Soil Survey of Woodruff County, Arkansas

By Cornelius Harris, Natural Resources Conservation Service

Fieldwork by Cornelius Harris and Kenneth Crader, Jr., Natural Resources Conservation Service

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Woodruff County is in east-central Arkansas on the east bank of the White River. It is roughly rectangular in shape and is about 33 miles from north to south and about 24 miles from east to west. Woodruff County has a total area of 380,103 acres, or about 577 square miles. The county is bounded on the north by Jackson County, on the south by St. Francis and Monroe Counties, on the east by Cross and St. Francis Counties and on the west by Prairie and White Counties.

In 1990, the population of Woodruff County was 9520. Augusta, with a population of 2759, is the county seat. Other important trading centers are McCrory, with a population of 1,971; Cotton Plant, with a population of 1,150; Patterson, with a population of 445; and Hunter, with a population of 137.

The economy of Woodruff County is based primarily on farming. Except for a few manufacturing plants in Augusta and McCrory, most local businesses provide agricultural services.

Figure 1.—Location of Woodruff County in Arkansas.

General Nature of the County

This section discusses farming, physiography, drainage, and the climate in Woodruff County.

Farming

Before DeSoto crossed the Mississippi River into Arkansas, the Chickasaw Indians occupied the first known settlement in Woodruff County.

Settlers first came to Woodruff County in the early 1800's. Many of them came from the Carolinas, Georgia, and other areas of the eastern United States. When these settlers arrived, almost the entire county was covered in gigantic hardwood forests intermingled with canebrakes, streams, lakes, bayous, and cypress brakes. A few areas near Hunter were native prairies, which were treeless in general, but had scattered trees along their borders. The early settlers cleared small areas on higher better drained natural levees to grow vegetables and corn for their own use and to grow cotton as a money crop. Game and fish were plentiful and supplied most of their meat.

After Arkansas was admitted to the Union in 1836, more and more acreage was farmed, and large plantations were cleared to grow cotton, corn, small grains, and pasture. The acreage in cotton rapidly increased, and cotton soon became the major cash crop.

In the early 1900's extensive drainage projects were installed which lead to rapid expansion of farming in the wetter areas and to a great reduction in the acreage of woodland. Rice and soybeans were also introduced in the early to mid-1900's and both have become important crops in Woodruff County. As machinery replaced livestock as a source of power, corn and other feed grains declined in importance. Acreage allotments were placed on cotton, and its importance also declined.

At present, soybeans and rice are the major crops grown in this county. Cotton, corn, milo, and wheat are other important crops. A few farmers raise catfish, truck crops, and beef cattle along with their row crop operation. The acreage of woodland is increasing somewhat because of government programs promoting reforestation of wetlands and highly erodible land.

According to the 1992 census of Agriculture, about 70 percent of Woodruff County is in farms. The rest consists of wooded tracts, state and federally-owned land, towns, transportation, and utility facilities.

Farms in Woodruff County are decreasing in number and increasing in size. Between 1987 and 1992, the number of farms decreased from 309 to 248. During the same period, the average farm size increased from 872 acres to 1,108 acres.

Most farms in Woodruff County are large enough to require hired laborers. The larger farms are operated by laborers who are supervised by a owner, manager, or tenant. Tenants pay a fixed rent or percentage of the crop for use of the land. Most of the land is farmed by operators who are highly efficient and use the latest technologies available.

Physiography and Drainage

The geologic deposits at the surface of Woodruff County are unconsolidated sediments laid down by water and wind. Generally, water deposited clayey, silty, and loamy sediments make up the western and central parts of the county, and wind deposited silty sediments make up the eastern part and Nubbin Ridge between the Cache River and Bayou Deview in the south central part of the county. Windblown sandy sediments cover the alluvial deposits around Augusta north to Fitzhugh and in the vicinity of Gregory.

Topographically, Woodruff County can be divided into three main regions: the nearly level to level flood plains; the level to gently sloping alluvial terrace areas in the central part of the county; and the level to gently sloping loess covered terraces in the eastern part of the county. The topography of the flood plains range from broad flats to natural levees that borders abandoned and active streams channels. Slope differences are generally less than 1 percent on the flats and range to 3 percent on side slopes of natural levees. The major soils in this area are Yancopin and Kobel soils.

In the alluvial terrace region, the topography ranges from broads flats to gently sloping ridges and flood plains along natural drains. Slopes generally range from less than 1 percent to 8 percent. The major soils in this area are Askew, Bonn, Bosket, Bulltown, Dubbs, Dundee, Foley, Jackport, Overcup, McCrory, Tuckerman, and Wiville soils.

In the loess terrace region, the topography is characterized by broad flats to gently sloping ridges and have narrow winding drainageways. Slopes within the drainageways range from 0 to 2 percent. The major soils in this area are Calhoun, Calloway, Grenada, Henry, Oaklimeter, and Tichnor.

Drainage in the western part of Woodruff County is generally southward through a system of natural drainageways. The major drainageway in the western part of the county is White River.

The White River is a graded stream with a well defined channel flowing southward. The flow is regulated by major flood-control impoundments upstream from Woodruff County. It is open to barge traffic the year round. This river, along with its many oxbow lakes, also provides recreation in the form of boating, fishing, and hunting. Fish and mussels are removed in commercial quantities. All the stream watersheds in Woodruff County drain into White River, except for a part of the east section that drains into the L'Anguille River.

Flooding occurs during the winter or spring almost every year along the White River and its tributaries, except for 7,000 acres south of the Jackson County line and about 20,000 acres north of the Prairie County line. These areas are protected by levees. The surface water drains from the area through artificial drains and the natural drains that follow the course of former river channels. There is a good supply of ground water for irrigation. Elevation in these areas are about 200 feet near the Jackson County line to about 190 feet near the Prairie County line.

The central part of the county is drained by Cache River and Bayou Deview. Other creeks draining water from the area are Buffalo Creek, Cache Bayou, Maple Creek, Roaring Slough, and many artificial drains. Flooding occurs annually during winter and spring along

low lying areas along rivers and streams. The widespread use of ground water for all crops grown in the area has resulted in the drilling of several hundred wells. There is a good supply of ground water for irrigation and home use; however, ground water levels have been lowering in recent years.

The eastern part of the county is drained by Bayou Deview, Big Creek, Caney Creek, and Second Creek. Ground water for irrigation and home use is adequate. The ground water level is declining and some wells in the southeastern part of the area has yielded water with a high content of salts. Flooding occurs during the winter and spring almost every year in low lying areas along most streams in the area. Ponded water is common in some parts of the area after heavy rains.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Brinkley in the period 1951 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 41 degrees F and the average daily minimum temperature is 31 degrees. In summer, the average temperature is 80 degrees and the average daily maximum temperature is 91 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 50 inches. Of this, 25 inches, or 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 11 inches. Thunderstorms occur on about 57 days each year, and most occur in summer.

The average seasonal snowfall is 5 inches. The greatest snow depth at any one time during the period of record was 12 inches. On an average of 3 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 71 percent of the time possible in summer and 51 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 10 miles per hour, in spring.