PROGRAM OF

LEE COUNTY SOILS DISTRICT

Donnellson, Iowa

January 1945

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The Lee County Soil Conservation District was organized to provide for the conservation, and efficient use and management of the soils of the area. In general the past management of the soil has resulted in the depletion of the soils both by erosion and by cropping practices. The land owners and agricultural leaders of the district believe that through district organization, those who are interested in this problem are in a position to cooperatively develop solutions to the various soil conservation and management problems which are of importance in this district.

This program includes a statement of the soil erosion and management problems, together with some of the underlying causes, and also lists the longtime objectives of the District. It has been prepared by the District Commissioners who hope that the program will serve -

1. To call the attention of all people of the county, particularly owners and operators of land, to the land use and soil management problems of the District.

2. To secure the cooperation and help coordinate the efforts of all persons and groups who are interested in these problems.

The Commissioners will give further study to the problems considered in this program, and will prepare a work plan which gives more specifically the operating policies and methods to be used in carrying on the work of the District.

Area Which is Included in the District

The Lee County Soil Conservation District is located in the extreme south-east part of Iowa. The Mississippi River being the east boundary, the Des Moines River the south-west boundary, and the Skunk River being the line between Lee County and Des Moines County on the north-east. The District includes all of the land in Lee County, Iowa, which is not included within the limits of incorporated towns and villages. The approximate area of the District is 323,220 acres.

There are 15 townships in the county, seven which are regular containing 36 sections, the other eight are irregular in size and shape, due to the fact that they are adjacent to one of the three rivers mentioned above.

Brief History

Lee County was first established in 1836, but it's boundaries were changed in 1838, and again in 1839 when it's present boundaries were fixed by the Territorial Legislature. On the 18th of January, 1838, the county-seat was located at Fort Madison. The county was officially named by the Wisconsin Territorial Legislature on December 7, 1836, but there is considerable controversy over the source of the name. However, it is now generally believed that the name refers to Lieutenant Albert M. Lea who mapped the region in 1835 and also suggested the name of Iowa for the new territory. The difference in spelling is considered a transcription error.

A site had been selected for the county-seat in 1840 near the geographical center of the county; a town was laid out and named Franklin, but no buildings were erected and no county business was transacted there. In 1843, the seat of government was moved to West Point, where the first term of court was held that year. In the fall of 1845, by a vote of the people, Fort Madison was again made the county-seat. By act of the Legislature of 1855, a court with concurrent jurisdiction was established at Keokuk.

This part of the State of Iowa, while under the rule of Spain and France, was at various times occupied by adventurers, traders and wanderers. However, in 1820, Dr. Muir, a U. S. Army surgeon settled at Keokuk, and history seems to accept this as the first real settlement in the county. Isaac Galland organized the first school, which opened on October 4, 1830, near the present village of Galland. Many other small settlements were also begun about this time.

In 1824, a treaty was made at Washington in which 119,000 acres in the south part of the county were reserved to half breeds-persons of white and Indian parentage. This caused almost endless trouble, and became known as the "Half Breed Tract" controversy. It was finally settled by repealing the law and selling the land.

Soils

The soils of Lee County are grouped into five classes according to their origin and location: namely loess, terrace, swamp and bottom-land, residual, and drift. The loess soils cover the highest percentage of which the most important one is Grundy silt loam and related types. The drift soils are predominately Lindley loam which comprises approximately one-fifth of the total acres in the county. The terrace soils are all Buckner silt loams and related types and the residual soils comprise a small percentage of the soils and are either Dubuque or Dodgeville types. The swamp and bottom-land soils comprise the next highest percentage of which the main important soil types are Genesee and Wabash loams.

Topography

Lee County occupies a broad upland plain. The surface, for the most part, is slightly undulating to rolling. At the border of this plain, numerous steep ravines and gorges occur and there is a sudden drop of 200 feet or more to the water level of the streams bordering the county. This upland area slopes gradually to the southeast and is divided roughly into two wide areas by Big Sugar Creek and Sugar Creek. Bordered on the east and west by these two creeks and on the north and south by the Skunk and Des Moines rivers, respectively, is an area which is somewhat elevated above the surrounding area. However, this area is very irregular and is severely cut by many small streams. Low, alluvial plains border the small streams, but none of them are very extensive in area. Along the Mississippi there is a large area of bottom-land lying between the mouth of the Skunk River and Fort Madison, including a large portion of Green Bay township. Between Fort Madison and Montrose there is bottom-land, but higher in elevation, and some terraces are found. Near Sand Prairie there is an important area of terrace soil separated from the Des Moines River by a narrow strip of bottom-land.

The drainage of the county is accomplished by three creeks, two of which Sugar and Big Sugar creeks, are large, while the third, Lost Creek, is much smaller. These creeks rise in the northwestern part of the county and flow in a southeasterly direction.

Climate

The 59-year (1871-1930) average temperature of this county was 52.1 degrees. The average precipitation for 59 years (1871-1930) was 31.05 inches, and the growing season between the average killing frost dates of April 12 and October 16 was 187 days for 59 years (1871-1930).

Development of Agriculture in the District

Probably the first development in agriculture in Lee County other than grazing of livestock and producing of some grain was the first orchard in Iowa located near Montrose in 1796. In Lee County are many industrial plants which most of the people of Keokuk and Fort Madison derive their living. However, business men bid high for farm trade and agriculture in Lee County takes it's place as one of the main industries.

The production of corn and grain for the feeding of livestock has become the principal enterprise and with it has come about the serious depletion of most of the soils of the county. The cropping practices that have been carried on have depleted the fertility and organic matter of the soil as well as resulted in serious erosion losses.

Farmers who have been doing commercial gardening and fruit growing have found the need for an increase in the fertility and organic matter of their soils.

Early history of the agriculture efforts of the Lee County Farm Bureau, the first organized effort to develop an agricultural program, was in the testing of soils to show the need for limestone. Later on some test demonstrations were used to show the application and need for phosphate on corn. ~~Seven~~ 19 years ago, 15 farmers cooperated with T. V. A. on a five year program showing the application of phosphate on pastures, legume seeding and some other agricultural practices. This program as well as the many educational meetings held on soil management throughout the county interested the farmers in the county on the need for pasture improvement, the need for application of complete fertilizer on corn and application of phosphate on small grain seed to legumes.

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Very little work has been done on strip farming other than a demonstration at the L. D. Boyd farm. Contour farming has been done on a few farms, but farmers are readily seeing the need for it in their program.

The Farm Bureau was the group which initiated the action of the Soils District and received the cooperation of the Farmer's Union, Vocational Agricultural instructors, AAA and other civic groups.

Problem Areas

I This area comprises most of the better farming area, but there is considerable sheet erosion on some of the slopes. There is need for contour farming, terraces and diversion ditches on some of the moderate to slightly rolling slopes. One serious problem is that the waterways are not grassed which will in time lead to serious erosion.

There is need for drainage in some of the more level land in this area. Considerable information relative to spacing of tiles and tile outlets should be given. Since there is slow surface and internal drainage, the adoption of sweet clover seedings will have to be promoted.

Fertility management and the use of fertilizers is a factor that shall be considered as there is need for lime, phosphate and potash on most of this area.

Most of this area is comprised of Grundy silt loam and related types.

II This area has a problem of their own and predominately wind erosion. However, with probable increase in fertility, organic matter and use of cover crops this problem can be handled. Much of this area is used for commercial gardening and the use of the right fertilizer and crop rotation is a factor. Very little of the area floods or is subject to erosion. Some of the area is in commercial orchards and there is need for a good fertilizer program with these men. Buckner silt loam and related types comprises the entire acreage in the area.

III This area has a problem all in itself and that is taking care of the seep water of the Mississippi and Skunk Rivers. Drainage is the main problem. A large tract of land has been reclaimed in the last 5 years through the aid of the re-pumping of the water at the pumping station. Several ponds that extend over several farms are present. There is some tiling and some drainage ditches which need constant attention. Fertility and weed control are other problems. Genesee and Wabash loams comprise the most of this area. There also is the problem of maintaining levees on both the Skunk and Mississippi Rivers.

IV Edina silt loam branching off into Marion silt loam are the predominant soil types. There is considerable need for pasture improvement as much of this area needs to be in permanent pasture. There is considerable need for erosion practices and cause for drainage on some of the upland areas. Much of the fertility of the soil is gone through continued cropping and there is need for lime, fertilizer and the use of legumes. Water for livestock is a factor and therefore more farm ponds will have to be built. There is also need for contour farming to save the moisture for some of the drier periods as well as protecting the more rolling slopes from erosion.

V This area is comprised mostly of Marion, Lindley and Memphis silt loam. There are steep slopes which have badly eroded. On some farms the top soil has all washed away. On some of the more steep slopes it is timbered and should remain so. Pasture improvement is an important problem on most of this area. Through the adoption of contour farming, some terraces and a good crop rotation, using legumes and fertilizers, this area can protect it's soil from serious erosion. There will need be some grassed waterways and diversion ditches as well as ponds to supply the shortage of water on the farms.

Long Time Objectives of the District

The District hopes to accomplish the following objectives over a term of years, as the work of the District progresses:

1. To secure the adoption of such farming methods and soil conservation practices as are necessary to prevent serious loss of the soil by erosion.

2. To increase the productiveness of land which has deficient drainage by the improvement of existing drainage enterprises, and by the installation of additional drainage facilities, where feasible and economically sound.

3. In many instances land is being used for the production of crops, which should be maintained in either meadow or pasture if very serious erosion is to be avoided. The District expects to encourage such adjustments in land use as are necessary in order that each acre of land is making a maximum return, consistent with the maintenance and improvement of the soil resources of the county.

4. To secure such adjustments in the livestock enterprises as is necessary to efficiently utilize the roughage produced under the conservation program.

5. To build up the productive capacity of the cropland by means of good rotations, soil treatments and other soil management practices. And to increase the production of permanent pastures by renovation, including the use of limestone, fertilizer and legume seedings, and good grazing management.

The District Commissioners believe that the accomplishment of these long time objectives will result in an increase in the average farm income, the elimination of serious soil losses, and the building up of soil fertility in the District; all of which will contribute to a profitable and stable agriculture.

This program will be revised as the need arises.

Lee County Soil Conservation District

By /s/ Ben Foecke
Chairman
Lee County Soil Conservation District

Date January 24, 1945

The signing of this program was authorized by a resolution of the Lee County Soil Conservation Commissioners adopted at a meeting held on January 24, 1945 .
(Date)

Signed /s/ Delbert T. Foster
Secretary
Lee County Soil Conservation District