



Terraced waterways pay off. This one shows the discharge of water following a flash rain. Notice how it retards and spreads the water over a wide area. Little washing here.

### Cass Countians Are Aware Of Flood Damage

Everyone in Cass County is aware of the damage being caused by floods to crops, buildings, and bottomland.

The question is often asked, "How can this flooding be reduced or eliminated?" The answer lies in soil conservation and co-operation. Each acre of land on an entire watershed must contribute to the holding back of as much water as possible where it falls.

This can be accomplished by the construction of a broad-based field terraces with grassed terrace outlets and waterways as the foundation, but many supporting practices are necessary. These include contour farming, contour strip cropping, the permanent seeding down of certain areas to trees or grasses which are too steep to farm, better management of pasture land to maintain at least a 4-inch cover of grass at all times, the construction of reservoirs or stock water dams, rotation of cropland and the inclusion of grass-legume mixtures in the rotation, field diversions, and of extreme importance, the judicious planting of erosive crops which exceed the capability of the land where they are grown. We must reckon with the simple honest fact that "All hill land is not corn land."

We might visualize the problem involved if we consider the main drainage stream as the small end of a large funnel with the wide open top as the many acres of land contained in the drainage basin. These large drainage areas or basins collect the water which the soil will not absorb from many acres of hill land and funnel it some times with rapidly down into the main creeks or streams which easily become swollen.

The severity and extent of floods is dependent upon many factors. These include the size of the watershed, the past and present farming methods on the farmland, the type of crops or cover growing there, the type of soil, the degree of erosion, the steepness of land involved, and the condition of the main streams and its capacity.

Solution of a flood problem is generally very complex. The land which comprises the watershed is generally divided into many farms with many owners. Cooperation of all is essential to the successful solution of the problem. This is rarely obtainable. The degree of interest of individual farmers has always been consistent with their location on the watershed with those to the bottom of the "funnel" the most concerned.

able bulch farming, with grassed waterways, and all the other appurtenances of soil conservation farming.

**FILLS DITCH WITH NEIGHBOR'S SOIL** watching his neighbor just below him sodding down a grass waterway.

The neighbor put in a diversion terrace above it to keep the water off until he got it established. In building the terrace he dug a hole above it about five feet deep to get dirt for a fill.

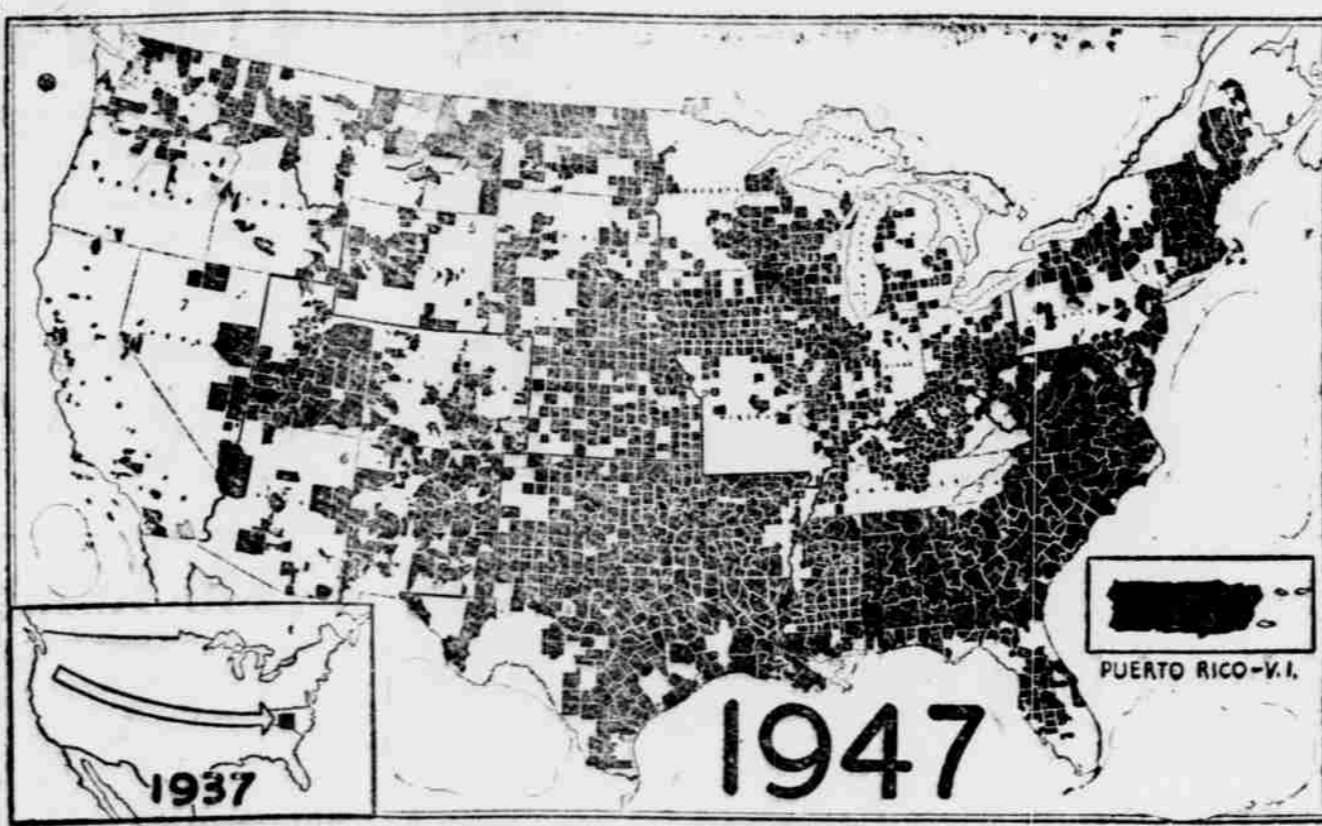
"How are you going to farm that hole?" the man up above inquired. "I'm not," the farmer replied. "I'll fill it up."

"Where are you going to get the dirt?" "Off your land," the farmer sneered. He remarked that it would take years for a hole that size to fill up with silt from drainage water.

**Contrast Proves Value Of Soil Practices**  
LINCOLN—The contrast between a field across the road and that of A. H. Jorgensen, Farnam, proves the value of soil conservation. The field across the road had a complete crop failure in 1946. The Frontier county farmer reports a 25 bushel per acre yield from his corn this year. Both fields were planted at the same time and had about the same care. The field which failed to produce a crop had been planted in straight rows up and down the slopes for the last 40 years. The other field has been terraced and contour farmed for seven years.

We think of our land and water and human resources not as static and sterile possessions but as life-giving assets to be directed by wise provision for future days. We seek to use our natural resources not as a thing apart but as something that is interwoven with industry, labor, finance, taxation, agriculture, homes, recreation, good citizenship. The results of this interweaving will have a greater influence on the future American standard of living than all the rest of our economic pie put together.—Franklin D. Roosevelt.

### SOIL CONSERVATION DISTRICTS BIRTHDAY



On the 10th anniversary of the first farmer-voted and farmer-managed soil conservation district—organized Aug. 4, 1937—there were a billion acres and 4 1/2 million United States farms in 1,900 districts. The first district established under state soil conservation district enabling law was the Brown Creek District in Anson County, North Carolina (Inset).

### History of Soil Conservation By Uni. of Nebr.

Growth in only a decade from a single soil conservation district of a few hundred thousand acres to a lusty group of more than 1900 including more than a billion acres will be celebrated by soil conservation districts throughout the United States and Puerto Rico, August 4, the tenth anniversary of the first district's organization.

These farmer-voted and farmer-managed units of state government cover all or parts of every state in the Union and Puerto Rico. Their billion-plus acres include nearly 60 per cent of the nation's farm land, more than half of its total land area, and three-fourths of its farms and ranches.

First to be organized by the farmers was the Brown Creek soil conservation district in Anson County, North Carolina, on August 4, 1937. It preceded by a year the first in Nebraska, which was the Papio soil conservation district in Washington County, voted in December, 1938.

Today, Nebraska has 82 soil conservation districts which include 41,035,000 acres.

The unit that pushed the total acres past the billion mark was the 1,172,000-acre San Juan soil conservation district in Colorado, which was organized this summer. Helping along in the last part of the growth of the district's total to the billion-acre mark, however, was the addition of nearly a million acres to the White River soil conservation district in Nebraska.

The anniversary brought a congratulatory letter from Secretary of Agriculture Clinton P. Anderson to C. E. McArthur of Gaffney, S. C., president of the National Association of Soil Conservation districts, in which he wrote, "the conservation being accomplished by farmers within soil conservation districts is one of the most promising assurances we could have of the permanency of American agriculture."

Dr. H. H. Bennett, chief of the Soil Conservation Service, which makes virtually all of its technical and other assistance available to districts, said: "This action by American farmers marks the beginning of a movement that can insure the permanency of our nation. It provides for the permanent security of a basic resource of our nation—productive soil—without which it cannot survive."

Records of the Soil Conservation Service show that its technicians aiding the soil conservation districts have helped more than half a million farmers and ranchers to develop complete soil and water conservation plans for their lands. The plans are based

### Contour Plowing Has Increased Farm Income

The public has an interest in the long-time conservation of the nation's resources. The farmer is also interested in this phase of the conservation program, but he is more particularly interested in the immediate results of a conservation program as measured by increased crop yields or greater net income. The investigations of the Research Division of the Soil Conservation Service in cooperation with the State Agricultural Experiment Stations, show that soil conservation, as practiced by the Soil Conservation Service, is meeting both of these interests.

The aim of this discussion is to point out how contour cultivation, one of the major practices recommended by the Soil Conservation Service, contributes to this end. Contour cultivation, when properly carried out is one of the most effective erosion control measures for cultivated crop land thus far used. It is effective from the standpoint of increasing crop yields, reducing runoff, and in preventing erosion losses. Like other conservation measures, it has its limitations and maximum results may be expected only when used in conjunction with other good farming practices. In most of Cass county contour cultivation should be supplemented with terracing and strip cropping is highly desirable. Grassed waterways are necessary to protect the field against needless gully-

### REA Service Extended To 600 Homes

Nebraska still has 71,306 farms without electric service, according to a report just sent by REA to the Eastern Nebraska Public Power District of Syracuse, Nebraska, President T. E. Wheeler of Nemaha announced.

About 2,500,000 of the nation's farms still do not have service, according to the figures received by Pres. Wheeler. Great progress has been made, however, during the past 12 years, when the percentage of farms with electricity increased from 10.9 in 1935 to 57.4 as of the first of this year. In Nebraska, the figure has risen from 7.1 per cent in 1935 to 36.1 per cent now, Mr. Wheeler said.

The Eastern Nebraska Public Power District has plans for extending service to 600 rural consumers within the district, most of them farms, within the next few months, Mr. Wheeler reported, and eventually it expects to add 5000 other consumers, bringing electric service to everyone in the district who wants it. Mr. Wheeler reported that the district, organized in 1935 and financed with loans from the Rural Electrification Administration, now has 2100 miles of line serving 4500 consumers in Saunders, Cass, Otoe, Nemaha, Johnson, Richardson and Pawnee counties.

"Our construction program has gone ahead much slower than we had expected," Mr. Wheeler said. "Nevertheless, we added 275 families to our lines during the past 12 months. We are building new lines just as fast as we can accumulate materials, men and money necessary to do the work and so long as any rural family in this area cannot have electricity, our construction program cannot be considered finished. A year ago we had about 1500 applicants for service, and now we have 1600."

With reference to this large

### Contour Plowing Has Increased Farm Income

Factor, such as soil type and soil condition, amount, and intensity of rainfall, the length, irregularity and steepness of slope, all modify the effectiveness of contour cultivation. Contour cultivation may be sufficient during periods of heavy rainfall for the orderly disposal of surplus water, and during the drier growing season for the conservation of moisture. It is in those areas where contour cultivation serves this double function that appropriate supporting measures are essential for maximum results. One of the most important means for evaluating any cultural practice is to examine the crop yields resulting from the use of the practice. The availability of data on this subject have been brought together and are presented here. Only such data as will permit a direct comparison of the effects of contour cultivation with other practices are included. Table 1 shows such a comparison on corn fields. Yields produced on the contoured fields were significantly higher than those produced on fields cultivated up and down the slope. In Illinois the weighted average increase was more than seven bushels per acre, while in a number

### Cass County Farms Have Built 520 Miles Broadbased Terraces



This picture shows newly-built terraces on a sloping field. They were built with a plow. They are broad-based and gentle-sloped so that they do not interfere with farming operations.—Photo by Soil Conservation Service.

According to E. Thomas Stacey, soil conservationist, Cass County farmers have built approximately 520 miles of broad-based gradient field terraces to date. This is but a start on the 10,000 miles that are urgently needed to protect the rich farm land of the district. Terraces are the foundation practice upon which soil conservation rests. With the increased emphasis and high priority that is being placed on them in the Cass Soil Conservation District program, a world of caution may be needed.

1. Terraces can be destroyed by inter-terrace erosion due to improper farming methods. Rotation and the use of grasses and legumes are needed.  
2. Terraces alone do not give sufficient protection against hard rains. Contour cultivation and other soil conservation practices are needed.  
3. Rilling and sheet erosion between terraces is sometimes rather severe especially when in row crop.  
4. Terraces are not designed for sedimentation traps, but often have to act as such.  
5. This sedimentation often interferes with the normal function of a terrace which is an orderly disposal of surplus water.  
6. Terrace maintenance may alleviate the problem temporarily but it will re-occur unless proper cropping practices are used.  
7. The reduction insulating can only be effected by proper cropping practice.  
Stacey points out that most soil erosion is caused by a few rains of excessive intensity. The Soil Conservation Service has developed a safe range within which excellent results may be obtained from the use of field terraces. However, the services of a trained soil conservationist is needed to perform the layout to get the maximum results from the application of the practice.

of other states the increase was even higher. Many of these results were obtained under actual field conditions and represent about what may reasonably be expected under general farm conditions in areas under similar conditions.

Table 1—1939-1945  
Corn (Bushels) Per Acre

	**	***
Urbana, Ill.	91.5	89.1
Clarinda, Iowa	73.8	69.6
Hastings, Neb.	45.0	26.8

\*—Contoured; \*\*—non-contoured; \*\*\*No. of fields.

Increase due to contouring ranged from 2.5 per cent to 56.3 per cent, with the average about 11 per cent.

### SEEDING WATERWAYS IS FIRST STEP

The first step in establishing soil conservation practices on farms is the establishment of grassed waterways, writes E. Thomas Stacey, work unit conservationist. These waterways are the natural drainageways on the farm where water accumulates and runs off. These waterways are used to carry the surplus water after terraces are built. Before seeding is done, it is necessary that these waterways be plowed in and leveled off. A waterway should be a minimum of 40 feet wide. Larger waterways should be wider, and they should be level. After leveling, the waterway should be thoroughly packed and then seeded down. Bromegrass is recommended for seeding at a rate of from 20 to 30 pounds of viable seed per acre. Stacey says. Further information on grassing down waterways and other soil conservation practices can be obtained through the county agricultural agent's office or the soil conservation service district office.



Sterling Ingwerson, farmer, northwest of Plattsmouth, is shown standing on the farm that has been selected as having outstanding soil conservation program. Mr. Ingwerson has been chosen to represent this district in the World-Herald Soil Conservation contest.

### Youth of County Take Deep Interest in Conservation

LINCOLN—One of the growing interests of Nebraska 4-H Club members is soil conservation. Where only two years ago there was a single soil conservation club or two in the state, today there are a score, representing all parts of the state. The 4-H soil conservation clubs in southeast Nebraska are particularly flourishing.

One of the oldest, if not the oldest, 4-H clubs specializing in soil conservation is the Modern Farmers of Gage county. Lancaster county has its soil conservation club; Otoe county two clubs—the Soil Savers and the other unnamed. The Junior Soil Savers are the club for Pawnee county, and in Richardson county, the conservation conscious 4-H members call themselves the Soil Managers.

The purpose of the 4-H conservation clubs are to learn to know the value of the soil, to learn how to successfully conserve soil, and to prevent soil wastage and deterioration on their home farms.

One of the projects of the club members is that of drawing their home farm as it is, showing the use of the fields, previous crop rotations, where wind and water erosion occur, showing contours and slopes, streams and the farmstead. With this done, the club members then are urged to make a map of the farm as it should be, suggesting what land should be cropped and what pastured, where windbreaks should be, where grassed waterways placed showing contours and terrace needs, and in general laying out a complete farm program built around soil conservation.

With these before and after maps completed the member is required to carry out at least three approved soil conservation practices; and is urged to do as many more as possible. Other activities of soil conservation club members include taking part in demonstrations of good soil practices and encouraging their elders to adopt soil conservation methods.

Other than the rewards in personal satisfaction and achievement, the club members also have an opportunity to participate in county, state, section and national awards for outstanding club work well done. Any 4-H club member regardless of whether or not he is a soil conservation club member, is eligible to compete for these awards, the top of which are eight \$200 scholarships given to eight national winners. Sectional winners receive trips to National 4-H Club Congress in Chicago each December. Six state winners receive \$50 U.S. Savings Bonds; and county winners are awarded gold-filled medals of honor.



Take a badly washed gully eating out your acres and grade it to sloping sides and seed it to grass—the above photo shows what can be done with a little time and effort. A before and after panorama photographed by Soil Conservation Photo Service.