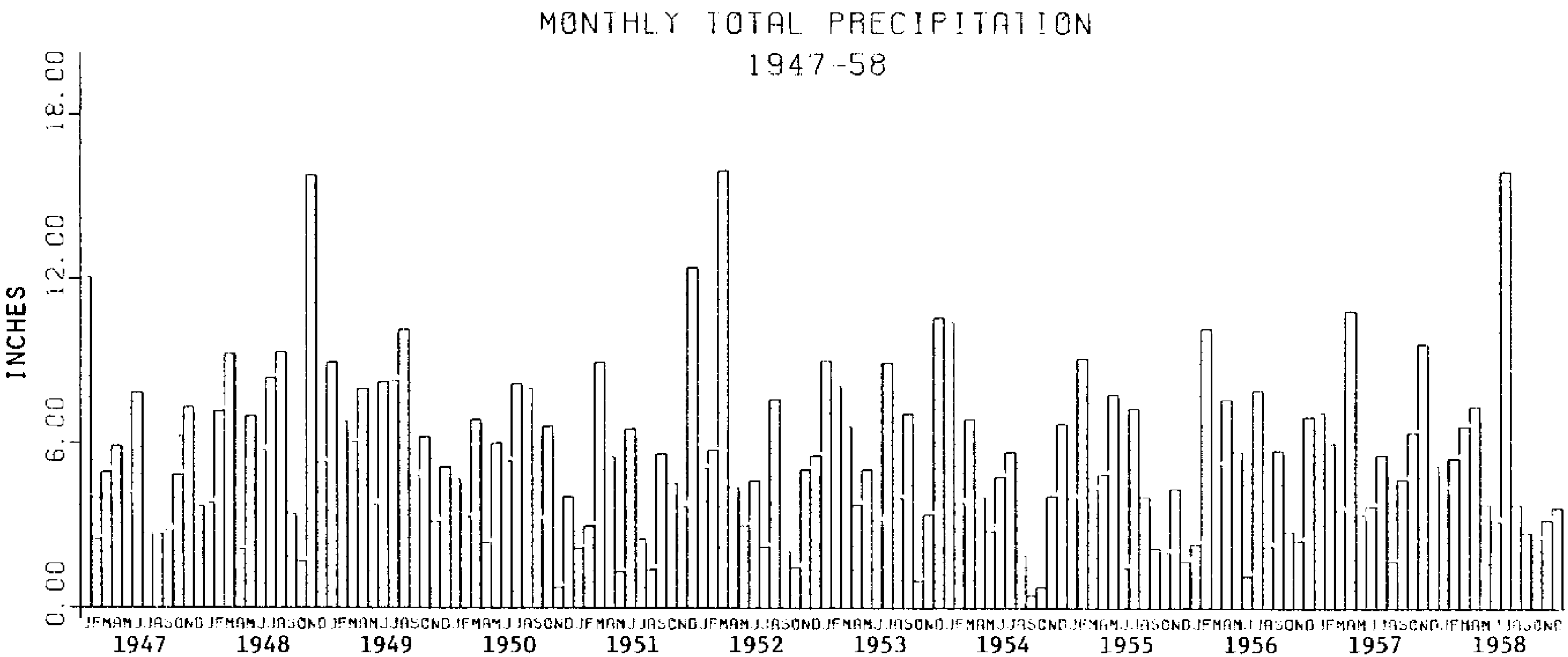
On the next several pages are histograms of the monthly rainfall totals from the seven selected stations for the period of record. These graphs are designed so that each one can display up to 12 years of data. Missing observations are indicated by bars plotted below the x-axis.

MONTHLY TOTAL PRECIPITATION
1943-46




GEORGIA STATION NUMBER: 2006

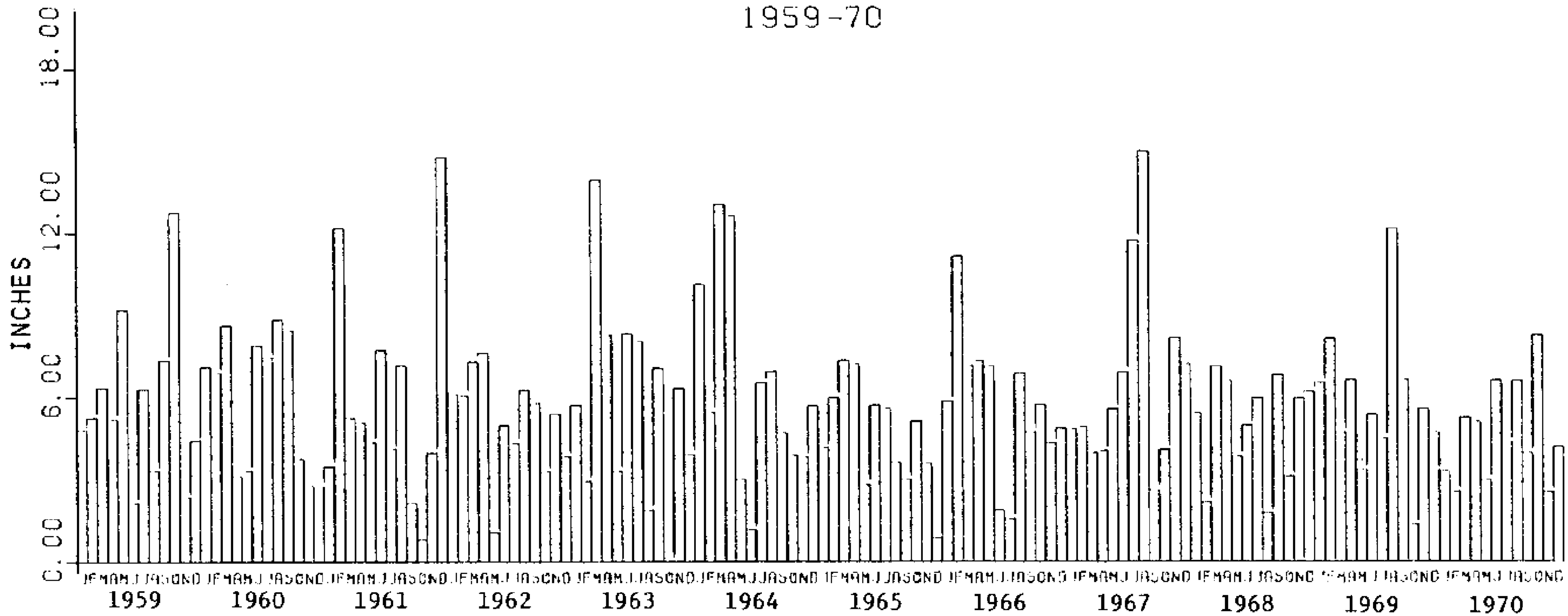
CLEVELAND, GEORGIA




GEORGIA STATION NUMBER: 2006

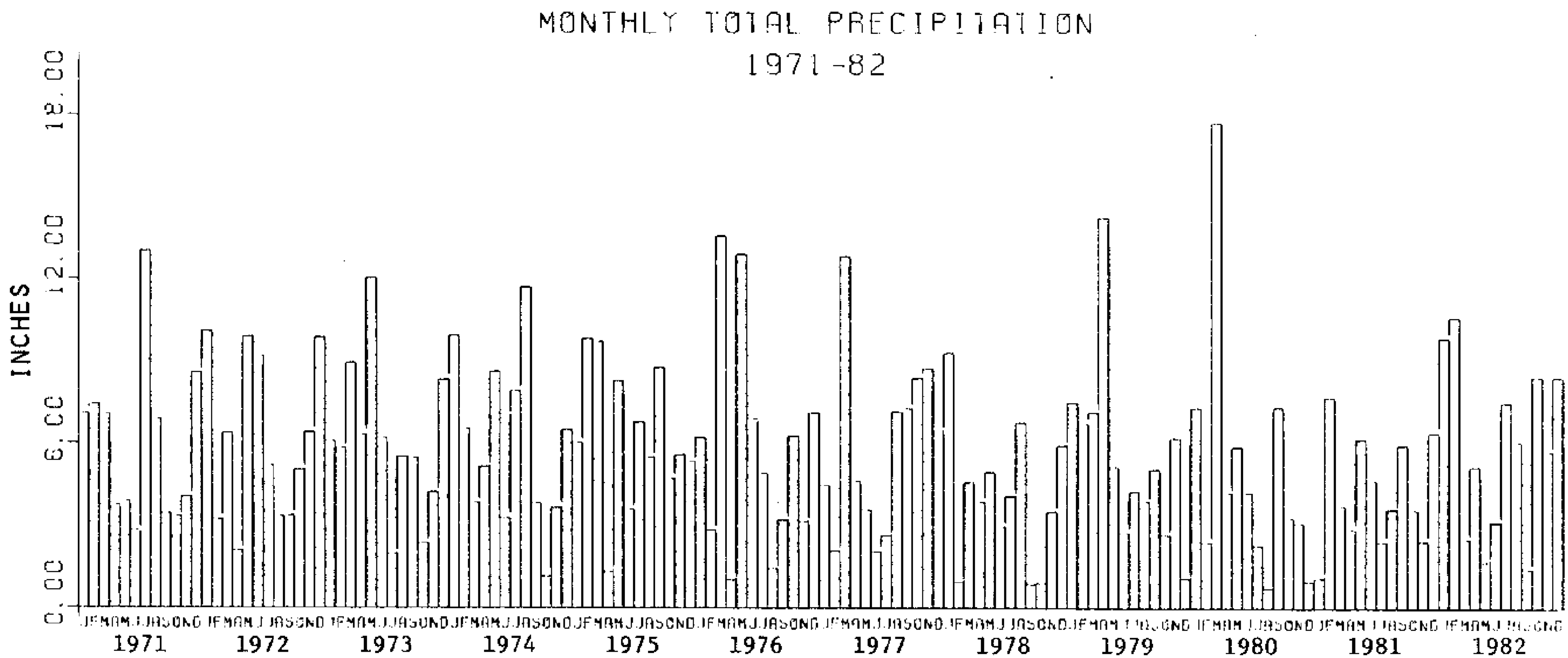
**CLEVELAND, GEORGIA**

MONTHLY TOTAL PRECIPITATION
1959-70




GEORGIA STATION NUMBER: 2006

**CLEVELAND, GEORGIA**

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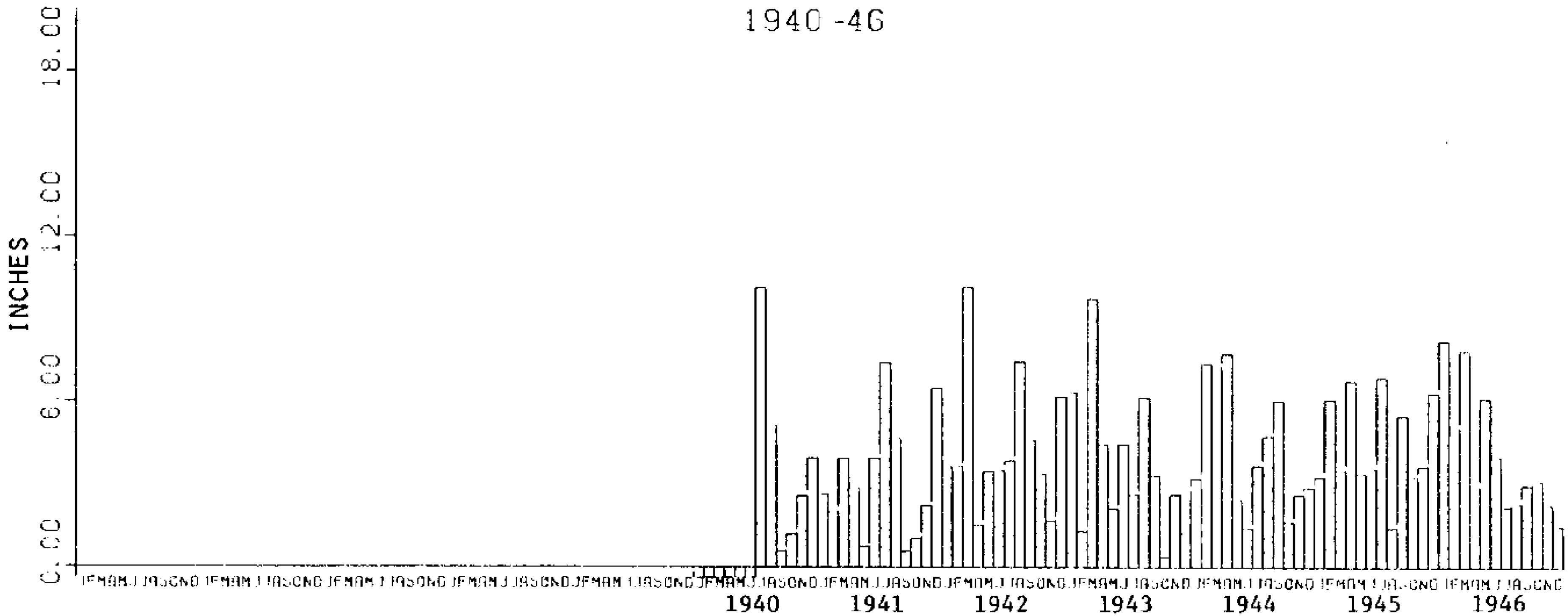
**CLEVELAND, GEORGIA**

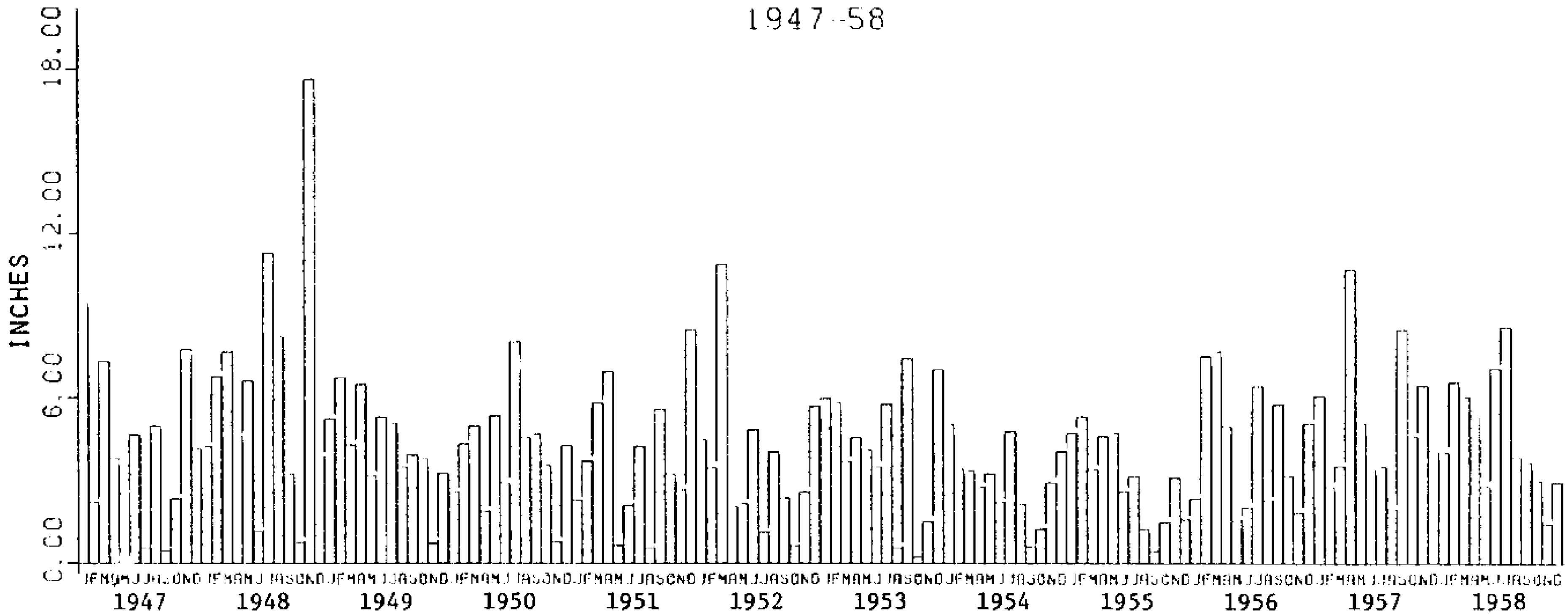
MONTHLY TOTAL PRECIPITATION
1940-46




GEORGIA STATION NUMBER: 2791

DOUGLASVILLE, GEORGIA

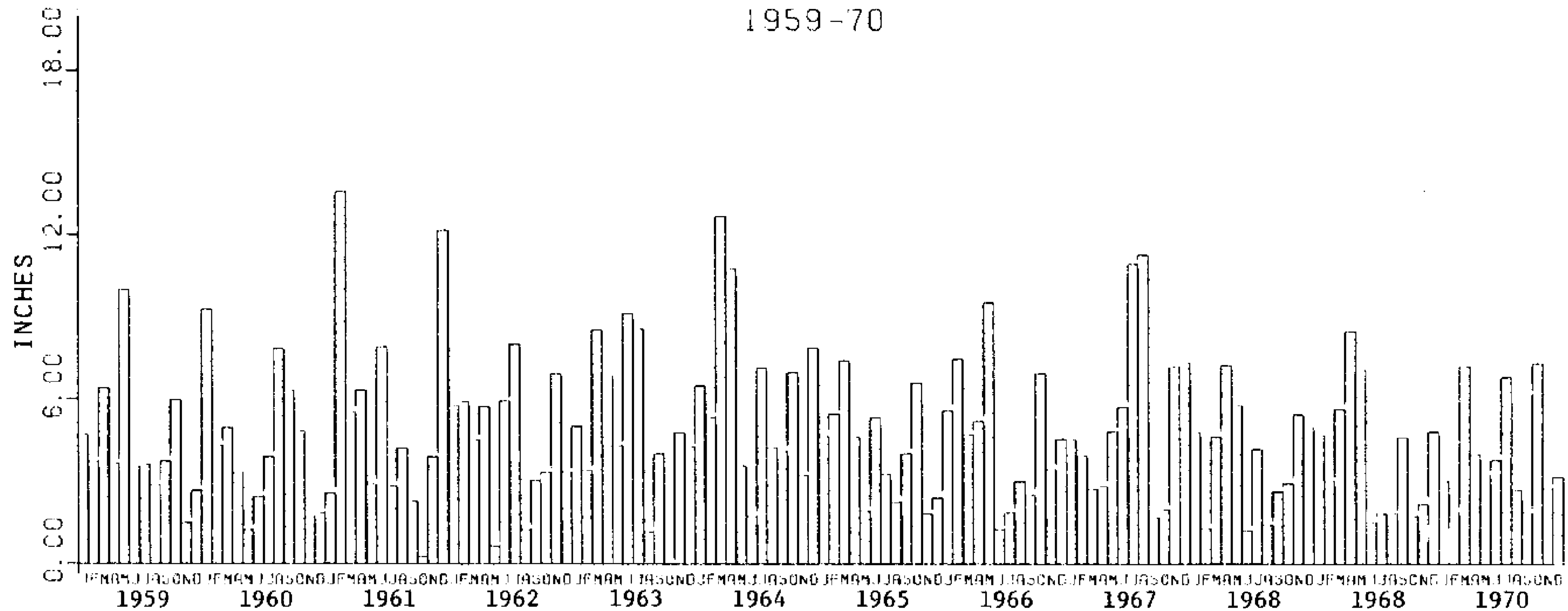
MONTHLY TOTAL PRECIPITATION
1947-58




GEORGIA STATION NUMBER: 2791

**DOUGLASVILLE, GEORGIA**

MONTHLY TOTAL PRECIPITATION
1959-70

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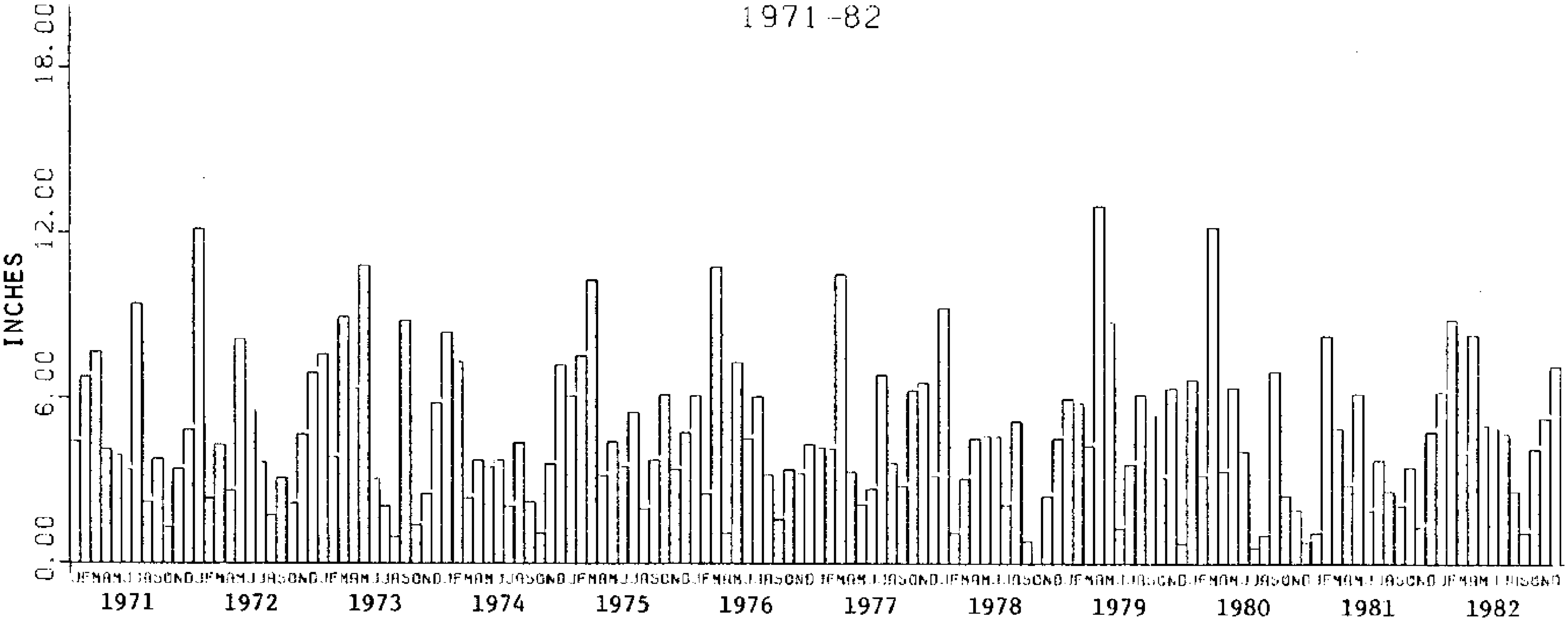
DOUGLASVILLE, GEORGIA

MONTHLY TOTAL PRECIPITATION
1971-82




GEORGIA STATION NUMBER: 2791

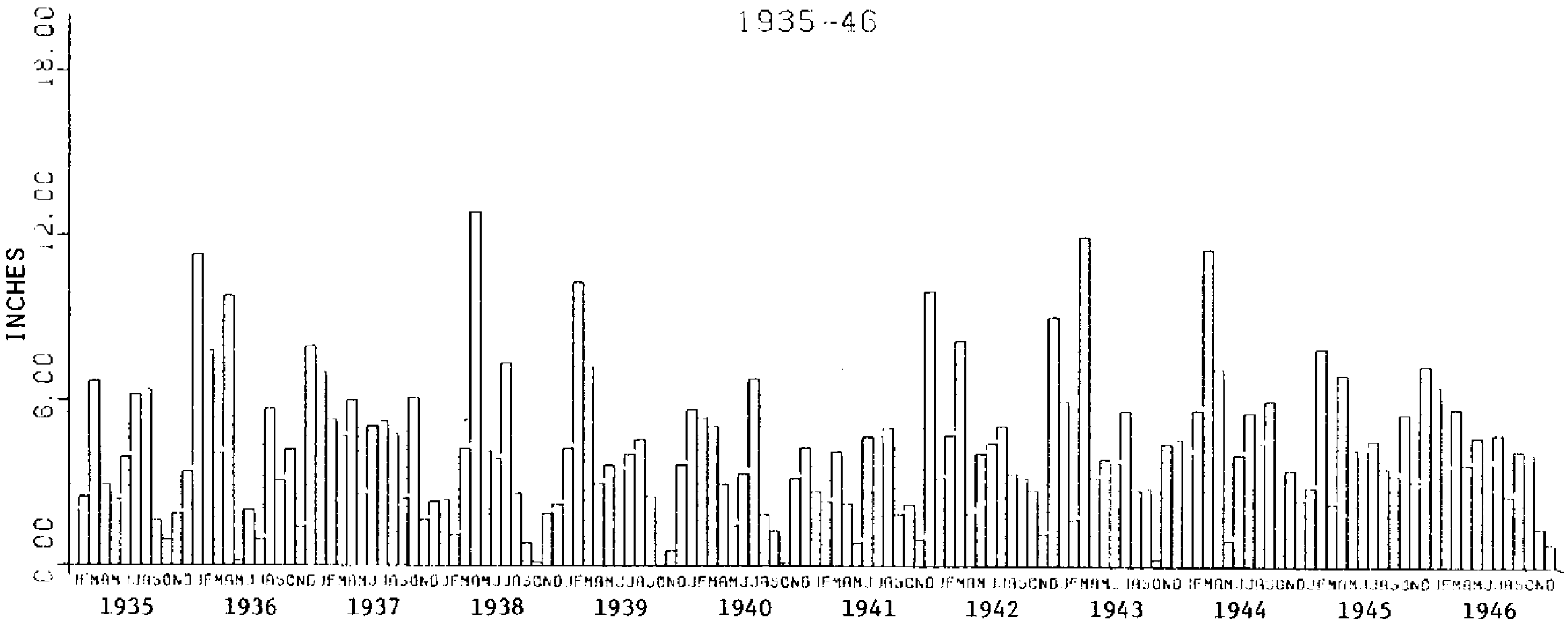
DOUGLASVILLE, GEORGIA

MONTHLY TOTAL PRECIPITATION
1931-34


GEORGIA STATION NUMBER: 9506

WOODBURY, GEORGIA

MONTHLY TOTAL PRECIPITATION
1935-46

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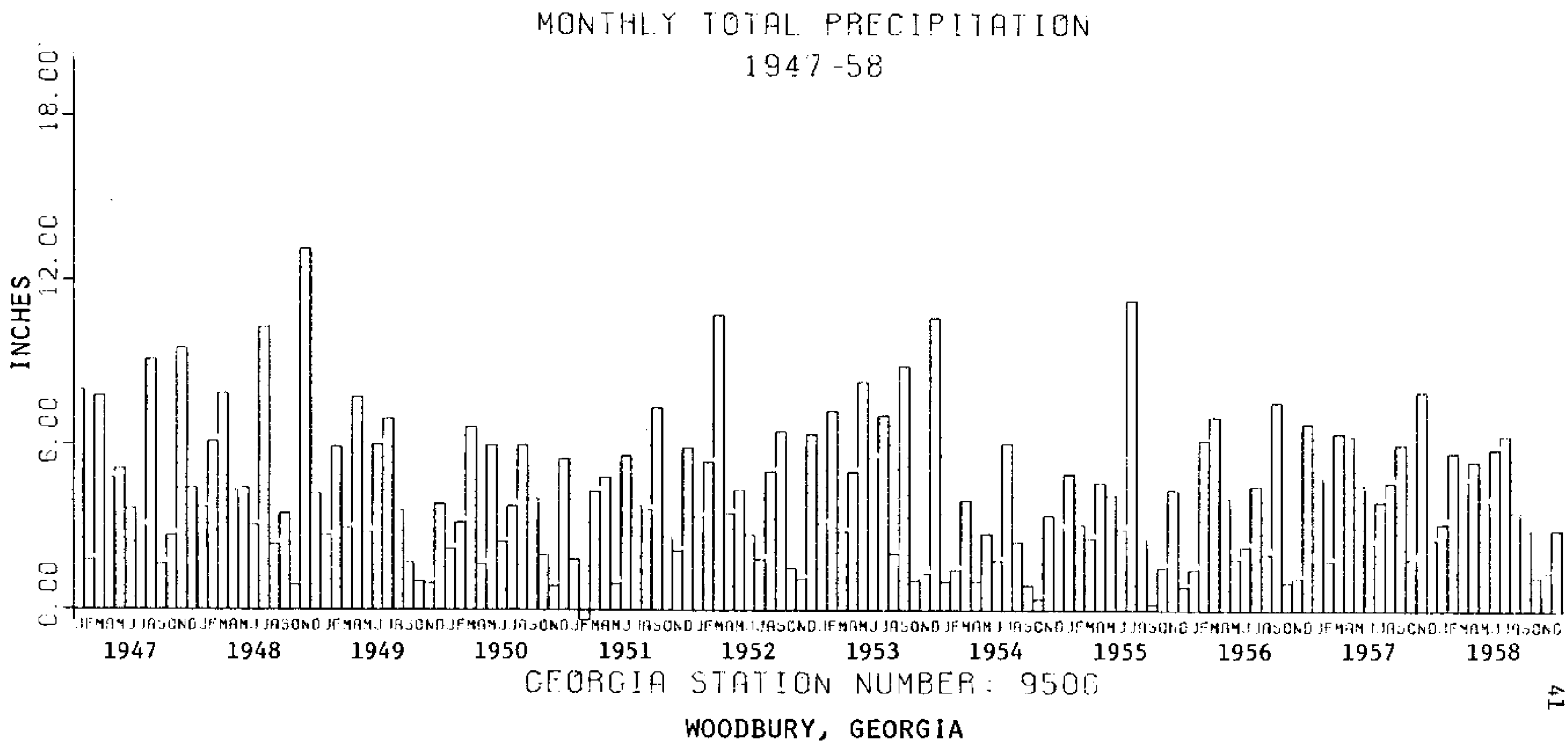
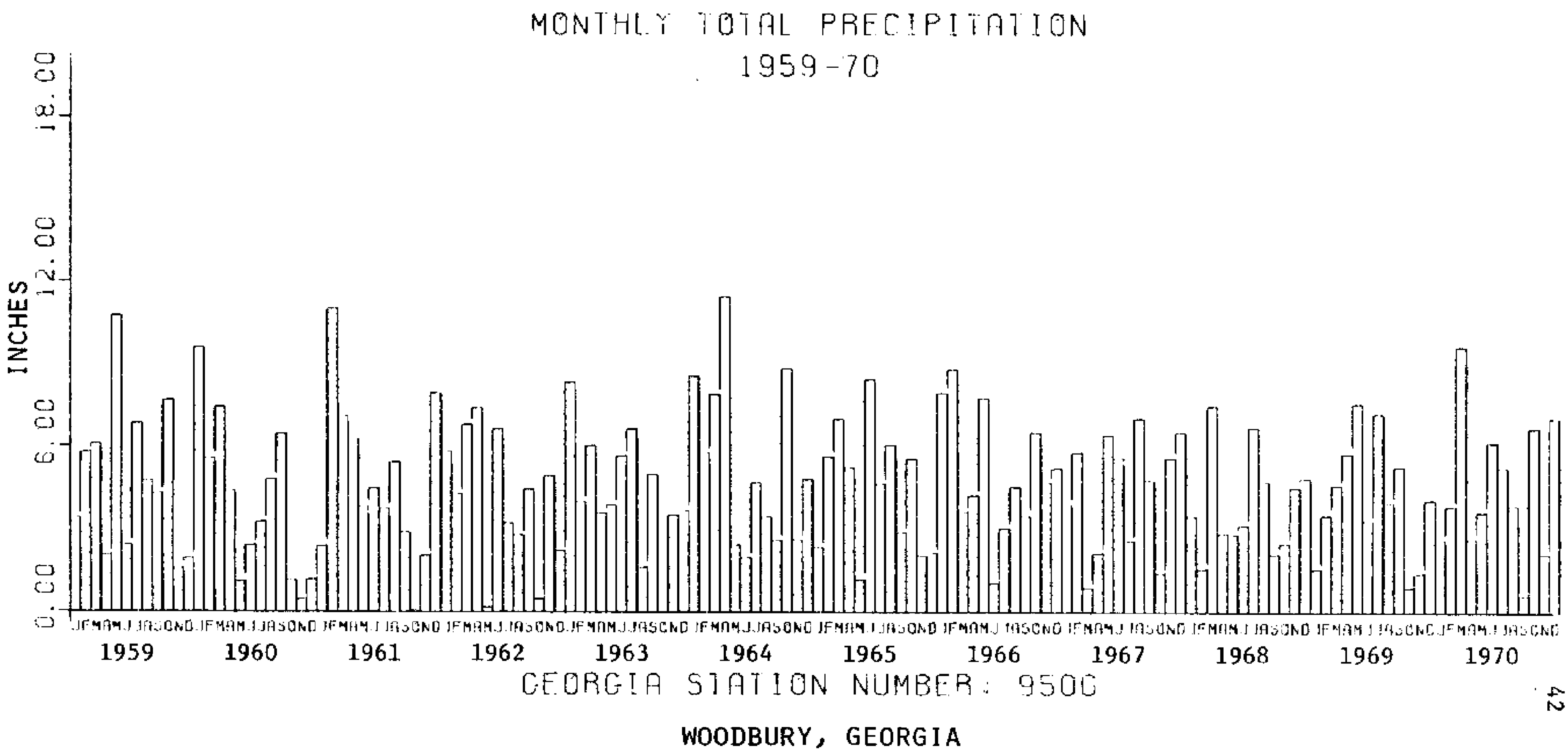
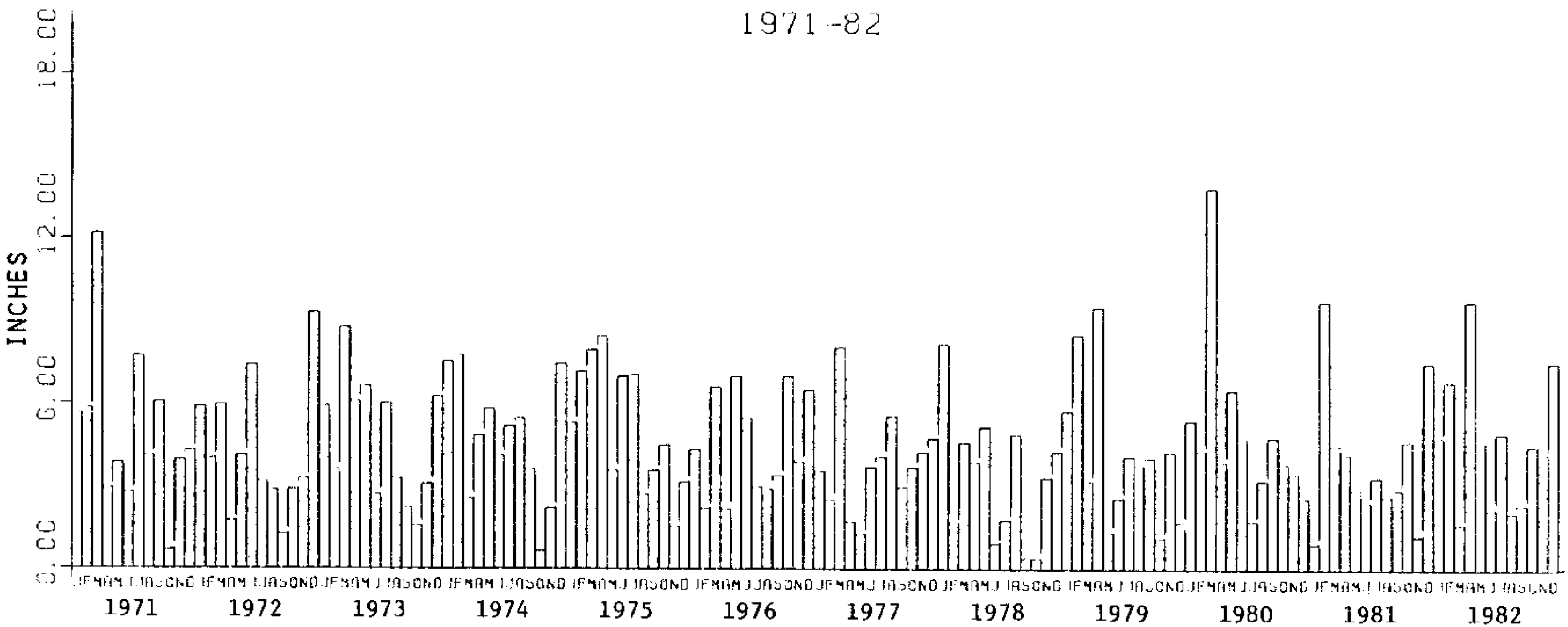
WOODBURY, GEORGIA


MONTHLY TOTAL PRECIPITATION
1947-58
INCHES
0.00
6.00
12.00
18.00
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
GEORGIA STATION NUMBER: 9500
WOODBURY, GEORGIA

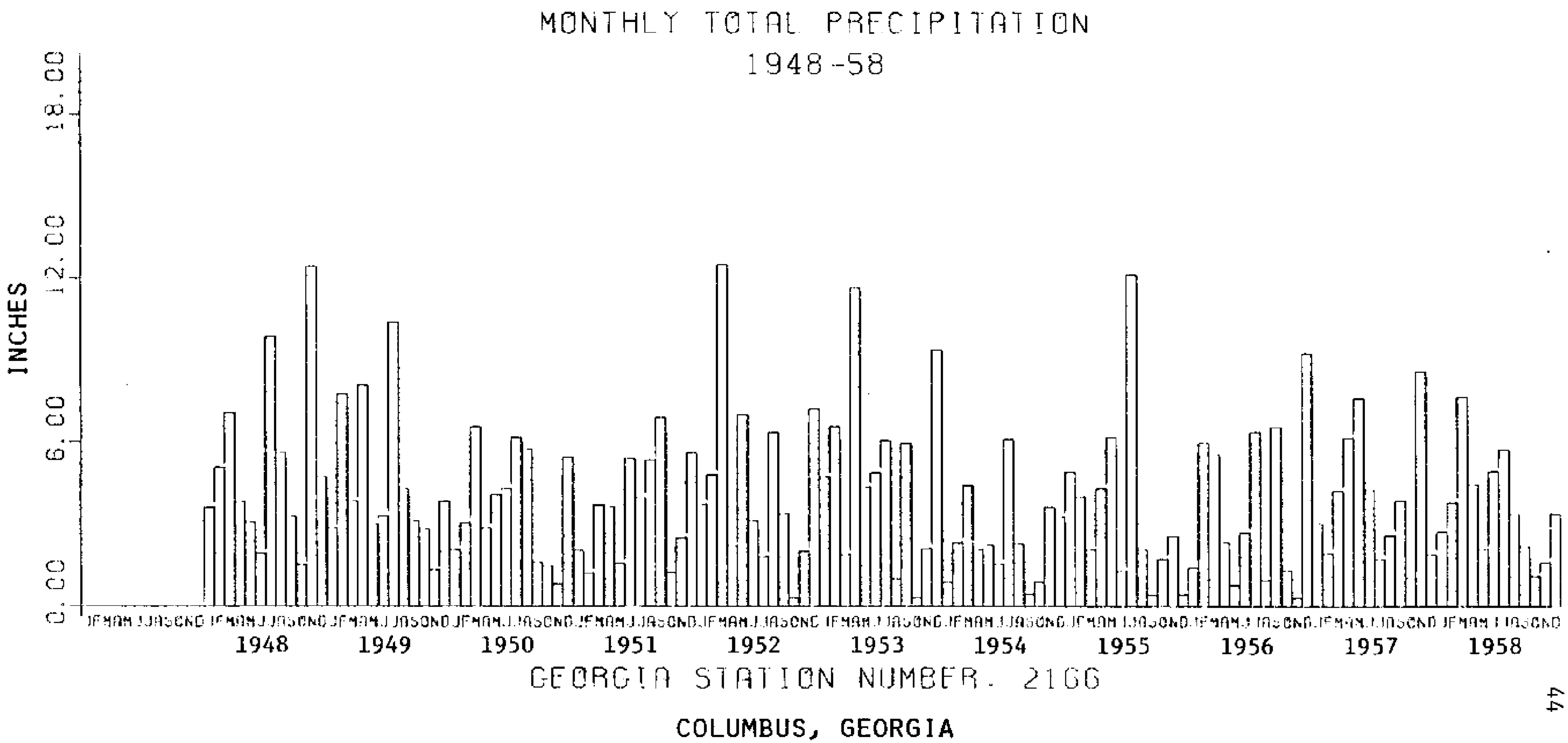

MONTHLY TOTAL PRECIPITATION
1959-70
INCHES
0.00
6.00
12.00
18.00
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
GEORGIA STATION NUMBER: 9500
WOODBURY, GEORGIA

MONTHLY TOTAL PRECIPITATION
1971-82

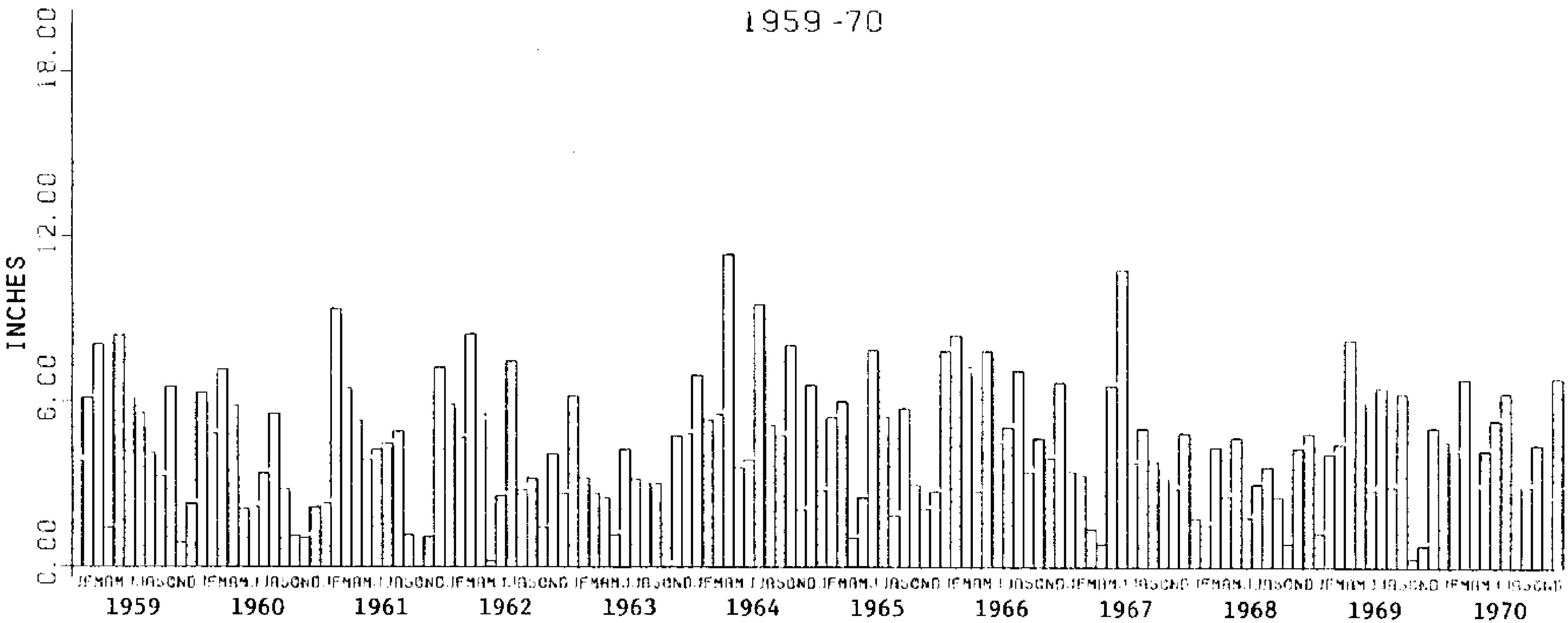



GEORGIA STATION NUMBER: 9506

**WOODBURY, GEORGIA**


MONTHLY TOTAL PRECIPITATION
1948-58
INCHES
0.00
6.00
12.00
18.00
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
GEORGIA STATION NUMBER. 2166
COLUMBUS, GEORGIA

MONTHLY TOTAL PRECIPITATION
1959-70

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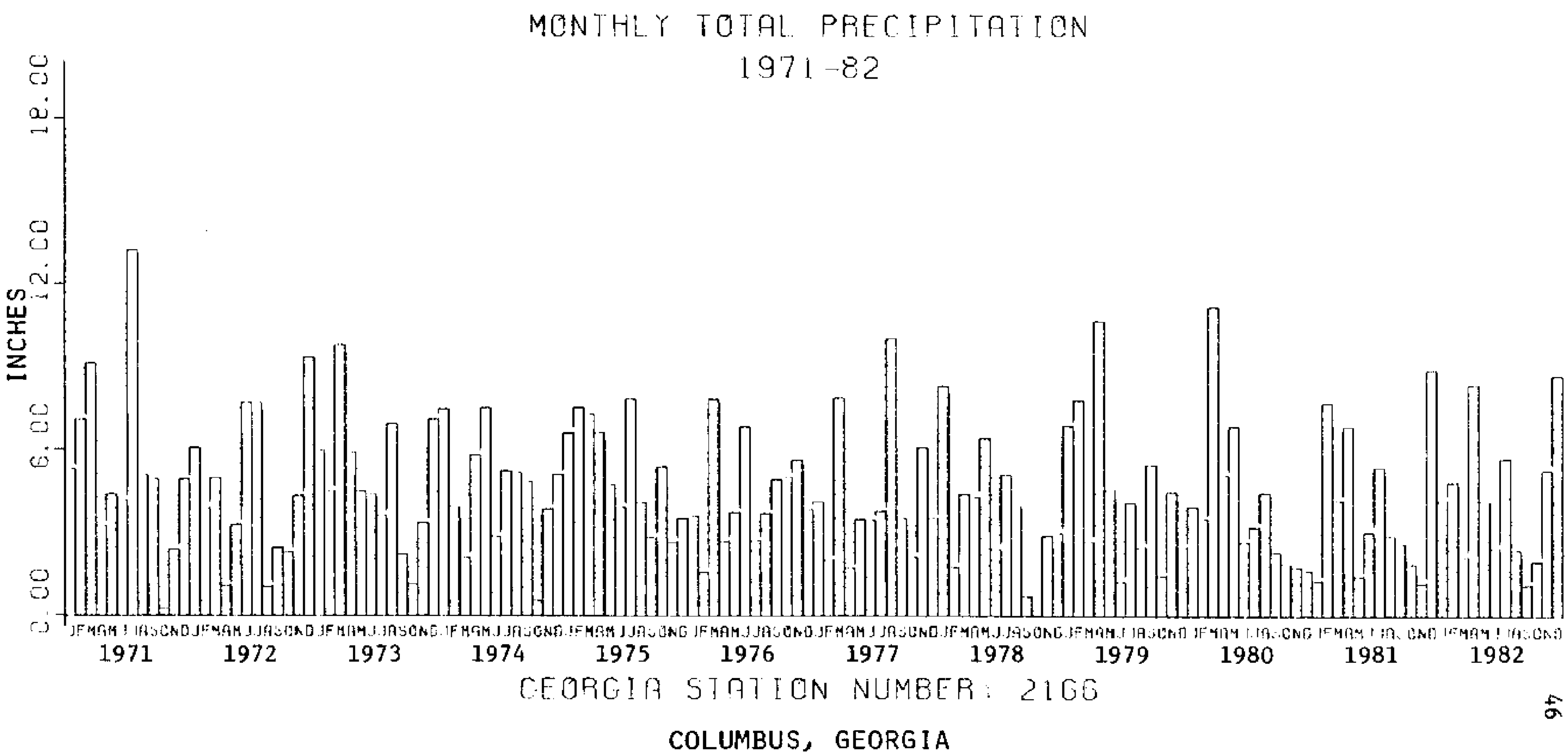
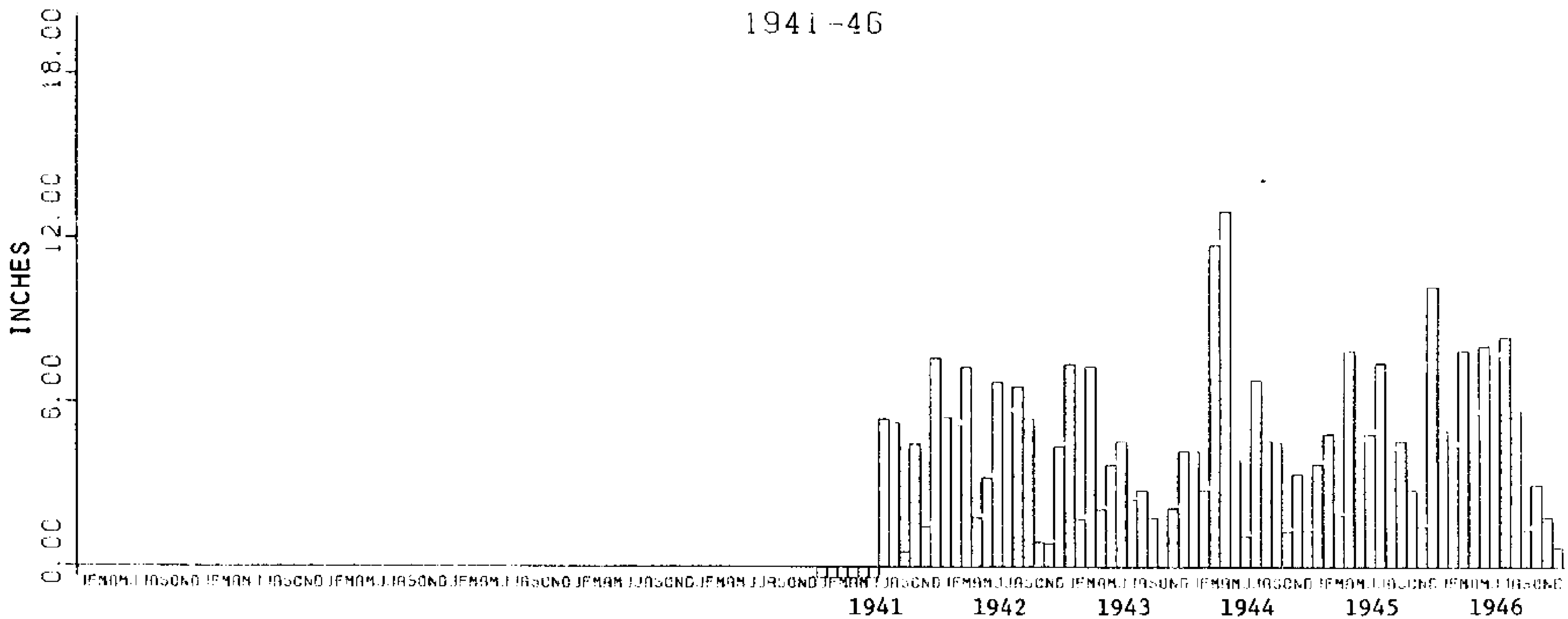
COLUMBUS, GEORGIA



MONTHLY TOTAL PRECIPITATION
1971-82
INCHES
0.00
6.00
12.00
18.00
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
GEORGIA STATION NUMBER: 2166
COLUMBUS, GEORGIA

MONTHLY TOTAL PRECIPITATION

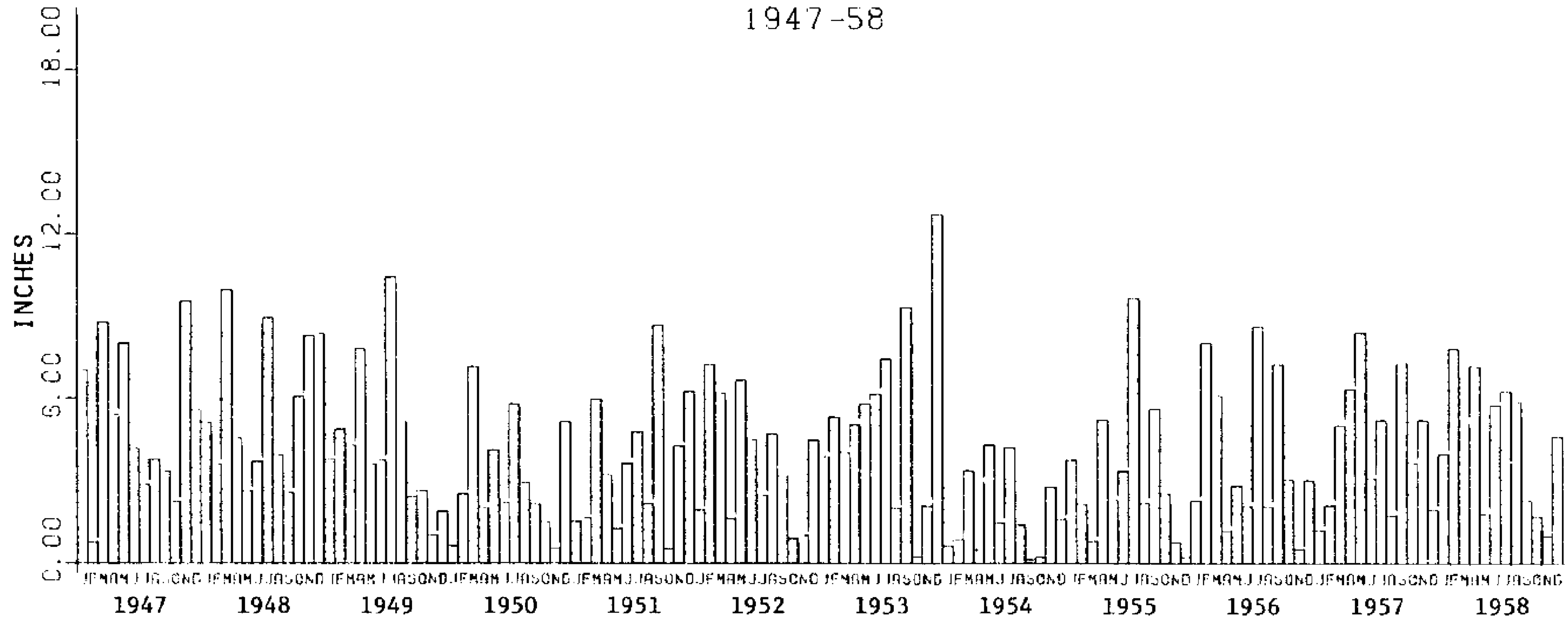
1941-46




GEORGIA STATION NUMBER: 2570

DAWSON, GEORGIA

MONTHLY TOTAL PRECIPITATION
1947-58

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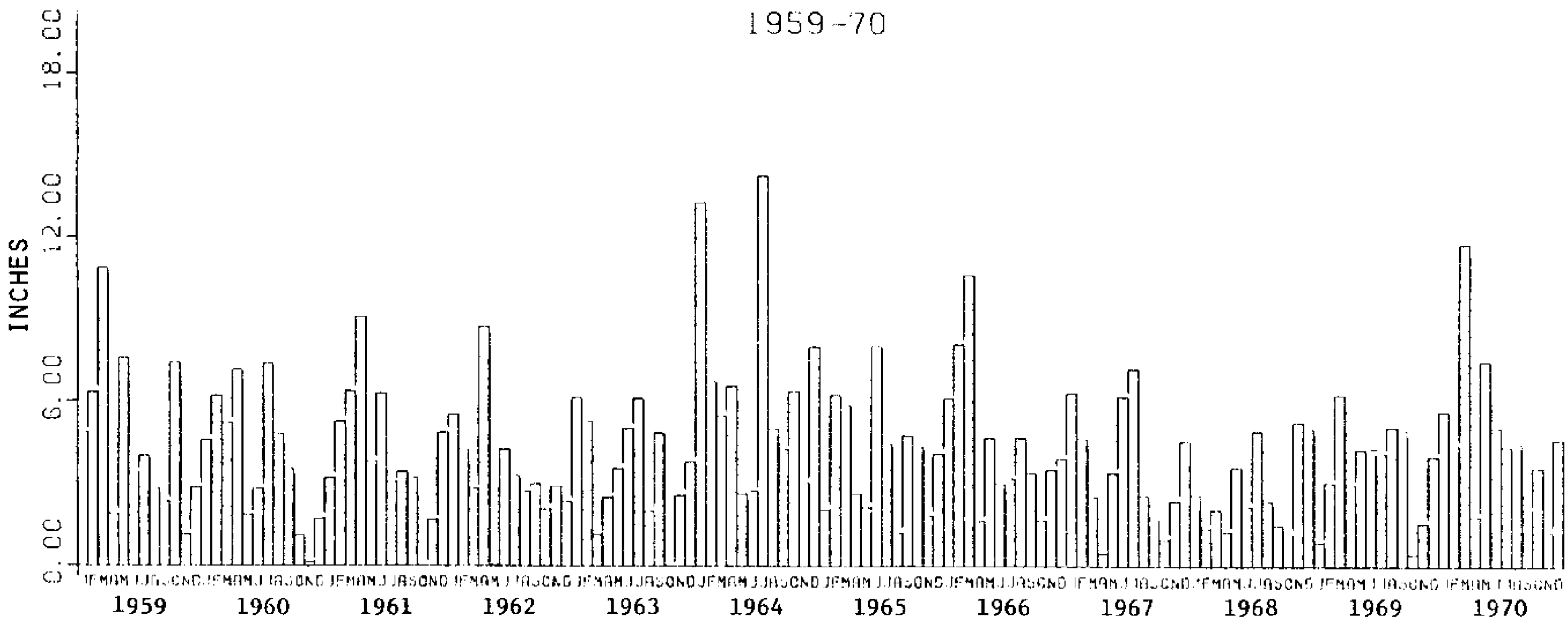
**DAWSON, GEORGIA**

MONTHLY TOTAL PRECIPITATION
1959-70

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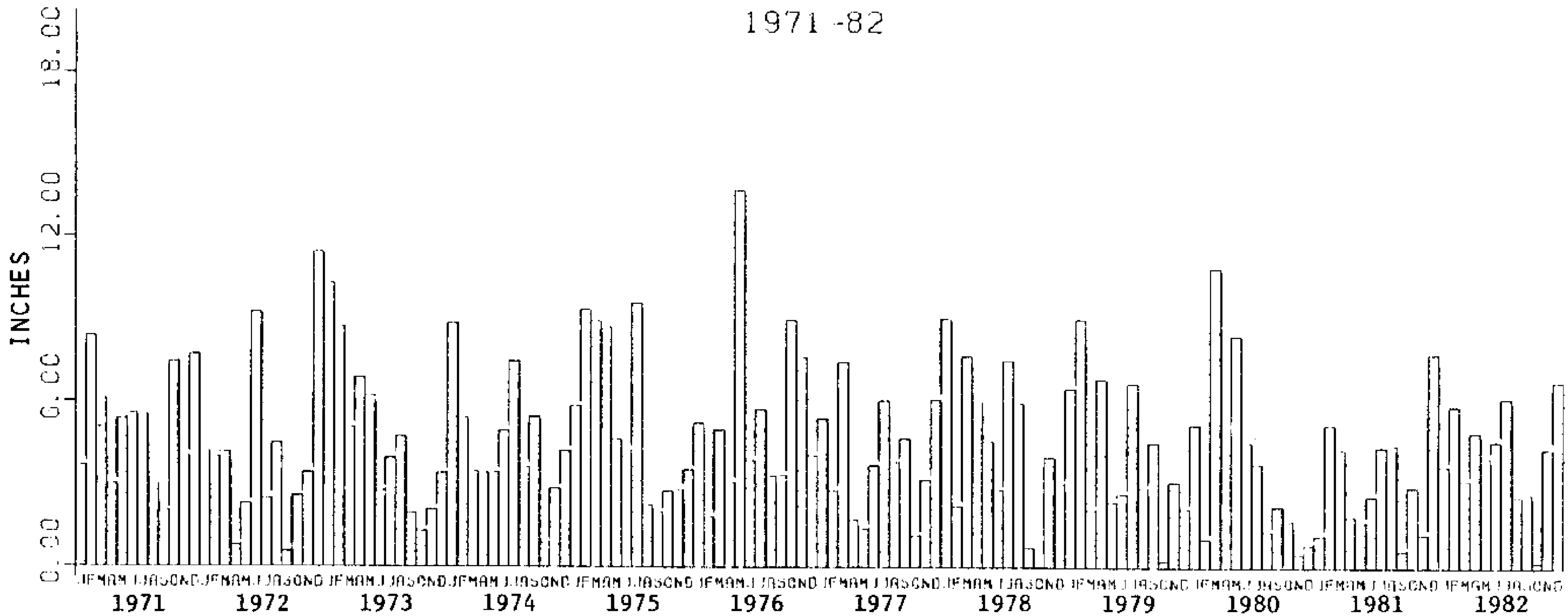
DAWSON, GEORGIA

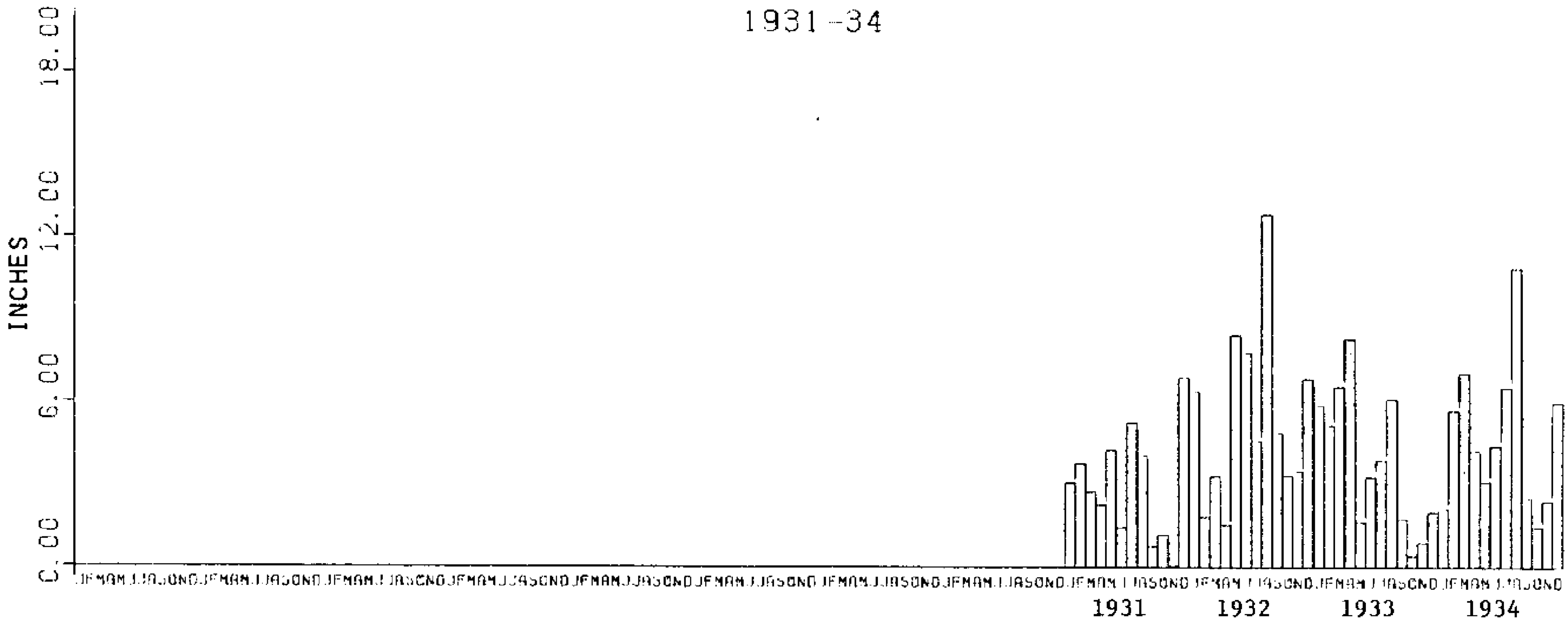
MONTHLY TOTAL PRECIPITATION
1971-82




GEORGIA STATION NUMBER: 2570

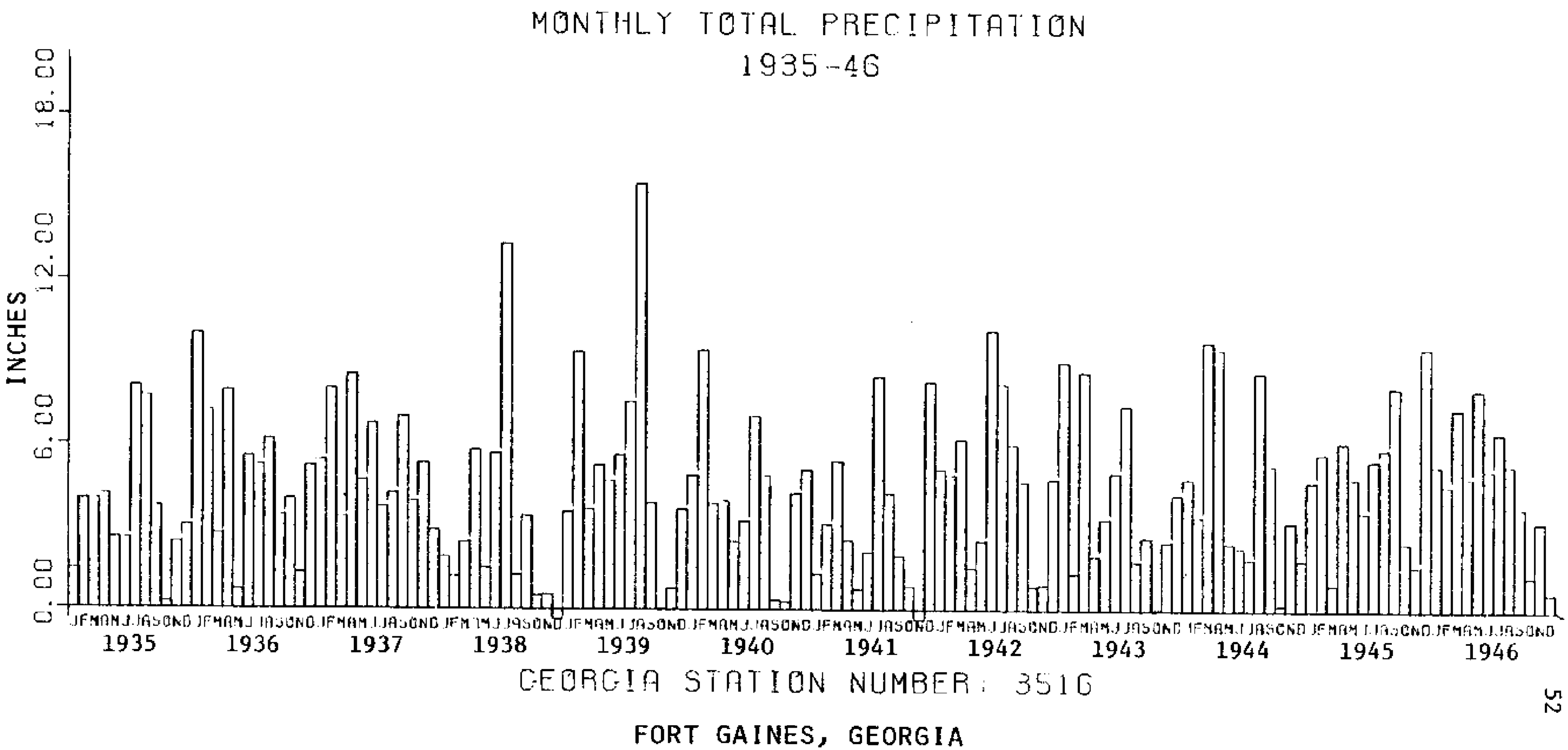
**DAWSON, GEORGIA**

MONTHLY TOTAL PRECIPITATION
1931-34



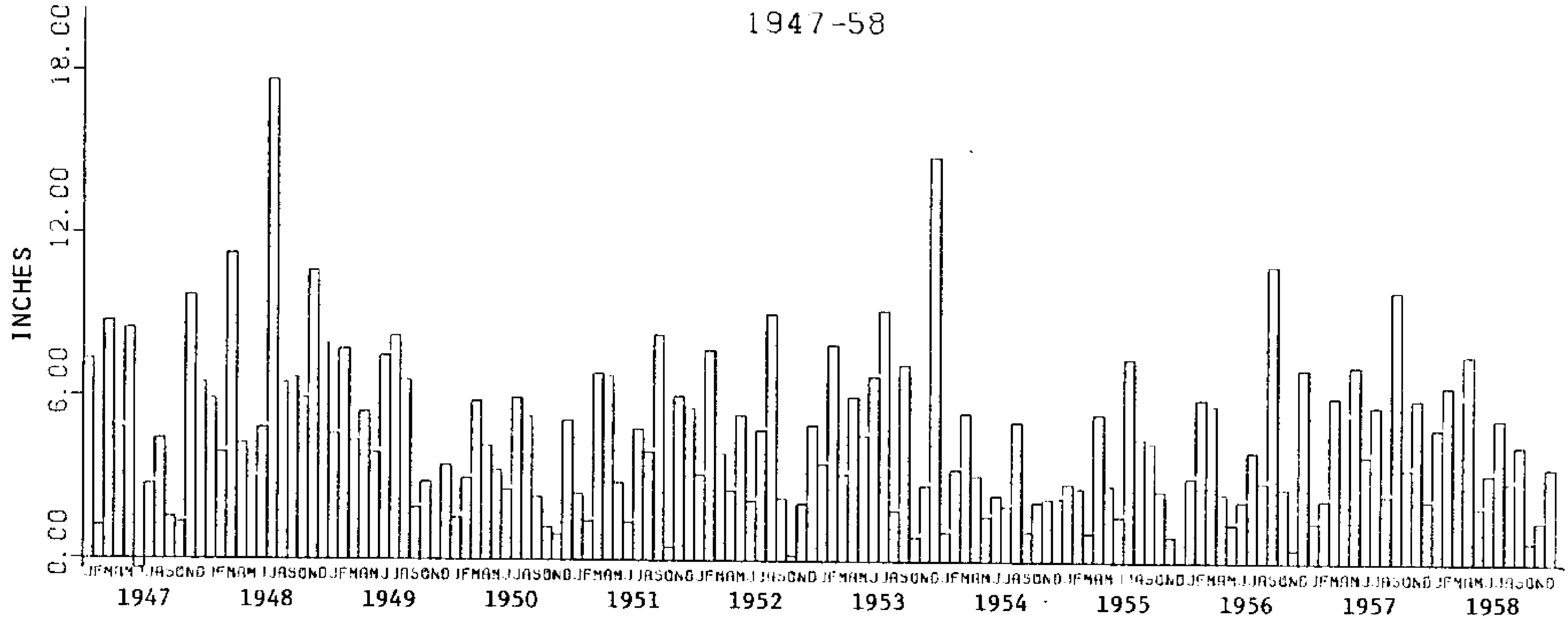

GEORGIA STATION NUMBER: 3516

FORT GAINES, GEORGIA



MONTHLY TOTAL PRECIPITATION
1935-46
INCHES
0.00
6.00
12.00
18.00
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
GEORGIA STATION NUMBER: 3516
FORT GAINES, GEORGIA

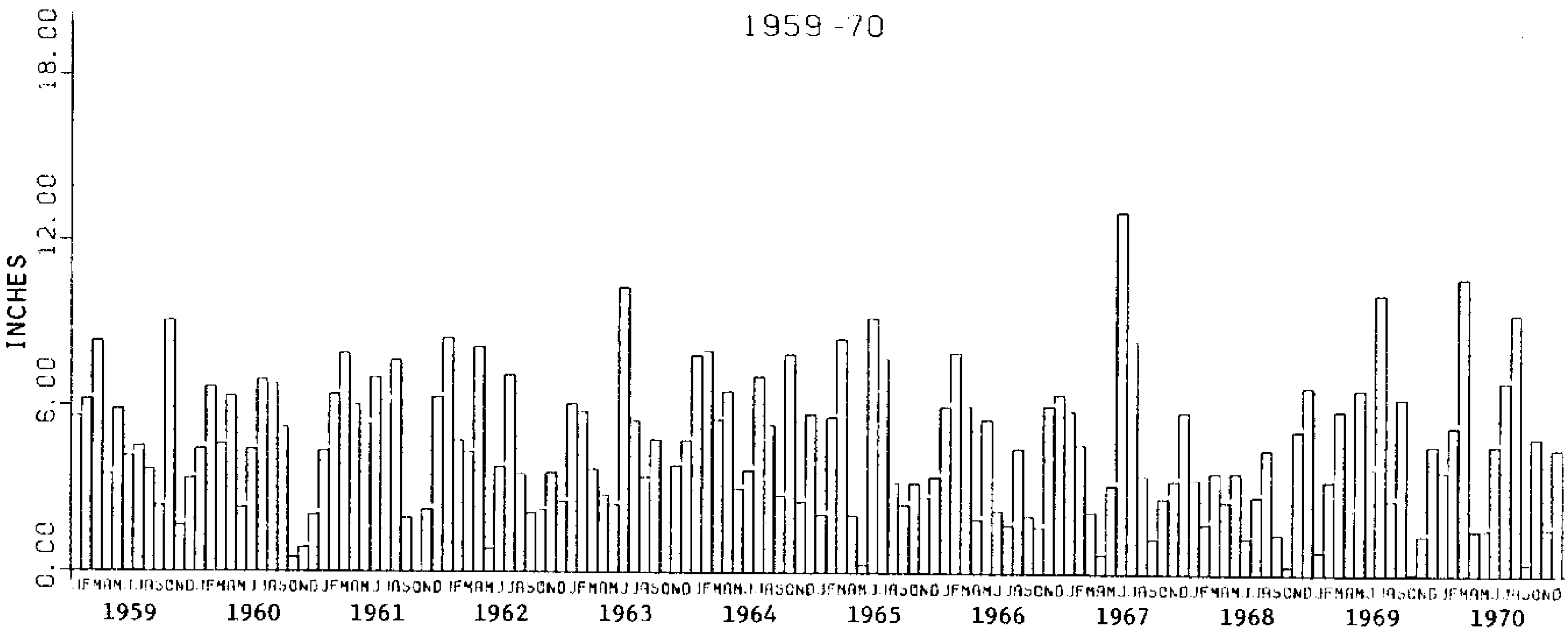
MONTHLY TOTAL PRECIPITATION
1947-58




GEORGIA STATION NUMBER: 3516

FORT GAINES, GEORGIA

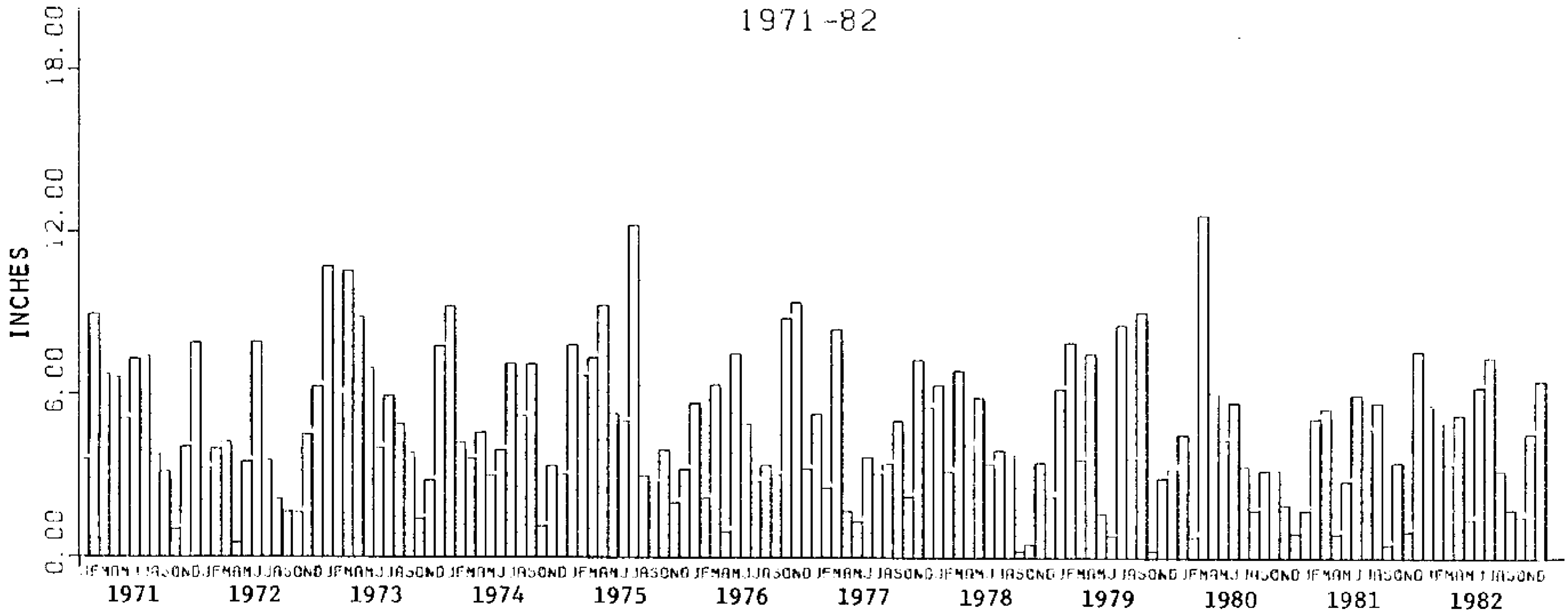
MONTHLY TOTAL PRECIPITATION
1959-70




GEORGIA STATION NUMBER: 3516

FORT GAINES, GEORGIA

MONTHLY TOTAL PRECIPITATION
1971-82

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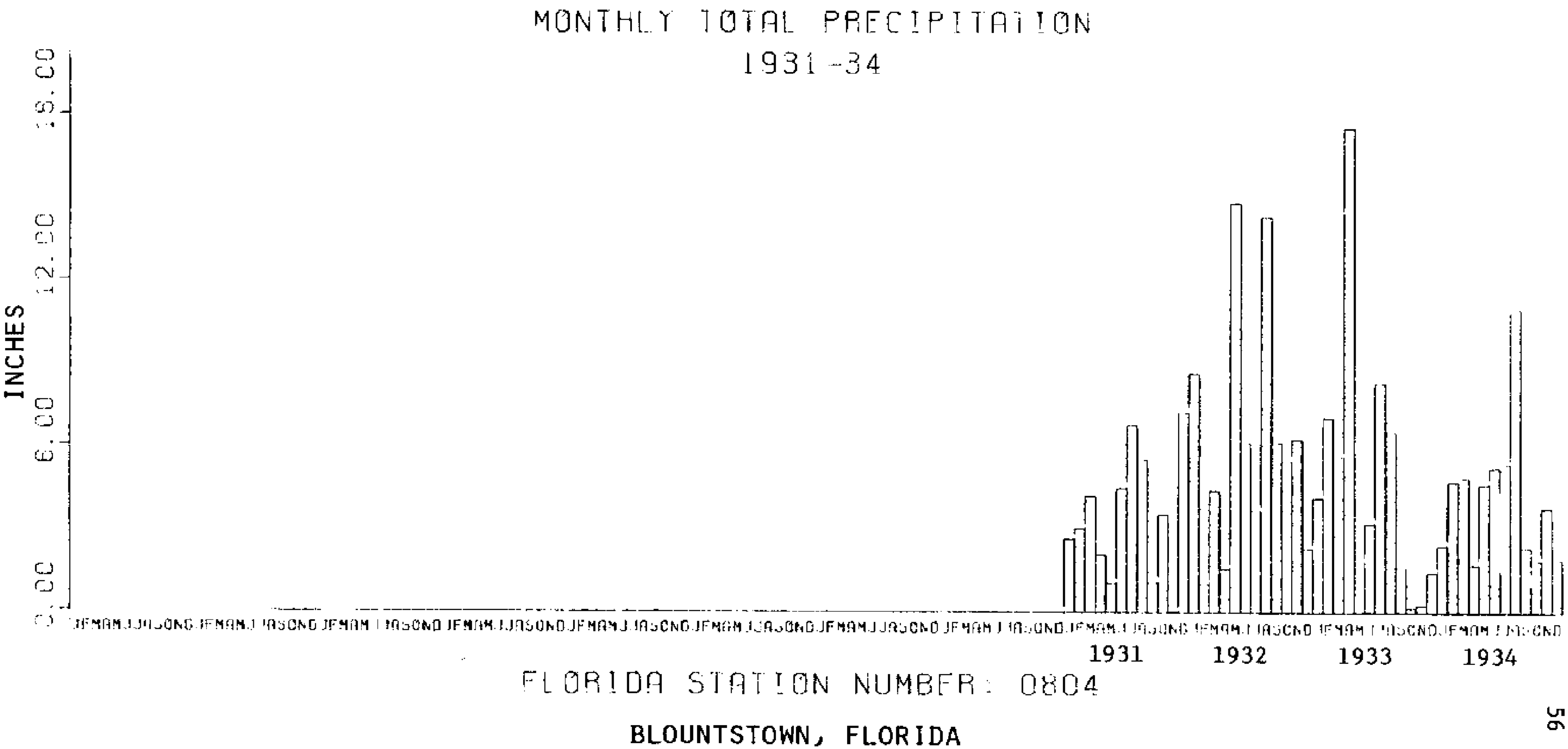
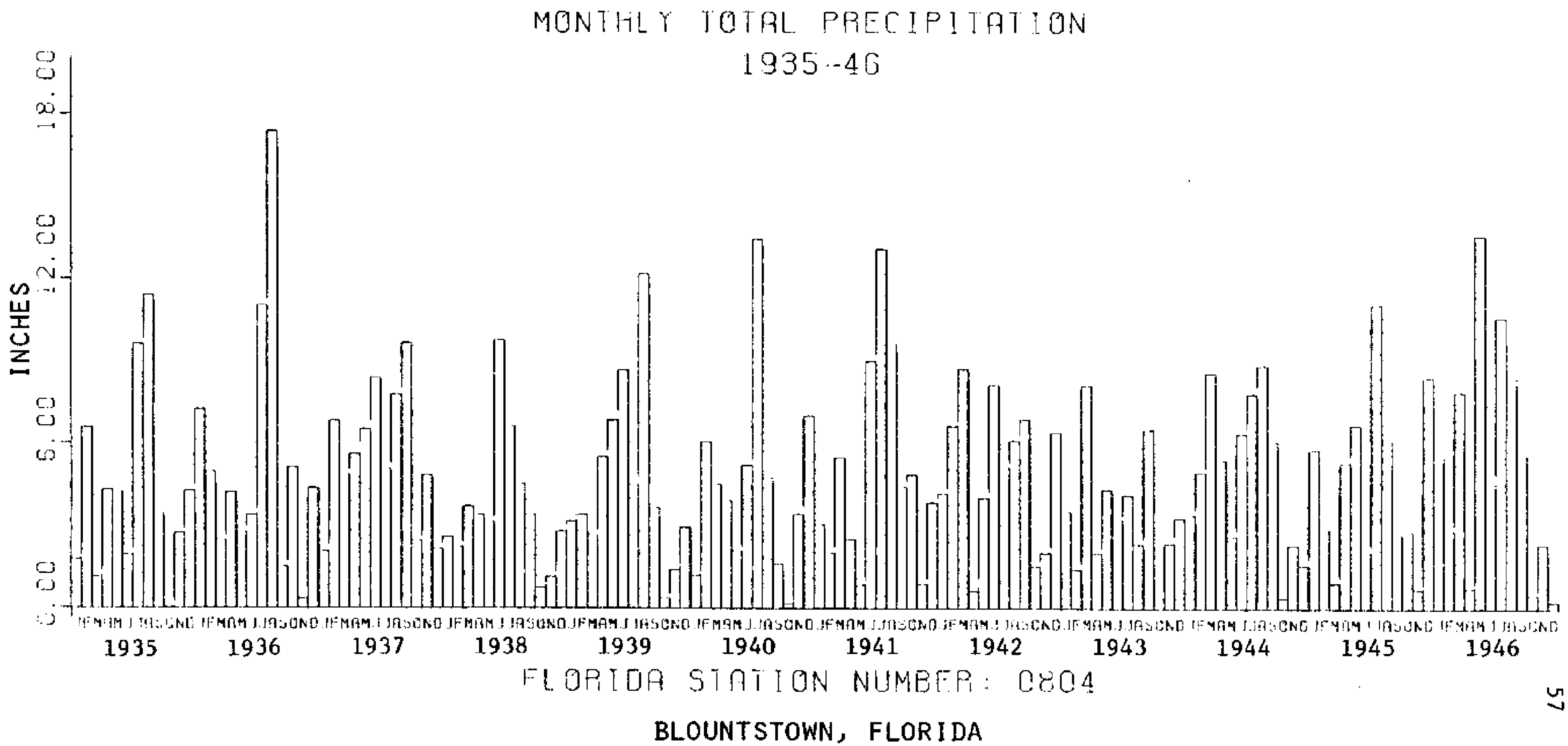
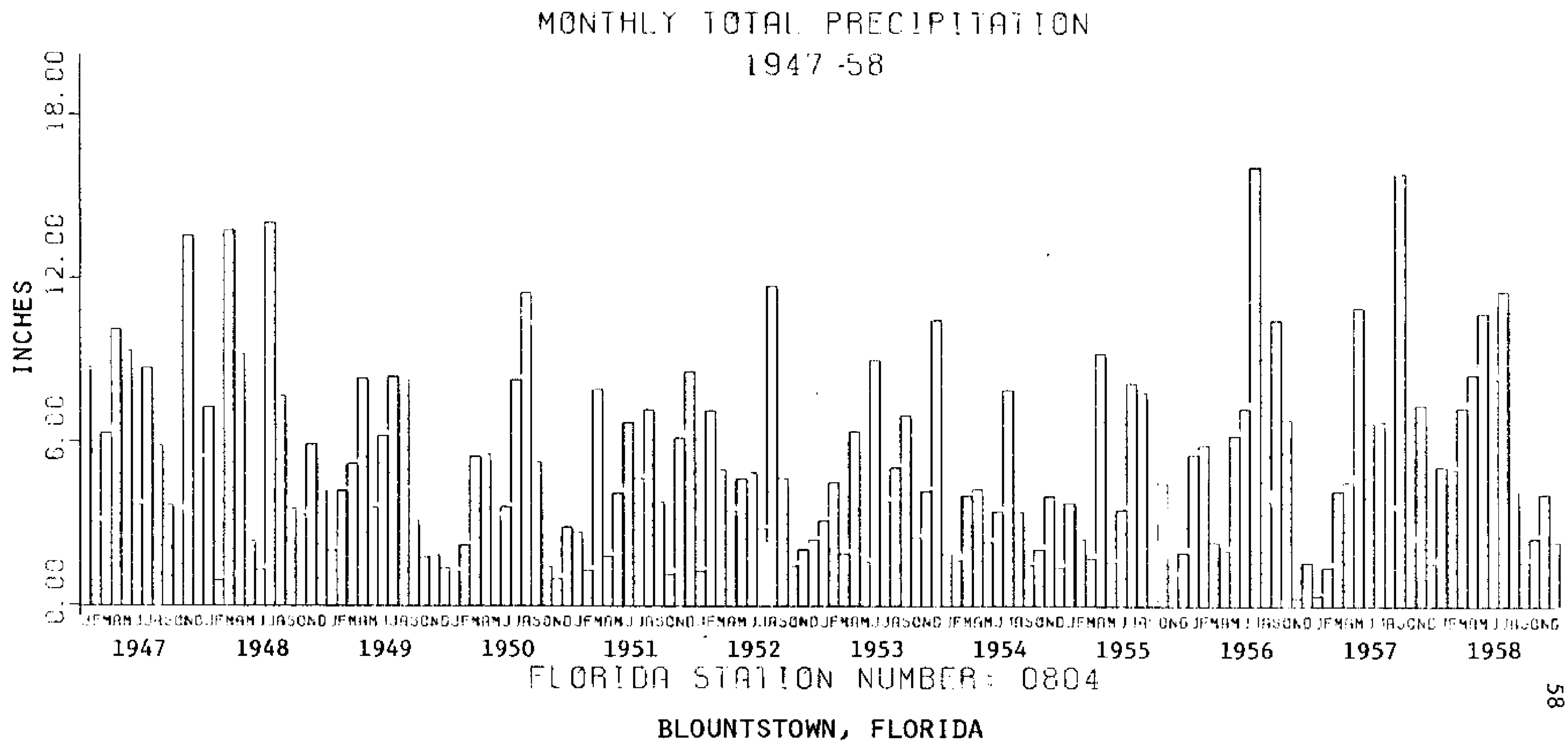
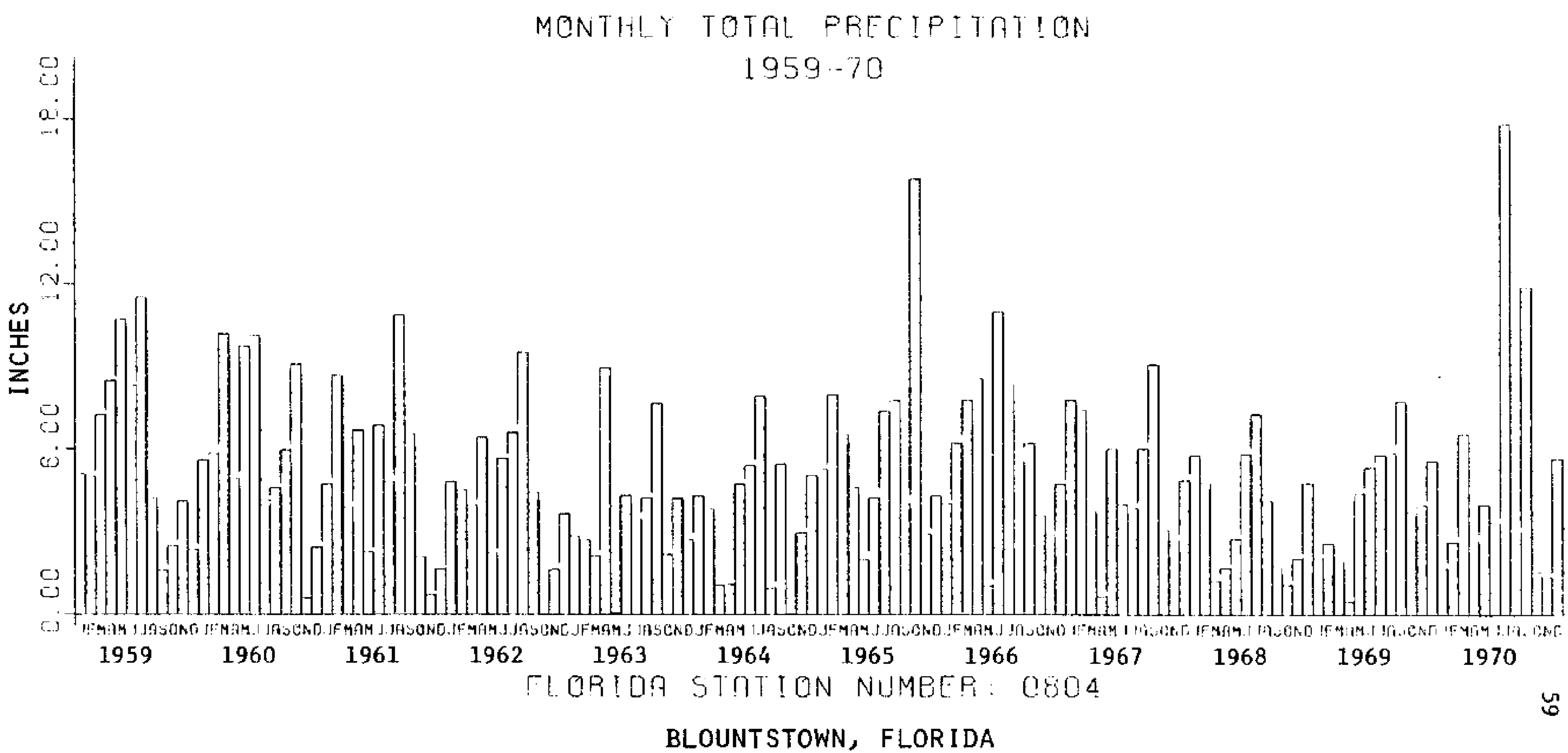
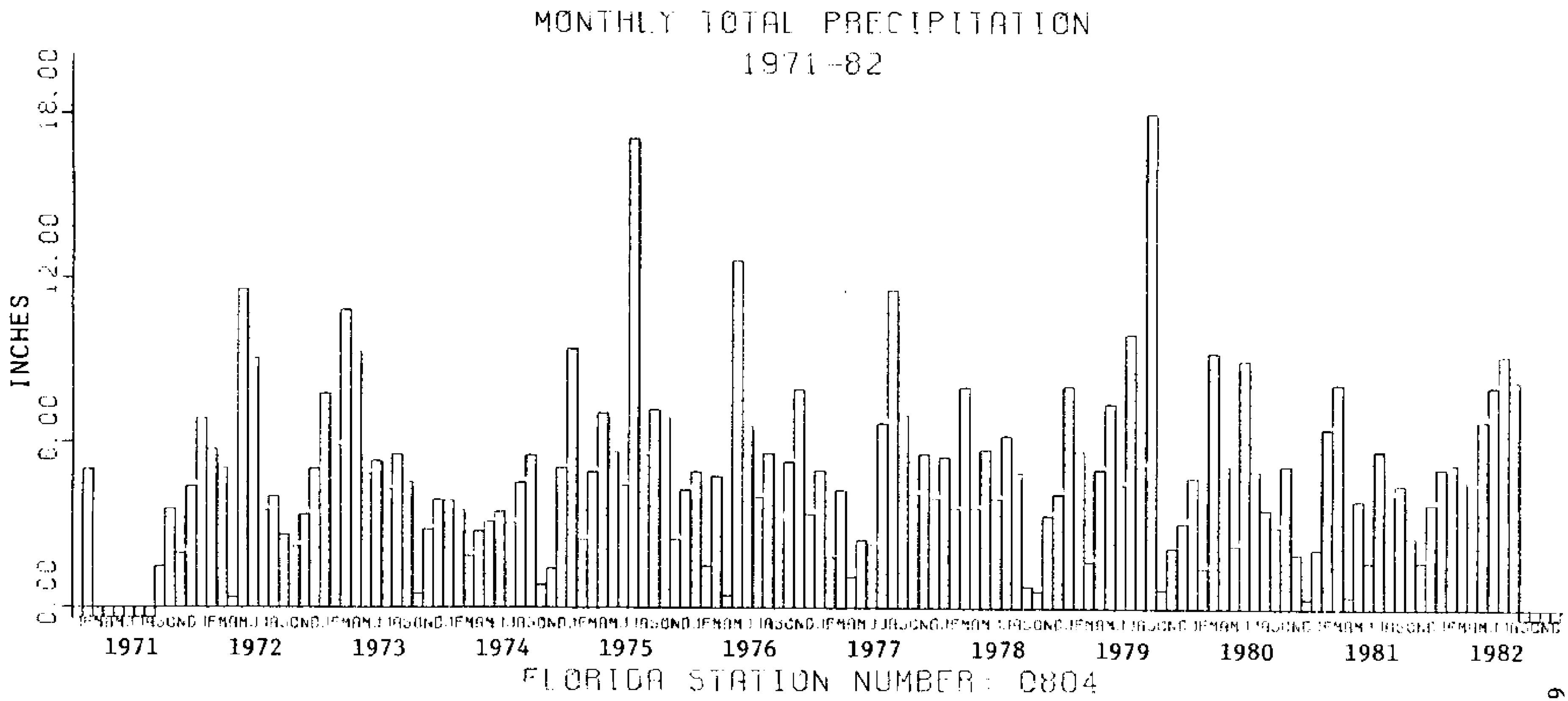
FORT GAINES, GEORGIA


MONTHLY TOTAL PRECIPITATION
1931-34
INCHES
0.00
6.00
12.00
18.00
1931
1932
1933
1934
FLORIDA STATION NUMBER: 0804
BLOUNTSTOWN, FLORIDA


MONTHLY TOTAL PRECIPITATION
1935-46
INCHES
0.00
6.00
12.00
18.00
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
FLORIDA STATION NUMBER: 0804
BLOUNTSTOWN, FLORIDA


MONTHLY TOTAL PRECIPITATION
1947-58
INCHES
0.00
6.00
12.00
18.00
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
FLORIDA STATION NUMBER: 0804
BLOUNTSTOWN, FLORIDA


MONTHLY TOTAL PRECIPITATION
1959-70
INCHES
0.00
6.00
12.00
18.00
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
FLORIDA STATION NUMBER: 0804
BLOUNTSTOWN, FLORIDA




BLOUNTSTOWN, FLORIDA

## 6. RECURRENCE INTERVALS AND NONEXCEEDENCE PROBABILITIES

In this section we present tables of total precipitation recurrence intervals (or nonexceedence probabilities) for periods of 1, 2, 3, 4, 6, 12, and 24 months from data gathered at the seven representative meteorological stations in the ACF river basin in Alabama, Florida, and Georgia.

The data were analyzed (1) for the entire period of record, (2) from the beginning of the period of record to 1959, and (3) from 1959 to the present. Data for the year 1959 was included in both analyses 2 and 3. The latest data considered in these analyses were gathered in 1982 and the earliest in 1931; thus some stations have a period of record of 52 years. The shortest period of record is 35 years starting in 1948.

### A. Assumptions

Since rainfall amounts are obviously non-negative, it was assumed that they follow the gamma probability density function. The gamma probability density function may be written as

$$f(x;\alpha,\beta) = \begin{cases} \dfrac{1}{\beta^{\alpha}\Gamma(\alpha)} x^{\alpha-1} e^{-x/\beta} & \text{, if } x>0,\alpha,\beta>0; \\ 0 & \text{, if } x\leq 0. \end{cases}$$

Letting $t = \frac{x}{\beta}$ , this density becomes

$$f(t;\alpha) = \begin{cases} \dfrac{1}{\Gamma(\alpha)} t^{\alpha-1} e^{-t} & \text{, if } t>0,\alpha>0 \\ 0 & \text{, if } t\leq 0. \end{cases}$$

Using the above densities, $E[X] = \alpha\beta$, $V[X] = \alpha\beta^2$ and $E[T] = V[T] = \alpha$.

Alpha and beta were estimated from the sample data using the method of moments. That is,

$$\frac{\Sigma x_i}{m} = \hat{\alpha}\hat{\beta}$$

and

$$\frac{\Sigma x_i^2}{m} = \hat{\alpha}\hat{\beta}^2 + (\hat{\alpha}\hat{\beta})^2 \ .$$

Solving these equations simultaneously, we get

$$\hat{\beta} = \frac{\frac{\Sigma x_i^2}{m} - \left(\frac{\Sigma x_i}{m}\right)^2}{\frac{\Sigma x_i}{m}}$$

$$= \frac{\frac{\Sigma x_i^2 - (\Sigma x_i)^2/m}{m}}{\frac{\Sigma x_i}{m}}$$

$$= \frac{\text{sample variance}}{\text{sample mean}}$$

and

$$\hat{\alpha} = \frac{\Sigma x_i}{m} / \hat{\beta}$$

$$= \frac{\text{sample mean}}{\hat{\beta}} \ .$$

B. Computer Programs

FORTRAN programs were written to perform the required analyses. A preliminary program was written and run for all 33 stations to compute the averages and standard deviations. The source listing of this program is included in Appendix E. However, the program to produce the actual tables for various amounts of input recomputes the averages and variances.

The source listing of the program PREDICTIONS is included as appendix G of this report. It reads the input file and computes the number of years (N). Missing values, coded as -99999, are ignored and the actual number of terms added (M) is computed. Sample averages and variances are then computed.

When computing 1 month totals all N years of data are used; but for 2, 3, 4, and 6 month totals the program only loops through N-1 years of data because the next month, next two months, next three months or next five months may go over into the next (or last) year of data. Similarly for the 12 month and 24 month sums. All N years of data is used to predict yearly precipitation totals but there are only N-1 twenty-four month totals.

In statistical terms a recurrence interval is a one-sided, lower confidence interval. That is, given a nonexceedence probability $\alpha$, we can be $100(1-\alpha)\%$ confident that the total precipitation will exceed the lower confidence limit. Put another way, once in $1/\alpha$ years the total precipitation will be less than the lower confidence limit. A sample output can be used to explain this better.

Georgia Station Number XXXX: Years 19XX-1982
Hometown, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Inches

For Period of 6 Months

| Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 4(.25) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 19.63 | 20.97 | 23.11 | 25.12 | 27.73 | 33.20 | 51.93 |
| February | 20.49 | 21.74 | 23.72 | 25.58 | 27.96 | 32.93 | 49.62 |
| March | 19.39 | 20.67 | 22.70 | 24.61 | 27.08 | 32.24 | 49.82 |
| April | 15.91 | 17.17 | 19.18 | 21.10 | 23.59 | 28.90 | 47.55 |
| May | 14.22 | 15.43 | 17.39 | 19.26 | 21.71 | 26.96 | 45.72 |
| June | 14.05 | 15.25 | 17.19 | 19.05 | 21.48 | 26.71 | 45.36 |
| July | 14.94 | 16.24 | 18.32 | 20.32 | 22.93 | 28.56 | 48.68 |
| August | 14.64 | 15.98 | 18.15 | 20.25 | 23.01 | 28.97 | 50.55 |
| September | 16.75 | 18.03 | 20.08 | 22.02 | 24.55 | 29.92 | 48.66 |
| October | 19.60 | 20.94 | 23.08 | 25.10 | 27.70 | 33.18 | 51.95 |
| November | 20.39 | 21.83 | 24.14 | 26.31 | 29.12 | 35.05 | 55.48 |
| December | 20.64 | 22.09 | 24.39 | 26.57 | 29.38 | 35.31 | 55.69 |

The above table indicates that for a period of 6 months starting in May we can expect a total precipitation of 26.96 inches. This figure is from the column headed 2(.50) and is the median value for 6 month periods starting in May at this particular station. Thus the probability is 0.50 that the actual precipitation will not exceed 26.96 inches.

## C. Output

The tables of recurrence intervals and nonexceedence probabilities and graphs of average monthly rainfall for the seven selected stations occupy the next 49 pages of this report. The printouts of recurrence intervals are formatted so that 1, 2, 3, and 4 month predictions fit on one page. The second page gives predictions for 6, 12, and 24 months.

For each station the first two pages are for the period of record, the next two pages are for the beginning of the period of record to 1959 inclusive, and the last two pages are for 1959 to 1982 inclusive. Following each set of tables is a graph of the average monthly rainfall for that station for the period of record.

Georgia Station Number 2006: Years 1943-1982
Cleveland, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 160 | 192 | 248 | 308 | 393 | 599 | 1508 |
| February | 137 | 168 | 222 | 281 | 365 | 573 | 1520 |
| March | 184 | 222 | 290 | 362 | 466 | 717 | 1840 |
| April | 121 | 148 | 197 | 250 | 326 | 514 | 1376 |
| May | 93 | 117 | 162 | 211 | 283 | 468 | 1350 |
| June | 117 | 141 | 182 | 226 | 289 | 440 | 1110 |
| July | 122 | 151 | 205 | 263 | 348 | 562 | 1562 |
| August | 69 | 92 | 136 | 186 | 265 | 475 | 1560 |
| September | 116 | 139 | 180 | 223 | 284 | 432 | 1083 |
| October | 38 | 52 | 82 | 118 | 176 | 338 | 1234 |
| November | 80 | 102 | 143 | 188 | 256 | 430 | 1275 |
| December | 117 | 145 | 195 | 250 | 330 | 531 | 1465 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 531 | 591 | 690 | 787 | 916 | 1204 | 2293 |
| February | 607 | 674 | 784 | 892 | 1035 | 1353 | 2549 |
| March | 542 | 608 | 716 | 824 | 968 | 1292 | 2536 |
| April | 507 | 557 | 639 | 719 | 825 | 1055 | 1903 |
| May | 366 | 416 | 500 | 584 | 699 | 959 | 1993 |
| June | 419 | 473 | 563 | 652 | 773 | 1046 | 2112 |
| July | 306 | 363 | 464 | 570 | 718 | 1074 | 2619 |
| August | 352 | 403 | 488 | 575 | 693 | 963 | 2051 |
| September | 234 | 277 | 352 | 430 | 540 | 802 | 1929 |
| October | 265 | 309 | 383 | 459 | 565 | 811 | 1838 |
| November | 355 | 408 | 497 | 588 | 712 | 998 | 2158 |
| December | 378 | 440 | 545 | 653 | 803 | 1152 | 2604 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1059 | 1148 | 1291 | 1427 | 1606 | 1988 | 3346 |
| February | 972 | 1059 | 1201 | 1337 | 1516 | 1901 | 3292 |
| March | 974 | 1055 | 1186 | 1311 | 1474 | 1825 | 3069 |
| April | 899 | 962 | 1062 | 1156 | 1279 | 1536 | 2421 |
| May | 751 | 826 | 948 | 1067 | 1225 | 1569 | 2837 |
| June | 628 | 709 | 843 | 976 | 1156 | 1562 | 3148 |
| July | 658 | 737 | 868 | 998 | 1173 | 1562 | 3062 |
| August | 540 | 609 | 724 | 838 | 992 | 1338 | 2691 |
| September | 542 | 607 | 715 | 821 | 964 | 1282 | 2506 |
| October | 622 | 691 | 804 | 914 | 1061 | 1386 | 2610 |
| November | 665 | 748 | 887 | 1025 | 1210 | 1627 | 3248 |
| December | 837 | 923 | 1065 | 1202 | 1385 | 1786 | 3274 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1428 | 1536 | 1707 | 1871 | 2083 | 2532 | 4097 |
| February | 1412 | 1512 | 1672 | 1823 | 2018 | 2430 | 3850 |
| March | 1373 | 1466 | 1612 | 1751 | 1929 | 2304 | 3584 |
| April | 1304 | 1388 | 1521 | 1645 | 1806 | 2142 | 3279 |
| May | 1007 | 1107 | 1270 | 1427 | 1636 | 2092 | 3769 |
| June | 1024 | 1119 | 1274 | 1423 | 1620 | 2045 | 3592 |
| July | 900 | 995 | 1150 | 1302 | 1503 | 1944 | 3591 |
| August | 839 | 927 | 1071 | 1212 | 1400 | 1811 | 3346 |
| September | 945 | 1031 | 1170 | 1303 | 1479 | 1857 | 3225 |
| October | 960 | 1057 | 1215 | 1369 | 1572 | 2017 | 3659 |
| November | 1195 | 1296 | 1460 | 1617 | 1822 | 2262 | 3833 |
| December | 1408 | 1519 | 1698 | 1868 | 2089 | 2561 | 4218 |

Georgia Station Number 2006: Years 1943-1982
Cleveland, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 2277 | 2405 | 2607 | 2796 | 3036 | 3534 | 5187 |
| February | 2440 | 2554 | 2732 | 2897 | 3105 | 3532 | 4910 |
| March | 2314 | 2432 | 2617 | 2788 | 3006 | 3455 | 4921 |
| April | 1986 | 2103 | 2288 | 2461 | 2682 | 3141 | 4676 |
| May | 1666 | 1791 | 1991 | 2181 | 2428 | 2951 | 4771 |
| June | 1618 | 1742 | 1941 | 2131 | 2377 | 2899 | 4727 |
| July | 1669 | 1797 | 2003 | 2199 | 2453 | 2994 | 4884 |
| August | 1632 | 1766 | 1979 | 2184 | 2450 | 3020 | 5035 |
| September | 1883 | 2006 | 2202 | 2386 | 2623 | 3121 | 4811 |
| October | 2126 | 2257 | 2463 | 2657 | 2905 | 3422 | 5162 |
| November | 2175 | 2317 | 2541 | 2752 | 3023 | 3592 | 5522 |
| December | 2246 | 2386 | 2607 | 2814 | 3081 | 3637 | 5510 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 4856 | 5041 | 5328 | 5592 | 5923 | 6593 | 8704 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 10607 | 10895 | 11336 | 11739 | 12239 | 13234 | 16263 |

Georgia Station Number 2006: Years 1943-1959
Cleveland, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 98 | 127 | 180 | 241 | 333 | 572 | 1763 |
| February | 193 | 227 | 286 | 346 | 431 | 630 | 1477 |
| March | 206 | 243 | 308 | 376 | 471 | 697 | 1667 |
| April | 186 | 214 | 262 | 310 | 376 | 529 | 1151 |
| May | 125 | 149 | 191 | 235 | 298 | 449 | 1109 |
| June | 109 | 132 | 170 | 211 | 270 | 412 | 1038 |
| July | 157 | 191 | 252 | 317 | 411 | 642 | 1687 |
| August | 57 | 76 | 112 | 153 | 217 | 389 | 1278 |
| September | 107 | 128 | 166 | 206 | 262 | 399 | 1003 |
| October | 26 | 38 | 65 | 99 | 157 | 330 | 1366 |
| November | 31 | 46 | 78 | 119 | 188 | 393 | 1619 |
| December | 129 | 157 | 208 | 261 | 339 | 529 | 1388 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 528 | 593 | 702 | 809 | 954 | 1280 | 2540 |
| February | 569 | 639 | 756 | 871 | 1027 | 1375 | 2725 |
| March | 698 | 753 | 841 | 926 | 1035 | 1267 | 2085 |
| April | 559 | 601 | 669 | 733 | 816 | 993 | 1608 |
| May | 428 | 470 | 539 | 606 | 694 | 886 | 1591 |
| June | 518 | 573 | 662 | 750 | 866 | 1121 | 2073 |
| July | 339 | 397 | 497 | 600 | 744 | 1082 | 2507 |
| August | 299 | 342 | 415 | 488 | 589 | 819 | 1745 |
| September | 215 | 253 | 319 | 387 | 483 | 709 | 1669 |
| October | 210 | 251 | 325 | 402 | 512 | 777 | 1944 |
| November | 336 | 390 | 482 | 577 | 708 | 1014 | 2281 |
| December | 309 | 370 | 478 | 591 | 751 | 1137 | 2835 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1004 | 1099 | 1253 | 1402 | 1599 | 2026 | 3581 |
| February | 1051 | 1135 | 1270 | 1398 | 1565 | 1922 | 3179 |
| March | 1177 | 1234 | 1324 | 1407 | 1513 | 1729 | 2431 |
| April | 932 | 985 | 1068 | 1146 | 1245 | 1450 | 2131 |
| May | 794 | 866 | 984 | 1098 | 1247 | 1570 | 2738 |
| June | 672 | 750 | 878 | 1005 | 1174 | 1550 | 2981 |
| July | 612 | 688 | 816 | 943 | 1114 | 1498 | 2990 |
| August | 444 | 504 | 604 | 705 | 842 | 1152 | 2379 |
| September | 473 | 535 | 638 | 741 | 880 | 1194 | 2425 |
| October | 586 | 655 | 769 | 881 | 1031 | 1365 | 2645 |
| November | 575 | 661 | 807 | 955 | 1159 | 1628 | 3537 |
| December | 806 | 897 | 1047 | 1194 | 1391 | 1828 | 3482 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1499 | 1604 | 1771 | 1928 | 2132 | 2561 | 4035 |
| February | 1444 | 1537 | 1685 | 1825 | 2004 | 2379 | 3650 |
| March | 1488 | 1560 | 1672 | 1776 | 1908 | 2179 | 3055 |
| April | 1273 | 1358 | 1494 | 1622 | 1787 | 2133 | 3314 |
| May | 958 | 1054 | 1211 | 1362 | 1563 | 2001 | 3616 |
| June | 981 | 1072 | 1221 | 1364 | 1553 | 1963 | 3451 |
| July | 807 | 899 | 1050 | 1198 | 1397 | 1838 | 3511 |
| August | 689 | 772 | 909 | 1044 | 1226 | 1632 | 3192 |
| September | 795 | 882 | 1025 | 1166 | 1353 | 1766 | 3322 |
| October | 847 | 947 | 1113 | 1276 | 1495 | 1983 | 3852 |
| November | 1085 | 1197 | 1379 | 1557 | 1794 | 2311 | 4233 |
| December | 1232 | 1354 | 1554 | 1747 | 2003 | 2561 | 4615 |

Georgia Station Number 2006: Years 1943-1959
Cleveland, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 2185 | 2314 | 2518 | 2708 | 2952 | 3460 | 5154 |
| February | 2533 | 2641 | 2807 | 2962 | 3156 | 3551 | 4811 |
| March | 2202 | 2317 | 2497 | 2664 | 2878 | 3317 | 4756 |
| April | 1799 | 1917 | 2104 | 2279 | 2505 | 2979 | 4589 |
| May | 1476 | 1598 | 1794 | 1982 | 2227 | 2752 | 4612 |
| June | 1482 | 1606 | 1807 | 1999 | 2249 | 2786 | 4696 |
| July | 1608 | 1734 | 1936 | 2129 | 2379 | 2913 | 4786 |
| August | 1334 | 1471 | 1694 | 1911 | 2199 | 2829 | 5166 |
| September | 1625 | 1763 | 1984 | 2195 | 2472 | 3065 | 5178 |
| October | 1873 | 2020 | 2256 | 2482 | 2775 | 3399 | 5591 |
| November | 2089 | 2239 | 2478 | 2705 | 2998 | 3617 | 5756 |
| December | 2193 | 2335 | 2561 | 2773 | 3045 | 3616 | 5553 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 4741 | 4924 | 5207 | 5468 | 5796 | 6459 | 8550 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 10202 | 10504 | 10967 | 11391 | 11918 | 12972 | 16202 |

Georgia Station Number 2006: Years 1959-1982
Cleveland, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

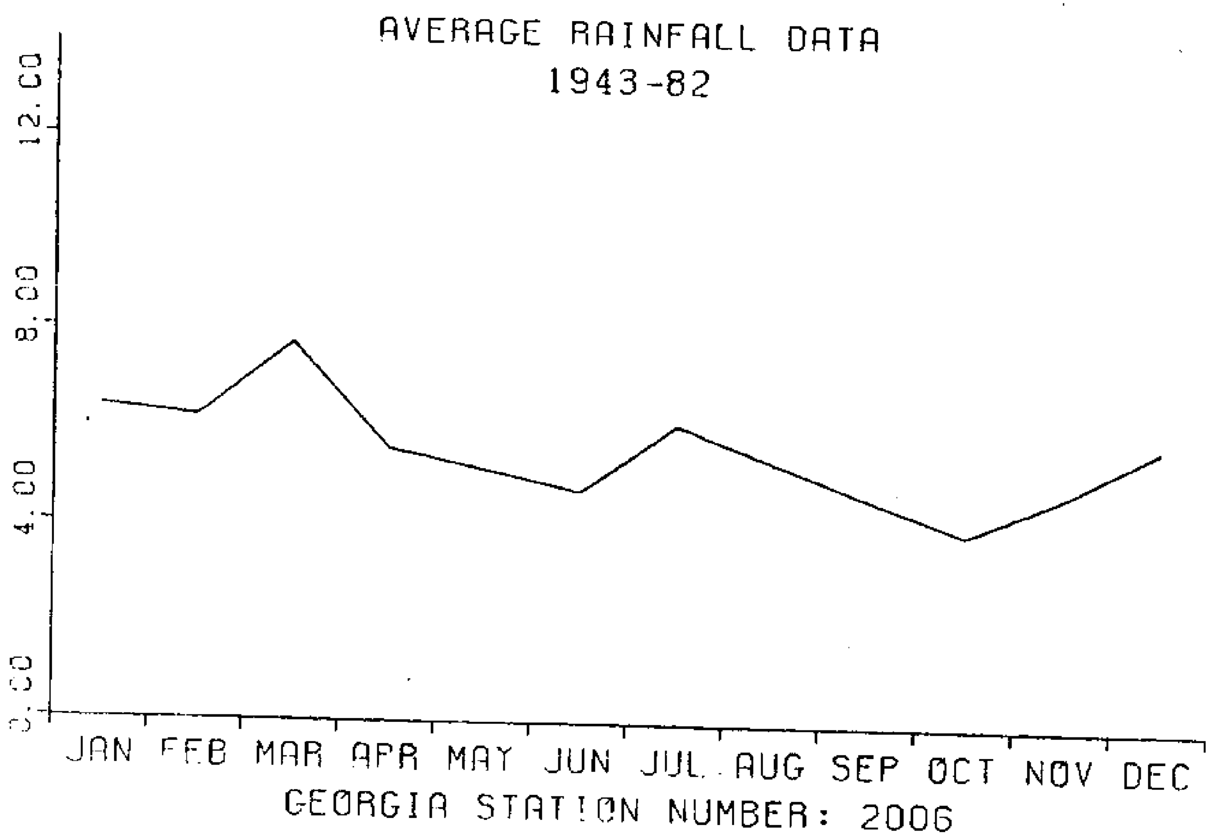
| For Period of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 228 | 260 | 314 | 368 | 442 | 611 | 1286 |
| | February | 111 | 139 | 189 | 245 | 327 | 534 | 1511 |
| | March | 176 | 215 | 284 | 358 | 465 | 727 | 1917 |
| | April | 94 | 120 | 168 | 221 | 300 | 505 | 1496 |
| | May | 89 | 114 | 161 | 214 | 294 | 500 | 1516 |
| | June | 116 | 140 | 182 | 227 | 292 | 449 | 1151 |
| | July | 116 | 143 | 192 | 245 | 322 | 513 | 1397 |
| | August | 90 | 116 | 166 | 223 | 309 | 535 | 1661 |
| | September | 133 | 158 | 202 | 248 | 313 | 468 | 1139 |
| | October | 37 | 53 | 84 | 123 | 186 | 365 | 1368 |
| | November | 161 | 185 | 224 | 265 | 320 | 446 | 957 |
| | December | 110 | 137 | 188 | 243 | 324 | 528 | 1496 |
| 2 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 558 | 613 | 703 | 790 | 905 | 1157 | 2083 |
| | February | 640 | 704 | 808 | 910 | 1045 | 1338 | 2423 |
| | March | 479 | 548 | 664 | 782 | 942 | 1310 | 2791 |
| | April | 502 | 556 | 645 | 732 | 847 | 1101 | 2053 |
| | May | 363 | 417 | 508 | 599 | 725 | 1015 | 2190 |
| | June | 365 | 417 | 505 | 594 | 716 | 995 | 2116 |
| | July | 285 | 342 | 443 | 550 | 702 | 1069 | 2694 |
| | August | 440 | 495 | 586 | 677 | 799 | 1072 | 2134 |
| | September | 268 | 314 | 395 | 479 | 596 | 872 | 2042 |
| | October | 312 | 356 | 429 | 503 | 605 | 835 | 1757 |
| | November | 372 | 424 | 511 | 598 | 717 | 987 | 2066 |
| | December | 439 | 500 | 602 | 705 | 844 | 1162 | 2428 |
| 3 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 1110 | 1194 | 1327 | 1453 | 1617 | 1964 | 3173 |
| | February | 922 | 1011 | 1157 | 1297 | 1483 | 1887 | 3367 |
| | March | 929 | 1018 | 1164 | 1305 | 1491 | 1896 | 3376 |
| | April | 915 | 982 | 1089 | 1190 | 1321 | 1599 | 2560 |
| | May | 724 | 800 | 926 | 1048 | 1211 | 1568 | 2903 |
| | June | 602 | 684 | 822 | 959 | 1147 | 1572 | 3257 |
| | July | 696 | 777 | 911 | 1042 | 1218 | 1608 | 3098 |
| | August | 674 | 747 | 866 | 982 | 1137 | 1478 | 2756 |
| | September | 606 | 673 | 782 | 889 | 1031 | 1346 | 2529 |
| | October | 649 | 717 | 829 | 938 | 1082 | 1400 | 2584 |
| | November | 746 | 826 | 956 | 1084 | 1254 | 1627 | 3025 |
| | December | 869 | 952 | 1086 | 1215 | 1386 | 1757 | 3110 |
| 4 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 1382 | 1491 | 1666 | 1833 | 2049 | 2512 | 4136 |
| | February | 1401 | 1505 | 1672 | 1829 | 2034 | 2467 | 3972 |
| | March | 1371 | 1471 | 1631 | 1783 | 1980 | 2395 | 3836 |
| | April | 1327 | 1409 | 1540 | 1662 | 1819 | 2148 | 3253 |
| | May | 1054 | 1156 | 1322 | 1483 | 1695 | 2157 | 3847 |
| | June | 1066 | 1163 | 1321 | 1473 | 1672 | 2104 | 3666 |
| | July | 983 | 1079 | 1235 | 1386 | 1586 | 2020 | 3613 |
| | August | 997 | 1087 | 1230 | 1369 | 1550 | 1941 | 3350 |
| | September | 1076 | 1158 | 1289 | 1414 | 1577 | 1921 | 3126 |
| | October | 1051 | 1145 | 1295 | 1440 | 1630 | 2040 | 3513 |
| | November | 1312 | 1403 | 1547 | 1684 | 1860 | 2230 | 3500 |
| | December | 1572 | 1671 | 1828 | 1976 | 2165 | 2561 | 3897 |

Georgia Station Number 2006: Years 1959-1982
Cleveland , Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 2351 | 2478 | 2677 | 2862 | 3099 | 3587 | 5195 |
| February | 2380 | 2498 | 2682 | 2854 | 3072 | 3519 | 4974 |
| March | 2430 | 2547 | 2730 | 2899 | 3113 | 3553 | 4979 |
| April | 2167 | 2280 | 2456 | 2620 | 2828 | 3257 | 4662 |
| May | 1858 | 1981 | 2176 | 2360 | 2597 | 3093 | 4783 |
| June | 1732 | 1855 | 2051 | 2236 | 2475 | 2979 | 4717 |
| July | 1720 | 1850 | 2057 | 2254 | 2509 | 3050 | 4936 |
| August | 1909 | 2033 | 2230 | 2416 | 2655 | 3155 | 4853 |
| September | 2113 | 2221 | 2390 | 2548 | 2748 | 3159 | 4505 |
| October | 2358 | 2471 | 2647 | 2810 | 3016 | 3439 | 4807 |
| November | 2246 | 2381 | 2592 | 2791 | 3045 | 3575 | 5346 |
| December | 2284 | 2422 | 2640 | 2844 | 3106 | 3651 | 5478 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 5009 | 5191 | 5472 | 5730 | 6053 | 6706 | 8748 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 10967 | 11237 | 11651 | 12027 | 12493 | 13418 | 16211 |




CLEVELAND, GEORGIA

Georgia Station Number 2791: Years 1940-1982
Douglasville, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 154 | 181 | 228 | 276 | 344 | 503 | 1183 |
| February | 100 | 123 | 166 | 213 | 281 | 451 | 1239 |
| March | 179 | 212 | 268 | 327 | 410 | 606 | 1448 |
| April | 100 | 124 | 168 | 216 | 286 | 461 | 1283 |
| May | 69 | 89 | 126 | 169 | 233 | 400 | 1231 |
| June | 81 | 99 | 132 | 167 | 218 | 344 | 918 |
| July | 79 | 102 | 144 | 191 | 262 | 447 | 1356 |
| August | 35 | 49 | 76 | 108 | 159 | 302 | 1080 |
| September | 49 | 64 | 93 | 127 | 179 | 318 | 1028 |
| October | 23 | 33 | 54 | 81 | 124 | 248 | 964 |
| November | 19 | 29 | 52 | 83 | 136 | 298 | 1307 |
| December | 106 | 129 | 170 | 213 | 276 | 431 | 1130 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 495 | 541 | 616 | 688 | 784 | 990 | 1739 |
| February | 480 | 535 | 625 | 714 | 833 | 1096 | 2097 |
| March | 492 | 548 | 639 | 728 | 847 | 1111 | 2110 |
| April | 287 | 334 | 416 | 500 | 617 | 891 | 2035 |
| May | 311 | 351 | 419 | 486 | 577 | 784 | 1592 |
| June | 234 | 279 | 357 | 438 | 552 | 827 | 2019 |
| July | 192 | 234 | 309 | 388 | 503 | 786 | 2064 |
| August | 237 | 274 | 335 | 398 | 484 | 683 | 1495 |
| September | 149 | 181 | 239 | 300 | 389 | 607 | 1594 |
| October | 133 | 164 | 221 | 283 | 374 | 600 | 1650 |
| November | 217 | 259 | 331 | 407 | 514 | 770 | 1884 |
| December | 380 | 430 | 512 | 594 | 705 | 956 | 1938 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 936 | 1004 | 1114 | 1218 | 1352 | 1637 | 2624 |
| February | 794 | 869 | 989 | 1105 | 1258 | 1590 | 2795 |
| March | 740 | 815 | 936 | 1054 | 1210 | 1550 | 2806 |
| April | 608 | 670 | 770 | 867 | 995 | 1276 | 2314 |
| May | 520 | 586 | 697 | 807 | 956 | 1291 | 2601 |
| June | 397 | 460 | 566 | 674 | 823 | 1168 | 2590 |
| July | 462 | 523 | 624 | 724 | 860 | 1168 | 2375 |
| August | 384 | 434 | 517 | 601 | 714 | 970 | 1973 |
| September | 339 | 391 | 478 | 567 | 689 | 971 | 2121 |
| October | 435 | 491 | 582 | 673 | 796 | 1073 | 2150 |
| November | 524 | 591 | 703 | 815 | 966 | 1306 | 2633 |
| December | 805 | 868 | 969 | 1066 | 1191 | 1459 | 2397 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1273 | 1359 | 1494 | 1621 | 1785 | 2130 | 3305 |
| February | 1083 | 1173 | 1319 | 1459 | 1641 | 2032 | 3422 |
| March | 1085 | 1167 | 1299 | 1423 | 1585 | 1928 | 3125 |
| April | 814 | 902 | 1047 | 1189 | 1378 | 1796 | 3362 |
| May | 746 | 827 | 958 | 1086 | 1257 | 1633 | 3041 |
| June | 729 | 804 | 926 | 1044 | 1201 | 1545 | 2821 |
| July | 641 | 714 | 834 | 952 | 1109 | 1459 | 2786 |
| August | 531 | 599 | 713 | 825 | 977 | 1320 | 2657 |
| September | 686 | 755 | 868 | 978 | 1123 | 1440 | 2612 |
| October | 757 | 834 | 960 | 1084 | 1247 | 1604 | 2927 |
| November | 954 | 1035 | 1167 | 1292 | 1457 | 1810 | 3070 |
| December | 1277 | 1360 | 1490 | 1613 | 1771 | 2102 | 3223 |

Georgia Station Number 2791: Years 1940-1982
Douglasville, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1851 | 1962 | 2135 | 2298 | 2507 | 2941 | 4392 |
| February | 1563 | 1694 | 1906 | 2109 | 2375 | 2944 | 4968 |
| March | 1639 | 1754 | 1935 | 2107 | 2328 | 2795 | 4398 |
| April | 1429 | 1533 | 1699 | 1857 | 2061 | 2492 | 3985 |
| May | 1321 | 1416 | 1567 | 1710 | 1895 | 2286 | 3636 |
| June | 1081 | 1184 | 1351 | 1512 | 1724 | 2185 | 3867 |
| July | 1116 | 1223 | 1397 | 1566 | 1788 | 2272 | 4039 |
| August | 1271 | 1373 | 1535 | 1690 | 1892 | 2322 | 3835 |
| September | 1453 | 1553 | 1713 | 1864 | 2058 | 2468 | 3873 |
| October | 1692 | 1798 | 1966 | 2124 | 2326 | 2749 | 4176 |
| November | 1779 | 1897 | 2082 | 2258 | 2483 | 2956 | 4564 |
| December | 1917 | 2031 | 2211 | 2380 | 2596 | 3045 | 4548 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3523 | 3703 | 3984 | 4247 | 4580 | 5265 | 7504 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7872 | 8160 | 8605 | 9014 | 9527 | 10561 | 13804 |

Georgia Station Number 2791: Years 1940-1959
Douglasville, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 142 | 166 | 207 | 249 | 307 | 444 | 1017 |
| February | 142 | 165 | 206 | 248 | 306 | 441 | 1009 |
| March | 205 | 237 | 290 | 345 | 420 | 593 | 1302 |
| April | 107 | 130 | 171 | 215 | 279 | 435 | 1143 |
| May | 51 | 67 | 98 | 133 | 187 | 331 | 1066 |
| June | 108 | 125 | 156 | 187 | 231 | 333 | 760 |
| July | 87 | 111 | 155 | 205 | 278 | 468 | 1390 |
| August | 54 | 70 | 100 | 135 | 188 | 326 | 1024 |
| September | 42 | 57 | 87 | 121 | 176 | 325 | 1118 |
| October | 28 | 37 | 56 | 79 | 114 | 211 | 724 |
| November | 2 | 5 | 13 | 29 | 66 | 227 | 1689 |
| December | 128 | 150 | 189 | 229 | 284 | 415 | 970 |
| **2 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 497 | 538 | 603 | 666 | 748 | 922 | 1540 |
| February | 533 | 583 | 664 | 742 | 844 | 1067 | 1876 |
| March | 581 | 628 | 705 | 778 | 873 | 1077 | 1798 |
| April | 307 | 347 | 415 | 483 | 575 | 783 | 1602 |
| May | 309 | 342 | 396 | 448 | 517 | 670 | 1241 |
| June | 262 | 308 | 388 | 471 | 587 | 860 | 2025 |
| July | 232 | 277 | 356 | 439 | 556 | 838 | 2073 |
| August | 257 | 294 | 357 | 421 | 509 | 709 | 1520 |
| September | 104 | 132 | 183 | 240 | 324 | 539 | 1576 |
| October | 61 | 83 | 128 | 182 | 266 | 501 | 1766 |
| November | 166 | 205 | 276 | 352 | 463 | 738 | 2015 |
| December | 387 | 431 | 505 | 577 | 674 | 889 | 1707 |
| **3 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 901 | 964 | 1064 | 1159 | 1281 | 1539 | 2424 |
| February | 887 | 951 | 1054 | 1152 | 1278 | 1544 | 2467 |
| March | 851 | 907 | 997 | 1081 | 1189 | 1417 | 2191 |
| April | 601 | 653 | 736 | 815 | 919 | 1142 | 1939 |
| May | 373 | 438 | 551 | 667 | 830 | 1214 | 2842 |
| June | 460 | 523 | 630 | 738 | 884 | 1217 | 2544 |
| July | 479 | 542 | 648 | 753 | 896 | 1220 | 2494 |
| August | 372 | 419 | 499 | 579 | 687 | 929 | 1878 |
| September | 212 | 259 | 342 | 432 | 561 | 878 | 2319 |
| October | 328 | 380 | 469 | 560 | 685 | 975 | 2175 |
| November | 439 | 503 | 612 | 722 | 872 | 1216 | 2608 |
| December | 843 | 895 | 979 | 1057 | 1158 | 1367 | 2074 |
| **4 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1279 | 1353 | 1471 | 1582 | 1723 | 2016 | 2993 |
| February | 1132 | 1207 | 1325 | 1437 | 1580 | 1882 | 2906 |
| March | 1149 | 1213 | 1312 | 1406 | 1524 | 1770 | 2582 |
| April | 610 | 701 | 854 | 1009 | 1221 | 1710 | 3691 |
| May | 626 | 707 | 842 | 977 | 1159 | 1569 | 3177 |
| June | 784 | 859 | 981 | 1098 | 1253 | 1591 | 2822 |
| July | 626 | 698 | 818 | 936 | 1093 | 1444 | 2779 |
| August | 404 | 471 | 586 | 704 | 867 | 1250 | 2851 |
| September | 491 | 562 | 681 | 800 | 964 | 1338 | 2843 |
| October | 614 | 687 | 808 | 928 | 1088 | 1446 | 2819 |
| November | 753 | 837 | 974 | 1109 | 1289 | 1687 | 3188 |
| December | 1221 | 1298 | 1419 | 1532 | 1678 | 1982 | 3009 |

Georgia Station Number 2791: Years 1940-1959
Douglasville, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1779 | 1874 | 2023 | 2162 | 2338 | 2702 | 3899 |
| February | 1276 | 1417 | 1648 | 1875 | 2177 | 2846 | 5365 |
| March | 1471 | 1590 | 1779 | 1961 | 2197 | 2701 | 4478 |
| April | 1318 | 1424 | 1593 | 1754 | 1965 | 2413 | 3991 |
| May | 1150 | 1246 | 1399 | 1546 | 1738 | 2148 | 3604 |
| June | 991 | 1096 | 1266 | 1433 | 1654 | 2139 | 3950 |
| July | 985 | 1096 | 1278 | 1457 | 1696 | 2225 | 4229 |
| August | 1051 | 1155 | 1325 | 1490 | 1707 | 2182 | 3928 |
| September | 1152 | 1257 | 1429 | 1594 | 1811 | 2281 | 3984 |
| October | 1413 | 1522 | 1697 | 1864 | 2080 | 2540 | 4150 |
| November | 1611 | 1727 | 1911 | 2086 | 2312 | 2789 | 4438 |
| December | 1899 | 1995 | 2145 | 2285 | 2462 | 2826 | 4017 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3254 | 3430 | 3706 | 3964 | 4292 | 4970 | 7203 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7162 | 7459 | 7921 | 8348 | 8885 | 9976 | 13447 |

Georgia Station Number 2791: Years 1959-1982

Recurr nce Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

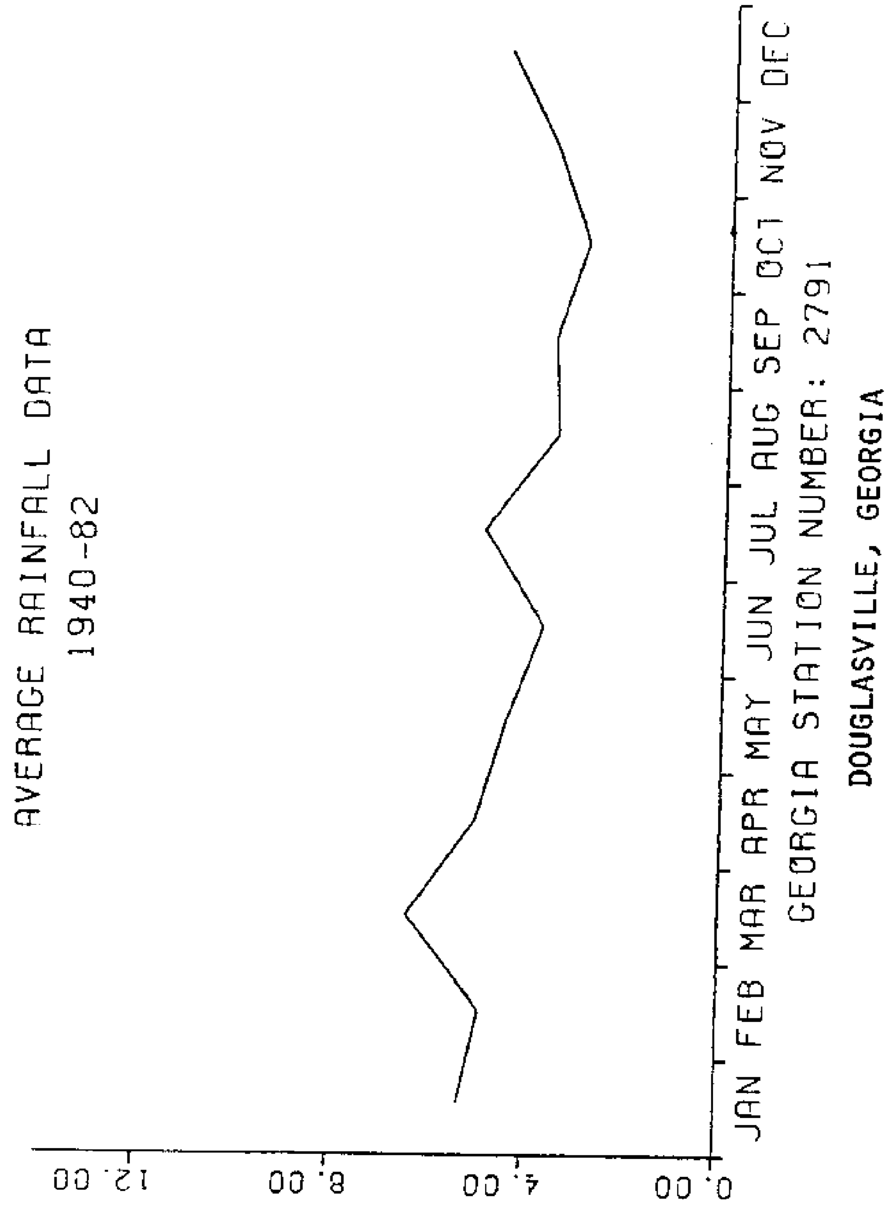
| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 182 | 212 | 262 | 314 | 386 | 553 | 1246 |
| February | 82 | 105 | 148 | 196 | 268 | 456 | 1375 |
| March | 171 | 204 | 262 | 323 | 410 | 618 | 1531 |
| April | 99 | 124 | 169 | 219 | 292 | 478 | 1359 |
| May | 100 | 125 | 171 | 221 | 295 | 481 | 1363 |
| June | 72 | 91 | 124 | 161 | 216 | 354 | 1008 |
| July | 74 | 96 | 136 | 181 | 249 | 425 | 1300 |
| August | 25 | 36 | 60 | 89 | 138 | 280 | 1103 |
| September | 61 | 77 | 107 | 140 | 189 | 316 | 926 |
| October | 33 | 46 | 72 | 104 | 156 | 301 | 1106 |
| November | 88 | 107 | 140 | 175 | 226 | 348 | 899 |
| December | 91 | 114 | 156 | 201 | 268 | 437 | 1235 |
| **2 Months Starting in** | **100(.01)** | **50(.02)** | **20(.05)** | **10(.10)** | **5(.20)** | **2(.50)** | **1(.99)** |
| January | 520 | 569 | 649 | 725 | 826 | 1045 | 1843 |
| February | 455 | 512 | 608 | 703 | 831 | 1120 | 2245 |
| March | 454 | 513 | 611 | 709 | 841 | 1140 | 2308 |
| April | 322 | 374 | 465 | 557 | 686 | 986 | 2236 |
| May | 377 | 422 | 495 | 568 | 665 | 882 | 1713 |
| June | 214 | 257 | 333 | 412 | 526 | 800 | 2009 |
| July | 165 | 204 | 275 | 352 | 464 | 743 | 2043 |
| August | 224 | 259 | 319 | 380 | 465 | 661 | 1469 |
| September | 200 | 235 | 297 | 362 | 452 | 666 | 1579 |
| October | 234 | 271 | 332 | 395 | 482 | 682 | 1504 |
| November | 271 | 313 | 385 | 459 | 561 | 796 | 1766 |
| December | 398 | 451 | 539 | 627 | 746 | 1015 | 2074 |
| **3 Months Starting in** | **100(.01)** | **50(.02)** | **20(.05)** | **10(.10)** | **5(.20)** | **2(.50)** | **1(.99)** |
| January | 999 | 1070 | 1182 | 1289 | 1427 | 1717 | 2718 |
| February | 753 | 833 | 963 | 1089 | 1258 | 1627 | 3006 |
| March | 759 | 841 | 975 | 1106 | 1280 | 1663 | 3101 |
| April | 685 | 751 | 857 | 960 | 1095 | 1390 | 2464 |
| May | 690 | 752 | 854 | 951 | 1079 | 1356 | 2354 |
| June | 353 | 413 | 517 | 625 | 775 | 1128 | 2618 |
| July | 458 | 516 | 612 | 708 | 837 | 1127 | 2256 |
| August | 399 | 451 | 538 | 624 | 741 | 1004 | 2036 |
| September | 498 | 549 | 631 | 711 | 816 | 1048 | 1902 |
| October | 559 | 614 | 703 | 790 | 905 | 1156 | 2076 |
| November | 614 | 683 | 796 | 906 | 1054 | 1381 | 2618 |
| December | 828 | 896 | 1005 | 1110 | 1246 | 1538 | 2572 |
| **4 Months Starting in** | **100(.01)** | **50(.02)** | **20(.05)** | **10(.10)** | **5(.20)** | **2(.50)** | **1(.99)** |
| January | 1320 | 1409 | 1552 | 1686 | 1859 | 2223 | 3468 |
| February | 1131 | 1228 | 1385 | 1536 | 1733 | 2158 | 3673 |
| March | 1148 | 1237 | 1378 | 1513 | 1688 | 2061 | 3363 |
| April | 1050 | 1130 | 1257 | 1378 | 1534 | 1866 | 3024 |
| May | 868 | 945 | 1070 | 1189 | 1347 | 1686 | 2905 |
| June | 689 | 763 | 885 | 1003 | 1161 | 1509 | 2810 |
| July | 653 | 727 | 847 | 965 | 1123 | 1471 | 2790 |
| August | 670 | 735 | 842 | 945 | 1081 | 1377 | 2464 |
| September | 927 | 987 | 1082 | 1171 | 1285 | 1525 | 2336 |
| October | 940 | 1017 | 1140 | 1258 | 1412 | 1739 | 2899 |
| November | 1188 | 1261 | 1376 | 1485 | 1624 | 1914 | 2889 |
| December | 1372 | 1456 | 1589 | 1713 | 1872 | 2204 | 3319 |

Georgia Station Number 2791: Years 1959-1982
Douglasville, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 2058 | 2169 | 2343 | 2505 | 2711 | 3137 | 4540 |
| February | 1880 | 1995 | 2177 | 2348 | 2567 | 3024 | 4561 |
| March | 1807 | 1915 | 2086 | 2245 | 2449 | 2874 | 4296 |
| April | 1537 | 1639 | 1800 | 1952 | 2148 | 2559 | 3956 |
| May | 1518 | 1608 | 1749 | 1882 | 2051 | 2403 | 3580 |
| June | 1164 | 1264 | 1426 | 1582 | 1786 | 2223 | 3789 |
| July | 1243 | 1345 | 1509 | 1666 | 1871 | 2310 | 3864 |
| August | 1518 | 1611 | 1758 | 1895 | 2072 | 2439 | 3674 |
| September | 1840 | 1923 | 2051 | 2170 | 2320 | 2626 | 3609 |
| October | 2061 | 2152 | 2294 | 2425 | 2590 | 2927 | 4008 |
| November | 1982 | 2096 | 2274 | 2442 | 2655 | 3098 | 4570 |
| December | 2075 | 2193 | 2379 | 2553 | 2775 | 3235 | 4763 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3933 | 4100 | 4360 | 4600 | 4903 | 5518 | 7482 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8934 | 9168 | 9525 | 9851 | 10255 | 11059 | 13497 |


AVERAGE RAINFALL DATA
1940-82
0.00
4.00
8.00
12.00
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
GEORGIA STATION NUMBER: 2791
DOUGLASVILLE, GEORGIA

Georgia Station Number 9506: Years 1931-1982
Woodbury, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 89 | 110 | 150 | 193 | 256 | 415 | 1163 |
| February | 112 | 137 | 181 | 228 | 296 | 462 | 1217 |
| March | 147 | 177 | 230 | 287 | 368 | 564 | 1437 |
| April | 79 | 101 | 142 | 188 | 256 | 431 | 1286 |
| May | 50 | 66 | 97 | 132 | 187 | 332 | 1079 |
| June | 101 | 121 | 157 | 194 | 247 | 375 | 939 |
| July | 153 | 178 | 222 | 267 | 330 | 478 | 1096 |
| August | 133 | 154 | 188 | 223 | 271 | 381 | 832 |
| September | 50 | 65 | 94 | 126 | 177 | 309 | 977 |
| October | 7 | 11 | 23 | 41 | 76 | 194 | 1042 |
| November | 15 | 23 | 41 | 65 | 107 | 239 | 1070 |
| December | 91 | 114 | 155 | 201 | 268 | 439 | 1245 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 323 | 370 | 451 | 532 | 644 | 901 | 1943 |
| February | 479 | 533 | 621 | 707 | 822 | 1076 | 2038 |
| March | 431 | 484 | 573 | 661 | 779 | 1045 | 2073 |
| April | 296 | 339 | 410 | 482 | 580 | 805 | 1709 |
| May | 292 | 331 | 396 | 461 | 549 | 749 | 1537 |
| June | 394 | 438 | 510 | 580 | 675 | 883 | 1670 |
| July | 500 | 538 | 600 | 658 | 733 | 893 | 1453 |
| August | 299 | 336 | 398 | 459 | 542 | 726 | 1442 |
| September | 138 | 167 | 220 | 277 | 358 | 557 | 1457 |
| October | 82 | 107 | 153 | 204 | 283 | 489 | 1515 |
| November | 226 | 265 | 332 | 402 | 499 | 727 | 1691 |
| December | 326 | 373 | 452 | 532 | 642 | 893 | 1903 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 732 | 805 | 923 | 1038 | 1190 | 1522 | 2742 |
| February | 738 | 812 | 932 | 1048 | 1202 | 1538 | 2776 |
| March | 704 | 771 | 879 | 984 | 1122 | 1422 | 2516 |
| April | 589 | 647 | 741 | 833 | 953 | 1216 | 2183 |
| May | 613 | 672 | 768 | 862 | 985 | 1253 | 2234 |
| June | 759 | 812 | 896 | 976 | 1078 | 1295 | 2040 |
| July | 734 | 784 | 864 | 939 | 1036 | 1240 | 1938 |
| August | 397 | 447 | 530 | 612 | 722 | 970 | 1932 |
| September | 290 | 336 | 413 | 492 | 600 | 852 | 1886 |
| October | 341 | 392 | 480 | 569 | 692 | 974 | 2128 |
| November | 519 | 578 | 677 | 773 | 902 | 1189 | 2278 |
| December | 695 | 761 | 868 | 971 | 1106 | 1401 | 2473 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 982 | 1075 | 1226 | 1372 | 1565 | 1983 | 3505 |
| February | 1024 | 1109 | 1245 | 1376 | 1547 | 1912 | 3210 |
| March | 1027 | 1105 | 1230 | 1349 | 1504 | 1831 | 2975 |
| April | 938 | 1014 | 1134 | 1250 | 1400 | 1721 | 2851 |
| May | 980 | 1048 | 1155 | 1257 | 1388 | 1664 | 2611 |
| June | 1003 | 1067 | 1169 | 1264 | 1387 | 1643 | 2509 |
| July | 878 | 938 | 1034 | 1125 | 1242 | 1489 | 2335 |
| August | 561 | 624 | 727 | 827 | 962 | 1260 | 2386 |
| September | 599 | 665 | 773 | 879 | 1020 | 1331 | 2503 |
| October | 645 | 716 | 833 | 947 | 1099 | 1436 | 2705 |
| November | 889 | 965 | 1088 | 1206 | 1360 | 1691 | 2875 |
| December | 1122 | 1208 | 1346 | 1478 | 1649 | 2012 | 3282 |

Georgia Station Number 9506: Years 1931-1982
Woodbury, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1654 | 1765 | 1941 | 2108 | 2322 | 2772 | 4306 |
| February | 1786 | 1892 | 2059 | 2215 | 2415 | 2830 | 4218 |
| March | 1809 | 1905 | 2056 | 2197 | 2376 | 2746 | 3962 |
| April | 1563 | 1656 | 1802 | 1939 | 2114 | 2478 | 3694 |
| May | 1344 | 1435 | 1579 | 1715 | 1890 | 2259 | 3516 |
| June | 1311 | 1398 | 1535 | 1665 | 1831 | 2181 | 3369 |
| July | 1404 | 1490 | 1625 | 1752 | 1915 | 2254 | 3393 |
| August | 1253 | 1345 | 1493 | 1633 | 1814 | 2198 | 3529 |
| September | 1380 | 1471 | 1616 | 1753 | 1929 | 2297 | 3553 |
| October | 1508 | 1611 | 1776 | 1932 | 2132 | 2555 | 4002 |
| November | 1644 | 1757 | 1936 | 2105 | 2323 | 2782 | 4354 |
| December | 1758 | 1869 | 2046 | 2212 | 2425 | 2871 | 4377 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3510 | 3672 | 3925 | 4160 | 4456 | 5063 | 7017 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7815 | 8071 | 8466 | 8827 | 9278 | 10184 | 12989 |

Georgia Station Number 9506: Years 1931-1959
Woodbury, Georgia

Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 69 | 87 | 122 | 160 | 217 | 362 | 1068 |
| February | 105 | 128 | 169 | 213 | 276 | 432 | 1136 |
| March | 151 | 179 | 230 | 283 | 358 | 538 | 1321 |
| April | 73 | 94 | 132 | 176 | 242 | 412 | 1253 |
| May | 38 | 52 | 80 | 112 | 163 | 304 | 1061 |
| June | 119 | 139 | 173 | 208 | 257 | 372 | 852 |
| July | 172 | 200 | 248 | 296 | 364 | 521 | 1172 |
| August | 119 | 139 | 174 | 210 | 260 | 378 | 874 |
| September | 35 | 48 | 75 | 107 | 159 | 303 | 1097 |
| October | 6 | 10 | 21 | 36 | 66 | 168 | 884 |
| November | 3 | 5 | 14 | 28 | 61 | 193 | 1308 |
| December | 66 | 87 | 125 | 170 | 237 | 415 | 1313 |
| **2 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 265 | 308 | 383 | 459 | 564 | 811 | 1837 |
| February | 428 | 478 | 562 | 644 | 755 | 1000 | 1942 |
| March | 428 | 479 | 563 | 646 | 758 | 1006 | 1960 |
| April | 255 | 295 | 364 | 434 | 530 | 753 | 1673 |
| May | 285 | 321 | 380 | 439 | 518 | 696 | 1389 |
| June | 426 | 470 | 543 | 614 | 709 | 916 | 1688 |
| July | 538 | 576 | 637 | 695 | 770 | 927 | 1470 |
| August | 253 | 291 | 355 | 420 | 508 | 713 | 1541 |
| September | 103 | 129 | 177 | 229 | 306 | 501 | 1425 |
| October | 47 | 65 | 102 | 146 | 217 | 417 | 1518 |
| November | 182 | 220 | 287 | 358 | 459 | 707 | 1810 |
| December | 269 | 313 | 390 | 468 | 578 | 833 | 1903 |
| **3 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 628 | 697 | 809 | 920 | 1067 | 1391 | 2610 |
| February | 722 | 792 | 904 | 1013 | 1156 | 1467 | 2604 |
| March | 640 | 704 | 808 | 908 | 1041 | 1330 | 2397 |
| April | 507 | 564 | 659 | 752 | 877 | 1153 | 2201 |
| May | 605 | 664 | 758 | 850 | 972 | 1235 | 2200 |
| June | 794 | 847 | 930 | 1009 | 1110 | 1322 | 2043 |
| July | 802 | 850 | 926 | 997 | 1087 | 1276 | 1908 |
| August | 325 | 373 | 454 | 535 | 648 | 905 | 1945 |
| September | 207 | 249 | 323 | 400 | 511 | 778 | 1959 |
| October | 288 | 337 | 421 | 507 | 627 | 909 | 2092 |
| November | 448 | 506 | 602 | 698 | 828 | 1121 | 2268 |
| December | 607 | 671 | 776 | 878 | 1013 | 1311 | 2422 |
| **4 Months Starting in** | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 908 | 996 | 1139 | 1277 | 1460 | 1856 | 3309 |
| February | 950 | 1030 | 1158 | 1281 | 1442 | 1787 | 3015 |
| March | 953 | 1028 | 1149 | 1264 | 1413 | 1732 | 2852 |
| April | 881 | 958 | 1083 | 1203 | 1360 | 1698 | 2910 |
| May | 984 | 1049 | 1153 | 1251 | 1377 | 1641 | 2542 |
| June | 1045 | 1108 | 1207 | 1301 | 1420 | 1669 | 2505 |
| July | 912 | 968 | 1057 | 1141 | 1249 | 1473 | 2229 |
| August | 439 | 500 | 605 | 710 | 853 | 1180 | 2489 |
| September | 472 | 537 | 648 | 759 | 910 | 1255 | 2632 |
| October | 561 | 628 | 738 | 847 | 994 | 1320 | 2572 |
| November | 737 | 814 | 940 | 1063 | 1227 | 1585 | 2920 |
| December | 987 | 1073 | 1212 | 1345 | 1519 | 1893 | 3234 |

Georgia Station Number 9506: Years 1931-1959
Woodbury, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1501 | 1608 | 1778 | 1939 | 2147 | 2585 | 4097 |
| February | 1741 | 1843 | 2002 | 2151 | 2342 | 2738 | 4057 |
| March | 1744 | 1840 | 1990 | 2130 | 2309 | 2678 | 3898 |
| April | 1490 | 1586 | 1738 | 1881 | 2064 | 2449 | 3753 |
| May | 1339 | 1424 | 1558 | 1684 | 1847 | 2186 | 3333 |
| June | 1215 | 1306 | 1450 | 1587 | 1764 | 2139 | 3444 |
| July | 1289 | 1380 | 1526 | 1664 | 1842 | 2218 | 3513 |
| August | 1064 | 1159 | 1312 | 1459 | 1652 | 2067 | 3562 |
| September | 1181 | 1274 | 1423 | 1564 | 1749 | 2142 | 3522 |
| October | 1312 | 1415 | 1579 | 1736 | 1939 | 2373 | 3893 |
| November | 1495 | 1607 | 1785 | 1954 | 2174 | 2639 | 4259 |
| December | 1657 | 1763 | 1931 | 2089 | 2292 | 2717 | 4156 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3220 | 3389 | 3654 | 3902 | 4216 | 4864 | 6993 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7394 | 7653 | 8051 | 8417 | 8875 | 9797 | 12671 |

Georgia Station Number 9506: Years 1959-1982
Woodbury, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 129 | 154 | 200 | 248 | 316 | 480 | 1205 |
| February | 135 | 162 | 209 | 260 | 331 | 505 | 1273 |
| March | 155 | 187 | 244 | 304 | 390 | 599 | 1531 |
| April | 82 | 104 | 146 | 192 | 262 | 441 | 1317 |
| May | 61 | 80 | 117 | 158 | 221 | 387 | 1231 |
| June | 82 | 102 | 137 | 176 | 232 | 373 | 1026 |
| July | 151 | 174 | 214 | 254 | 309 | 437 | 961 |
| August | 160 | 180 | 213 | 246 | 290 | 389 | 771 |
| September | 88 | 106 | 136 | 168 | 213 | 321 | 797 |
| October | 12 | 19 | 36 | 60 | 105 | 252 | 1236 |
| November | 85 | 100 | 128 | 156 | 196 | 290 | 698 |
| December | 119 | 143 | 186 | 232 | 297 | 454 | 1154 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 437 | 488 | 573 | 656 | 768 | 1018 | 1972 |
| February | 577 | 633 | 722 | 809 | 924 | 1173 | 2082 |
| March | 446 | 502 | 595 | 688 | 812 | 1093 | 2184 |
| April | 363 | 407 | 481 | 554 | 652 | 871 | 1719 |
| May | 325 | 368 | 438 | 508 | 603 | 817 | 1655 |
| June | 363 | 405 | 475 | 545 | 637 | 844 | 1634 |
| July | 466 | 503 | 563 | 620 | 695 | 853 | 1413 |
| August | 372 | 406 | 462 | 517 | 588 | 743 | 1305 |
| September | 197 | 231 | 289 | 349 | 432 | 629 | 1455 |
| October | 154 | 185 | 240 | 297 | 380 | 579 | 1458 |
| November | 296 | 335 | 400 | 465 | 553 | 751 | 1531 |
| December | 417 | 466 | 546 | 625 | 731 | 967 | 1866 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 948 | 1020 | 1136 | 1245 | 1387 | 1689 | 2742 |
| February | 787 | 864 | 991 | 1113 | 1275 | 1628 | 2926 |
| March | 829 | 897 | 1006 | 1111 | 1247 | 1539 | 2572 |
| April | 720 | 776 | 865 | 950 | 1060 | 1295 | 2115 |
| May | 624 | 684 | 782 | 877 | 1002 | 1275 | 2272 |
| June | 721 | 774 | 859 | 939 | 1043 | 1264 | 2028 |
| July | 666 | 717 | 800 | 878 | 980 | 1197 | 1956 |
| August | 516 | 566 | 647 | 725 | 827 | 1051 | 1867 |
| September | 438 | 483 | 559 | 632 | 729 | 943 | 1739 |
| October | 425 | 480 | 570 | 660 | 782 | 1057 | 2129 |
| November | 632 | 692 | 788 | 882 | 1005 | 1273 | 2247 |
| December | 851 | 916 | 1019 | 1117 | 1244 | 1514 | 2454 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 1137 | 1233 | 1387 | 1535 | 1729 | 2143 | 3618 |
| February | 1191 | 1278 | 1415 | 1546 | 1715 | 2072 | 3306 |
| March | 1173 | 1251 | 1375 | 1491 | 1641 | 1957 | 3030 |
| April | 1016 | 1088 | 1203 | 1312 | 1452 | 1748 | 2770 |
| May | 981 | 1051 | 1162 | 1268 | 1404 | 1693 | 2686 |
| June | 959 | 1023 | 1126 | 1223 | 1348 | 1610 | 2506 |
| July | 846 | 911 | 1014 | 1112 | 1239 | 1509 | 2451 |
| August | 773 | 830 | 922 | 1008 | 1121 | 1359 | 2186 |
| September | 818 | 877 | 972 | 1062 | 1178 | 1424 | 2274 |
| October | 811 | 883 | 1001 | 1115 | 1263 | 1585 | 2742 |
| November | 1157 | 1225 | 1331 | 1431 | 1559 | 1824 | 2708 |
| December | 1364 | 1445 | 1572 | 1692 | 1844 | 2161 | 3221 |

Georgia Station Number 9506: Years 1959-1982

Woodbury, Georgia

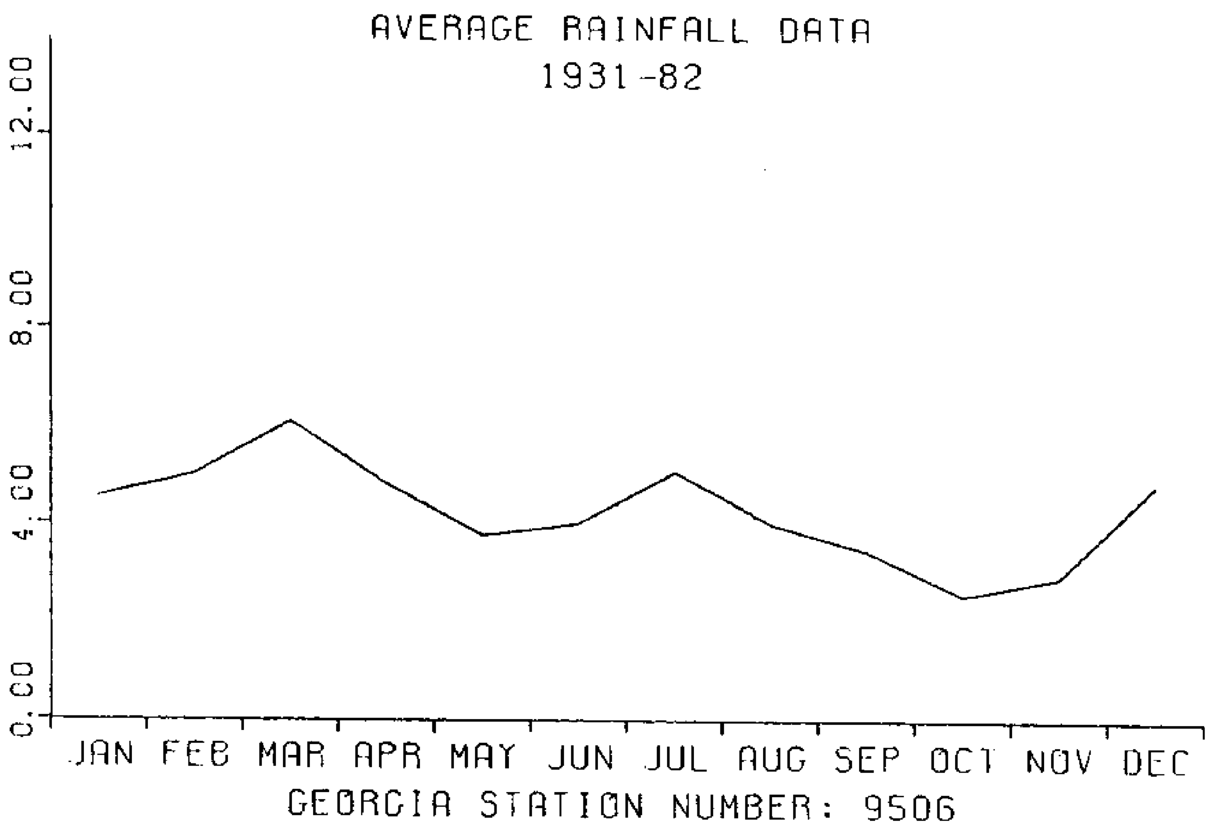
Recurrence Intervals and Nonexceedence Probabilities

For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1995 | 2099 | 2263 | 2415 | 2609 | 3008 | 4318 |
| February | 1884 | 1992 | 2162 | 2321 | 2524 | 2946 | 4348 |
| March | 1911 | 2006 | 2155 | 2293 | 2469 | 2829 | 4002 |
| April | 1663 | 1750 | 1887 | 2015 | 2177 | 2512 | 3612 |
| May | 1385 | 1481 | 1632 | 1776 | 1961 | 2350 | 3683 |
| June | 1448 | 1528 | 1654 | 1772 | 1921 | 2231 | 3257 |
| July | 1574 | 1649 | 1767 | 1876 | 2015 | 2298 | 3216 |
| August | 1595 | 1674 | 1798 | 1914 | 2060 | 2361 | 3340 |
| September | 1784 | 1859 | 1975 | 2083 | 2218 | 2494 | 3370 |
| October | 1916 | 2006 | 2148 | 2279 | 2445 | 2785 | 3885 |
| November | 1915 | 2022 | 2190 | 2347 | 2547 | 2962 | 4335 |
| December | 1984 | 2095 | 2268 | 2430 | 2637 | 3064 | 4479 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 4087 | 4222 | 4430 | 4621 | 4859 | 5337 | 6819 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8745 | 8957 | 9282 | 9577 | 9942 | 10667 | 12852 |




WOODBURY, GEORGIA

Georgia Station Number 2166: Years 1948-1982
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 96 | 117 | 155 | 195 | 253 | 396 | 1042 |
| February | 117 | 140 | 181 | 225 | 287 | 437 | 1101 |
| March | 139 | 167 | 218 | 272 | 350 | 538 | 1380 |
| April | 58 | 78 | 116 | 160 | 229 | 415 | 1384 |
| May | 87 | 108 | 145 | 185 | 244 | 391 | 1072 |
| June | 80 | 99 | 134 | 172 | 227 | 366 | 1015 |
| July | 139 | 168 | 219 | 273 | 351 | 538 | 1375 |
| August | 93 | 113 | 148 | 186 | 241 | 375 | 979 |
| September | 69 | 86 | 116 | 148 | 195 | 313 | 860 |
| October | 3 | 6 | 14 | 27 | 53 | 149 | 885 |
| November | 20 | 30 | 52 | 79 | 126 | 266 | 1108 |
| December | 111 | 136 | 179 | 226 | 294 | 460 | 1217 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 319 | 364 | 440 | 516 | 620 | 858 | 1812 |
| February | 408 | 460 | 548 | 635 | 753 | 1019 | 2058 |
| March | 426 | 478 | 563 | 648 | 761 | 1015 | 1993 |
| April | 271 | 315 | 393 | 472 | 582 | 840 | 1919 |
| May | 282 | 324 | 395 | 467 | 565 | 793 | 1715 |
| June | 404 | 452 | 531 | 610 | 715 | 951 | 1854 |
| July | 420 | 468 | 547 | 624 | 728 | 958 | 1831 |
| August | 310 | 347 | 408 | 469 | 550 | 732 | 1429 |
| September | 119 | 146 | 195 | 247 | 323 | 510 | 1367 |
| October | 77 | 100 | 144 | 194 | 269 | 466 | 1453 |
| November | 270 | 311 | 380 | 449 | 545 | 766 | 1665 |
| December | 342 | 388 | 465 | 541 | 645 | 881 | 1811 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 668 | 738 | 854 | 966 | 1116 | 1445 | 2673 |
| February | 647 | 720 | 841 | 960 | 1119 | 1472 | 2811 |
| March | 695 | 764 | 876 | 984 | 1127 | 1440 | 2589 |
| April | 600 | 660 | 759 | 854 | 981 | 1258 | 2281 |
| May | 699 | 762 | 866 | 965 | 1096 | 1378 | 2400 |
| June | 728 | 789 | 887 | 981 | 1103 | 1366 | 2300 |
| July | 690 | 749 | 844 | 935 | 1054 | 1310 | 2222 |
| August | 360 | 408 | 488 | 568 | 678 | 925 | 1901 |
| September | 263 | 307 | 383 | 461 | 569 | 823 | 1886 |
| October | 382 | 432 | 516 | 600 | 713 | 970 | 1978 |
| November | 526 | 586 | 684 | 780 | 909 | 1195 | 2279 |
| December | 669 | 733 | 836 | 936 | 1067 | 1352 | 2392 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 896 | 988 | 1137 | 1282 | 1475 | 1896 | 3456 |
| February | 944 | 1033 | 1177 | 1317 | 1501 | 1900 | 3353 |
| March | 1066 | 1143 | 1266 | 1383 | 1533 | 1852 | 2956 |
| April | 996 | 1077 | 1207 | 1330 | 1492 | 1836 | 3052 |
| May | 998 | 1074 | 1197 | 1314 | 1466 | 1788 | 2916 |
| June | 975 | 1047 | 1162 | 1272 | 1413 | 1713 | 2755 |
| July | 730 | 802 | 918 | 1031 | 1179 | 1504 | 2693 |
| August | 510 | 573 | 677 | 781 | 921 | 1234 | 2447 |
| September | 580 | 646 | 754 | 860 | 1001 | 1315 | 2503 |
| October | 665 | 733 | 843 | 950 | 1091 | 1401 | 2545 |
| November | 866 | 942 | 1064 | 1181 | 1335 | 1666 | 2851 |
| December | 1057 | 1140 | 1275 | 1403 | 1570 | 1925 | 3176 |

Georgia Station Number 2166: Years 1948-1982
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1563 | 1678 | 1861 | 2034 | 2259 | 2734 | 4382 |
| February | 1723 | 1839 | 2023 | 2197 | 2420 | 2889 | 4491 |
| March | 1783 | 1890 | 2058 | 2216 | 2418 | 2838 | 4245 |
| April | 1583 | 1685 | 1845 | 1996 | 2190 | 2595 | 3967 |
| May | 1273 | 1375 | 1538 | 1694 | 1897 | 2330 | 3853 |
| June | 1195 | 1293 | 1451 | 1602 | 1799 | 2220 | 3710 |
| July | 1296 | 1395 | 1552 | 1701 | 1895 | 2306 | 3741 |
| August | 1158 | 1254 | 1407 | 1554 | 1745 | 2154 | 3604 |
| September | 1289 | 1381 | 1526 | 1665 | 1843 | 2221 | 3520 |
| October | 1425 | 1526 | 1686 | 1837 | 2033 | 2445 | 3865 |
| November | 1493 | 1610 | 1797 | 1976 | 2208 | 2703 | 4438 |
| December | 1564 | 1685 | 1879 | 2064 | 2304 | 2815 | 4604 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3275 | 3459 | 3747 | 4017 | 4361 | 5073 | 7433 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7538 | 7819 | 8253 | 8653 | 9154 | 10166 | 13345 |

Georgia Station Number 2166: Years 1948-1959
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 92 | 108 | 134 | 160 | 198 | 285 | 647 |
| February | 116 | 138 | 177 | 217 | 275 | 413 | 1014 |
| March | 114 | 141 | 190 | 244 | 322 | 518 | 1430 |
| April | 48 | 65 | 100 | 141 | 206 | 385 | 1349 |
| May | 61 | 80 | 115 | 155 | 216 | 376 | 1182 |
| June | 107 | 125 | 157 | 190 | 237 | 346 | 810 |
| July | 143 | 174 | 230 | 290 | 376 | 587 | 1546 |
| August | 77 | 95 | 127 | 162 | 212 | 337 | 913 |
| September | 43 | 58 | 86 | 118 | 168 | 302 | 1000 |
| October | 3 | 5 | 12 | 22 | 43 | 123 | 740 |
| November | 2 | 4 | 12 | 27 | 61 | 213 | 1597 |
| December | 72 | 93 | 133 | 178 | 246 | 425 | 1314 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 246 | 283 | 344 | 406 | 491 | 685 | 1473 |
| February | 343 | 392 | 474 | 556 | 669 | 926 | 1958 |
| March | 490 | 536 | 612 | 685 | 781 | 990 | 1752 |
| April | 217 | 260 | 335 | 414 | 527 | 798 | 1989 |
| May | 276 | 312 | 373 | 433 | 515 | 699 | 1425 |
| June | 473 | 519 | 592 | 664 | 758 | 962 | 1709 |
| July | 381 | 431 | 515 | 598 | 711 | 966 | 1966 |
| August | 230 | 266 | 327 | 389 | 474 | 672 | 1485 |
| September | 117 | 141 | 182 | 226 | 288 | 438 | 1101 |
| October | 25 | 39 | 68 | 108 | 175 | 384 | 1672 |
| November | 222 | 264 | 338 | 416 | 526 | 789 | 1935 |
| December | 268 | 308 | 376 | 445 | 539 | 755 | 1635 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 544 | 604 | 704 | 802 | 933 | 1222 | 2315 |
| February | 663 | 730 | 841 | 948 | 1090 | 1401 | 2552 |
| March | 636 | 702 | 810 | 915 | 1054 | 1359 | 2494 |
| April | 418 | 478 | 580 | 683 | 824 | 1146 | 2444 |
| May | 795 | 850 | 937 | 1020 | 1126 | 1350 | 2117 |
| June | 735 | 792 | 884 | 971 | 1084 | 1325 | 2168 |
| July | 713 | 772 | 866 | 956 | 1073 | 1323 | 2209 |
| August | 329 | 370 | 438 | 506 | 597 | 802 | 1598 |
| September | 175 | 215 | 286 | 363 | 475 | 751 | 2018 |
| October | 336 | 385 | 467 | 550 | 664 | 925 | 1978 |
| November | 425 | 482 | 577 | 672 | 801 | 1092 | 2244 |
| December | 598 | 654 | 745 | 832 | 948 | 1198 | 2107 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 817 | 897 | 1028 | 1155 | 1322 | 1688 | 3031 |
| February | 872 | 956 | 1093 | 1225 | 1399 | 1778 | 3164 |
| March | 865 | 944 | 1071 | 1193 | 1355 | 1703 | 2960 |
| April | 899 | 983 | 1119 | 1250 | 1423 | 1798 | 3159 |
| May | 1043 | 1109 | 1215 | 1315 | 1442 | 1710 | 2614 |
| June | 1007 | 1073 | 1178 | 1277 | 1404 | 1670 | 2576 |
| July | 758 | 823 | 928 | 1029 | 1161 | 1444 | 2456 |
| August | 371 | 431 | 533 | 637 | 781 | 1118 | 2512 |
| September | 444 | 511 | 623 | 737 | 893 | 1252 | 2712 |
| October | 562 | 622 | 721 | 817 | 945 | 1227 | 2281 |
| November | 649 | 726 | 853 | 978 | 1146 | 1520 | 2953 |
| December | 989 | 1063 | 1181 | 1294 | 1440 | 1749 | 2827 |

Georgia Station Number 2166: Years 1948-1959
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1265 | 1374 | 1549 | 1717 | 1937 | 2409 | 4095 |
| February | 1689 | 1798 | 1969 | 2131 | 2338 | 2773 | 4244 |
| March | 1746 | 1845 | 2001 | 2146 | 2332 | 2717 | 3995 |
| April | 1516 | 1616 | 1773 | 1922 | 2113 | 2514 | 3875 |
| May | 1465 | 1539 | 1655 | 1763 | 1900 | 2183 | 3104 |
| June | 1152 | 1245 | 1395 | 1538 | 1725 | 2124 | 3531 |
| July | 1230 | 1330 | 1491 | 1645 | 1845 | 2273 | 3786 |
| August | 907 | 999 | 1150 | 1297 | 1491 | 1917 | 3494 |
| September | 966 | 1061 | 1215 | 1364 | 1561 | 1991 | 3569 |
| October | 1198 | 1295 | 1451 | 1600 | 1794 | 2208 | 3671 |
| November | 1250 | 1368 | 1559 | 1743 | 1986 | 2513 | 4432 |
| December | 1346 | 1465 | 1657 | 1841 | 2083 | 2604 | 4474 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3052 | 3230 | 3509 | 3771 | 4106 | 4801 | 7116 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 6922 | 7192 | 7609 | 7993 | 8476 | 9453 | 12537 |

Georgia Station Number 2166: Years 1959-1982
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

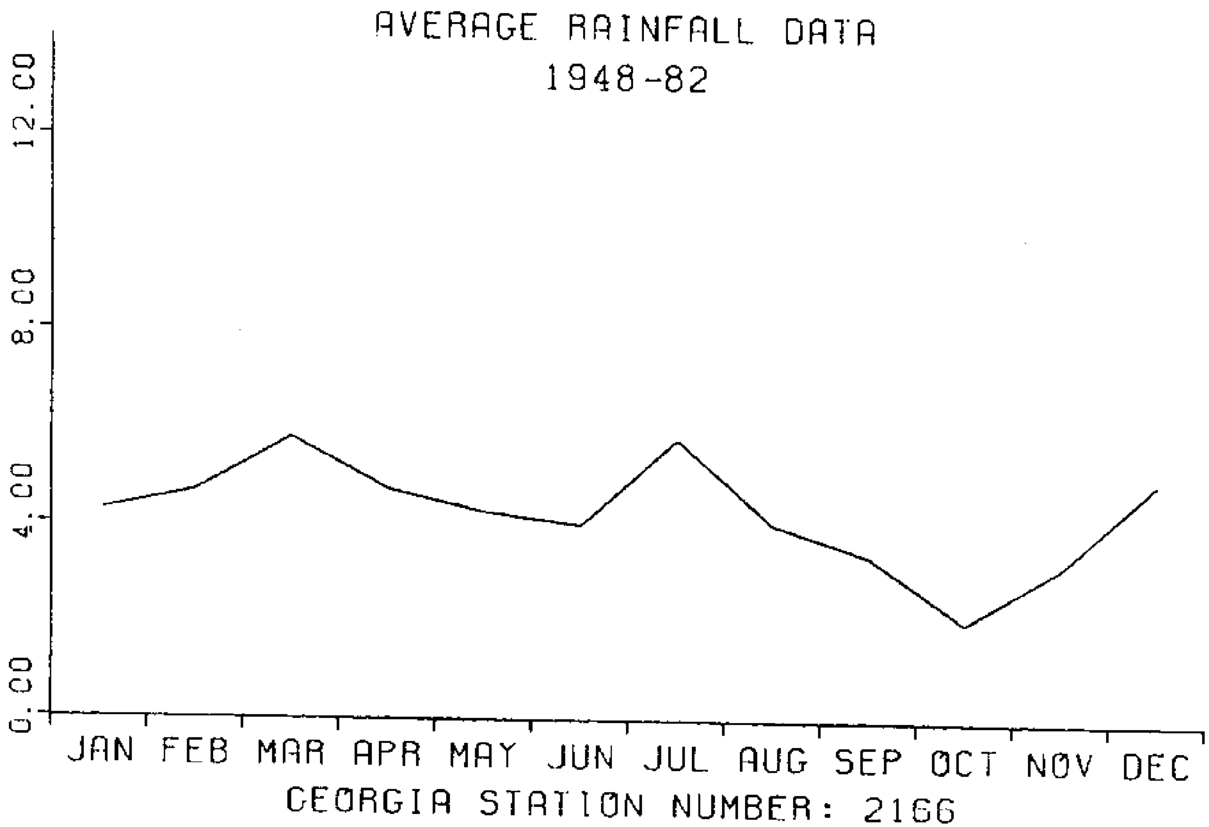
| For Period of | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 140 | 165 | 208 | 252 | 315 | 462 | 1088 |
| February | 126 | 151 | 194 | 239 | 303 | 457 | 1133 |
| March | 161 | 191 | 244 | 299 | 376 | 559 | 1353 |
| April | 56 | 75 | 113 | 157 | 226 | 414 | 1399 |
| May | 104 | 126 | 165 | 207 | 267 | 413 | 1070 |
| June | 80 | 100 | 137 | 178 | 237 | 388 | 1102 |
| July | 151 | 179 | 227 | 277 | 348 | 517 | 1243 |
| August | 108 | 129 | 166 | 206 | 261 | 396 | 988 |
| September | 93 | 110 | 140 | 171 | 215 | 319 | 767 |
| October | 5 | 9 | 20 | 36 | 68 | 180 | 1006 |
| November | 65 | 80 | 107 | 136 | 179 | 286 | 781 |
| December | 127 | 152 | 196 | 242 | 308 | 466 | 1160 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 403 | 451 | 531 | 609 | 715 | 949 | 1851 |
| February | 451 | 505 | 594 | 682 | 800 | 1065 | 2080 |
| March | 406 | 459 | 548 | 637 | 757 | 1028 | 2092 |
| April | 300 | 346 | 423 | 502 | 610 | 860 | 1880 |
| May | 304 | 348 | 423 | 499 | 603 | 841 | 1803 |
| June | 376 | 424 | 506 | 587 | 697 | 945 | 1918 |
| July | 442 | 489 | 565 | 639 | 738 | 954 | 1761 |
| August | 359 | 396 | 456 | 514 | 592 | 761 | 1388 |
| September | 132 | 161 | 213 | 269 | 350 | 548 | 1450 |
| October | 122 | 149 | 197 | 249 | 323 | 505 | 1330 |
| November | 308 | 347 | 412 | 476 | 562 | 756 | 1511 |
| December | 403 | 450 | 529 | 607 | 712 | 944 | 1837 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 793 | 865 | 982 | 1094 | 1241 | 1560 | 2709 |
| February | 650 | 726 | 851 | 974 | 1140 | 1507 | 2912 |
| March | 732 | 802 | 914 | 1024 | 1167 | 1479 | 2617 |
| April | 721 | 778 | 870 | 957 | 1070 | 1312 | 2162 |
| May | 667 | 734 | 843 | 948 | 1088 | 1392 | 2516 |
| June | 729 | 792 | 892 | 989 | 1115 | 1386 | 2354 |
| July | 680 | 739 | 834 | 926 | 1045 | 1303 | 2227 |
| August | 402 | 452 | 537 | 621 | 734 | 988 | 1978 |
| September | 318 | 363 | 439 | 515 | 619 | 857 | 1809 |
| October | 407 | 458 | 542 | 626 | 739 | 992 | 1973 |
| November | 589 | 649 | 747 | 843 | 969 | 1245 | 2268 |
| December | 743 | 808 | 913 | 1014 | 1146 | 1430 | 2450 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 983 | 1077 | 1231 | 1379 | 1575 | 2001 | 3559 |
| February | 994 | 1085 | 1232 | 1373 | 1559 | 1960 | 3411 |
| March | 1201 | 1274 | 1389 | 1498 | 1637 | 1926 | 2898 |
| April | 1048 | 1127 | 1253 | 1372 | 1526 | 1854 | 2996 |
| May | 995 | 1075 | 1204 | 1326 | 1486 | 1827 | 3030 |
| June | 967 | 1041 | 1160 | 1274 | 1421 | 1734 | 2829 |
| July | 727 | 801 | 922 | 1039 | 1194 | 1533 | 2788 |
| August | 597 | 660 | 763 | 864 | 997 | 1291 | 2385 |
| September | 662 | 726 | 829 | 928 | 1059 | 1345 | 2386 |
| October | 758 | 826 | 938 | 1045 | 1185 | 1489 | 2586 |
| November | 1010 | 1081 | 1195 | 1303 | 1443 | 1737 | 2749 |
| December | 1135 | 1220 | 1357 | 1487 | 1656 | 2014 | 3260 |

Georgia Station Number 2166: Years 1959-1982
Columbus, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1818 | 1927 | 2099 | 2261 | 2467 | 2898 | 4340 |
| February | 1756 | 1875 | .2062 | 2239 | 2467 | 2946 | 4581 |
| March | 1821 | 1930 | 2102 | 2263 | 2469 | 2897 | 4332 |
| April | 1623 | 1725 | 1886 | 2037 | 2230 | 2635 | 3998 |
| May | 1256 | 1365 | 1540 | 1709 | 1929 | 2404 | 4102 |
| June | 1227 | 1327 | 1487 | 1640 | 1840 | 2267 | 3775 |
| July | 1330 | 1427 | 1582 | 1729 | 1920 | 2322 | 3716 |
| August | 1346 | 1438 | 1583 | 1721 | 1899 | 2272 | 3550 |
| September | 1529 | 1612 | 1741 | 1862 | 2016 | 2334 | 3381 |
| October | 1602 | 1699 | 1852 | 1996 | 2180 | 2563 | 3849 |
| November | 1647 | 1760 | 1941 | 2112 | 2332 | 2796 | 4385 |
| December | 1709 | 1829 | 2018 | 2198 | 2430 | 2919 | 4598 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3495 | 3675 | 3957 | 4220 | 4553 | 5239 | 7484 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8132 | 8391 | 8789 | 9153 | 9607 | 10518 | 13330 |




COLUMBUS, GEORGIA

Georgia Station Number 2570: Years 1941-1982
Dawson, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 74 | 95 | 135 | 179 | 247 | 422 | 1290 |
| February | 89 | 112 | 153 | 197 | 263 | 429 | 1212 |
| March | 130 | 158 | 211 | 266 | 347 | 547 | 1461 |
| April | 49 | 67 | 102 | 143 | 209 | 388 | 1347 |
| May | 61 | 80 | 116 | 157 | 221 | 388 | 1240 |
| June | 125 | 146 | 184 | 222 | 276 | 402 | 938 |
| July | 175 | 205 | 257 | 310 | 385 | 561 | 1306 |
| August | 115 | 134 | 165 | 197 | 241 | 343 | 765 |
| September | 40 | 54 | 81 | 113 | 163 | 299 | 1020 |
| October | 4 | 7 | 15 | 29 | 58 | 167 | 1018 |
| November | 16 | 24 | 42 | 65 | 105 | 225 | 961 |
| December | 62 | 82 | 120 | 164 | 232 | 413 | 1345 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 259 | 307 | 389 | 475 | 596 | 883 | 2119 |
| February | 393 | 447 | 536 | 626 | 748 | 1024 | 2120 |
| March | 323 | 376 | 467 | 560 | 689 | 990 | 2247 |
| April | 245 | 289 | 367 | 447 | 561 | 830 | 1986 |
| May | 298 | 341 | 415 | 489 | 591 | 825 | 1769 |
| June | 490 | 537 | 614 | 688 | 785 | 997 | 1773 |
| July | 399 | 445 | 522 | 598 | 700 | 926 | 1791 |
| August | 295 | 330 | 387 | 443 | 518 | 685 | 1322 |
| September | 123 | 151 | 202 | 257 | 337 | 535 | 1447 |
| October | 44 | 62 | 100 | 146 | 221 | 433 | 1627 |
| November | 139 | 174 | 238 | 307 | 410 | 668 | 1889 |
| December | 264 | 311 | 393 | 478 | 597 | 878 | 2078 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 611 | 687 | 814 | 939 | 1107 | 1486 | 2952 |
| February | 604 | 678 | 802 | 924 | 1089 | 1459 | 2889 |
| March | 529 | 604 | 729 | 855 | 1027 | 1420 | 2992 |
| April | 567 | 630 | 733 | 834 | 970 | 1269 | 2398 |
| May | 773 | 837 | 939 | 1036 | 1163 | 1435 | 2397 |
| June | 729 | 789 | 886 | 979 | 1100 | 1359 | 2277 |
| July | 587 | 649 | 750 | 848 | 979 | 1265 | 2333 |
| August | 402 | 448 | 523 | 597 | 696 | 916 | 1749 |
| September | 207 | 250 | 325 | 404 | 518 | 793 | 2016 |
| October | 195 | 242 | 326 | 418 | 553 | 889 | 2457 |
| November | 370 | 431 | 536 | 643 | 792 | 1140 | 2593 |
| December | 511 | 581 | 699 | 818 | 979 | 1345 | 2801 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 824 | 921 | 1081 | 1239 | 1450 | 1920 | 3719 |
| February | 866 | 959 | 1112 | 1261 | 1458 | 1894 | 3527 |
| March | 881 | 971 | 1117 | 1259 | 1447 | 1858 | 3380 |
| April | 987 | 1071 | 1206 | 1336 | 1506 | 1871 | 3173 |
| May | 1037 | 1112 | 1231 | 1343 | 1489 | 1798 | 2864 |
| June | 931 | 1005 | 1123 | 1236 | 1382 | 1695 | 2793 |
| July | 688 | 761 | 881 | 998 | 1153 | 1496 | 2775 |
| August | 500 | 559 | 657 | 754 | 885 | 1175 | 2290 |
| September | 393 | 460 | 575 | 693 | 857 | 1243 | 2864 |
| October | 459 | 532 | 657 | 784 | 960 | 1369 | 3057 |
| November | 639 | 722 | 861 | 999 | 1187 | 1610 | 3269 |
| December | 896 | 991 | 1146 | 1297 | 1498 | 1940 | 3588 |

Georgia Station Number 2570: Years 1941-1982
Dawson, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1461 | 1587 | 1791 | 1986 | 2241 | 2790 | 4753 |
| February | 1690 | 1812 | 2006 | 2191 | 2429 | 2932 | 4670 |
| March | 1618 | 1737 | 1925 | 2104 | 2336 | 2826 | 4525 |
| April | 1479 | 1585 | 1755 | 1916 | 2125 | 2565 | 4087 |
| May | 1311 | 1413 | 1575 | 1730 | 1931 | 2359 | 3857 |
| June | 1195 | 1291 | 1445 | 1592 | 1784 | 2192 | 3633 |
| July | 1061 | 1167 | 1339 | 1507 | 1729 | 2213 | 3999 |
| August | 995 | 1095 | 1259 | 1419 | 1630 | 2092 | 3799 |
| September | 992 | 1100 | 1277 | 1450 | 1681 | 2189 | 4099 |
| October | 1141 | 1259 | 1452 | 1640 | 1890 | 2436 | 4467 |
| November | 1295 | 1420 | 1624 | 1821 | 2081 | 2646 | 4716 |
| December | 1429 | 1559 | 1769 | 1972 | 2239 | 2815 | 4897 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3041 | 3240 | 3556 | 3854 | 4237 | 5039 | 7767 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 6931 | 7265 | 7787 | 8271 | 8885 | 10142 | 14219 |

Georgia Station Number 2570: Years 1941-1959
Dawson, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 69 | 86 | 118 | 154 | 206 | 338 | 967 |
| | February | 62 | 80 | 114 | 152 | 210 | 362 | 1114 |
| | March | 161 | 193 | 249 | 307 | 391 | 593 | 1479 |
| | April | 55 | 74 | 112 | 156 | 225 | 414 | 1412 |
| | May | 103 | 126 | 166 | 210 | 273 | 427 | 1129 |
| | June | 111 | 131 | 167 | 204 | 256 | 380 | 912 |
| | July | 205 | 237 | 290 | 344 | 418 | 589 | 1287 |
| | August | 106 | 125 | 157 | 191 | 238 | 349 | 823 |
| | September | 38 | 52 | 82 | 118 | 177 | 340 | 1243 |
| | October | 9 | 15 | 29 | 47 | 81 | 189 | 900 |
| | November | 4 | 7 | 16 | 32 | 64 | 187 | 1158 |
| | December | 35 | 51 | 83 | 124 | 192 | 388 | 1524 |
| 2 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 241 | 279 | 344 | 411 | 503 | 717 | 1601 |
| | February | 384 | 433 | 516 | 598 | 710 | 961 | 1943 |
| | March | 352 | 407 | 502 | 599 | 733 | 1043 | 2325 |
| | April | 279 | 327 | 408 | 492 | 609 | 884 | 2039 |
| | May | 299 | 342 | 414 | 487 | 587 | 815 | 1734 |
| | June | 483 | 532 | 612 | 690 | 793 | 1017 | 1848 |
| | July | 447 | 495 | 573 | 650 | 752 | 976 | 1817 |
| | August | 321 | 359 | 423 | 485 | 568 | 755 | 1469 |
| | September | 147 | 178 | 232 | 289 | 372 | 573 | 1469 |
| | October | 35 | 50 | 84 | 126 | 196 | 402 | 1606 |
| | November | 93 | 123 | 183 | 253 | 361 | 652 | 2165 |
| | December | 226 | 268 | 343 | 420 | 529 | 790 | 1920 |
| 3 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 561 | 628 | 738 | 847 | 992 | 1317 | 2563 |
| | February | 630 | 702 | 821 | 938 | 1094 | 1441 | 2760 |
| | March | 615 | 691 | 817 | 942 | 1111 | 1488 | 2951 |
| | April | 551 | 617 | 726 | 833 | 977 | 1298 | 2530 |
| | May | 811 | 875 | 976 | 1074 | 1200 | 1469 | 2412 |
| | June | 675 | 740 | 847 | 951 | 1087 | 1385 | 2476 |
| | July | 678 | 743 | 848 | 950 | 1085 | 1376 | 2442 |
| | August | 450 | 497 | 573 | 648 | 747 | 965 | 1773 |
| | September | 199 | 242 | 320 | 404 | 524 | 819 | 2157 |
| | October | 167 | 211 | 293 | 384 | 519 | 863 | 2518 |
| | November | 290 | 346 | 444 | 547 | 692 | 1041 | 2561 |
| | December | 497 | 558 | 660 | 761 | 897 | 1203 | 2385 |
| 4 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 813 | 901 | 1047 | 1189 | 1379 | 1798 | 3373 |
| | February | 933 | 1022 | 1166 | 1305 | 1489 | 1887 | 3340 |
| | March | 927 | 1017 | 1164 | 1306 | 1494 | 1902 | 3401 |
| | April | 1014 | 1102 | 1245 | 1382 | 1561 | 1947 | 3328 |
| | May | 1017 | 1096 | 1223 | 1344 | 1502 | 1837 | 3012 |
| | June | 924 | 1005 | 1135 | 1261 | 1425 | 1778 | 3045 |
| | July | 763 | 839 | 961 | 1080 | 1238 | 1580 | 2841 |
| | August | 510 | 572 | 675 | 776 | 913 | 1218 | 2394 |
| | September | 347 | 415 | 534 | 660 | 838 | 1268 | 3152 |
| | October | 378 | 445 | 561 | 681 | 849 | 1247 | 2942 |
| | November | 537 | 613 | 742 | 871 | 1048 | 1451 | 3068 |
| | December | 845 | 934 | 1080 | 1223 | 1412 | 1829 | 3382 |

Georgia Station Number 2570: Years 1941-1959
Dawson, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1377 | 1497 | 1691 | 1878 | 2123 | 2649 | 4535 |
| February | 1726 | 1847 | 2039 | 2220 | 2454 | 2947 | 4641 |
| March | 1651 | 1775 | 1972 | 2160 | 2403 | 2918 | 4710 |
| April | 1497 | 1613 | 1798 | 1975 | 2205 | 2693 | 4404 |
| May | 1392 | 1494 | 1656 | 1810 | 2010 | 2432 | 3893 |
| June | 1203 | 1303 | 1464 | 1618 | 1820 | 2251 | 3781 |
| July | 1105 | 1215 | 1395 | 1569 | 1799 | 2302 | 4153 |
| August | 923 | 1024 | 1189 | 1351 | 1566 | 2042 | 3831 |
| September | 860 | 965 | 1138 | 1310 | 1541 | 2059 | 4054 |
| October | 1015 | 1128 | 1316 | 1500 | 1746 | 2290 | 4348 |
| November | 1217 | 1340 | 1540 | 1734 | 1992 | 2556 | 4637 |
| December | 1470 | 1594 | 1792 | 1982 | 2230 | 2762 | 4653 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 2960 | 3163 | 3486 | 3791 | 4184 | 5010 | 7842 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 6694 | 7041 | 7584 | 8089 | 8732 | 10055 | 14387 |

Georgia Station Number 2570: Years 1959-1982
Dawson, Georgia

Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

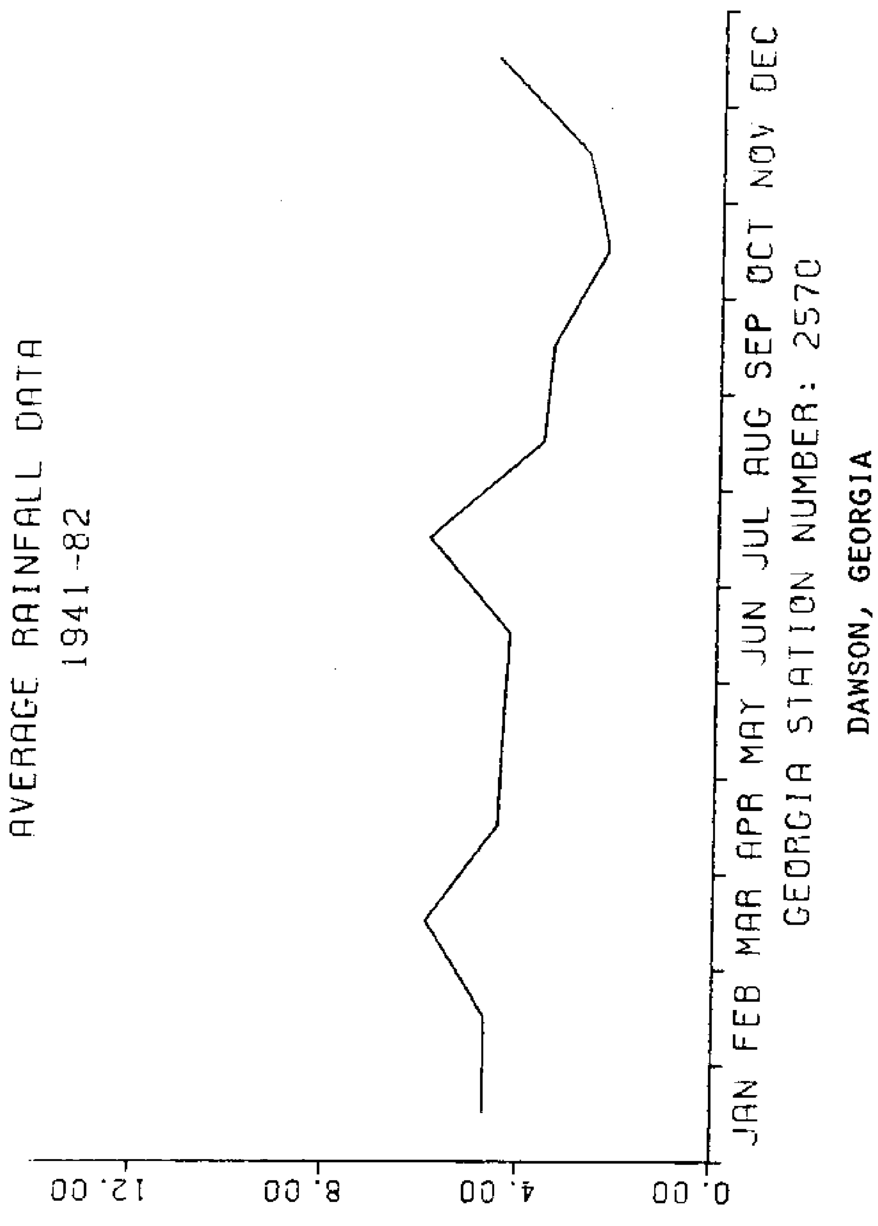
| For Period of 1 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|---|
| | January | 107 | 133 | 181 | 233 | 309 | 499 | 1392 |
| | February | 132 | 158 | 205 | 253 | 323 | 491 | 1233 |
| | March | 113 | 140 | 191 | 246 | 328 | 533 | 1496 |
| | April | 43 | 59 | 91 | 129 | 190 | 358 | 1276 |
| | May | 44 | 60 | 93 | 133 | 196 | 373 | 1334 |
| | June | 138 | 160 | 198 | 237 | 291 | 417 | 939 |
| | July | 151 | 179 | 229 | 281 | 355 | 532 | 1301 |
| | August | 126 | 144 | 173 | 203 | 243 | 336 | 704 |
| | September | 63 | 77 | 103 | 131 | 172 | 272 | 731 |
| | October | 2 | 4 | 11 | 23 | 51 | 167 | 1186 |
| | November | 42 | 54 | 77 | 104 | 144 | 249 | 773 |
| | December | 95 | 117 | 158 | 201 | 266 | 426 | 1169 |
| 2 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 348 | 402 | 495 | 590 | 721 | 1024 | 2274 |
| | February | 414 | 469 | 563 | 657 | 784 | 1074 | 2219 |
| | March | 307 | 358 | 445 | 535 | 660 | 952 | 2175 |
| | April | 225 | 267 | 342 | 419 | 529 | 791 | 1930 |
| | May | 298 | 342 | 416 | 491 | 595 | 832 | 1793 |
| | June | 499 | 544 | 618 | 688 | 781 | 982 | 1707 |
| | July | 369 | 414 | 489 | 564 | 664 | 888 | 1754 |
| | August | 307 | 338 | 387 | 434 | 497 | 634 | 1137 |
| | September | 108 | 134 | 182 | 235 | 312 | 507 | 1420 |
| | October | 53 | 73 | 114 | 163 | 241 | 457 | 1639 |
| | November | 198 | 235 | 299 | 365 | 459 | 682 | 1644 |
| | December | 312 | 363 | 450 | 539 | 662 | 951 | 2151 |
| 3 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 709 | 790 | 924 | 1055 | 1230 | 1619 | 3098 |
| | February | 588 | 664 | 791 | 917 | 1087 | 1472 | 2979 |
| | March | 475 | 548 | 671 | 797 | 970 | 1370 | 3007 |
| | April | 584 | 645 | 744 | 840 | 968 | 1248 | 2289 |
| | May | 747 | 810 | 912 | 1009 | 1136 | 1409 | 2379 |
| | June | 792 | 846 | 933 | 1014 | 1119 | 1339 | 2095 |
| | July | 551 | 608 | 702 | 794 | 916 | 1183 | 2178 |
| | August | 372 | 417 | 490 | 563 | 660 | 878 | 1714 |
| | September | 219 | 260 | 333 | 409 | 517 | 774 | 1892 |
| | October | 219 | 267 | 354 | 447 | 581 | 910 | 2407 |
| | November | 452 | 516 | 624 | 732 | 881 | 1220 | 2579 |
| | December | 576 | 652 | 779 | 906 | 1077 | 1466 | 2993 |
| 4 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 864 | 966 | 1134 | 1299 | 1521 | 2015 | 3904 |
| | February | 824 | 920 | 1077 | 1232 | 1439 | 1900 | 3656 |
| | March | 851 | 940 | 1085 | 1226 | 1414 | 1826 | 3358 |
| | April | 983 | 1063 | 1191 | 1314 | 1473 | 1814 | 3019 |
| | May | 1064 | 1134 | 1245 | 1350 | 1485 | 1768 | 2730 |
| | June | 977 | 1042 | 1146 | 1243 | 1369 | 1632 | 2531 |
| | July | 645 | 715 | 831 | 945 | 1097 | 1431 | 2690 |
| | August | 498 | 555 | 649 | 742 | 867 | 1143 | 2195 |
| | September | 448 | 512 | 621 | 731 | 881 | 1225 | 2608 |
| | October | 547 | 624 | 753 | 884 | 1062 | 1468 | 3092 |
| | November | 762 | 849 | 993 | 1133 | 1322 | 1740 | 3328 |
| | December | 961 | 1059 | 1219 | 1374 | 1580 | 2030 | 3698 |

Georgia Station Number 2570: Years 1959-1982
Dawson, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1554 | 1683 | 1889 | 2087 | 2345 | 2898 | 4857 |
| February | 1663 | 1786 | 1982 | 2168 | 2409 | 2920 | 4692 |
| March | 1612 | 1725 | 1905 | 2075 | 2294 | 2757 | 4346 |
| April | 1521 | 1616 | 1767 | 1908 | 2090 | 2469 | 3747 |
| May | 1258 | 1359 | 1521 | 1675 | 1875 | 2303 | 3811 |
| June | 1200 | 1292 | 1439 | 1579 | 1761 | 2148 | 3498 |
| July | 1041 | 1143 | 1309 | 1470 | 1683 | 2146 | 3847 |
| August | 1057 | 1157 | 1319 | 1476 | 1683 | 2131 | 3767 |
| September | 1124 | 1232 | 1408 | 1579 | 1804 | 2293 | 4084 |
| October | 1272 | 1392 | 1586 | 1773 | 2020 | 2554 | 4500 |
| November | 1369 | 1495 | 1700 | 1897 | 2156 | 2718 | 4755 |
| December | 1408 | 1542 | 1761 | 1972 | 2251 | 2857 | 5069 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3158 | 3352 | 3658 | 3946 | 4315 | 5085 | 7671 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7131 | 7454 | 7956 | 8422 | 9010 | 10211 | 14071 |


AVERAGE RAINFALL DATA
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GEORGIA STATION NUMBER: 2570
DAWSON, GEORGIA

Georgia Station Number 3516: Years 1931-1982
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|---|
| | January | 98 | 121 | 163 | 207 | 273 | 436 | 1191 |
| | February | 115 | 140 | 183 | 230 | 296 | 458 | 1187 |
| | March | 145 | 173 | 224 | 277 | 353 | 536 | 1341 |
| | April | 80 | 102 | 141 | 185 | 250 | 416 | 1218 |
| | May | 56 | 72 | 104 | 139 | 192 | 332 | 1030 |
| | June | 83 | 105 | 146 | 191 | 258 | 429 | 1252 |
| | July | 153 | 184 | 240 | 299 | 383 | 587 | 1493 |
| | August | 89 | 112 | 156 | 205 | 277 | 461 | 1351 |
| | September | 32 | 45 | 72 | 106 | 161 | 318 | 1205 |
| | October | 2 | 3 | 9 | 19 | 43 | 140 | 992 |
| | November | 17 | 26 | 46 | 72 | 117 | 255 | 1112 |
| | December | 90 | 113 | 155 | 202 | 271 | 446 | 1281 |
| 2 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 327 | 376 | 459 | 543 | 658 | 923 | 1999 |
| | February | 487 | 537 | 620 | 701 | 808 | 1043 | 1918 |
| | March | 373 | 425 | 512 | 600 | 720 | 993 | 2084 |
| | April | 272 | 314 | 386 | 459 | 560 | 793 | 1752 |
| | May | 245 | 289 | 363 | 441 | 549 | 805 | 1891 |
| | June | 347 | 403 | 497 | 594 | 728 | 1039 | 2328 |
| | July | 427 | 484 | 579 | 674 | 804 | 1096 | 2251 |
| | August | 276 | 322 | 399 | 478 | 588 | 845 | 1912 |
| | September | 91 | 117 | 166 | 222 | 306 | 526 | 1616 |
| | October | 39 | 57 | 93 | 139 | 214 | 433 | 1699 |
| | November | 164 | 203 | 273 | 348 | 459 | 733 | 2008 |
| | December | 348 | 396 | 477 | 559 | 670 | 922 | 1930 |
| 3 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 717 | 789 | 907 | 1022 | 1174 | 1506 | 2731 |
| | February | 690 | 762 | 881 | 997 | 1151 | 1488 | 2748 |
| | March | 597 | 665 | 778 | 889 | 1038 | 1368 | 2624 |
| | April | 578 | 640 | 743 | 843 | 976 | 1270 | 2372 |
| | May | 617 | 689 | 807 | 924 | 1081 | 1428 | 2756 |
| | June | 676 | 754 | 883 | 1010 | 1180 | 1558 | 2997 |
| | July | 632 | 706 | 828 | 949 | 1110 | 1470 | 2843 |
| | August | 384 | 439 | 533 | 627 | 756 | 1051 | 2242 |
| | September | 175 | 218 | 296 | 381 | 505 | 818 | 2282 |
| | October | 236 | 285 | 373 | 467 | 601 | 929 | 2397 |
| | November | 447 | 512 | 620 | 730 | 879 | 1221 | 2597 |
| | December | 666 | 736 | 848 | 959 | 1105 | 1425 | 2615 |
| 4 Months Starting in | | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 913 | 1007 | 1162 | 1312 | 1512 | 1949 | 3576 |
| | February | 951 | 1037 | 1176 | 1310 | 1486 | 1865 | 3233 |
| | March | 936 | 1022 | 1160 | 1293 | 1468 | 1846 | 3213 |
| | April | 950 | 1038 | 1181 | 1318 | 1499 | 1890 | 3307 |
| | May | 949 | 1041 | 1190 | 1335 | 1525 | 1940 | 3457 |
| | June | 923 | 1016 | 1167 | 1314 | 1509 | 1934 | 3504 |
| | July | 757 | 840 | 976 | 1109 | 1286 | 1677 | 3149 |
| | August | 525 | 595 | 713 | 831 | 991 | 1353 | 2784 |
| | September | 423 | 493 | 613 | 736 | 907 | 1306 | 2973 |
| | October | 547 | 621 | 745 | 869 | 1038 | 1422 | 2941 |
| | November | 806 | 890 | 1027 | 1161 | 1338 | 1728 | 3179 |
| | December | 1105 | 1192 | 1332 | 1465 | 1638 | 2007 | 3302 |

Georgia Station Number 3516: Years 1931-1982
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1507 | 1631 | 1830 | 2020 | 2268 | 2799 | 4677 |
| February | 1704 | 1827 | 2023 | 2210 | 2451 | 2960 | 4720 |
| March | 1734 | 1856 | 2052 | 2237 | 2476 | 2981 | 4720 |
| April | 1523 | 1644 | 1837 | 2021 | 2261 | 2772 | 4569 |
| May | 1313 | 1427 | 1611 | 1788 | 2020 | 2519 | 4305 |
| June | 1251 | 1364 | 1547 | 1723 | 1954 | 2453 | 4253 |
| July | 1241 | 1356 | 1542 | 1722 | 1958 | 2469 | 4322 |
| August | 1174 | 1282 | 1455 | 1623 | 1843 | 2318 | 4038 |
| September | 1151 | 1258 | 1433 | 1601 | 1823 | 2303 | 4050 |
| October | 1353 | 1464 | 1643 | 1814 | 2037 | 2514 | 4203 |
| November | 1520 | 1641 | 1834 | 2018 | 2258 | 2769 | 4567 |
| December | 1600 | 1720 | 1912 | 2094 | 2329 | 2830 | 4571 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3272 | 3477 | 3800 | 4104 | 4493 | 5307 | 8048 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7794 | 8105 | 8587 | 9031 | 9589 | 10721 | 14304 |

Georgia Station Number 3516: Years 1931-1959
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 78 | 97 | 134 | 174 | 234 | 385 | 1107 |
| February | 93 | 116 | 158 | 204 | 270 | 439 | 1230 |
| March | 126 | 153 | 200 | 250 | 322 | 497 | 1284 |
| April | 126 | 150 | 193 | 238 | 302 | 454 | 1120 |
| May | 54 | 70 | 102 | 137 | 191 | 334 | 1054 |
| June | 82 | 102 | 139 | 179 | 237 | 385 | 1079 |
| July | 137 | 168 | 224 | 285 | 373 | 592 | 1595 |
| August | 91 | 116 | 165 | 219 | 301 | 513 | 1558 |
| September | 43 | 59 | 92 | 130 | 192 | 363 | 1293 |
| October | 1 | 3 | 8 | 16 | 37 | 126 | 919 |
| November | 5 | 9 | 20 | 37 | 72 | 204 | 1207 |
| December | 63 | 84 | 124 | 171 | 243 | 436 | 1437 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 277 | 322 | 400 | 480 | 590 | 847 | 1920 |
| February | 451 | 499 | 576 | 652 | 752 | 973 | 1795 |
| March | 406 | 456 | 539 | 621 | 732 | 980 | 1939 |
| April | 337 | 379 | 450 | 520 | 614 | 827 | 1652 |
| May | 191 | 230 | 301 | 376 | 484 | 747 | 1921 |
| June | 312 | 365 | 459 | 555 | 689 | 1006 | 2345 |
| July | 451 | 513 | 616 | 719 | 859 | 1177 | 2440 |
| August | 330 | 380 | 467 | 555 | 676 | 956 | 2105 |
| September | 73 | 97 | 145 | 201 | 287 | 519 | 1730 |
| October | 20 | 31 | 57 | 92 | 155 | 353 | 1619 |
| November | 108 | 141 | 206 | 281 | 395 | 699 | 2248 |
| December | 312 | 359 | 438 | 518 | 628 | 881 | 1910 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 637 | 704 | 814 | 922 | 1065 | 1380 | 2553 |
| February | 731 | 798 | 908 | 1014 | 1154 | 1456 | 2554 |
| March | 650 | 714 | 819 | 921 | 1055 | 1348 | 2426 |
| April | 548 | 610 | 713 | 814 | 949 | 1248 | 2383 |
| May | 552 | 624 | 744 | 863 | 1024 | 1388 | 2815 |
| June | 646 | 727 | 863 | 997 | 1179 | 1587 | 3173 |
| July | 734 | 813 | 942 | 1068 | 1236 | 1606 | 2992 |
| August | 382 | 442 | 542 | 644 | 785 | 1112 | 2450 |
| September | 118 | 155 | 227 | 309 | 435 | 770 | 2482 |
| October | 161 | 204 | 284 | 373 | 507 | 848 | 2503 |
| November | 368 | 429 | 535 | 644 | 795 | 1150 | 2639 |
| December | 604 | 672 | 785 | 896 | 1045 | 1374 | 2622 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 928 | 1015 | 1157 | 1294 | 1474 | 1865 | 3287 |
| February | 1019 | 1097 | 1222 | 1342 | 1497 | 1826 | 2979 |
| March | 889 | 972 | 1106 | 1235 | 1405 | 1774 | 3112 |
| April | 978 | 1064 | 1203 | 1337 | 1513 | 1891 | 3251 |
| May | 871 | 969 | 1129 | 1286 | 1495 | 1958 | 3709 |
| June | 928 | 1026 | 1187 | 1344 | 1553 | 2012 | 3727 |
| July | 775 | 862 | 1007 | 1149 | 1339 | 1761 | 3359 |
| August | 463 | 537 | 662 | 790 | 967 | 1378 | 3074 |
| September | 306 | 373 | 493 | 622 | 807 | 1262 | 3327 |
| October | 436 | 505 | 624 | 745 | 912 | 1302 | 2912 |
| November | 681 | 765 | 905 | 1043 | 1229 | 1646 | 3260 |
| December | 988 | 1076 | 1217 | 1354 | 1532 | 1918 | 3303 |

Georgia Station Number 3516: Years 1931-1959
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1408 | 1527 | 1718 | 1901 | 2140 | 2652 | 4475 |
| February | 1714 | 1831 | 2016 | 2191 | 2417 | 2891 | 4515 |
| March | 1714 | 1839 | 2038 | 2227 | 2472 | 2990 | 4783 |
| April | 1582 | 1708 | 1908 | 2100 | 2350 | 2881 | 4750 |
| May | 1194 | 1317 | 1517 | 1712 | 1970 | 2535 | 4630 |
| June | 1086 | 1208 | 1408 | 1605 | 1867 | 2447 | 4642 |
| July | 1107 | 1233 | 1440 | 1644 | 1917 | 2523 | 4822 |
| August | 1027 | 1141 | 1329 | 1513 | 1759 | 2302 | 4355 |
| September | 934 | 1046 | 1231 | 1414 | 1660 | 2209 | 4319 |
| October | 1151 | 1262 | 1443 | 1617 | 1848 | 2349 | 4184 |
| November | 1442 | 1561 | 1753 | 1937 | 2177 | 2690 | 4512 |
| December | 1625 | 1739 | 1921 | 2094 | 2316 | 2785 | 4400 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3021 | 3239 | 3586 | 3915 | 4340 | 5238 | 8342 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 7378 | 7716 | 8242 | 8730 | 9347 | 10607 | 14664 |

Georgia Station Number 3516: Years 1959-1982
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

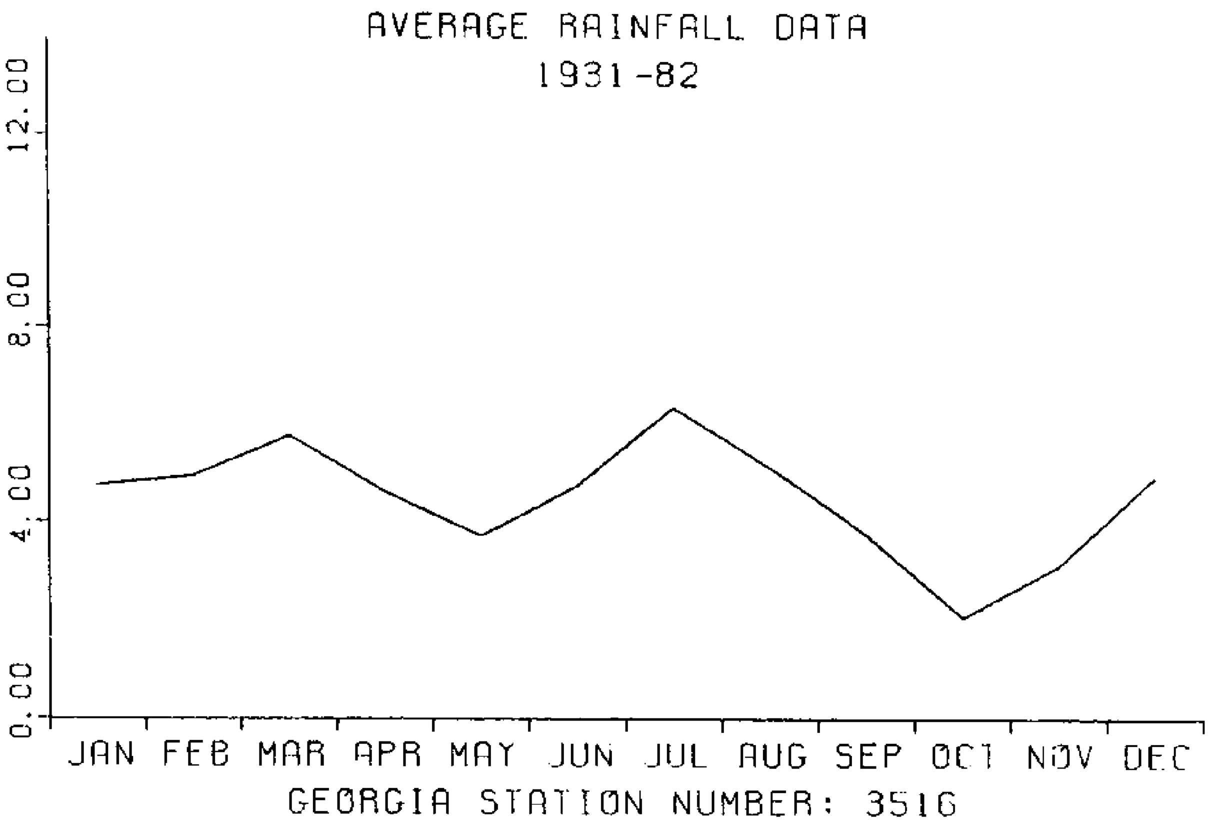
| For Period of | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 147 | 174 | 222 | 271 | 341 | 507 | 1224 |
| February | 157 | 183 | 228 | 274 | 338 | 489 | 1118 |
| March | 187 | 218 | 274 | 331 | 410 | 597 | 1385 |
| April | 44 | 61 | 93 | 133 | 195 | 367 | 1298 |
| May | 64 | 81 | 113 | 149 | 202 | 340 | 1007 |
| June | 101 | 127 | 173 | 223 | 298 | 485 | 1370 |
| July | 180 | 210 | 264 | 318 | 395 | 575 | 1335 |
| August | 131 | 153 | 190 | 228 | 281 | 406 | 929 |
| September | 26 | 37 | 59 | 87 | 133 | 265 | 1015 |
| October | 2 | 5 | 12 | 26 | 55 | 178 | 1218 |
| November | 51 | 67 | 96 | 128 | 178 | 309 | 966 |
| December | 141 | 166 | 208 | 251 | 311 | 452 | 1049 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 417 | 469 | 555 | 641 | 757 | 1018 | 2030 |
| February | 566 | 619 | 705 | 788 | 897 | 1134 | 1996 |
| March | 343 | 397 | 489 | 582 | 711 | 1011 | 2242 |
| April | 209 | 249 | 320 | 394 | 500 | 753 | 1858 |
| May | 334 | 379 | 456 | 533 | 638 | 876 | 1822 |
| June | 397 | 453 | 549 | 646 | 778 | 1081 | 2298 |
| July | 446 | 496 | 578 | 659 | 766 | 1005 | 1907 |
| August | 292 | 329 | 391 | 453 | 537 | 725 | 1458 |
| September | 119 | 147 | 198 | 253 | 334 | 535 | 1468 |
| October | 84 | 110 | 160 | 217 | 305 | 538 | 1724 |
| November | 277 | 318 | 388 | 458 | 554 | 776 | 1673 |
| December | 401 | 450 | 533 | 615 | 726 | 974 | 1936 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 896 | 969 | 1088 | 1202 | 1350 | 1667 | 2792 |
| February | 660 | 737 | 864 | 989 | 1156 | 1529 | 2951 |
| March | 551 | 623 | 743 | 864 | 1026 | 1393 | 2836 |
| April | 618 | 680 | 782 | 881 | 1012 | 1297 | 2354 |
| May | 708 | 778 | 894 | 1006 | 1154 | 1477 | 2670 |
| June | 731 | 804 | 923 | 1038 | 1191 | 1524 | 2752 |
| July | 587 | 653 | 760 | 865 | 1005 | 1315 | 2484 |
| August | 424 | 473 | 555 | 635 | 743 | 984 | 1901 |
| September | 279 | 326 | 406 | 489 | 604 | 875 | 2008 |
| October | 366 | 420 | 512 | 605 | 733 | 1028 | 2221 |
| November | 572 | 637 | 745 | 851 | 993 | 1309 | 2508 |
| December | 758 | 826 | 937 | 1044 | 1185 | 1488 | 2583 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 937 | 1038 | 1204 | 1366 | 1582 | 2057 | 3842 |
| February | 901 | 994 | 1145 | 1292 | 1487 | 1913 | 3496 |
| March | 1016 | 1104 | 1245 | 1380 | 1556 | 1936 | 3292 |
| April | 919 | 1009 | 1154 | 1295 | 1482 | 1887 | 3374 |
| May | 1083 | 1164 | 1294 | 1418 | 1578 | 1918 | 3101 |
| June | 959 | 1042 | 1177 | 1307 | 1477 | 1843 | 3155 |
| July | 779 | 854 | 975 | 1092 | 1246 | 1581 | 2803 |
| August | 651 | 714 | 815 | 914 | 1043 | 1325 | 2356 |
| September | 651 | 716 | 822 | 925 | 1061 | 1359 | 2458 |
| October | 741 | 817 | 941 | 1062 | 1222 | 1573 | 2872 |
| November | 1000 | 1080 | 1208 | 1331 | 1490 | 1829 | 3025 |
| December | 1293 | 1376 | 1507 | 1630 | 1787 | 2117 | 3234 |

Georgia Station Number 3516: Years 1959-1982
Fort Gaines, Georgia
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1700 | 1826 | 2026 | 2216 | 2462 | 2984 | 4794 |
| February | 1717 | 1847 | 2053 | 2250 | 2505 | 3045 | 4928 |
| March | 1760 | 1880 | 2070 | 2251 | 2483 | 2971 | 4641 |
| April | 1498 | 1610 | 1789 | 1958 | 2178 | 2644 | 4264 |
| May | 1515 | 1614 | 1770 | 1916 | 2105 | 2500 | 3841 |
| June | 1545 | 1638 | 1784 | 1921 | 2096 | 2460 | 3681 |
| July | 1557 | 1643 | 1780 | 1908 | 2071 | 2408 | 3524 |
| August | 1421 | 1512 | 1657 | 1794 | 1970 | 2338 | 3585 |
| September | 1523 | 1613 | 1756 | 1890 | 2062 | 2419 | 3613 |
| October | 1720 | 1821 | 1981 | 2131 | 2322 | 2720 | 4049 |
| November | 1637 | 1757 | 1949 | 2131 | 2367 | 2866 | 4598 |
| December | 1585 | 1710 | 1912 | 2103 | 2353 | 2885 | 4755 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3695 | 3874 | 4153 | 4412 | 4740 | 5412 | 7593 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8400 | 8667 | 9078 | 9453 | 9922 | 10861 | 13762 |




FORT GAINES, GEORGIA

Florida Station Number 0804: Years 1931-1982
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 89 | 111 | 149 | 190 | 251 | 402 | 1106 |
| February | 91 | 111 | 148 | 187 | 245 | 386 | 1034 |
| March | 86 | 110 | 155 | 205 | 280 | 473 | 1421 |
| April | 29 | 43 | 73 | 112 | 178 | 375 | 1552 |
| May | 38 | 54 | 89 | 133 | 205 | 414 | 1620 |
| June | 146 | 174 | 222 | 273 | 345 | 518 | 1270 |
| July | 175 | 212 | 279 | 351 | 454 | 706 | 1843 |
| August | 160 | 194 | 256 | 321 | 415 | 645 | 1682 |
| September | 49 | 68 | 107 | 155 | 231 | 446 | 1633 |
| October | 4 | 7 | 17 | 33 | 67 | 199 | 1261 |
| November | 12 | 19 | 36 | 59 | 101 | 234 | 1097 |
| December | 63 | 81 | 113 | 150 | 204 | 344 | 1028 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 303 | 346 | 419 | 492 | 591 | 819 | 1730 |
| February | 322 | 370 | 451 | 532 | 644 | 900 | 1939 |
| March | 216 | 264 | 350 | 442 | 576 | 904 | 2401 |
| April | 244 | 291 | 374 | 461 | 584 | 880 | 2172 |
| May | 272 | 324 | 415 | 510 | 646 | 970 | 2383 |
| June | 573 | 636 | 738 | 839 | 973 | 1269 | 2381 |
| July | 573 | 645 | 764 | 882 | 1042 | 1400 | 2791 |
| August | 412 | 473 | 576 | 679 | 822 | 1148 | 2470 |
| September | 131 | 167 | 235 | 312 | 426 | 721 | 2168 |
| October | 61 | 83 | 128 | 181 | 266 | 499 | 1757 |
| November | 142 | 175 | 234 | 298 | 391 | 622 | 1683 |
| December | 260 | 301 | 372 | 444 | 545 | 778 | 1743 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 564 | 632 | 744 | 855 | 1003 | 1335 | 2609 |
| February | 467 | 538 | 658 | 779 | 946 | 1331 | 2901 |
| March | 501 | 575 | 700 | 827 | 1001 | 1401 | 3021 |
| April | 567 | 641 | 765 | 888 | 1055 | 1432 | 2913 |
| May | 795 | 881 | 1021 | 1158 | 1341 | 1743 | 3251 |
| June | 1066 | 1153 | 1291 | 1423 | 1596 | 1963 | 3262 |
| July | 820 | 914 | 1071 | 1224 | 1430 | 1887 | 3628 |
| August | 528 | 603 | 729 | 855 | 1028 | 1422 | 3002 |
| September | 250 | 304 | 400 | 503 | 651 | 1014 | 2653 |
| October | 241 | 289 | 373 | 462 | 588 | 893 | 2235 |
| November | 367 | 423 | 519 | 616 | 750 | 1060 | 2328 |
| December | 555 | 614 | 711 | 806 | 931 | 1208 | 2242 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 726 | 816 | 967 | 1116 | 1318 | 1770 | 3524 |
| February | 809 | 900 | 1050 | 1197 | 1393 | 1827 | 3471 |
| March | 858 | 955 | 1116 | 1274 | 1485 | 1953 | 3729 |
| April | 1081 | 1184 | 1352 | 1514 | 1728 | 2194 | 3893 |
| May | 1325 | 1432 | 1605 | 1769 | 1984 | 2442 | 4060 |
| June | 1255 | 1367 | 1547 | 1720 | 1947 | 2436 | 4196 |
| July | 955 | 1063 | 1240 | 1415 | 1648 | 2165 | 4125 |
| August | 694 | 783 | 929 | 1075 | 1272 | 1714 | 3439 |
| September | 496 | 570 | 697 | 825 | 1002 | 1408 | 3063 |
| October | 504 | 574 | 692 | 810 | 971 | 1338 | 2801 |
| November | 692 | 765 | 884 | 1000 | 1155 | 1494 | 2757 |
| December | 810 | 893 | 1029 | 1161 | 1336 | 1720 | 3143 |

Florida Station Number 0804: Years 1931-1982
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1420 | 1550 | 1761 | 1964 | 2230 | 2806 | 4891 |
| February | 1747 | 1882 | 2097 | 2301 | 2567 | 3132 | 5106 |
| March | 1963 | 2105 | 2332 | 2547 | 2826 | 3414 | 5449 |
| April | 1784 | 1934 | 2174 | 2405 | 2706 | 3351 | 5645 |
| May | 1638 | 1784 | 2020 | 2248 | 2546 | 3190 | 5507 |
| June | 1615 | 1749 | 1964 | 2169 | 2437 | 3011 | 5046 |
| July | 1499 | 1628 | 1835 | 2034 | 2294 | 2853 | 4847 |
| August | 1385 | 1498 | 1678 | 1851 | 2076 | 2557 | 4257 |
| September | 1141 | 1248 | 1420 | 1587 | 1807 | 2283 | 4014 |
| October | 1042 | 1154 | 1336 | 1515 | 1752 | 2275 | 4231 |
| November | 1122 | 1241 | 1437 | 1628 | 1883 | 2443 | 4536 |
| December | 1356 | 1478 | 1677 | 1868 | 2118 | 2660 | 4613 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3552 | 3772 | 4119 | 4445 | 4864 | 5737 | 8675 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8337 | 8676 | 9203 | 9688 | 10299 | 11538 | 15470 |

Florida Station Number 0804: Years 1931-1959
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 56 | 72 | 104 | 140 | 196 | 341 | 1072 |
| February | 74 | 93 | 127 | 164 | 218 | 355 | 1004 |
| March | 93 | 118 | 163 | 214 | 289 | 482 | 1411 |
| April | 39 | 56 | 92 | 137 | 210 | 424 | 1649 |
| May | 38 | 55 | 92 | 137 | 214 | 437 | 1740 |
| June | 153 | 181 | 232 | 284 | 358 | 535 | 1301 |
| July | 221 | 261 | 332 | 405 | 508 | 753 | 1808 |
| August | 187 | 225 | 293 | 364 | 466 | 714 | 1813 |
| September | 48 | 67 | 103 | 148 | 218 | 415 | 1486 |
| October | 8 | 13 | 26 | 44 | 79 | 195 | 996 |
| November | 5 | 9 | 21 | 40 | 78 | 220 | 1305 |
| December | 31 | 45 | 72 | 105 | 159 | 315 | 1196 |
| 2 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 273 | 311 | 375 | 439 | 527 | 727 | 1525 |
| February | 339 | 384 | 459 | 533 | 634 | 863 | 1761 |
| March | 254 | 305 | 394 | 489 | 623 | 949 | 2384 |
| April | 245 | 295 | 384 | 478 | 612 | 938 | 2386 |
| May | 286 | 340 | 433 | 530 | 667 | 994 | 2409 |
| June | 663 | 726 | 828 | 926 | 1056 | 1337 | 2363 |
| July | 720 | 795 | 919 | 1039 | 1199 | 1549 | 2856 |
| August | 484 | 546 | 650 | 753 | 893 | 1207 | 2437 |
| September | 113 | 145 | 205 | 272 | 373 | 635 | 1921 |
| October | 58 | 79 | 122 | 172 | 251 | 469 | 1642 |
| November | 94 | 123 | 180 | 245 | 344 | 609 | 1956 |
| December | 196 | 234 | 301 | 371 | 471 | 712 | 1766 |
| 3 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 544 | 605 | 706 | 806 | 939 | 1234 | 2352 |
| February | 494 | 565 | 684 | 803 | 966 | 1339 | 2837 |
| March | 530 | 607 | 737 | 867 | 1046 | 1456 | 3105 |
| April | 642 | 718 | 845 | 969 | 1137 | 1510 | 2943 |
| May | 885 | 972 | 1114 | 1251 | 1433 | 1828 | 3282 |
| June | 1232 | 1319 | 1457 | 1589 | 1758 | 2116 | 3348 |
| July | 1115 | 1204 | 1345 | 1481 | 1657 | 2032 | 3353 |
| August | 571 | 645 | 768 | 890 | 1055 | 1428 | 2887 |
| September | 191 | 240 | 328 | 424 | 567 | 926 | 2630 |
| October | 195 | 240 | 320 | 407 | 532 | 843 | 2272 |
| November | 272 | 326 | 420 | 520 | 661 | 1001 | 2498 |
| December | 500 | 555 | 646 | 736 | 855 | 1120 | 2117 |
| 4 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| January | 707 | 795 | 940 | 1084 | 1278 | 1713 | 3397 |
| February | 829 | 921 | 1071 | 1218 | 1415 | 1848 | 3484 |
| March | 976 | 1072 | 1230 | 1382 | 1584 | 2024 | 3644 |
| April | 1232 | 1337 | 1505 | 1667 | 1878 | 2330 | 3943 |
| May | 1460 | 1572 | 1750 | 1920 | 2141 | 2609 | 4243 |
| June | 1556 | 1659 | 1822 | 1976 | 2174 | 2589 | 4002 |
| July | 1154 | 1257 | 1424 | 1584 | 1795 | 2249 | 3885 |
| August | 715 | 803 | 950 | 1096 | 1292 | 1731 | 3433 |
| September | 407 | 477 | 599 | 724 | 900 | 1314 | 3065 |
| October | 406 | 472 | 585 | 701 | 861 | 1235 | 2789 |
| November | 575 | 648 | 768 | 888 | 1049 | 1412 | 2824 |
| December | 743 | 824 | 956 | 1086 | 1259 | 1641 | 3076 |

Florida Station Number 0804: Years 1931-1959
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1470 | 1595 | 1796 | 1988 | 2240 | 2779 | 4701 |
| February | 1891 | 2023 | 2233 | 2432 | 2688 | 3227 | 5081 |
| March | 2259 | 2397 | 2615 | 2820 | 3082 | 3628 | 5463 |
| April | 2176 | 2317 | 2540 | 2750 | 3020 | 3585 | 5502 |
| May | 1775 | 1921 | 2155 | 2379 | 2671 | 3296 | 5506 |
| June | 1808 | 1936 | 2141 | 2336 | 2587 | 3117 | 4944 |
| July | 1685 | 1807 | 2003 | 2189 | 2430 | 2939 | 4701 |
| August | 1315 | 1428 | 1610 | 1785 | 2013 | 2504 | 4258 |
| September | 999 | 1101 | 1267 | 1429 | 1644 | 2113 | 3853 |
| October | 930 | 1038 | 1218 | 1395 | 1631 | 2159 | 4172 |
| November | 1020 | 1144 | 1348 | 1550 | 1821 | 2428 | 4765 |
| December | 1344 | 1468 | 1670 | 1865 | 2122 | 2677 | 4692 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3697 | 3912 | 4250 | 4567 | 4971 | 5811 | 8609 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8384 | 8733 | 9275 | 9775 | 10405 | 11684 | 15756 |

Florida Station Number 0804: Years 1959-1982
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

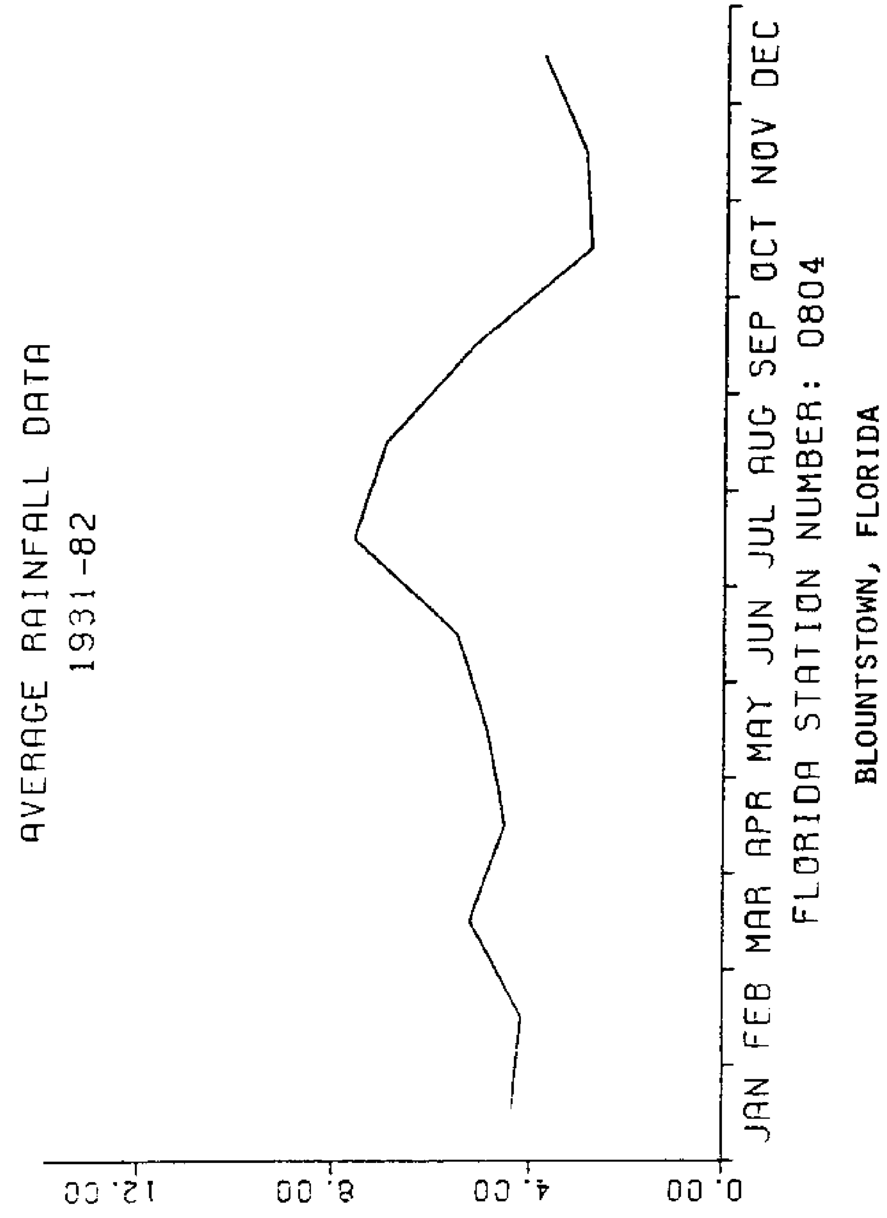
| For Period of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 174 | 200 | 244 | 289 | 350 | 491 | 1065 |
| | February | 125 | 148 | 189 | 231 | 291 | 433 | 1046 |
| | March | 82 | 106 | 151 | 202 | 279 | 482 | 1490 |
| | April | 25 | 37 | 64 | 98 | 155 | 325 | 1343 |
| | May | 45 | 63 | 99 | 142 | 212 | 408 | 1488 |
| | June | 139 | 166 | 215 | 266 | 339 | 515 | 1291 |
| | July | 122 | 155 | 215 | 281 | 379 | 631 | 1845 |
| | August | 153 | 183 | 235 | 290 | 369 | 557 | 1383 |
| | September | 60 | 82 | 127 | 180 | 264 | 496 | 1753 |
| | October | 3 | 7 | 17 | 36 | 76 | 238 | 1595 |
| | November | 40 | 52 | 75 | 101 | 140 | 244 | 767 |
| | December | 152 | 171 | 203 | 235 | 278 | 375 | 753 |
| 2 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 398 | 446 | 525 | 603 | 707 | 940 | 1836 |
| | February | 320 | 370 | 457 | 545 | 666 | 949 | 2114 |
| | March | 176 | 220 | 301 | 389 | 520 | 849 | 2410 |
| | April | 276 | 319 | 393 | 468 | 572 | 813 | 1805 |
| | May | 255 | 305 | 394 | 487 | 620 | 939 | 2343 |
| | June | 485 | 546 | 646 | 746 | 881 | 1183 | 2357 |
| | July | 475 | 539 | 645 | 751 | 895 | 1222 | 2511 |
| | August | 341 | 399 | 498 | 600 | 743 | 1077 | 2483 |
| | September | 178 | 221 | 301 | 388 | 516 | 838 | 2350 |
| | October | 68 | 92 | 140 | 198 | 288 | 537 | 1872 |
| | November | 262 | 294 | 349 | 403 | 476 | 639 | 1275 |
| | December | 369 | 412 | 484 | 554 | 649 | 860 | 1666 |
| 3 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 646 | 719 | 839 | 957 | 1116 | 1466 | 2795 |
| | February | 437 | 508 | 628 | 752 | 923 | 1322 | 2977 |
| | March | 474 | 544 | 664 | 785 | 951 | 1333 | 2884 |
| | April | 494 | 564 | 683 | 802 | 964 | 1336 | 2826 |
| | May | 709 | 791 | 927 | 1061 | 1240 | 1638 | 3156 |
| | June | 971 | 1049 | 1174 | 1293 | 1448 | 1779 | 2946 |
| | July | 576 | 668 | 823 | 982 | 1202 | 1713 | 3820 |
| | August | 482 | 558 | 686 | 817 | 997 | 1415 | 3134 |
| | September | 345 | 406 | 510 | 617 | 768 | 1123 | 2630 |
| | October | 309 | 360 | 448 | 538 | 662 | 954 | 2172 |
| | November | 529 | 584 | 673 | 761 | 877 | 1131 | 2076 |
| | December | 668 | 729 | 828 | 924 | 1049 | 1321 | 2302 |
| 4 Months | Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
| | January | 760 | 854 | 1010 | 1165 | 1373 | 1840 | 3649 |
| | February | 786 | 876 | 1025 | 1171 | 1367 | 1801 | 3453 |
| | March | 732 | 828 | 990 | 1151 | 1369 | 1862 | 3804 |
| | April | 953 | 1051 | 1211 | 1367 | 1574 | 2026 | 3706 |
| | May | 1274 | 1368 | 1519 | 1662 | 1848 | 2241 | 3607 |
| | June | 996 | 1109 | 1293 | 1475 | 1717 | 2254 | 4289 |
| | July | 764 | 872 | 1055 | 1239 | 1490 | 2063 | 4363 |
| | August | 670 | 758 | 904 | 1050 | 1248 | 1694 | 3445 |
| | September | 637 | 715 | 844 | 971 | 1142 | 1526 | 3003 |
| | October | 668 | 740 | 858 | 974 | 1127 | 1466 | 2737 |
| | November | 882 | 951 | 1061 | 1167 | 1303 | 1594 | 2615 |
| | December | 916 | 1001 | 1138 | 1270 | 1443 | 1818 | 3178 |

Florida Station Number 0804: Years 1959-1982
Blountstown, Florida
Recurrence Intervals and Nonexceedence Probabilities
For Total Precipitation in Hundredths of Inches

| For Period of 6 Months Starting in | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| January | 1372 | 1507 | 1728 | 1941 | 2224 | 2840 | 5105 |
| February | 1602 | 1737 | 1955 | 2163 | 2434 | 3017 | 5089 |
| March | 1732 | 1869 | 2089 | 2299 | 2571 | 3152 | 5194 |
| April | 1465 | 1613 | 1854 | 2088 | 2398 | 3075 | 5577 |
| May | 1499 | 1644 | 1880 | 2108 | 2409 | 3063 | 5460 |
| June | 1424 | 1560 | 1780 | 1993 | 2274 | 2885 | 5113 |
| July | 1312 | 1444 | 1659 | 1868 | 2144 | 2749 | 4980 |
| August | 1481 | 1592 | 1770 | 1939 | 2158 | 2622 | 4238 |
| September | 1420 | 1525 | 1694 | 1854 | 2060 | 2499 | 4023 |
| October | 1221 | 1334 | 1515 | 1691 | 1921 | 2420 | 4227 |
| November | 1270 | 1383 | 1564 | 1739 | 1967 | 2460 | 4231 |
| December | 1373 | 1493 | 1686 | 1872 | 2115 | 2638 | 4514 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 12 Months | 3411 | 3640 | 4002 | 4344 | 4785 | 5710 | 8864 |

| For Period of | 100(.01) | 50(.02) | 20(.05) | 10(.10) | 5(.20) | 2(.50) | 1(.99) |
|---|---|---|---|---|---|---|---|
| 24 Months | 8326 | 8649 | 9150 | 9611 | 10190 | 11362 | 15060 |


AVERAGE RAINFALL DATA
1931-82
0.00
4.00
8.00
12.00
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
FLORIDA STATION NUMBER: 0804
BLOUNTSTOWN, FLORIDA

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APPENDIX A

Table of Contents and Index of Published

Climatological Data by Elements

from

"Selected Guide to Climatic Data Sources",
Key to Meterological Records Documentation
No. 411, U. S. Department of Commerce, National
Oceanic and Atmospheric Administration, December 1979.

# INDEX OF PUBLISHED CLIMATOLOGICAL DATA BY ELEMENT (CONT'D)



## PRECIPITATION (CONT'D)

TABLE OF CONTENTS

# INDEX OF PUBLISHED CLIMATOLOGICAL DATA BY ELEMENT

## BAROMETRIC PRESSURE



## CARBON DIOXIDE



## CEILING, SKY CONDITION, OR SKY COVER

## CEILING, SKY CONDITION, OR SKY COVER (CONT'D)



## DEW POINT



## EVAPORATION

## HURRICANES AND TROPICAL CYCLONES



## OCEAN WAVES



## OZONE



## PRECIPITATION

PRECIPITATION (CONT'D)



RELATIVE HUMIDITY



RIVER GAGE DATA

TEMPERATURE, SURFACE AND UPPER AIR (CONT'D)

## TEMPERATURE, SURFACE AND UPPER AIR (CONT'D)



## TURBIDITY (ATMOSPHERIC)



## VISIBILITY

## VISIBILITY (CONT'D)



## WEATHER AND/OR OBSTRUCTIONS TO VISION



## WIND DIRECTION AND SPEED

WIND DIRECTION AND SPEED (CONT'D)

## Appendix B

## Program CREATE

Program CREATE was the first program written and executed. Its purpose is to read the data files supplied by the National Climatic Data Center and slightly modified by the User Service staff at The University of Alabama and to create a new data file which contains only records on total precipitation. The modification, as explained earlier, was to divide the 186 character records into two records containing 90 and 96 characters.

The FORTRAN program assumes that the input file is assigned as unit 3 and the output file is assigned as unit 4. In addition to creating a file of total precipitation records, it also echo checks the information to the lineprinter.

```
@FTN,S PROGRAM.CREATE
FTN 10R1A  05/16/84-08:29(0,)
*     Program to read a data file and pick out those records on
*     total precipitation--those with TPCP in columns 12-15.
*     Selected records are echo checked and written to a file.

      CHARACTER*4 ELMTYP
      CHARACTER*7 STATE
      INTEGER STATID, STNID1, STNID2, YEAR, VALUE(12)
      CHARACTER FLAG1(12), FLAG2(12)

*     Determine correct state name for data file being read.
      READ (3,300) STATID, STNID1, STNID2, ELMTYP, YEAR,
     *             (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
      IF (STATID .EQ. 1) THEN
          STATE = 'Alabama'
      ELSE IF (STATID .EQ. 8) THEN
          STATE = 'Florida'
      ELSE IF (STATID .EQ. 9) THEN
          STATE = 'Georgia'
      ENDIF

   10 PRINT '(''1APALACHICOLA-CHATTAHOOCHEE-FLINT MONTHLY PRECIPITATION
     *TOTALS''//)'
      PRINT 100, STATE, STNID1
      PRINT 101

*     If the first record was a type 'TPCP', output it.
      IF (ELMTYP .EQ. 'TPCP') GO TO 30

*     Search for the next 'TPCP' record.
   20 READ (3,301,END=40) STNID2, ELMTYP, YEAR,
     *                    (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
      IF (ELMTYP .NE. 'TPCP') GO TO 20

   30 WRITE(4,400) STATID, STNID1, STNID2, YEAR,
     *             (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
      PRINT 401, STNID2, YEAR, (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
      IF (YEAR .LT. 1982) GO TO 20

*     Find the next station id.
   35 READ (3,302,END=40) NEWID1,STNID2, ELMTYP, YEAR,
     *                    (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
      IF (NEWID1 .EQ. STNID1) GO TO 35
      STNID1 = NEWID1
      GO TO 10
   40 ENDFILE 4
      STOP

  100 FORMAT(' State: ',A,5X,
     *       ' Station''s Cooperative Network Index: ',I4.4)
  101 FORMAT('0Division Year    Jan      Feb      Mar      Apr      May    ',
     *       ' June     July     Aug      Sept     Oct      Nov      Dec'/)
  300 FORMAT(3X,I2,I4,I2,A4,2X,I4,9X,5(4X,I6,2A1)/7(4X,I6,2A1))
  301 FORMAT(9X,I2,A4,2X,I4,9X,5(4X,I6,2A1)/7(4X,I6,2A1))
  302 FORMAT(5X,I4,I2,A4,2X,I4,9X,5(4X,I6,2A1)/7(4X,I6,2A1))
  400 FORMAT(I2.2,I4.4,I2.2,1X,I4,1X,12(I6,2A1))
  401 FORMAT(1X,3X,I2.2,4X,I4,1X,12(I6,2A1))
      END

END FTN 68 IBANK 448 DBANK
```

## Appendix C

### Station Names

There are 33 meteorological stations in the ACF river basin. In the raw data files they are identified by an eight-digit code. The first two digits are the state identification number in alphabetical order - 01 for Alabama, 08 for FLorida, and 09 for Georgia. The middle four digits are the station identification number. This is the number used on all computer printouts. The last two digits are called the division number.

| STATE | NUMBER | NAME | RIVER BASIN |
|---|---|---|---|
| Alabama 01 | 7025 | Rock Mills | C |
| | 4502 | Lafayette | C |
| | 2730 | Eufaula | C |
| Florida 08 | 0804 | Blountstown | A |
| | 0211 | Apalachicola WSO AP | A |
| Georgia 09 | 2283 | Cornelia | C |
| | 2006 | Cleveland | C |
| | 2475 | Dahlonega | C |
| | 3621 | Gainesville | C |
| | 2408 | Cumming | C |
| | 6407 | Norcross 4N | C |
| | 2791 | Douglasville | C |
| | 6335 | Newnan | C |
| | 4949 | LaGrange | C |
| | 9291 | West Point | C |
| | 2166 | Columbus WSO AP | C |
| | 3516 | Fort Gaines | C |
| | 0979 | Blakely | C |
| | 2736 | Donaldsonville | C |
| | 0451 | Atlanta WSO AP | F |
| | 4700 | Jonesboro | F |
| | 3271 | Experiment | F |
| | 9506 | Woodbury | F |
| | 8535 | Talbotton | F |
| | 5979 | Montezuma | F |
| | 0253 | Americus 3SW | F |
| | 2266 | Cordele | F |
| | 2450 | Cuthbert | F |
| | 2570 | Dawson | F |
| | 0140 | Albany 3SE | F |
| | 1500 | Camilla | F |
| | 0586 | Bainbridge International | F |
| | 1425 | Butler | F |

# Appendix D

## Program TOTALS

Program TOTALS is the second program written to analyze total precipitation records for the 33 climatic stations in the Apalachicola-Chattahoochee-Flint river basin in Alabama, Florida, and Georgia. It uses the file created by program CREATE as its input file and creates a new data file with yearly totals added to the ends of the records.

If missing values, which are coded as -99999, are detected the yearly totals are approximated from the actual average of the data present. These approximated totals are flagged with an asterisk both in the output file and the echo check to the line printer.

Like the previous program, the input file must be assigned as unit 3 and the output file as unit 4.

```
@FTN,S PROGRAM.TOTALS
FTN 10R1A  05/16/84-08:30(0,)
      *     Program to calculate yearly totals for precipitation data.
            INTEGER STATID, STNID1, STNID2, YEAR, VALUE(12), SUM/0/
            CHARACTER FLAG1(12), FLAG2(12), FLAG3/' '/, STATE*7

      *     Determine correct state name for data being read.
         10 READ (3,300,END=40) STATID, STNID1, STNID2, YEAR,
           *                    (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
            IF (STATID .EQ. 1) THEN
 1               STATE = 'Alabama'
 1          ELSE IF (STATID .EQ. 8) THEN
 1               STATE = 'Florida'
 1          ELSE IF (STATID .EQ. 9) THEN
 1               STATE = 'Georgia'
 1          ENDIF
 1
            PRINT '(''1APALACHICOLA-CHATTAHOOCHEE-FLINT MONTHLY AND ANNUAL '',
           *''PRECIPITATION DATA''//)'
            PRINT 100, STATE, STNID1
            PRINT 101

         20 DO 30 J=1, 12
 1          IF (VALUE(J) .GE. 0) THEN
 2               SUM = SUM + VALUE(J)
 2               N = N + 1
 2               ENDIF
 1       30 CONTINUE
            AVPREC = REAL(SUM)/REAL(N)
            IF (N .LT. 12) THEN
      *     If some data are missing, approximate the total yearly rainfall.
 1               SUM = NINT(AVPREC*12.0)
 1               FLAG3 = '*'
 1               ENDIF
 1
            WRITE(4,400) STATID, STNID1, STNID2, YEAR,
           *             (VALUE(J), FLAG1(J), FLAG2(J), J=1,12),
           *             SUM, FLAG3, AVPREC
            PRINT 401, STNID2, YEAR, (VALUE(J), FLAG1(J), FLAG2(J), J=1,12),
           *           SUM, FLAG3, AVPREC
            SUM, N = 0
            FLAG3 = ' '
            IF (YEAR .EQ. 1982) GO TO 10
            READ (3,301) STNID2, YEAR, (VALUE(J), FLAG1(J), FLAG2(J), J=1,12)
            GO TO 20

         40 ENDFILE 4
            STOP

        100 FORMAT(' State: ',A,5X,
           *       ' Station''s Cooperative Network Index: ',I4.4)
        101 FORMAT('0Division Year    Jan      Feb      Mar      Apr      May    ',
           *       ' June     July     Aug      Sept     Oct      Nov      Dec    ',
           *       ' Total    Average'/)
        300 FORMAT(I2,I4,I2,1X,I4,1X,12(I6,2A1))
        301 FORMAT(6X,I2,1X,I4,1X,12(I6,2A1))
        400 FORMAT(I2.2,I4.4,I2.2,1X,I4,1X,12(I6,2A1),I7,A2,F9.2)
        401 FORMAT(1X,3X,I2.2,4X,I4,1X,12(I6,2A1),I7,A2,F9.2)
            END

END FTN 95 IBANK 403 DBANK
```

## Appendix E

## Program AVERAGES

Program AVERAGES, like TOTALS, uses the file created by program CREATE as its input file. It calculates monthly and annual averages and standard deviations for all 33 climatic stations in the Apalachicola-Chattahoochee-Flint river basin. The monthly means are written to a data file which is used as input for the plotting program. Like the previous two programs it uses units 3 and 4 for its input and output files.

The program also prints the monthly and annual average, standard deviations and data counts for all stations. The output is provided with this report.

```
@FTN,S PROGRAM.AVERAGES
FTN 10R1A  05/16/84-15:26(0,)
         *      Program to compute monthly average rainfalls.

                INTEGER STATID, YEAR, M/3/, COUNT(13)
                REAL VALUE(52,13), TOTAL(13), TOTALS(13), MEAN(13), STDDEV(13)
                CHARACTER STATE*7, STNID1*4
             10 IF(M .EQ. 3) THEN
 1                  PRINT '(''1APALACHICOLA-CHATTAHOOCHEE-FLINT MONTHLY AND'',
 1            *            '' ANNUAL PRECIPITATION DATA''//)'
 1                  M = 0
 1                  ENDIF
 1
 1       *      Determine correct state name for data being read.
                READ (3,300,END=60) STATID, STNID1, YEAR, (VALUE(1,J), J=1,13)
                IF (STATID .EQ. 1) THEN
 1                   STATE = 'Alabama'
 1              ELSE IF (STATID .EQ. 8) THEN
 1                   STATE = 'Florida'
 1              ELSE IF (STATID .EQ. 9) THEN
 1                   STATE = 'Georgia'
 1              ENDIF
                PRINT 100, STATE, STNID1
                WRITE(4,800) STATE, STNID1, YEAR
                PRINT 101

                I = 1
         *      Read all data for this station.
             20 I = I + 1
                READ (3,301) YEAR, (VALUE(I,J), J=1,13)
                IF (YEAR .LT. 1982) GO TO 20

         *      The value of I is the number of years of data.
                NUMBER = I
         *      Determine sum, sum of squares, and number of valid values.
                DO 30 I=1, NUMBER
 1              DO 30 J=1, 13
 2              AMOUNT = VALUE(I,J)
 2              IF (AMOUNT .GE. 0) THEN
 3                   TOTAL(J) = TOTAL(J) + AMOUNT
 3                   TOTALS(J)= TOTALS(J)+AMOUNT*AMOUNT
 3                   COUNT(J) = COUNT(J) + 1
 3                   ENDIF
 2           30 CONTINUE
 2
 2       *      Calculate monthly and annual means and standard deviations.
                DO 40 J=1, 13
 1              SUM = TOTAL(J)
 1              N = COUNT(J)
 1              MEAN(J) = SUM/N
 1              VARNCE = (TOTALS(J) - SUM*SUM/N)/(N-1)
 1           40 STDDEV(J) = SQRT(VARNCE)
                PRINT 102, COUNT
                PRINT 103, MEAN
                WRITE(4,801) (MEAN(I), I=1,12)
                PRINT 104, STDDEV
                M = M + 1
```

```
                DO 50 J=1, 13
       *        Reinitialize accumulators to zero.
1               COUNT(J) = 0
1               TOTAL(J) = 0.0
1            50 TOTALS(J)= 0.0
                GO TO 10
             60 STOP

            100 FORMAT(////' State: ',A,5X,
               *        ' Station''s Cooperative Network Index: ',A4/)
            101 FORMAT(' Month',12X, Jan      Feb      Mar      Apr      May     June',
               *        '     July      Aug     Sept      Oct      Nov      Dec     Year')
            102 FORMAT('OValid'/' Observations',13(6X,I2))
            103 FORMAT(/'OMeans',7X,13F8.2)
            104 FORMAT('OStandard'/' Deviations  ',13F8.2)
            300 FORMAT(I2,A4,3X,I4,1X,12(F6.2,2X),F7.2)
            301 FORMAT(9X,I4,1X,12(F6.2,2X),F7.2)
            800 FORMAT(A7,1X,A4,I4)
            801 FORMAT(12F4.2)
                END
```

END FTN 143 IBANK 1000 DBANK

# Appendix F

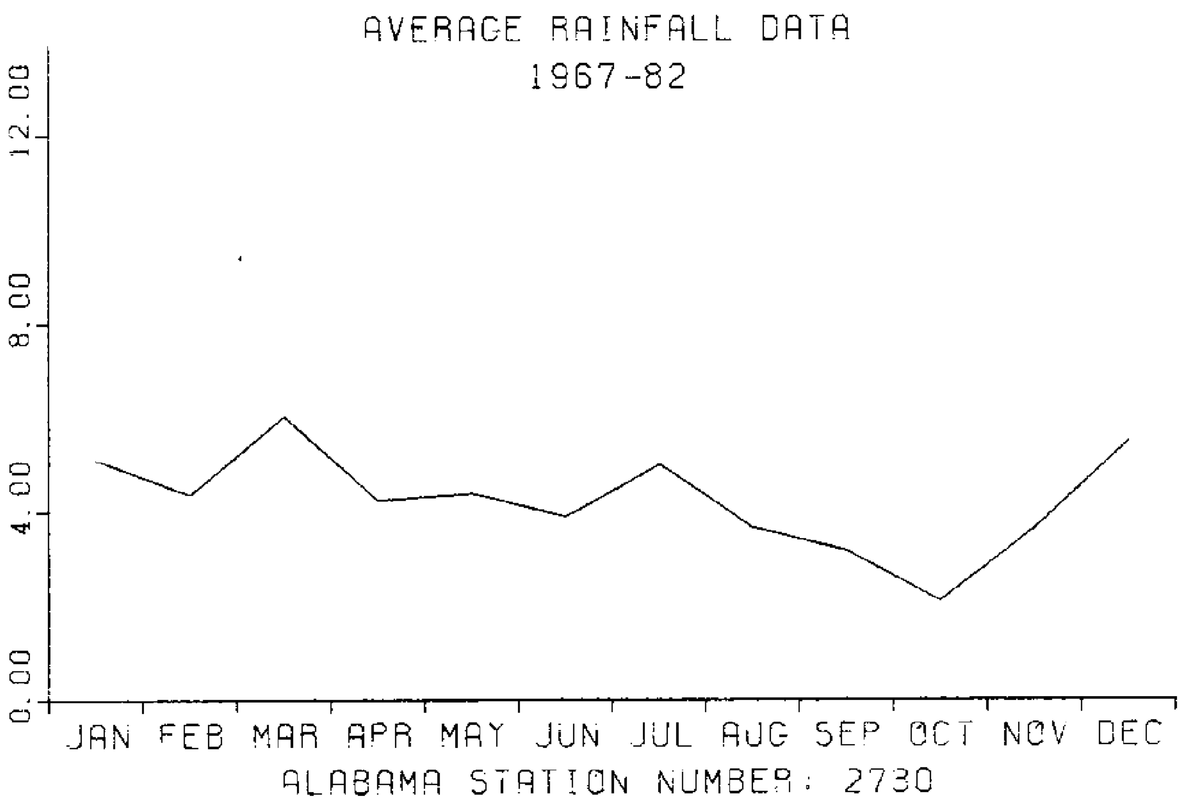
## Plotting Programs

This appendix contains the source listings of the programs to plot the raw data and the monthly average rainfalls. The program HISTOGRAM plots up to twelve years of data on each graph using bars 1/16" wide. The program is interactive and prompts the user to give the number of years to be plotted, the state name, the station number and the range of years. Plots for the seven selected stations have been included in section 5. Plots for all of the other stations will be provided.

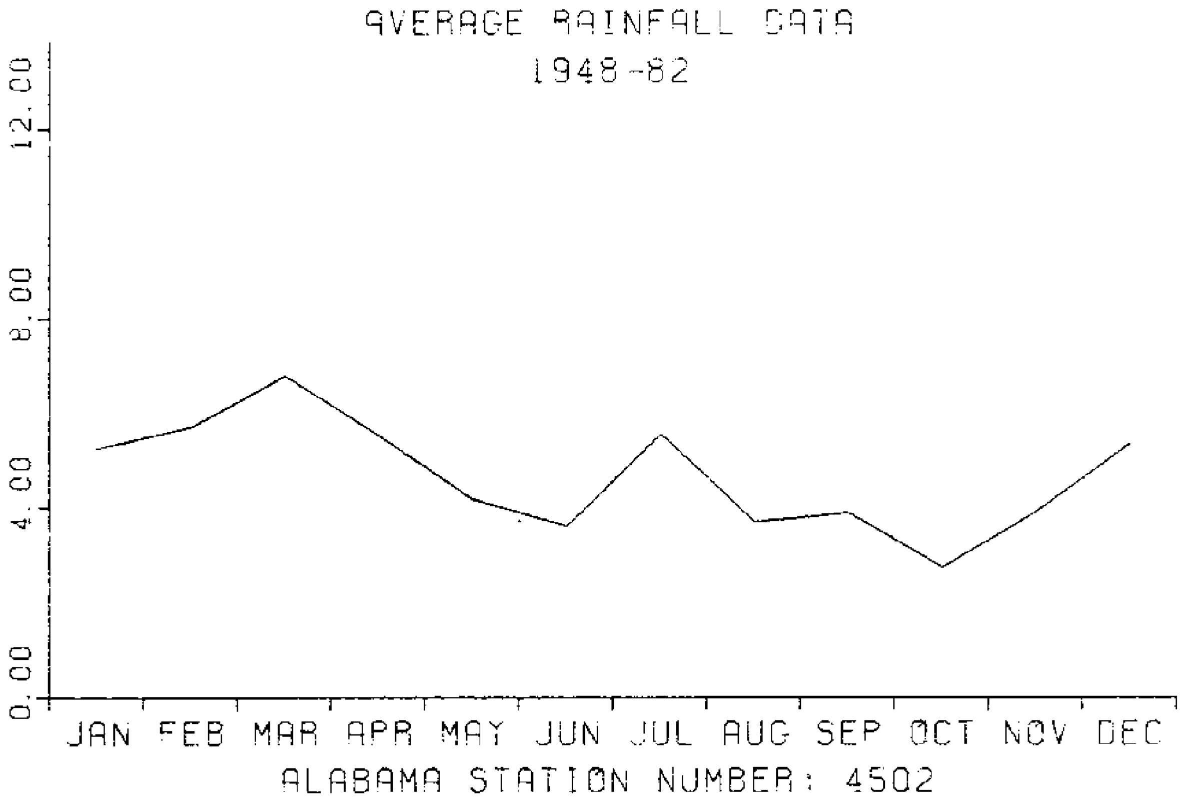
The program PLOT produces a line graph for one particular station. It was executed for each of the 33 stations and these graphs are included as part of this appendix.

```
@FTN,S PROGRAM.HISTOGRAM
FTN 10R1A  05/16/84-23:05(7,)
                   REAL TOTAL(12)
                   DIMENSION LABEL(7)/' ',' ','STAT','ION ','NUMB','ER: ',' '/
                   INTEGER DATE(2)
                   DATA STARTX/0.0/, DELTAX/0.0625/, START/1.015625/
                10 PRINT *, 'How many years on this plot?'
                   READ *, N
                   IF (N .GT. 12) GO TO 10
                   PRINT *
                   PRINT *, 'Enter state name in columns 1-7'
                   PRINT *, 'Station number in columns 9-12'
                   PRINT *, 'Starting year in columns 13-16'
                   PRINT *, 'A dash (-) in column 17 and the'
                   PRINT *, 'last 2 digits of ending year in cols 18-19'
                   READ '(5A4)', LABEL(1),LABEL(2),LABEL(7), DATE
             *     START OF GRAPHIC OUTPUT
                   CALL PLOTS(0,0,8)
                   CALL SYMBOL(3.8125,5.0,0.125,27HMONTHLY TOTAL PRECIPITATION,0.,27)
                   CALL SYMBOL(5.0625,4.75,0.125,DATE,0.0,7)
                   CALL AXIS(1.0,1.5,0,-1,9.0,0.0,999.0,16.0)
                   CALL AXIS(1.0,1.5,0,0,3.375,90.0,0.0,6.0)
                   DO 20 I=1, 12
 1                 CALL SYMBOL(START,1.375,0.0625,12HJFMAMJJASOND,0.0,12)
 1              20 START = START + 0.75
                   CALL SYMBOL(3.75,1.0,0.125,LABEL,0.0,28)
                   STARTX = 9.0 - 0.75*N
                   CALL PLOT(STARTX+1.0,1.5,-3)
                   DO 30 J=1, N
 1                 READ(3,300) TOTAL
 1                 DO 30 I=1, 12
 2                 IF (TOTAL(I) .LT. 0.0) THEN
 3                           Y = -0.0625
 3                      ELSE
 3                           Y = TOTAL(I)/6.0
 3                      ENDIF
 2                 CALL PLOT(X,Y,2)
 2                 X = X + DELTAX
 2                 CALL PLOT(X,Y,2)
 2              30 CALL PLOT(X,0.0,2)
                   CALL PLOT(X+2.0,Y-1.0,999)
                   ENDFILE 8
               300 FORMAT(14X,12(F6.2,2X))
                   END

END FTN 125 IBANK 289 DBANK
```

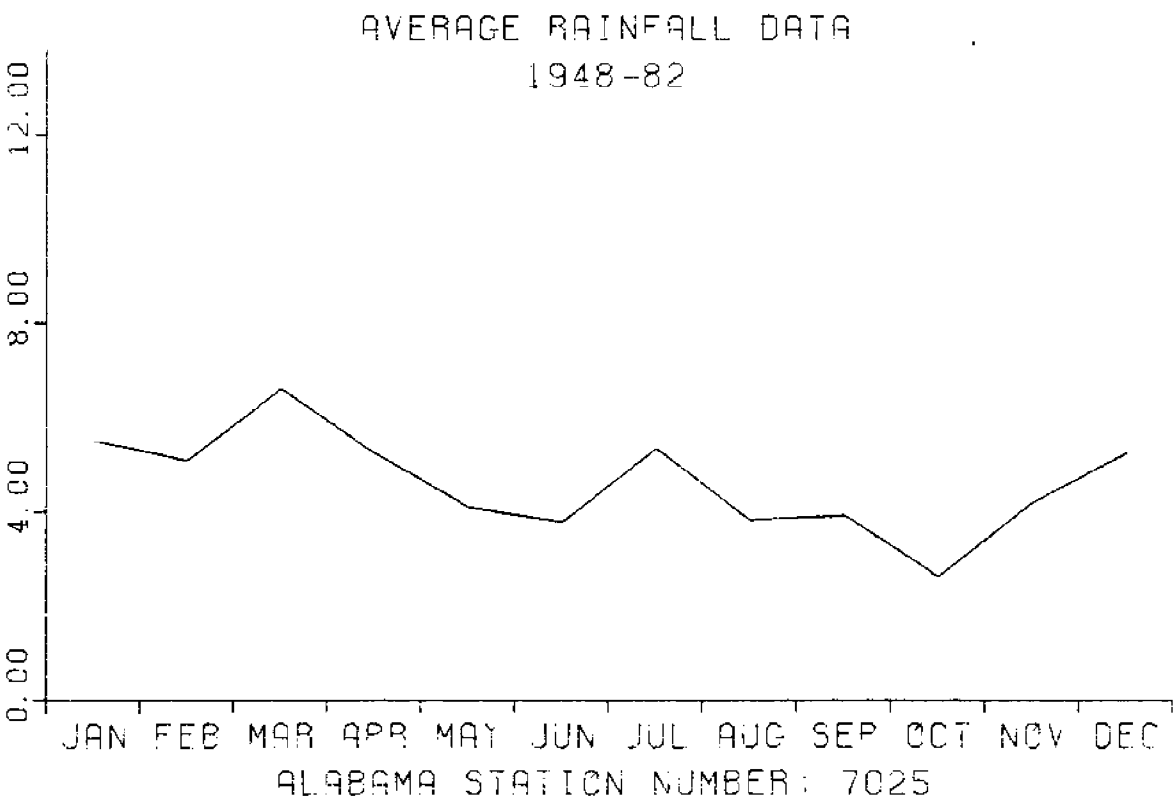
```
@FTN,S PROGRAM.PLOT
FTN 10R1A  05/16/84-23:03(0,)
          REAL XARR(14)/1.,2.,3.,4.,5.,6.,7.,8.,9.,10.,11.,12.,0.5,2.0/
          DIMENSION YARR(14),
         *          LABEL(7)/' ',' ','STAT','ION ','NUMB','ER: ',' '/
          DIMENSION LEGEND(12)/'JAN','FEB','MAR','APR','MAY','JUN',
         *                      'JUL','AUG','SEP','OCT','NOV','DEC'/
          INTEGER DATE(2)/' ','-82 '/
          YARR(13) = 0.0
          YARR(14) = 4.0
          READ '(4A4)', LABEL(1),LABEL(2),LABEL(7), DATE(1)
          READ '(12F4.2)', (YARR(I), I=1,12)
          CALL PLOTS(0,0,8)
          CALL SYMBOL(3.6875,5.0,0.125,21HAVERAGE RAINFALL DATA,0.0,21)
          CALL SYMBOL(4.5625,4.75,0.125,DATE,0.0,7)
          CALL OFFSET(2.0,2.0,1.5,4.0)
          CALL AXIS(2.0,1.5,0,-1,6.0,0.0,999.0,0.5)
          CALL AXIS(2.0,1.5,0,0,3.5,90.0,0.0,4.0)
          DO 10 I=1, 12
  1       X = 2.09375 + (I-1)*0.5
  1    10 CALL SYMBOL(X,1.25,0.125,LEGEND(I),0.0,3)
          CALL SYMBOL(3.25,1.0,0.125,LABEL,0.0,28)
          CALL PLOT(2.0,1.5,-3)
          CALL LINE(XARR,YARR,12,1,0,2)
          CALL PLOT(0.,0.,999)
          ENDFILE 8
          END

END FTN 65 IBANK 211 DBANK
```



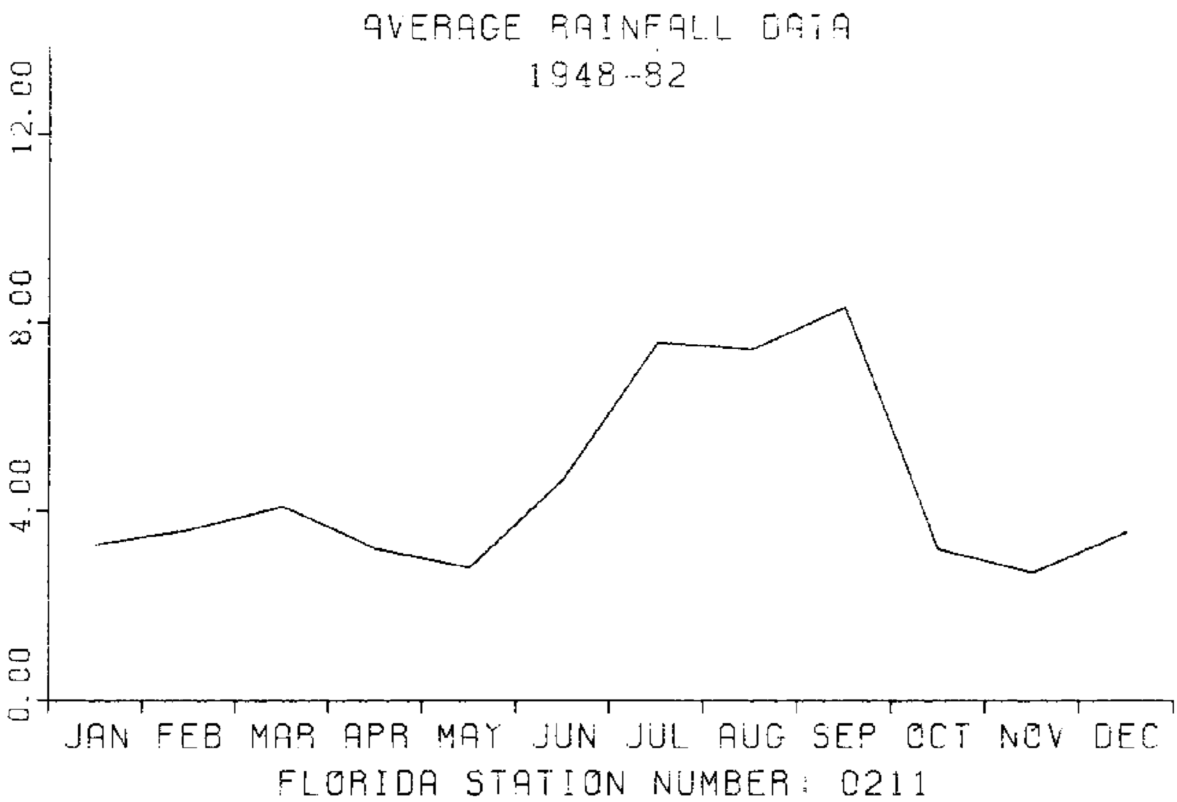

EUFAULA, ALABAMA



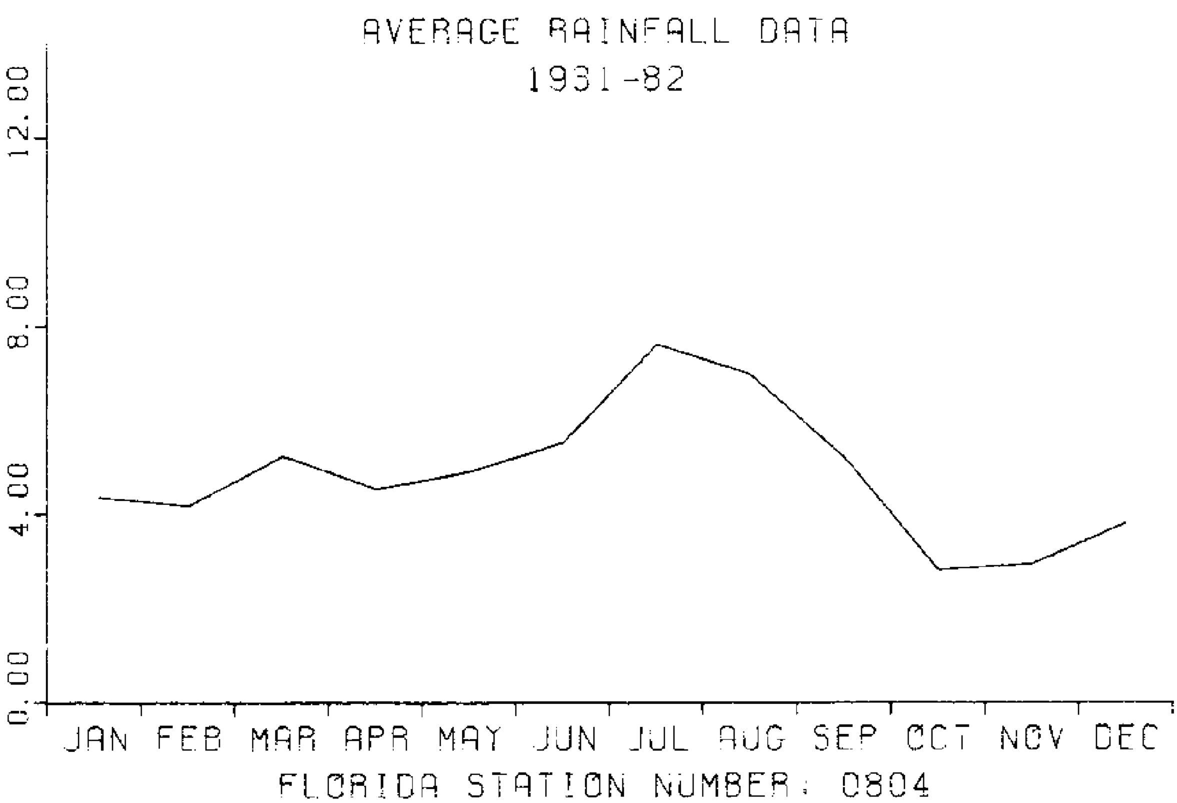

**LAFAYETTE, ALABAMA**



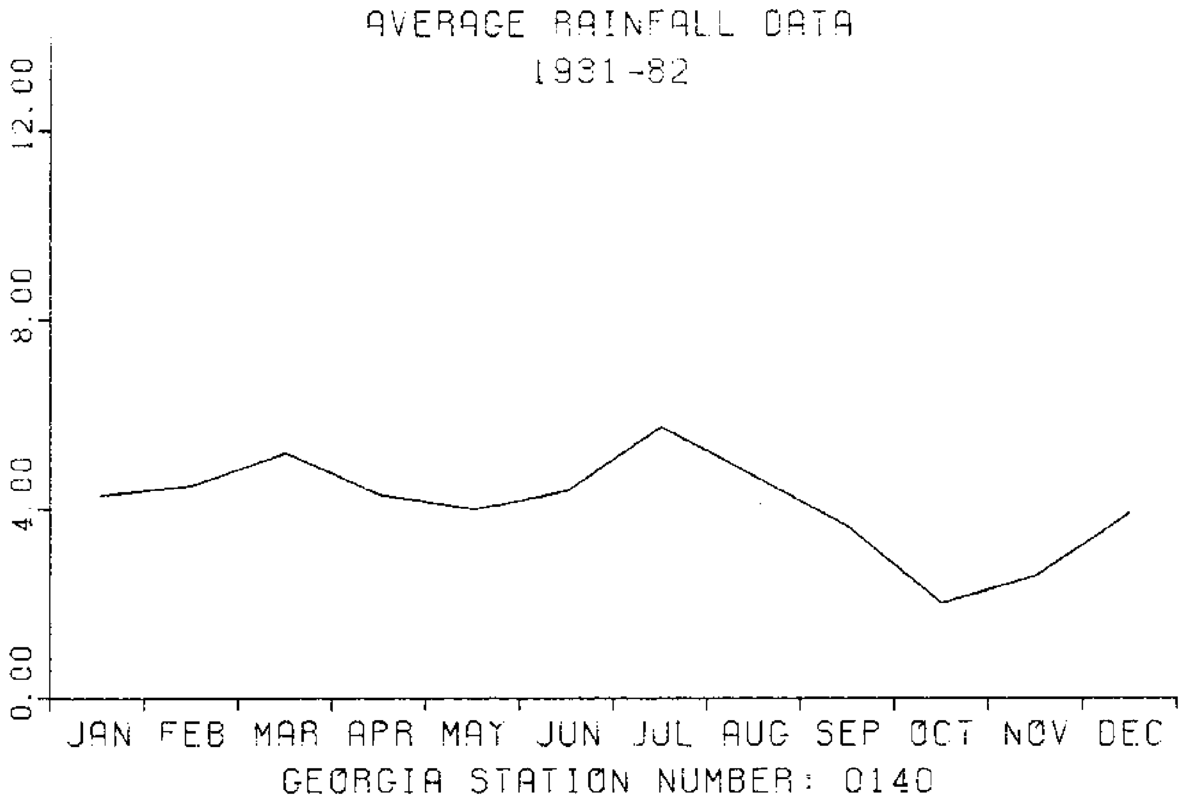

**ROCK MILLS, ALABAMA**



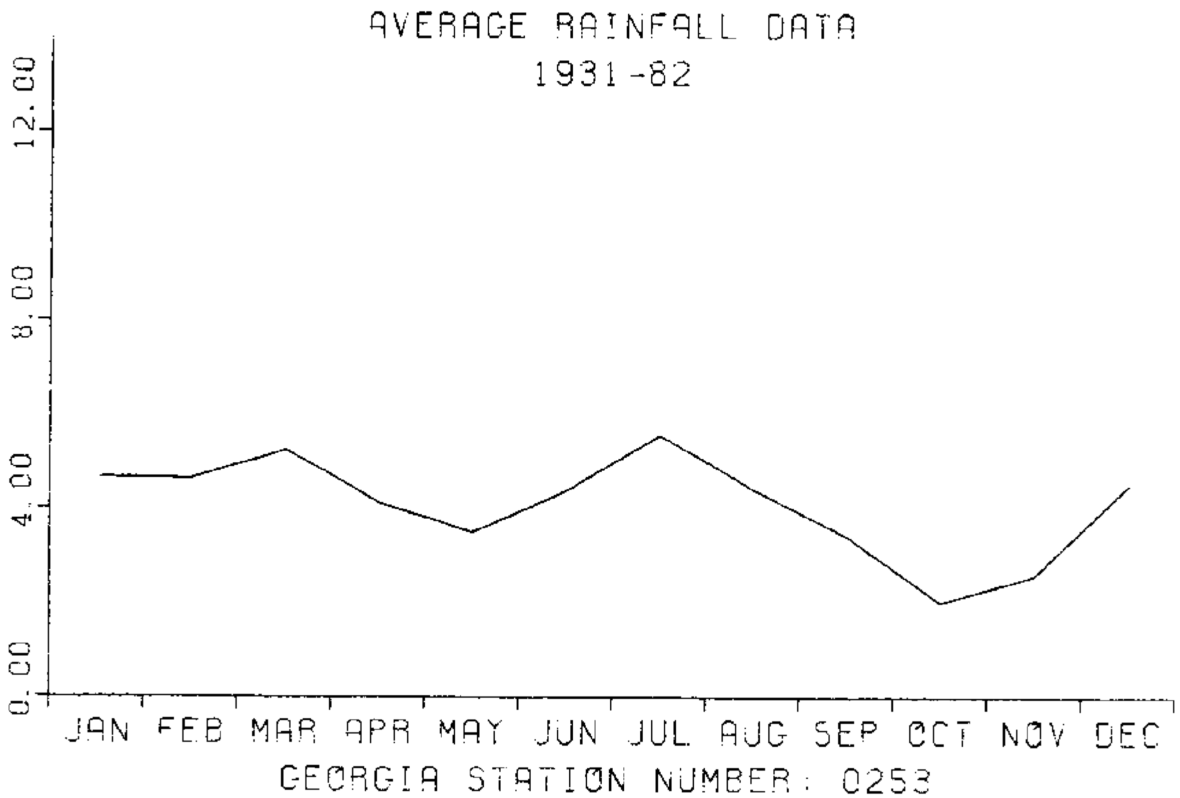

**APALACHICOLA, FLORIDA**



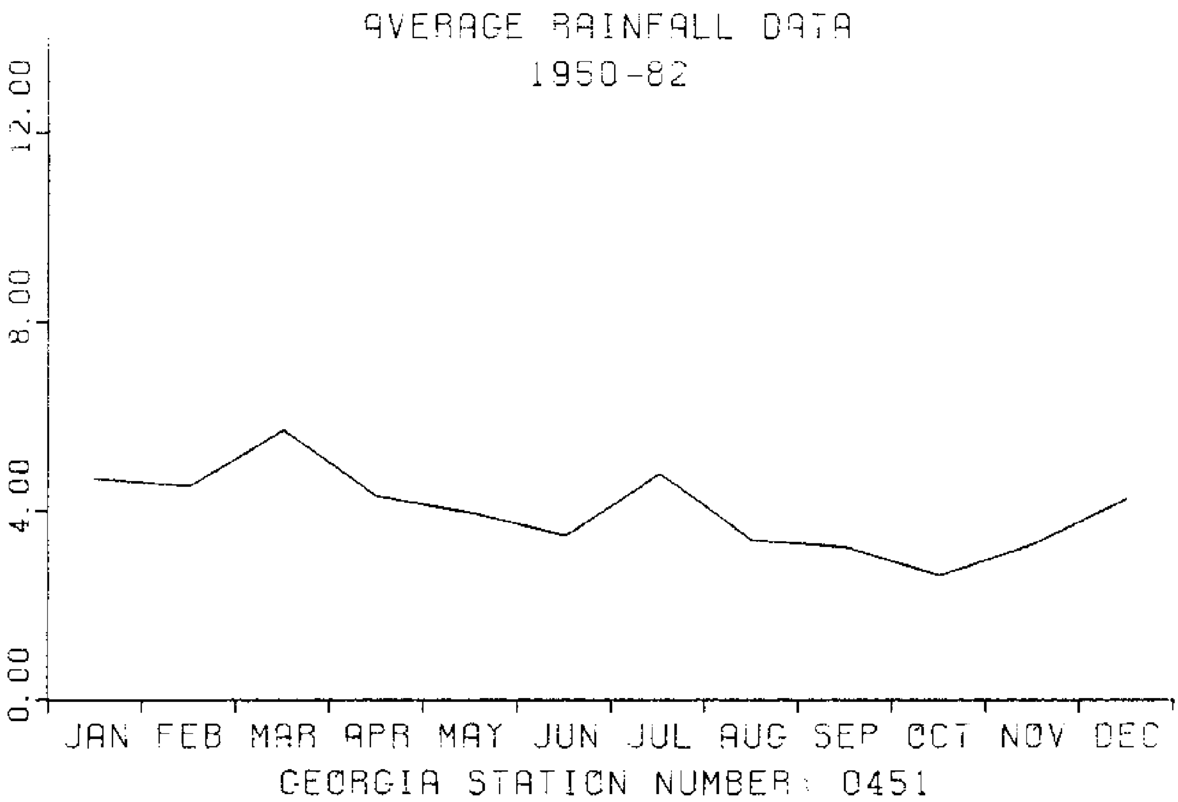

**BLOUNTSTOWN, FLORIDA**



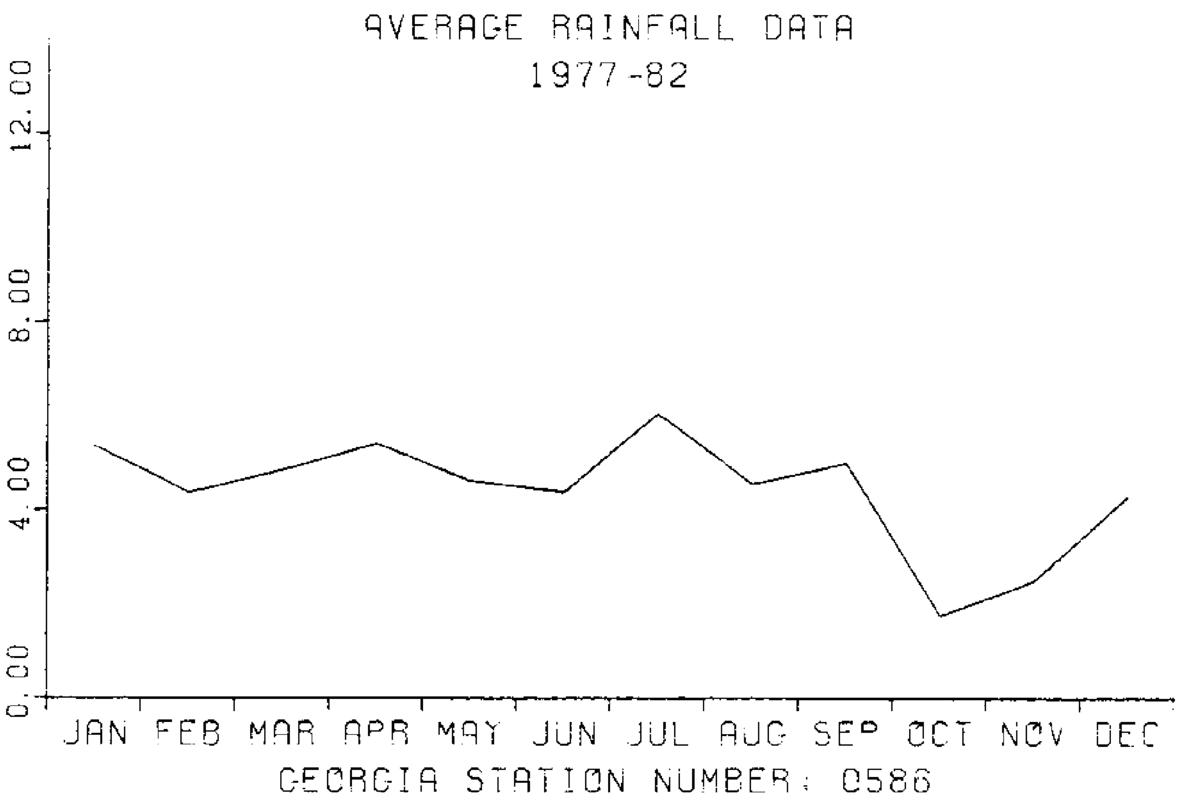

**ALBANY, GEORGIA**



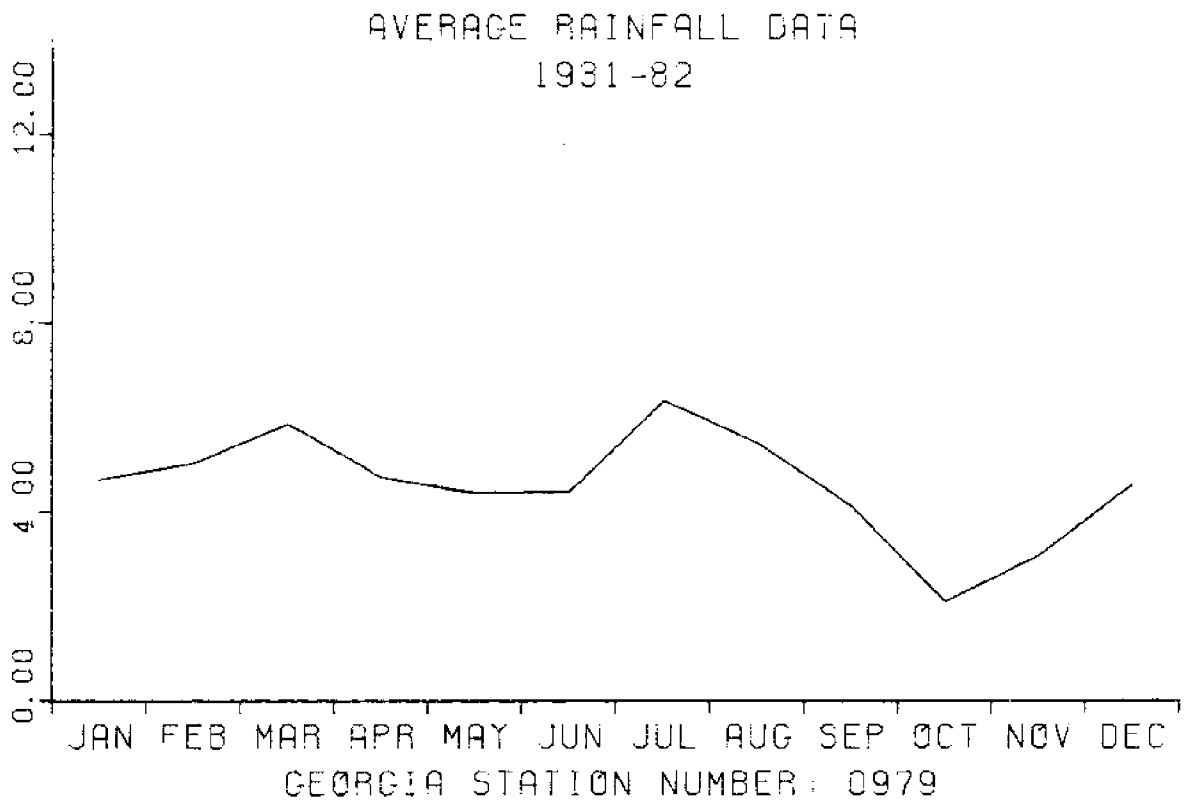

**AMERICUS, GEORGIA**



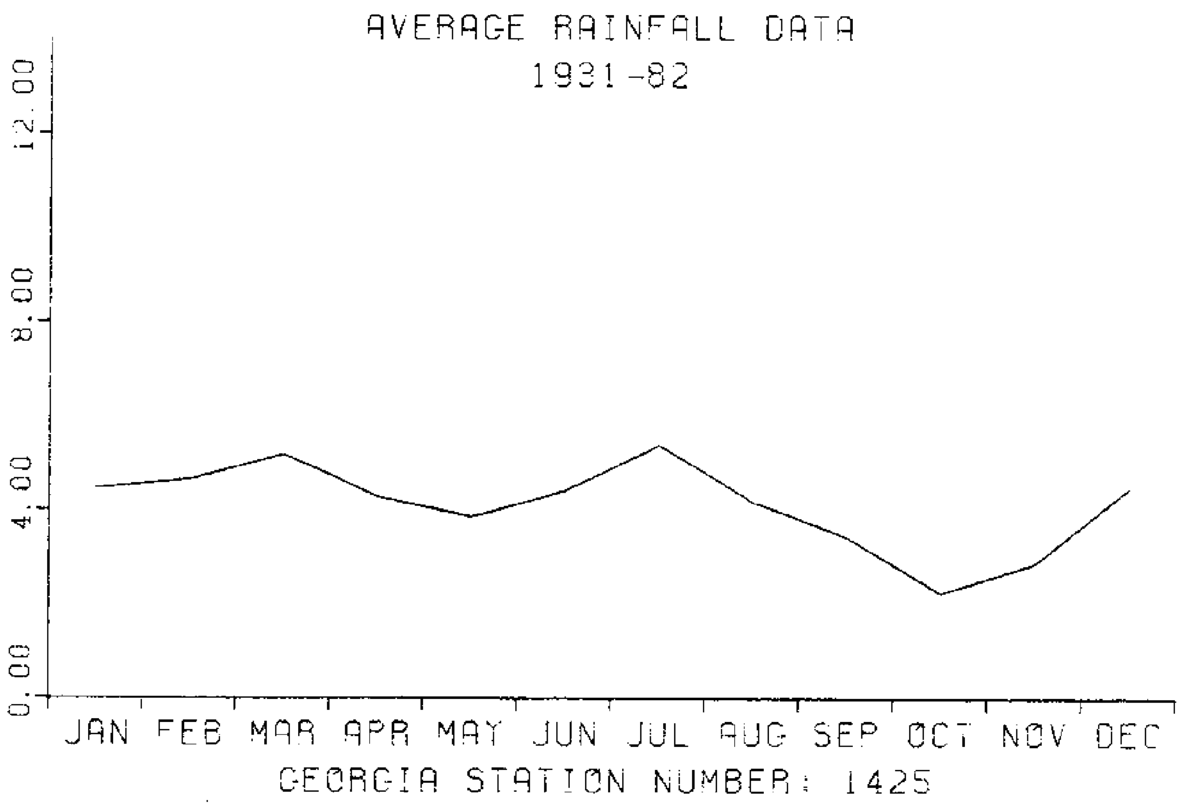

**ATLANTA, GEORGIA**



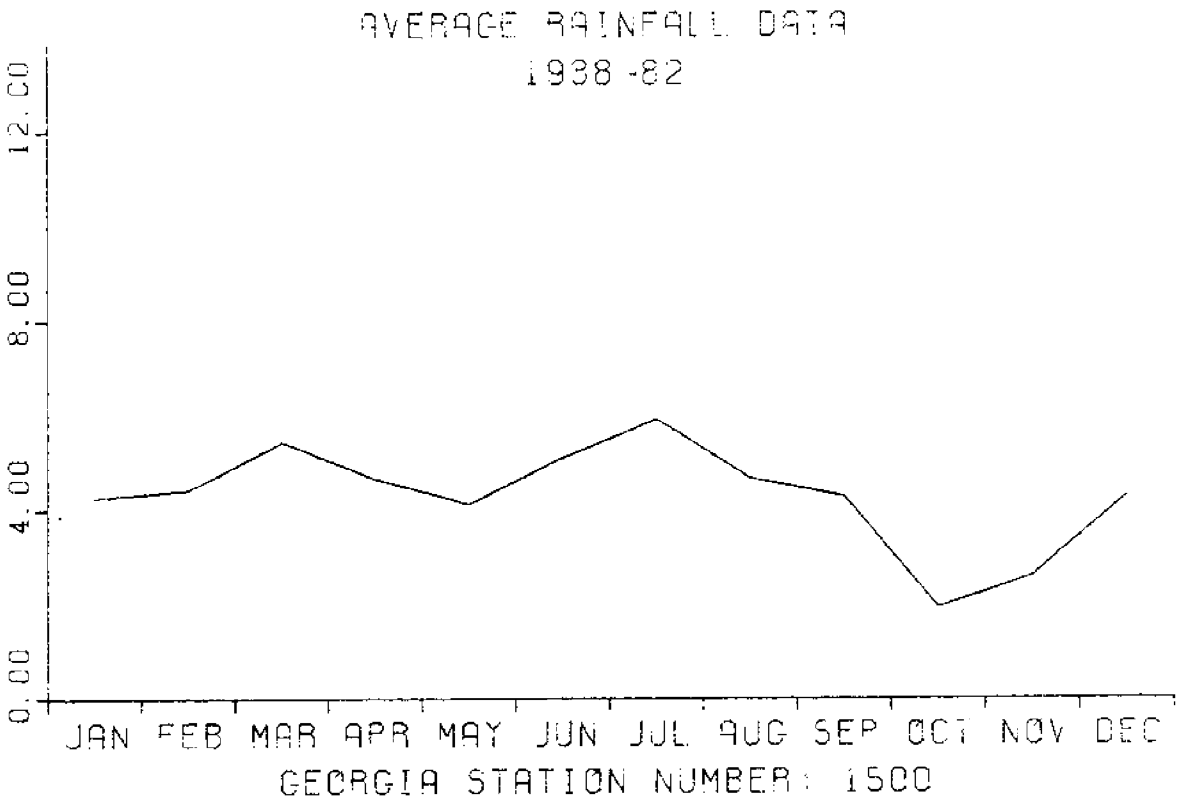

**BAINBRIDGE INTERNATIONAL, GEORGIA**



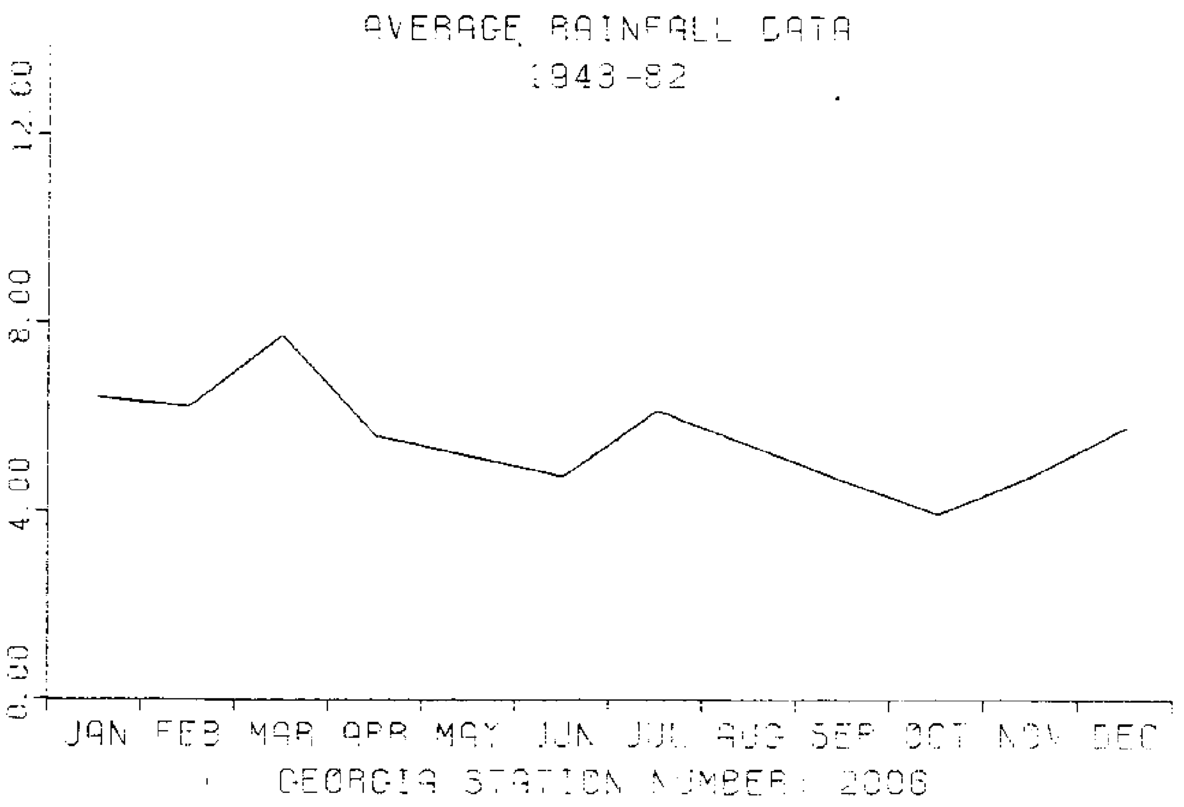

**BLAKELY, GEORGIA**



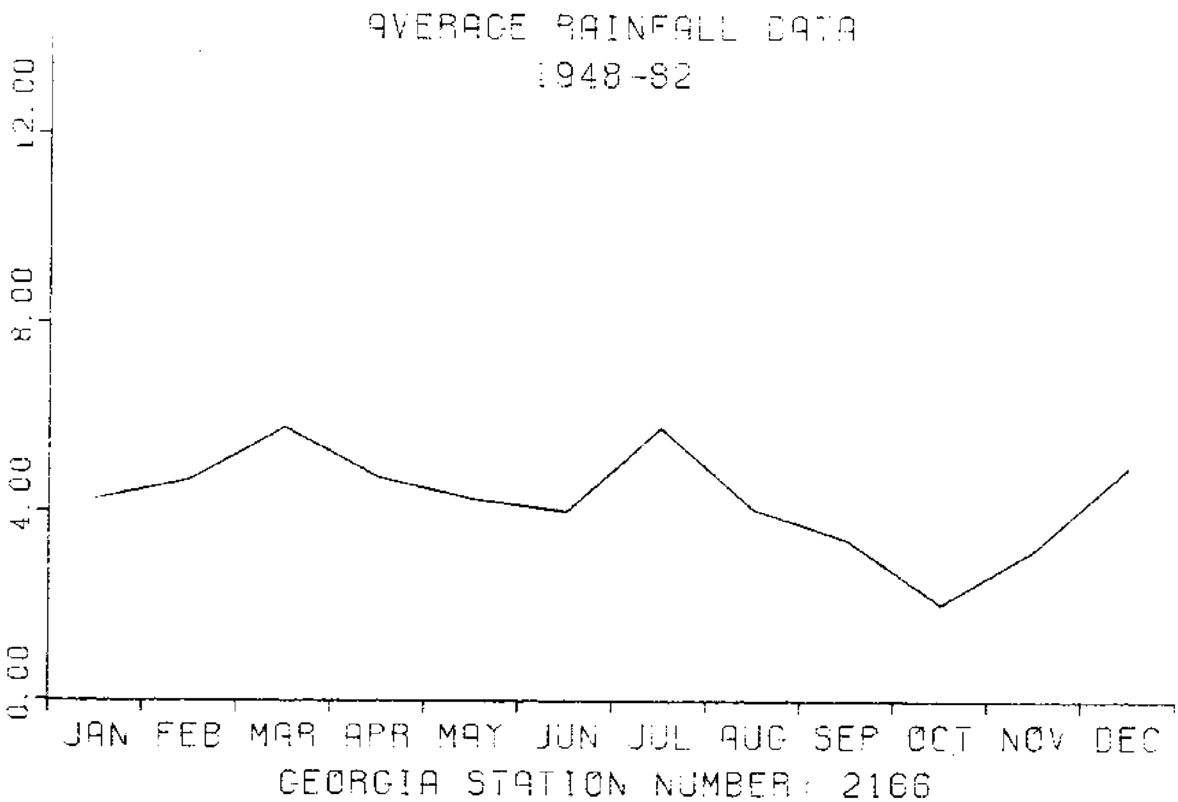

**BUTLER, GEORGIA**



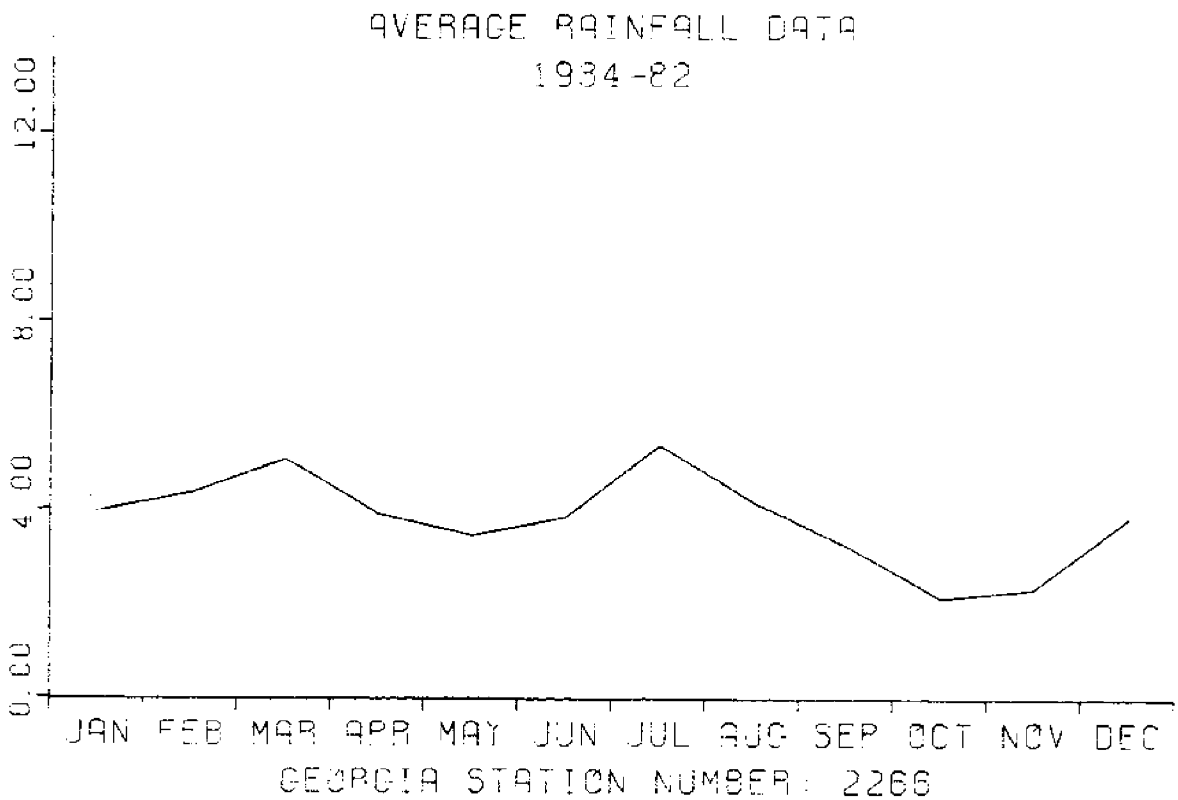

CAMILLA, GEORGIA



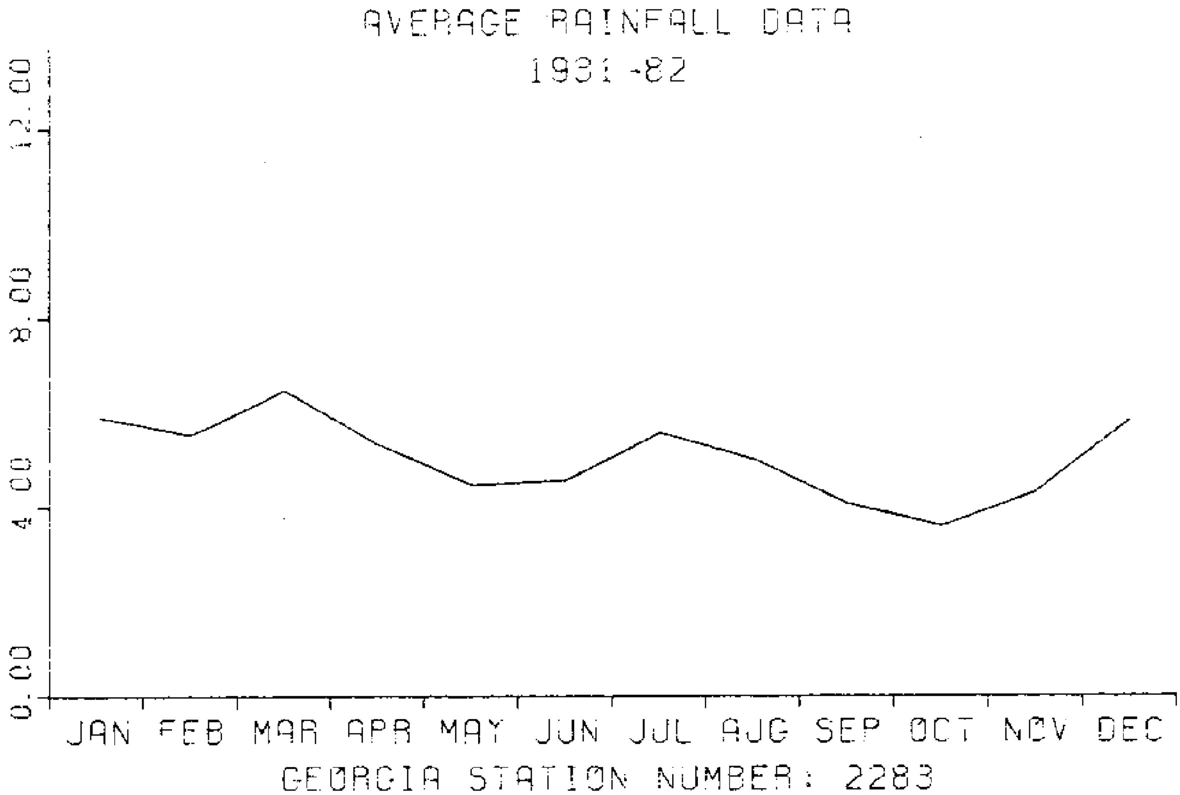

CLEVELAND, GEORGIA



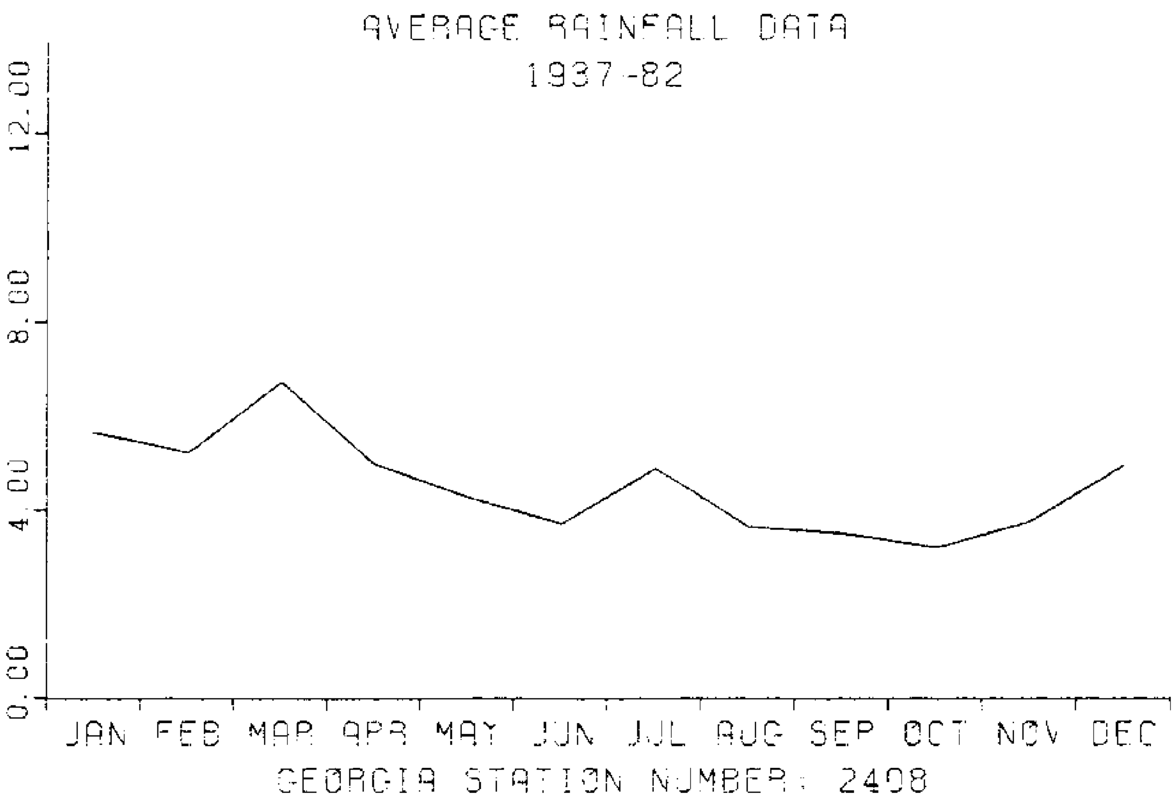

**COLUMBUS, GEORGIA**



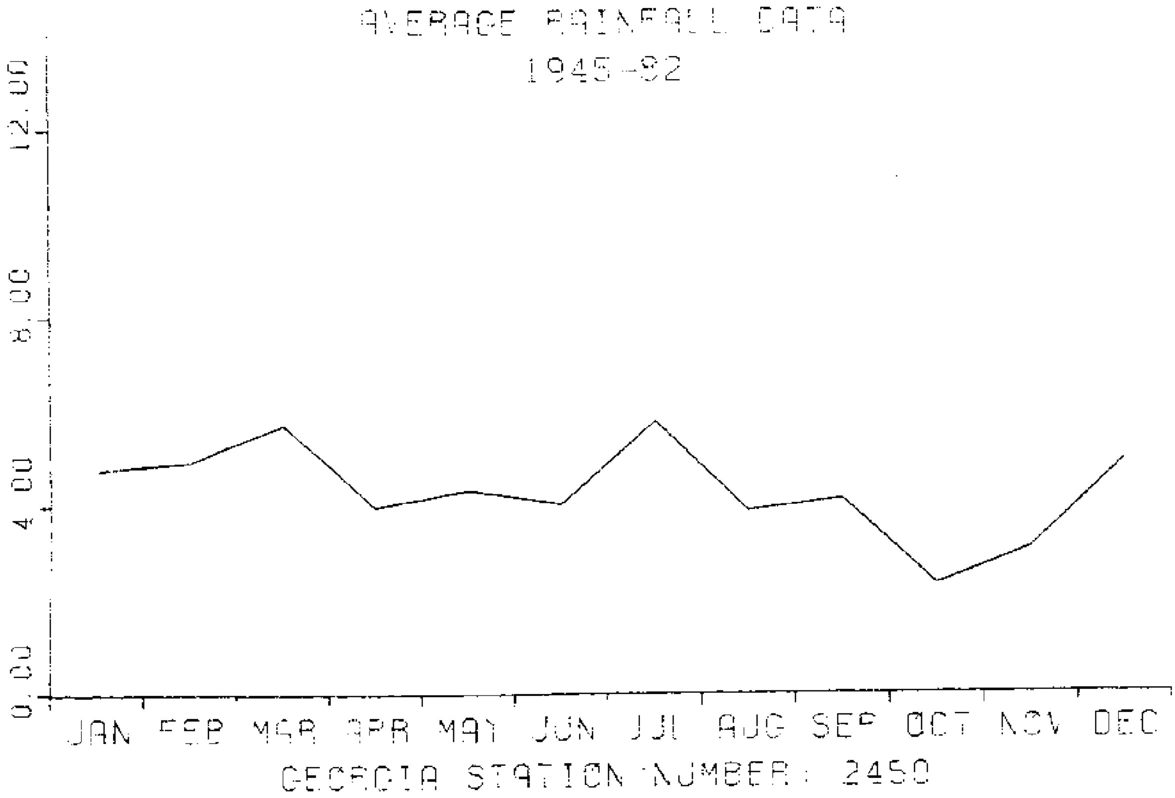

**CORDELE, GEORGIA**



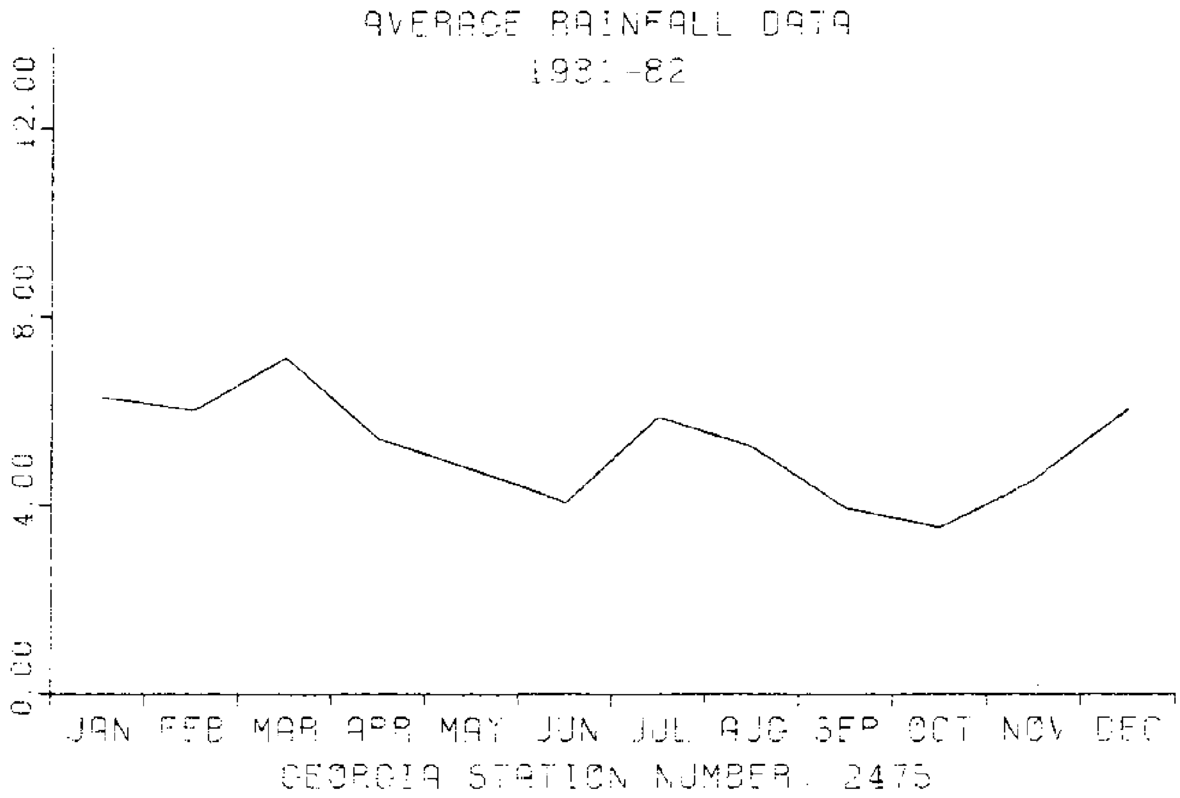

**CORNELIA, GEORGIA**



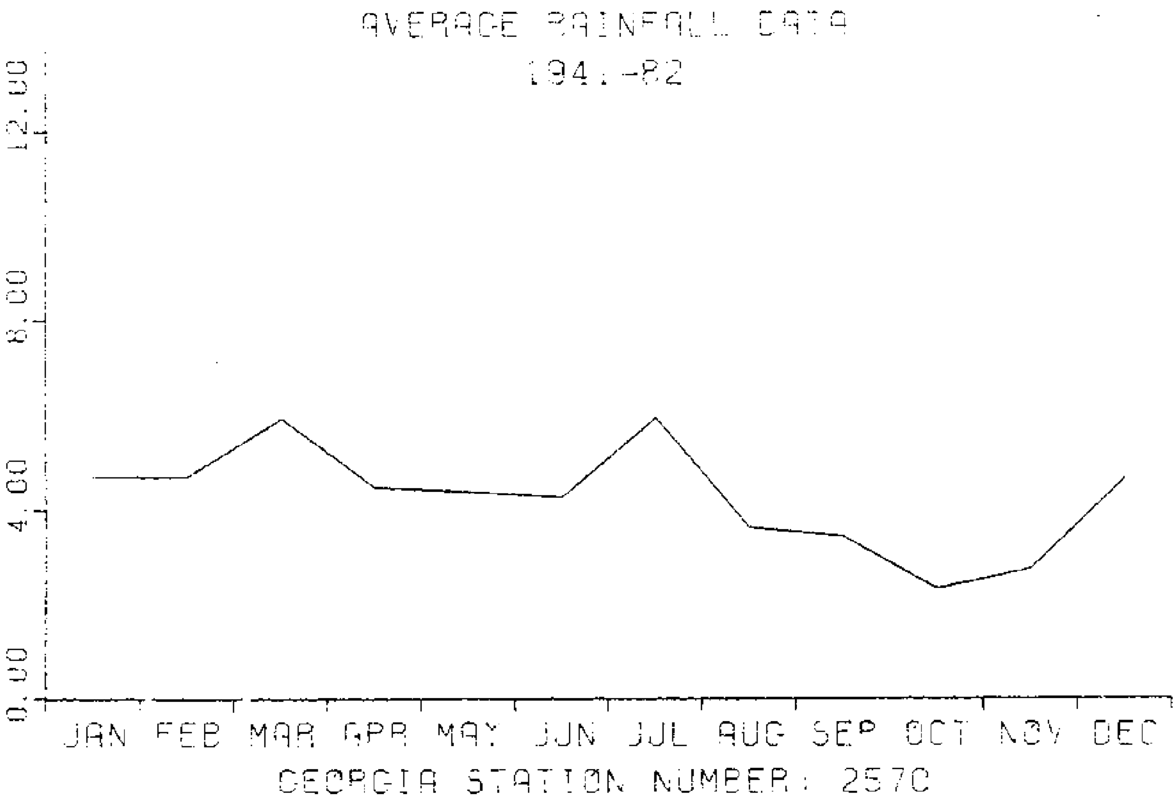

**CUMMING, GEORGIA**



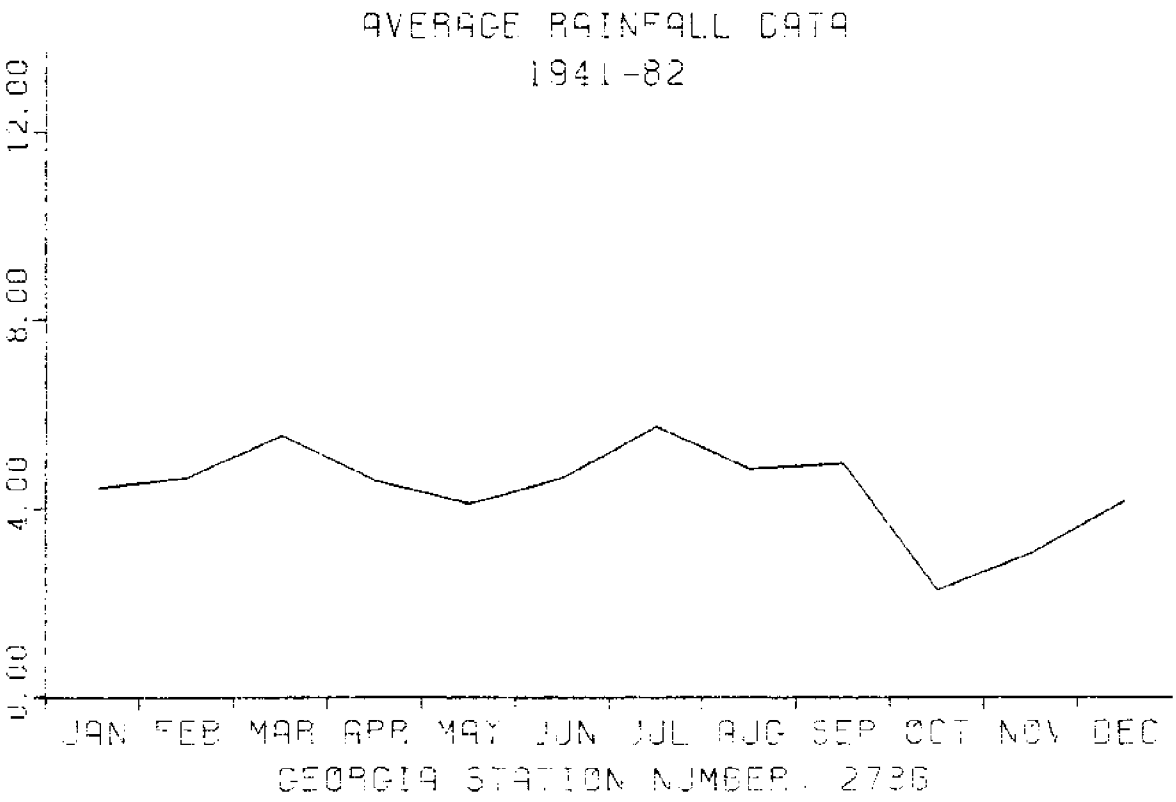

CUTHBERT, GEORGIA



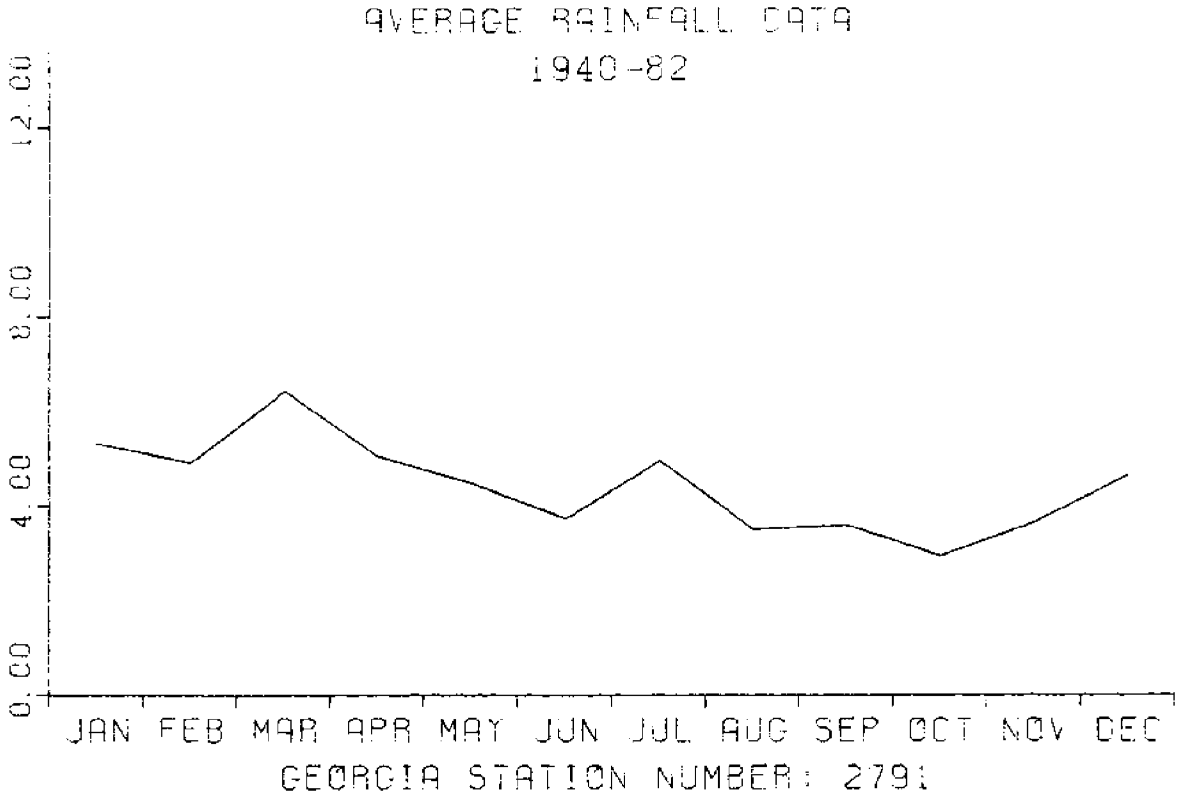

DAHLONEGA, GEORGIA



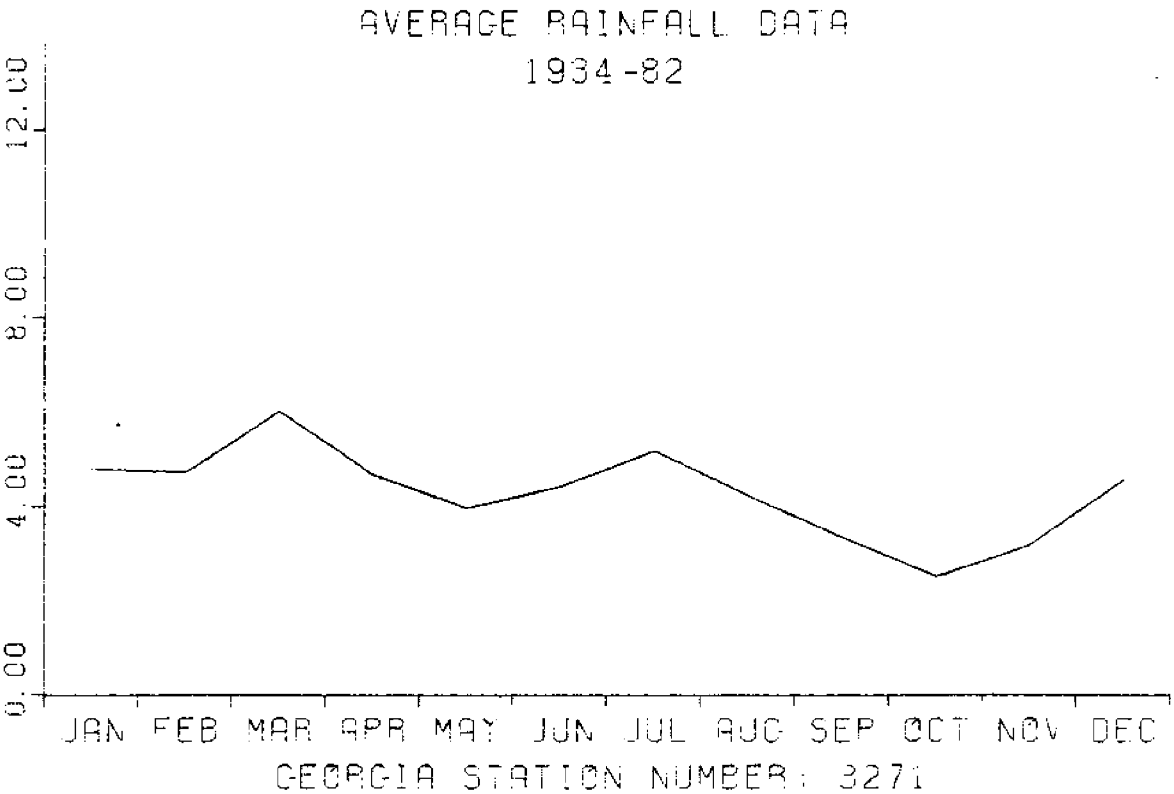

**DAWSON, GEORGIA**



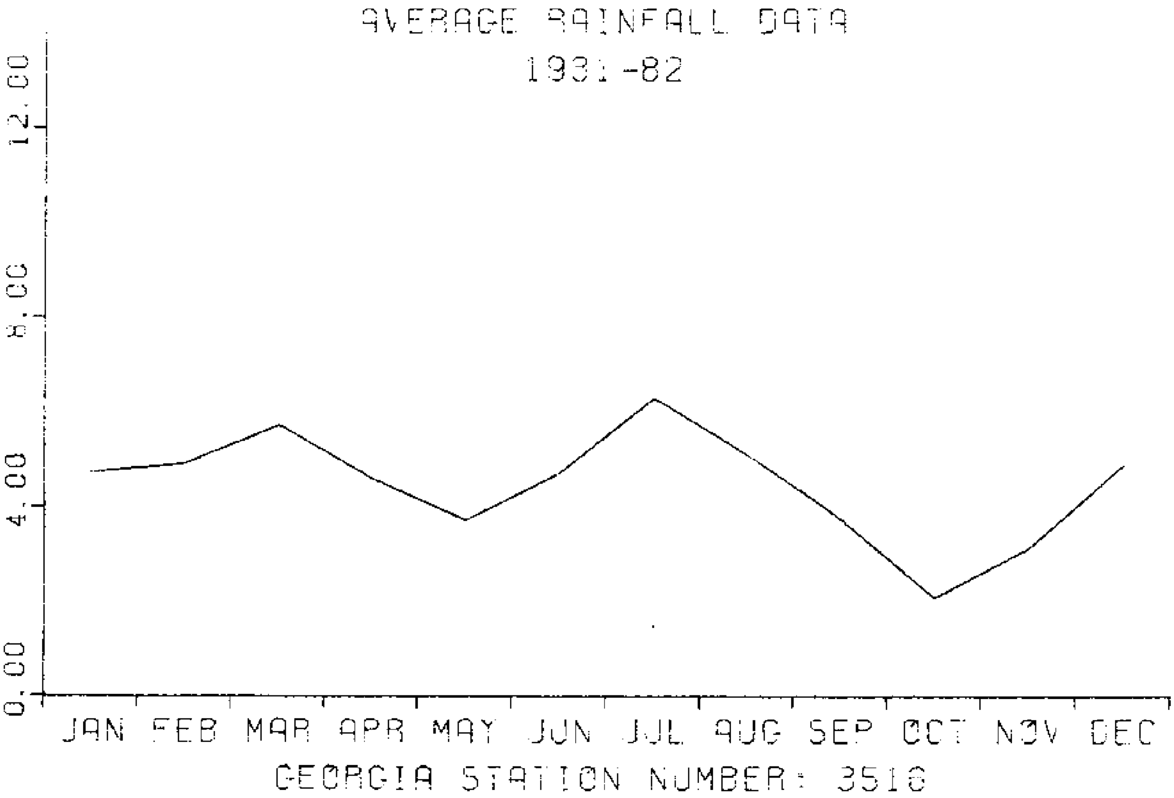

**DONALDSONVILLE, GEORGIA**



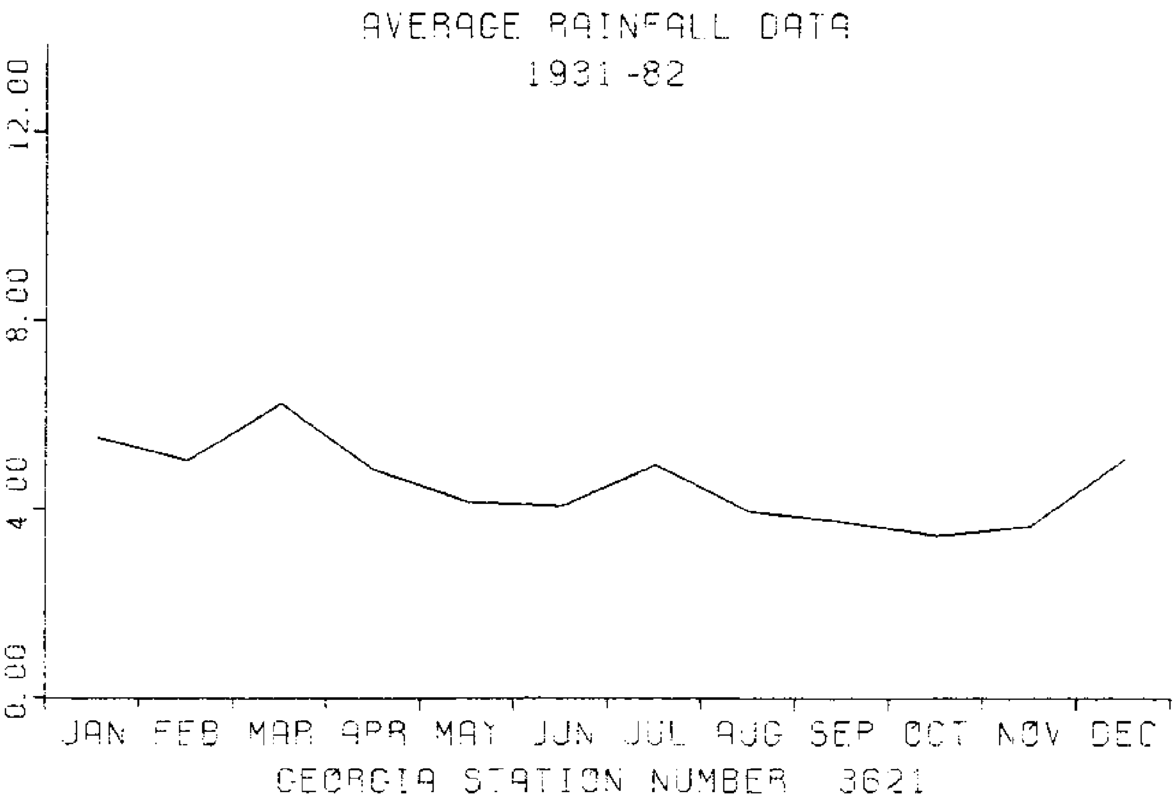

DOUGLASVILLE, GEORGIA



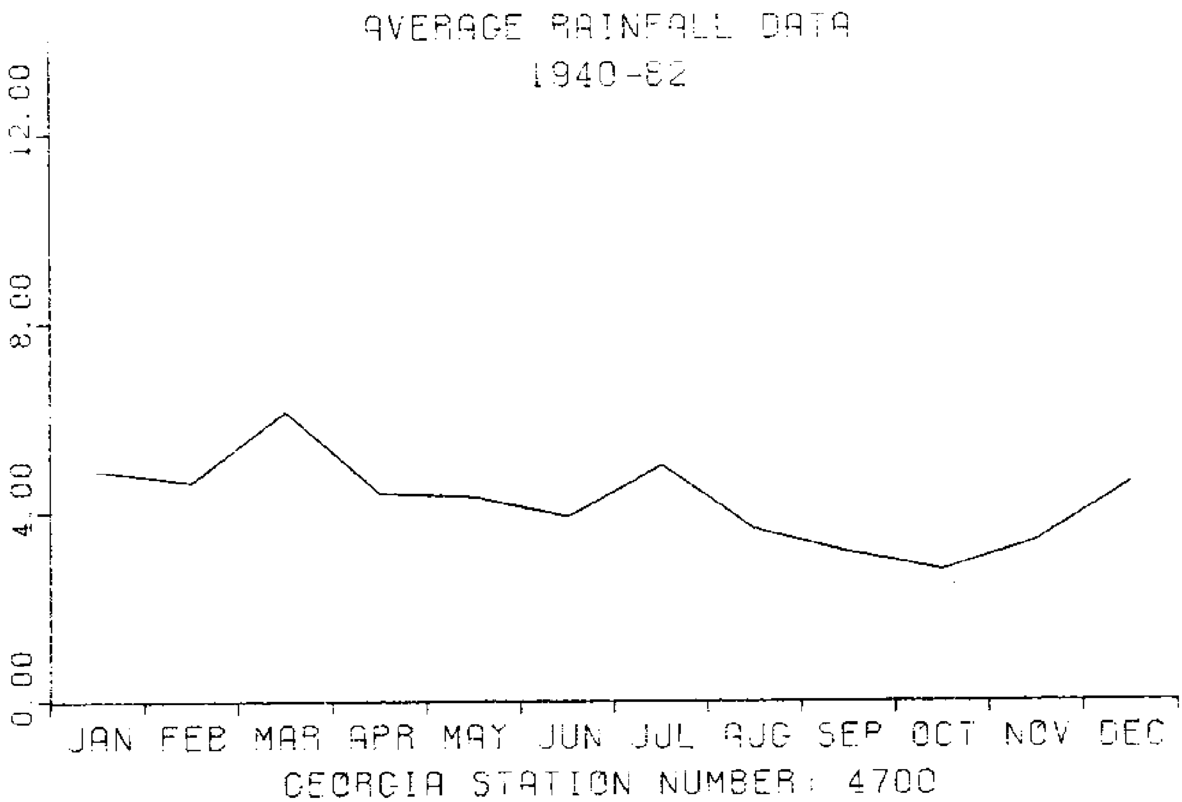

EXPERIMENT, GEORGIA



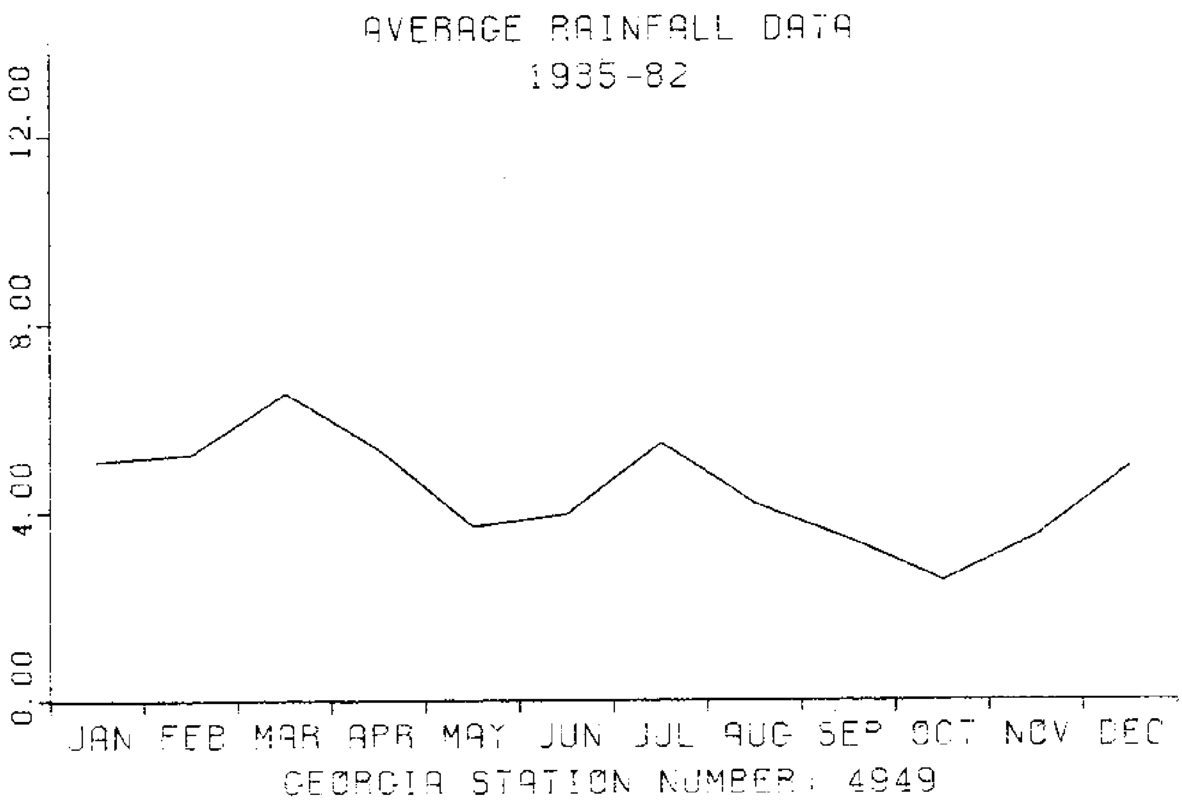

**FORT GAINES, GEORGIA**



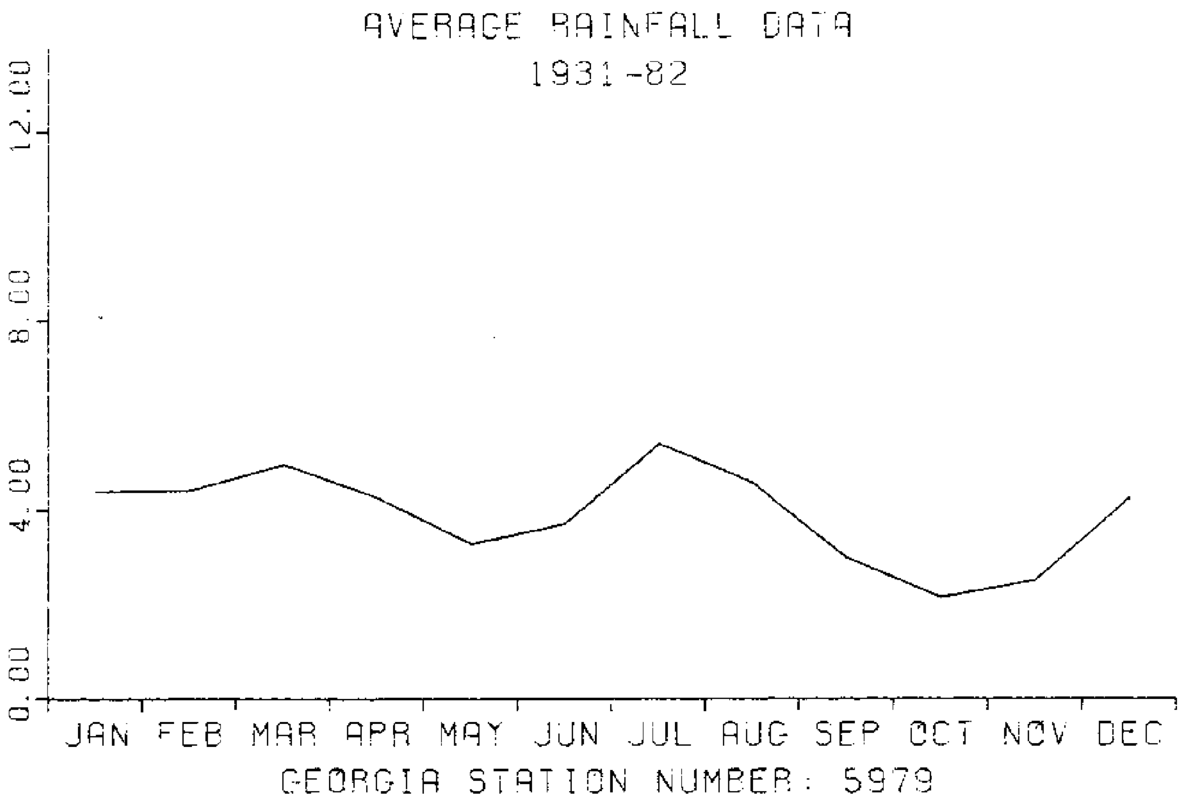

**GAINESVILLE, GEORGIA**



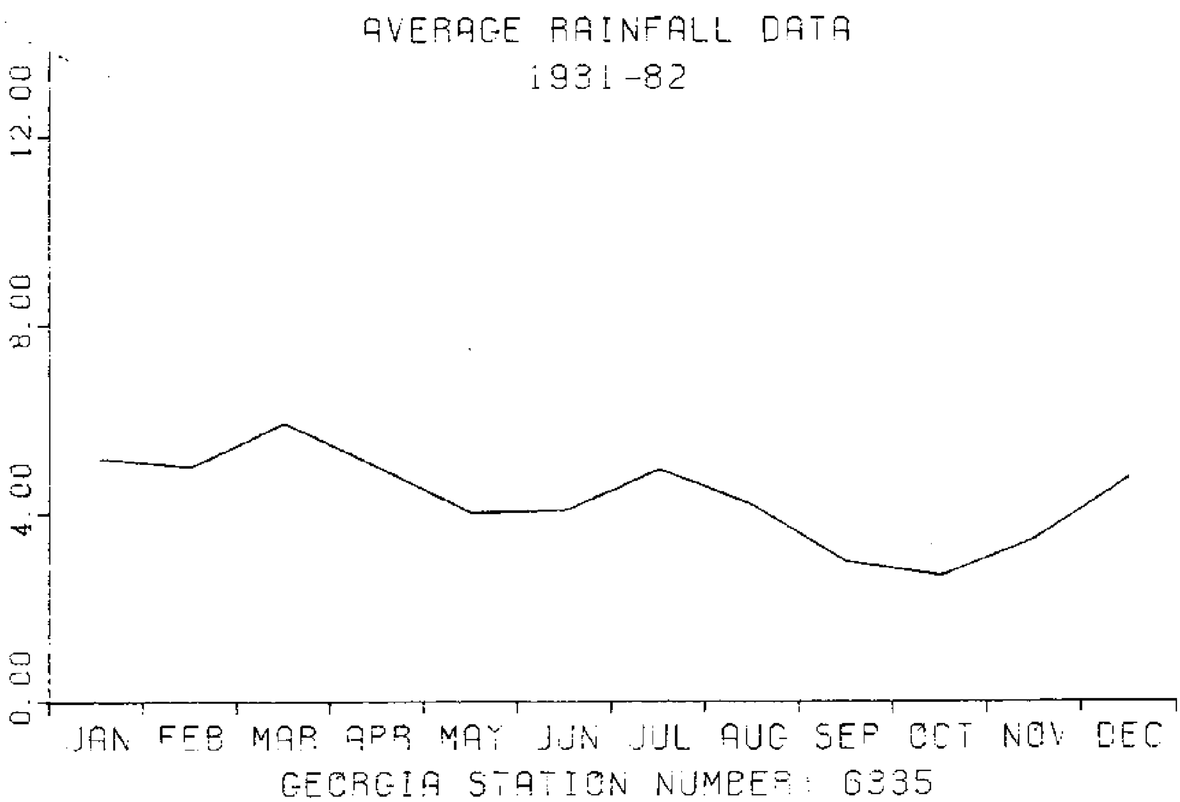

**JONESBORO, GEORGIA**



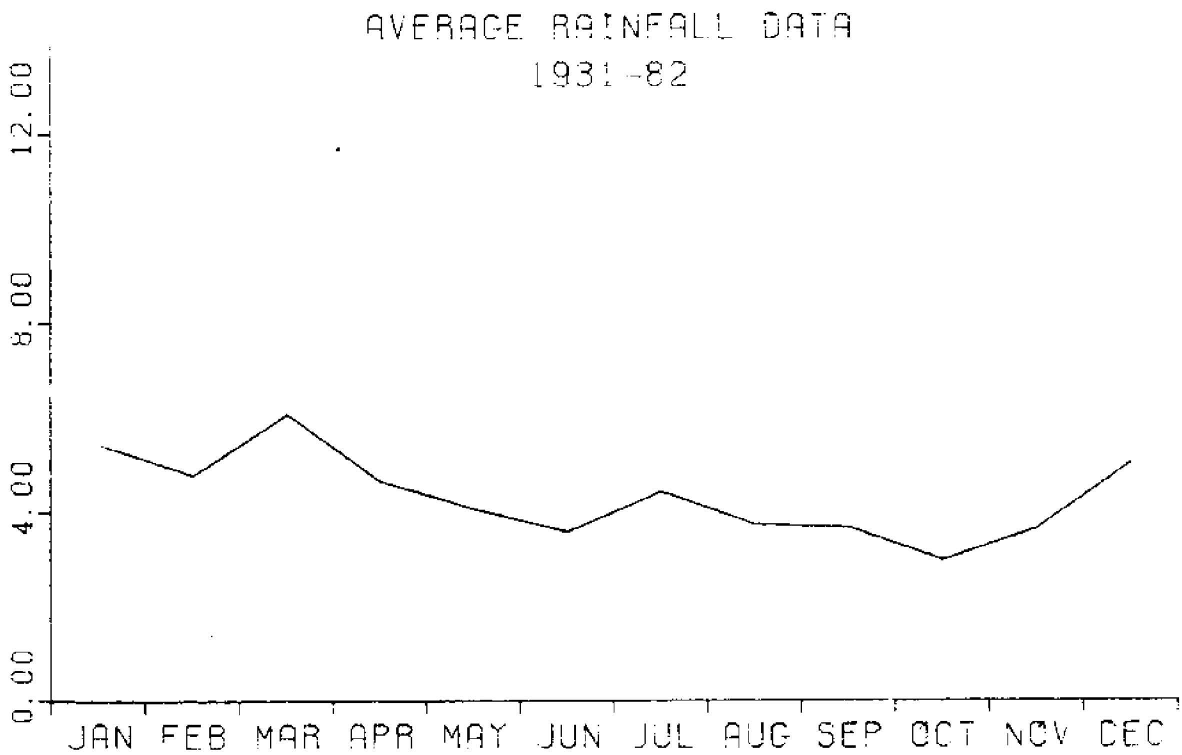

**LAGRANGE, GEORGIA**




**MONTEZUMA, GEORGIA**

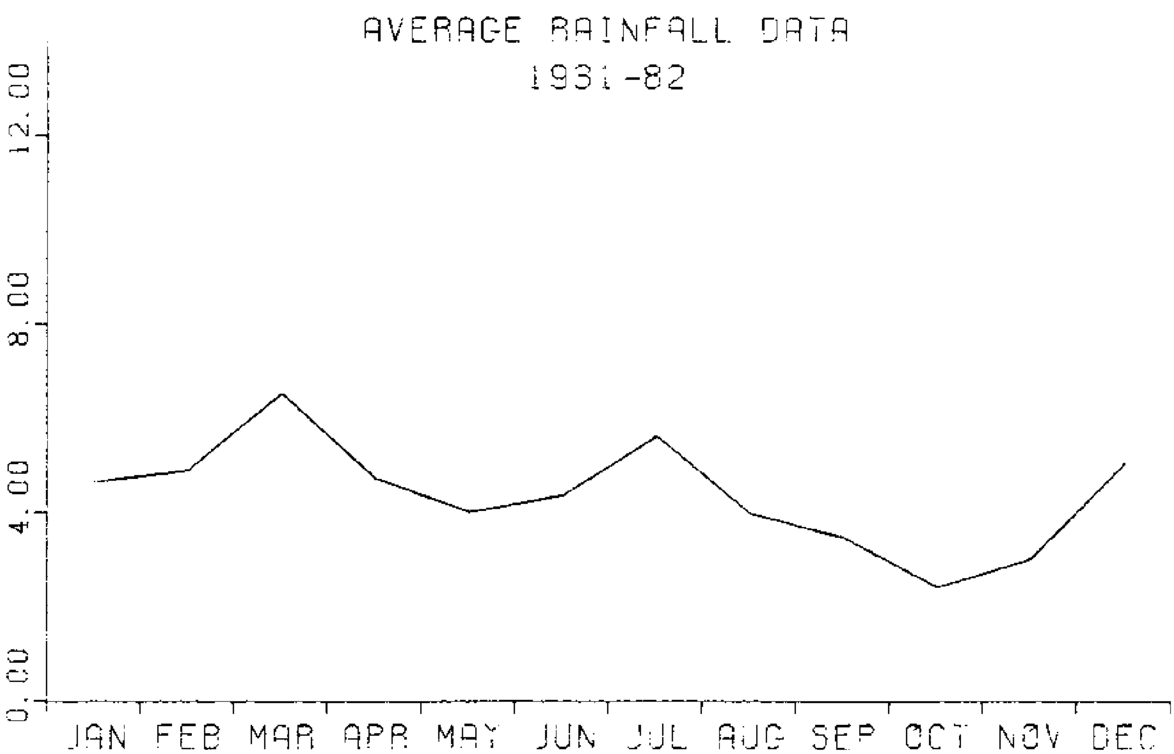



**NEWMAN, GEORGIA**



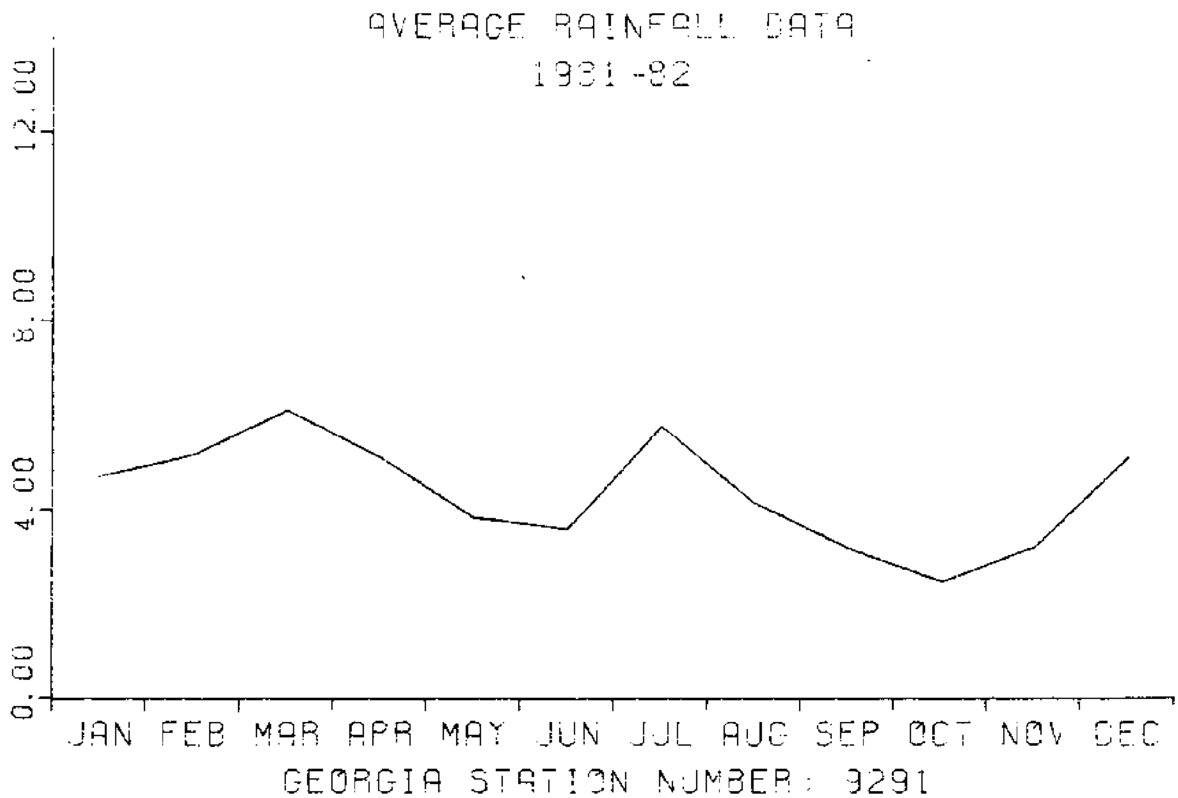

GEORGIA STATION NUMBER: 6407

**NORCROSS, GEORGIA**

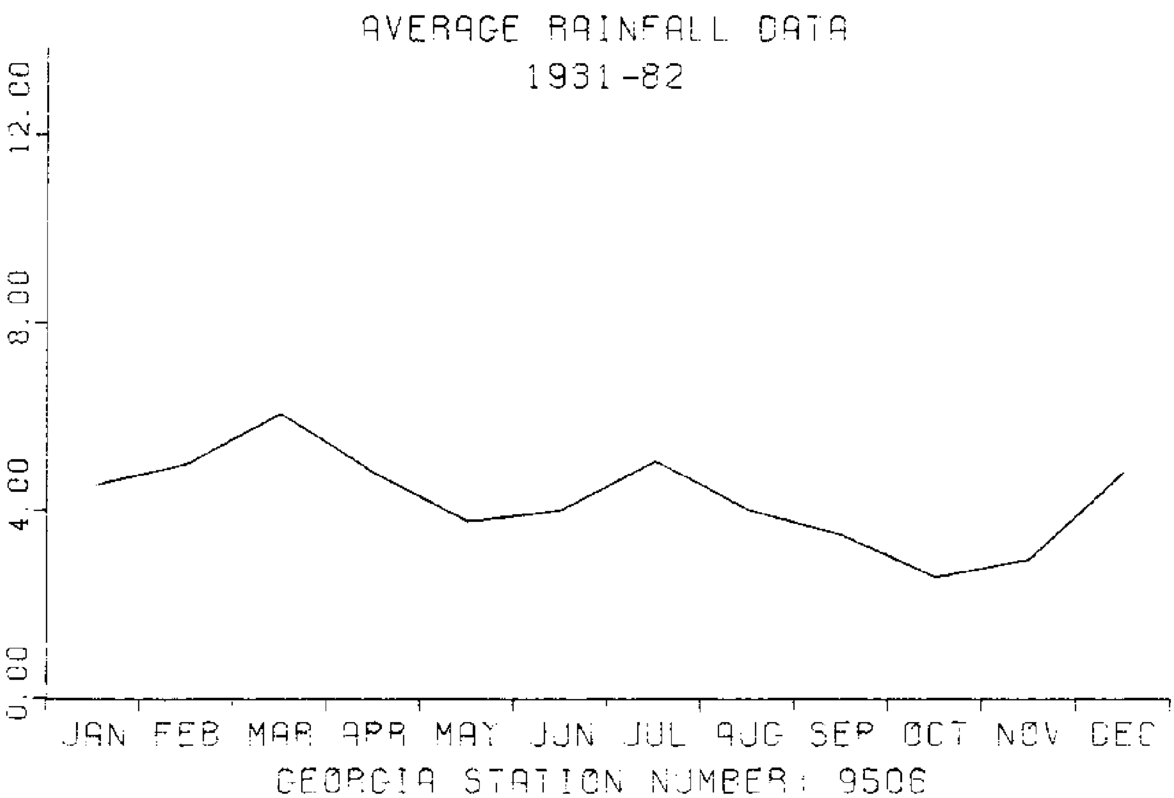



GEORGIA STATION NUMBER: 8535

**TALBOTTON, GEORGIA**




**WEST POINT, GEORGIA**




**WOODBURY, GEORGIA**

## Appendix G

## Program PREDICTIONS

This appendix includes the source listings of the program PREDICTIONS and the subroutine CALC. PREDICTIONS is the program to compute recurrence intervals for 1, 2, 5, 10, 20, 50, and 100 years. A PARAMETER statement is used to set the first year (FRSTYR) at 1931, the last year (LASTYR) at 1982 and the maximum number of years (NYRS) at 52. Thus the program can easily be changed as more data become available.

The program reads the data file and then produces three printouts. First it uses all data available in the period of record. Then it computes recurrence intervals using only the data from the begining of the period of record up to and including 1959. Finally it computes recurrence intervals using the data for 1959-1982 inclusive.

After computing the sample means and variances and estimating alpha and beta for the Gamma density, the program calls the subroutine CALC to do the actual numerical integration. This subroutine in turn calls a subroutine in the IMSL library[1] called MDGAM to evaluate the incomplete Gamma distribution.

Before trying the IMSL library the subroutine CALC called the function GAMIN in the UNIVAC STAT-PACK. This routine had some difficulty in integrating some of the distributions caused by divisions by zero and underflow. In most cases this occurred in trying to find the 99th percentile; but in some of the flatter distributions, it occurred earlier. The subroutine MDGAM is written to avoid these problems.

---

[1]The IMSL library is an extensive collection of mathematical and statistical subroutines written in FORTRAN. Edition 9 is available on the UNIVAC 1100/61 at The University of Alabama.

```
@FTN,S PROGRAM.PREDICTIONS
FTN 10R1A  05/16/84-16:02(1,)
      *     Program to compute nonexceedence precipitation values for periods
      *     of 1, 2, 3, 4, 6, 12, and 24 months.  The program generates three
      *     outputs.  First using all of the data, then using only the data
      *     up to 1959, and then only the data from 1959 to the end.

            PARAMETER (LASTYR = 1982, NYRS = 52)
            REAL VALUE(NYRS,12),AVG(6,12),VAR(6,12),AYR(2),VYR(2),TOTAL(NYRS)
            INTEGER STATID, YEAR, YEAR1, YEAR2, N/1/, OUT(7), TIMES
            CHARACTER STATE*7, STNID1*4, MONTH(12)*9/'January','February',
           *          'March','April','May','June','July','August',
           *          'September','October','November','December'/

            REAL PROB(7)/0.01, 0.02, 0.05, 0.10, 0.20, 0.50, 0.99/
      *     Precipitation is assumed to follow a Gamma density function.  This
      *     program uses a SUBROUTINE called CALC to find these percentiles.

         10 READ (3,800,END=999) STATID, STNID1, YEAR1, (VALUE(1,J), J=1,12)
      *     Determine correct state name for data being read.
            IF (STATID .EQ. 1) THEN
 1               STATE = 'Alabama'
 1          ELSE IF (STATID .EQ. 8) THEN
 1               STATE = 'Florida'
 1          ELSE IF (STATID .EQ. 9) THEN
 1               STATE = 'Georgia'
 1          ENDIF
 1
 1    *     Input loop.  Determine number of years of data (N).
         20 N = N + 1
            READ (3,801) YEAR, (VALUE(N,J), J=1,12)
            IF (YEAR .EQ. 1959) I59 = N
            IF (YEAR .LT. LASTYR) GO TO 20

            DO 100 TIMES=1, 3
 1          IF (TIMES .EQ. 1) THEN
 1    *          Use all N years of precipitation data.
 2               ISTART = 1
 2               ISTOP = N
 2               YEAR2 = LASTYR
 2          ELSE IF (TIMES .EQ. 2) THEN
 2    *          Use only precipitation data before 1960.
 2               ISTOP = I59
 2               YEAR2 = 1959
 2          ELSE
 2    *          Use only precipitation data after 1958.
 2               ISTART = I59
 2               ISTOP = N
 2               YEAR1 = 1959
 2               YEAR2 = LASTYR
 2          ENDIF
 2
 1          DO 50 J=1, 12
 1    *     Determine 1 month totals.
 2          SUM = 0
 2          SSQ = 0
 2          M = 0
```

```
2   *     We can use all N years of data in 1 month totals.
2         DO 30 I=ISTART, ISTOP
3         RAIN = VALUE(I,J)
3         IF (RAIN .GE. 0) THEN
4              M = M + 1
4              SUM = SUM + RAIN
4              SSQ = SSQ + RAIN*RAIN
4              ENDIF
3      30 CONTINUE
2         AVG(1,J) = SUM/M
2         VAR(1,J) = (SSQ - SUM*SUM/M)/M
2   *     Determine 2, 3, 4, and 6 month totals.
2         DO 50 MONTHS=2, 6
3         IF (MONTHS .EQ. 5) GO TO 50
3         SUM = 0
3         SSQ = 0
3         M = 0
3
3   *     For 2 to 6 month totals we loop through only N-1 years; but the
3   *     July through December totals go into the last year of data.
3         DO 40 I=ISTART, ISTOP-1
4         L = 0
4         II = I
4         JJ = J
4         RAIN = 0
4         DO 35 K=1, MONTHS
5         IF (JJ .GT. 12) THEN
6              JJ = JJ - 12
6              II = II + 1
6              ENDIF
5         IF (VALUE(II,JJ) .GE. 0) THEN
6              RAIN = RAIN + VALUE(II,JJ)
6              L = L + 1
6              ENDIF
5      35 JJ = JJ + 1
4         IF (L .EQ. 0) GO TO 40
4         IF (L .LT. MONTHS) RAIN = RAIN/L*MONTHS
4         M = M + 1
4         SUM = SUM + RAIN
4         SSQ = SSQ + RAIN*RAIN
4      40 CONTINUE
3         AVG(MONTHS,J) = SUM/M
3         VAR(MONTHS,J) = (SSQ - SUM*SUM/M)/M
3      50 CONTINUE
3   *     Determine 12 month totals.  (Use all N years.)
1         SUM = 0
1         SSQ = 0
1         M = 0
1         DO 60 I=ISTART, ISTOP
2         L = 0
2         RAIN = 0
2         DO 55 J=1, 12
3         IF (VALUE(I,J) .GE. 0) THEN
4              RAIN = RAIN + VALUE(I,J)
4              L = L + 1
4              ENDIF
3      55 CONTINUE
```

```
2               IF (L .EQ. 0) GO TO 60
2               IF (L .LT. 12) RAIN = RAIN/L*12
2               M = M + 1
2               SUM = SUM + RAIN
2               SSQ = SSQ + RAIN*RAIN
2            60 TOTAL(I) = RAIN
1               AYR(1) = SUM/M
1               VYR(1) = (SSQ - SUM*SUM/M)/M
1
1         *     Determine 24 month totals.  (Loop through first N-1 years.)
1               SUM = 0
1               SSQ = 0
1               M = 0
1               DO 70 I=ISTART, ISTOP-1
2               RAIN = TOTAL(I) + TOTAL(I+1)
2               M = M + 1
2               SUM = SUM + RAIN
2               SSQ = SSQ + RAIN*RAIN
2            70 CONTINUE
1               AYR(2) = SUM/M
1               VYR(2) = (SSQ - SUM*SUM/M)/M
1
1
1         *     Print page heading.
1               PRINT 850, STATE, STNID1, YEAR1, YEAR2
1               PRINT 902
1
1               DO 90 I=1, 6
2               IF (I .EQ. 5) THEN
3                    PRINT 850, STATE, STNID1, YEAR1, YEAR2
3                    GO TO 90
3                    ENDIF
2               PRINT 900, I, 100,.01, 50,.02, 20,.05, 10,.10, 5,.20, 2,.50, 1,.99
2               PRINT 902
2               DO 85 J=1, 12
3               RAIN = 0.0
3               BETA = VAR(I,J)/AVG(I,J)
3               ALPHA = AVG(I,J)/BETA
3               DO 80 K=1, 7
4               DELTAX = I
4               CALL CALC(ALPHA,RAIN,DELTAX,PROB(K))
4            80 OUT(K) = NINT(100*RAIN*BETA)
3            85 PRINT 901, MONTH(J), OUT
2            90 PRINT 902
2
1               DO 100 I=1, 2
2               RAIN = 0.0
2               BETA = VYR(I)/AYR(I)
2               ALPHA = AYR(I)/BETA
2               DO 95 K=1, 7
3               DELTAX = 12.0*I
3               CALL CALC(ALPHA,RAIN,DELTAX,PROB(K))
3            95 OUT(K) = NINT(100*RAIN*BETA)
2               PRINT 910, 100,.01, 50,.02 ,20,.05, 10,.10, 5,.20, 2,.50, 1,.99
2               PRINT 902
2               PRINT 911, 12*I, OUT
2           100 PRINT 902
```

```
2     *      Reinitialize year counter and go read data for another station.
             N = 1
             GO TO 10

         800 FORMAT(I2,A4,3X,I4,1X,12(F6.2,2X))
         801 FORMAT(9X,I4,1X,12(F6.2,2X))
         850 FORMAT('1',23X,A7,' Station Number ',A4,': Years ',I4,'-',I4//
            * 20X,'Recurrence Intervals and Nonexceedence Probabilities'/
            * 22X,  'For Total Precipitation in Hundredths of Inches'/
            *  7X,  'For Period of')
         900 FORMAT(7X,I1,' Months Starting in |',7(I3,'(',F3.2,')'))
         901 FORMAT(16X,A9,3X,'|',7I8)
         902 FORMAT('+',6X,78('_'))
         910 FORMAT(///7X,'For Period of',8X,'|',7(I3,'(',F3.2,')'))
         911 FORMAT(7X,I2,' Months',12X,'|',7I8)
         999 PRINT '(''1'')'
             END

END FTN 516 IBANK 1259 DBANK
```

Note: This is a listing of the program that was run and output to the high speed lineprinter. To generate the tables in Section 6 the underscores and vertical lines were removed and the output was directed to a letter-quality terminal which did not have a vertical line on its daisy wheel.

```
@FTN,S PROGRAM.IMSLCALC
FTN 10R1A  05/24/84-08:29(3,)
        SUBROUTINE CALC(ALPHA,X,DELTAX,PROB)
*       Subroutine to integrate the Gamma pdf for parameters alpha
*       and beta from 0.0 to X.  DELTAX is the increment and VALUE
*       is the value of the integral.

     10 X = X + DELTAX
        CALL MDGAM(X,ALPHA,VALUE,IER)

        IF (VALUE .LT. PROB) GO TO 10
        IF (DELTAX .GT. 0.001) THEN
             X = X - DELTAX
             DELTAX = DELTAX/10.0
             GO TO 10
             ENDIF

        RETURN
        END

END FTN 35 IBANK 18 DBANK
```

## Appendix H

## Program PARAMETERS

This appendix includes the source listing of the program PARAMETERS which is a modification of the program PREDICTIONS in the previous appendix. This program was written to produce a hard copy of the estimated alpha and beta values. It also prints the sample means and variances. The output, which is too long to include in this report, will be provided.

```
@FTN,S PROGRAM.PARAMETERS
FTN 10R1A  05/16/84-23:07(3,)
        *     Program to compute the mean, variance, alpha, and beta for periods
        *     of 1, 2, 3, 4, 6, 12, and 24 months.  The program generates three
        *     outputs.  First using all of the data, then using only the data
        *     up to 1959, and then only the data from 1959 to the end.


              PARAMETER (LASTYR = 1982, NYRS = 52)
              REAL VALUE(NYRS,12),AVG(6,12),VAR(6,12),AYR(2),VYR(2),TOTAL(NYRS)
              INTEGER STATID, YEAR, YEAR1, YEAR2, N/1/, TIMES
              CHARACTER STATE*7, STNID1*4, MONTH(12)*9/'January','February',
             *          'March','April','May','June','July','August',
             *          'September','October','November','December'/


           10 READ (3,800,END=999) STATID, STNID1, YEAR1, (VALUE(1,J), J=1,12)
        *     Determine correct state name for data being read.
              IF (STATID .EQ. 1) THEN
 1                 STATE = 'Alabama'
 1            ELSE IF (STATID .EQ. 8) THEN
 1                 STATE = 'Florida'
 1            ELSE IF (STATID .EQ. 9) THEN
 1                 STATE = 'Georgia'
 1            ENDIF
 1
 1
 1      *     Input loop.  Determine number of years of data (N).
           20 N = N + 1
              READ (3,801) YEAR, (VALUE(N,J), J=1,12)
              IF (YEAR .EQ. 1959) I59 = N
              IF (YEAR .LT. LASTYR) GO TO 20


              DO 100 TIMES=1, 3
 1            IF (TIMES .EQ. 1) THEN
 1      *          Use all N years of precipitation data.
 2                 ISTART = 1
 2                 ISTOP = N
 2                 YEAR2 = LASTYR
 2            ELSE IF (TIMES .EQ. 2) THEN
 2      *          Use only precipitation data before 1960.
 2                 ISTOP = I59
 2                 YEAR2 = 1959
 2            ELSE
 2      *          Use only precipitation data after 1958.
 2                 ISTART = I59
 2                 ISTOP = N
 2                 YEAR1 = 1959
 2                 YEAR2 = LASTYR
 2            ENDIF
 2
 1            DO 50 J=1, 12
 1      *     Determine 1 month totals.
 2            SUM = 0
 2            SSQ = 0
 2            M = 0
```

```
2     *      We can use all N years of data in 1 month totals.
2            DO 30 I=ISTART, ISTOP
3            RAIN = VALUE(I,J)
3            IF (RAIN .GE. 0) THEN
4                 M = M + 1
4                 SUM = SUM + RAIN
4                 SSQ = SSQ + RAIN*RAIN
4                 ENDIF
3         30 CONTINUE
2            AVG(1,J) = SUM/M
2            VAR(1,J) = (SSQ - SUM*SUM/M)/M
2     *      Determine 2, 3, 4, and 6 month totals.
2            DO 50 MONTHS=2, 6
3            IF (MONTHS .EQ. 5) GO TO 50
3            SUM = 0
3            SSQ = 0
3            M = 0
3
3     *      For 2 to 6 month totals we loop through only N-1 years; but the
3     *      July through December totals go into the last year of data.
3            DO 40 I=ISTART, ISTOP-1
4            L = 0
4            II = I
4            JJ = J
4            RAIN = 0
4            DO 35 K=1, MONTHS
5            IF (JJ .GT. 12) THEN
6                 JJ = JJ - 12
6                 II = II + 1
6                 ENDIF
5            IF (VALUE(II,JJ) .GE. 0) THEN
6                 RAIN = RAIN + VALUE(II,JJ)
6                 L = L + 1
6                 ENDIF
5         35 JJ = JJ + 1
4            IF (L .EQ. 0) GO TO 40
4            IF (L .LT. MONTHS) RAIN = RAIN/L*MONTHS
4            M = M + 1
4            SUM = SUM + RAIN
4            SSQ = SSQ + RAIN*RAIN
4         40 CONTINUE
3            AVG(MONTHS,J) = SUM/M
3            VAR(MONTHS,J) = (SSQ - SUM*SUM/M)/M
3         50 CONTINUE
3     *      Determine 12 month totals.  (Use all N years.)
1            SUM = 0
1            SSQ = 0
1            M = 0
1            DO 60 I=ISTART, ISTOP
2            L = 0
2            RAIN = 0
2            DO 55 J=1, 12
3            IF (VALUE(I,J) .GE. 0) THEN
4                 RAIN = RAIN + VALUE(I,J)
4                 L = L + 1
4                 ENDIF
3         55 CONTINUE
```

```
2            IF (L .EQ. 0) GO TO 60
2            IF (L .LT. 12) RAIN = RAIN/L*12
2            M = M + 1
2            SUM = SUM + RAIN
2            SSQ = SSQ + RAIN*RAIN
2         60 TOTAL(I) = RAIN
1            AYR(1) = SUM/M
1            VYR(1) = (SSQ - SUM*SUM/M)/M
1
1
1     *      Determine 24 month totals.  (Loop through first N-1 years.)
1            SUM = 0
1            SSQ = 0
1            M = 0
1            DO 70 I=ISTART, ISTOP-1
2            RAIN = TOTAL(I) + TOTAL(I+1)
2            M = M + 1
2            SUM = SUM + RAIN
2            SSQ = SSQ + RAIN*RAIN
2         70 CONTINUE
1            AYR(2) = SUM/M
1            VYR(2) = (SSQ - SUM*SUM/M)/M
1
1
1     *      Print page heading.
1            PRINT 850, STATE, STNID1, YEAR1, YEAR2
1            PRINT 902
1
1
1            DO 90 I=1, 6
2            IF (I .EQ. 5) THEN
3                 PRINT 850, STATE, STNID1, YEAR1, YEAR2
3                 GO TO 90
3                 ENDIF
2            PRINT 900, I
2            PRINT 902
2            DO 85 J=1, 12
3            RAIN = 0.0
3            BETA = VAR(I,J)/AVG(I,J)
3            ALPHA = AVG(I,J)/BETA
3         85 PRINT 901, MONTH(J), AVG(I,J), VAR(I,J), ALPHA, BETA
2         90 PRINT 902
2
2
1            DO 100 I=1, 2
2            RAIN = 0.0
2            BETA = VYR(I)/AYR(I)
2            ALPHA = AYR(I)/BETA
2            PRINT 910
2            PRINT 902
2            PRINT 911, 12*I, AYR(I), VYR(I), ALPHA, BETA
2        100 PRINT 902
2
2     *      Reinitialize year counter and go read data for another station.
             N = 1
             GO TO 10
```

```
      800 FORMAT(I2,A4,3X,I4,1X,12(F6.2,2X))
      801 FORMAT(9X,I4,1X,12(F6.2,2X))
      850 FORMAT('1',23X,A7,' Station Number ',A4,': Years ',I4,'-',I4//
         * 26X,'Values of Mean, Variance, Alpha, and Beta'/
         * 29X,  'For Total Precipitation in Inches'/
         *  7X,  'For Period of')
      900 FORMAT(7X,I1,' Months Starting in |',10X,'MEAN',6X,'VARIANCE',
         *        9X,'ALPHA',10X,'BETA')
      901 FORMAT(16X,A9,3X,'|',4F14.4)
      902 FORMAT('+',6X,78('_'))
      910 FORMAT(///7X,'For Period of',8X,'|')
      911 FORMAT(7X,I2,' Months',12X,'|',4F14.1)
      999 PRINT '(''1'')'
          END
```

END FTN 458 IBANK 1187 DBANK