

SOIL CONSERVATION AS A MODEL FOR
MANAGING CHANGE IN RURAL LANDSCAPES

by

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Chapter 1

Introduction

Americans have always had a keen interest in their cultural heritage. Links to history have been sought on many levels, from personal to national, through select organizations, such as Daughters of the American Revolution, and visits to national historic sites, such as Mt. Vernon. These concepts of cultural heritage and artifacts were oriented toward museum display and protection. There was little concern for the ordinary cultural resources, those which contribute to the landscape of everyday living.

During the late 1960's and early 1970's attitudes began to change. The interest in cultural heritage began to include not only the artifact but its environment as well. Government legislation protected buildings and open landscapes so that any changes in the surroundings would not adversely affect the site. Controlling change became almost as important as the artifact itself. Gradually protection was gained for national and state historic and cultural resources. Attention turned to less conspicuous examples of cultural heritage; urban and rural landscapes which were representative of a particular lifestyle. These resources differed from those of national and state importance because their protection could not separate them from their vitality. Wrapped up in the complex of social, political and economic forces of everyday life, these resources could change with little or no control.

Statement of the Problem

The purpose of this study involves an analysis of soil conservation programs as a model for controlling change of cultural resources found on

the rural landscape. Soil conservation deals primarily with control of mans utilization of natural resources. To expand this conservation process to include cultural resources would be contrary to traditional soil conservation objectives. However, the separation of natural and cultural resources is an inappropriate way to address the management of change in rural areas. The inherent qualities of cultural resources are based on their interrelationship with the surrounding landscapes. This is not to suggest that soil conservation programs be revamped. The soil conservation process is one which has been successfully implemented. It is very specific in its objectives and goals. It has been an effective tool for managing change in the rural landscape. Learning its strengths and weaknesses may help establish a cultural resource management program in the rural landscape.

A study of the process of change must begin with the early formation of the present cultural landscape. It is important to realize how the undisturbed landscape affected early settlement because this information provides clues to the true carrying capacity of the landscape. Successful settlement can utilize the land to its full capability. Then there is a gradual retreat to a balance between natural and cultural forces. When soil conservation was becoming an important aspect of agriculture, natural forces were getting out of control. Soil conservation provided stability to certain characteristics of the rural landscape. By gradually changing the utilization of land the natural-cultural forces were brought to an even balance. Changes in cultural forces has caused uncontrolled changes in cultural resources. Some rural landscapes have been irreversibly altered while others are in a state of flux. Concern for controlling these changes should address them as part of a process which can be improved by enlightened and sympathetic control.¹

¹See Robert Z. Melnick, "Landscapes of Memory and Landscapes of the Future," paper presented to the annual meeting of the American Association of Geographers, San Antonio, TX, 1981.

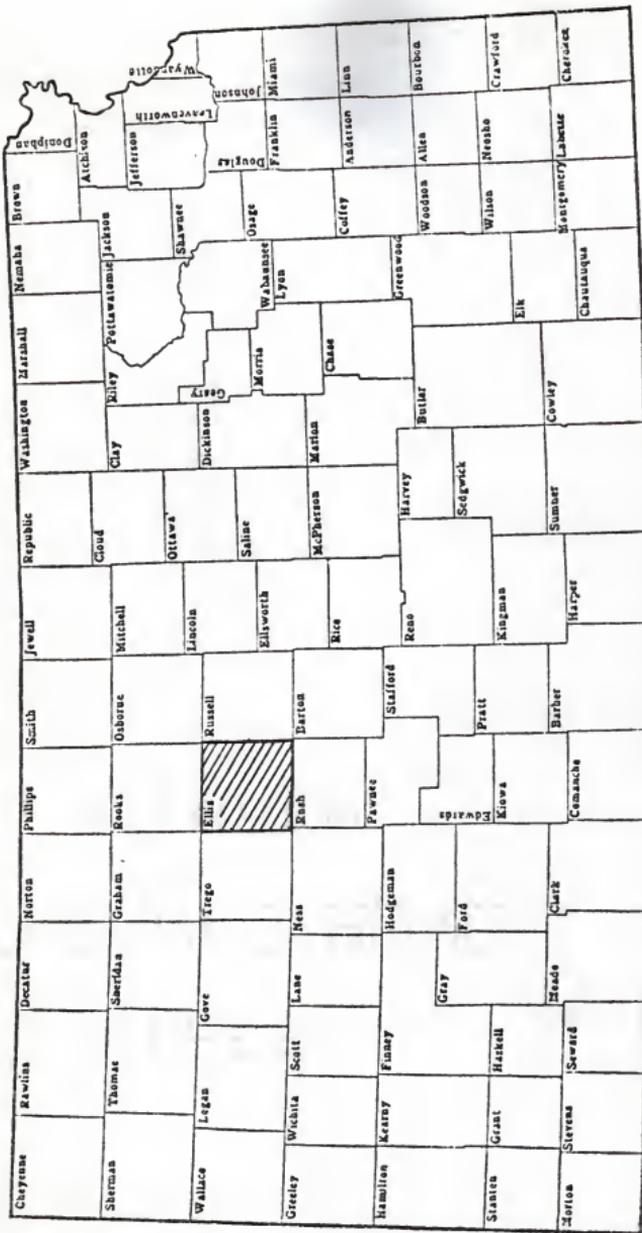
Ellis County, Kansas was chosen as study area because it is representative of a rural landscape in the early stages of major cultural change. Located in north central Kansas it is near the center of the American Great Plains (see Map 1). The majority of this region was settled in 1875-1925. In Ellis County the most successful settlement group were German-Russian emigrants. They attempted to reestablish their culture and customs on the Kansas rural landscape. As they became assimilated their culture blended with American influences. The rural landscape of Ellis County is evidence of this mix. Land ownership reflects original patterns even though ownership is shared by third and fourth generation descendants. If land ownership changes, due to disinterested or discouraged relatives selling the land, many of the existing cultural resources could be destroyed.

Cultural resources found on the rural landscape represent the rich historical record of human activity. They are expressions of the "relationship between human influences and the natural landscape."² These resources exemplify the ingenuity and vernacular innovation of their builders, as well as the many "decisions regarding function, building and ethnic traditions, materials, costs, and such environmental factors as topography, access, microclimate, and sources of water."³ As agriculture has become mechanized and technological it has become more homogenous. Regional characteristics become blurred by the monotony of prefabricated materials and structures. If no action is taken to conserve rural cultural resources, the heritage they represent will be irretrievably lost. Managing change in

²Robert Z. Melnick, "Capturing the Cultural Landscape" Landscape Architecture, 71:1 (January 1981), p. 57.

³William H. Tishler, "The Role of Historic Preservation in Tomorrow's Rural Landscape" in New Directions in Rural Preservation, Robert E. Stipe, ed. (U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1980) p. 27.

KANSAS



SOURCE: USDA - SOIL CONSERVATION SERVICE

LOCATION MAP ELLIS COUNTY, KANSAS

MAP 1

these resources will enable rural landscapes to become better and more meaningful physical environments.

Literature Dealing with Change in the Landscape

In the early 1950's a periodical entitled Landscape came into publication. Beginning with some of its earliest articles the central theme of the journal focused on changing landscapes in rural and urban regions. Articles were accepted from a broad range of topics. Most of these articles were observations of the process of change in the landscape or change of a particular landscape characteristic. Seldom was there any solution offered for controlling the observed change. The journal continues to serve as an open forum for information about otherwise ordinary aspects of the landscape.⁴

Geographic journals are another source of information about changing landscapes.⁵ By the nature of geographic study, the articles in these journals focused on specific regions. These regions are defined by a variety of boundaries, some fixed, some arbitrary. In any case, the emphasis on specific locations indicates that intense study of defined landscapes can provide valuable information about problems and solutions encountered in the rural landscape. These study areas are ordinary landscapes. Each has its own history and unique cultural characteristics.

Of the references cited herein, four were particularly influential on this thesis.⁶ Lowenthal (1977) points out that Americans view their

⁴Articles from Landscape have been included in other volumes regarding change in the landscape. See: Ervin H. Zube and Margaret J. Zube, eds., Changing Rural Landscapes. (Amherst: The University of Massachusetts Press, 1977); Ervin H. Zube, Landscapes: Selected Writings of J.B. Jackson. (Amherst: 1970); and D.W. Meinig, The Interpretation of Ordinary Landscapes (New York: Oxford University Press, 1979).

⁵See Geographical Review, Annals of the American Association of Geographers, and Journal of Geography.

⁶See the list of references under Landscape Preservation.

past history in a variety of ways. These images are often inaccurate yet serve the current needs for 'history.' The past needs to be clearly and honestly represented in present-day landscapes so that future landscapes "...reflect a concern with continuity, rather than nostalgic yearning..." The implication being that public education could enable citizens to make appropriate decisions regarding historic and cultural resources. In this way ordinary landscapes could be used as indicators for development of future landscapes.

Landscape development and landscape preservation are considered, by many persons, to be incompatible ideas. Stea (1975) explains that this does not have to be the case. Once cultural resources are identified and their purpose in present-day and future landscapes is defined the relationship between preservation and development can be harmonious. For this relationship to be feasible the planning process must allow community involvement in resource identification and program definition. Frondorf, et al. (1980) state that the importance of cultural resources is often described subjectively. In many situations this is the only way that the intrinsic value of the resource can be measured. Expression of human values through community input is critical when analyzing cultural resources of local significance. Cultural resource conservation and planning which is based on community involvement and support could result in more meaningful landscapes in the future. Finally, Melnick (1981) contends that landscape preservation should respond to the inherent process of change rather than "...the 'bell jar' theory of historic preservation on a large scale..." This provides an appropriate means for utilizing cultural resources in the development of future landscapes. In this way locally significant resources would become part of a community-based process for managing change in the landscape.

Soil conservation literature consulted for this paper has been selected from numerous texts regarding the historical and political analysis of the programs and policies of the Soil Conservation Service. Information about early U.S. Department of Agriculture soil erosion control projects can be found in Harding (1947) and Simms (1970). Soil conservation district operations at the national level were studied by Morgan (1965), Held and Clawson (1965), and Hardin (1952). District operations in Kansas were studied by Tomlinson (1968).

Information about Ellis County, Kansas came primarily from local sources. The Ethnic Studies Library within Forsyth Library, Fort Hays State University, proved to be invaluable to this research, particularly the bibliographic work of Burkey (1979), and Petersen's (1970) dissertation on the German-Russians.

Sources of Data

Data of a primary nature has been obtained from two principal sources. First, information regarding the cultural landscape of Ellis County was gathered from the Register of Deeds, Ellis County Courthouse, Hays, Kansas. These included record books, plat maps, and ownership maps. Second, information concerning local district organization and program implementation was obtained from soil conservation district annual reports, work plans, long range programs and aerial photographs. This information was obtained at the Soil Conservation Service field office at Hays, Kansas.

Chapter 2

Evolution of the Cultural Landscape of Ellis County 1866-1938

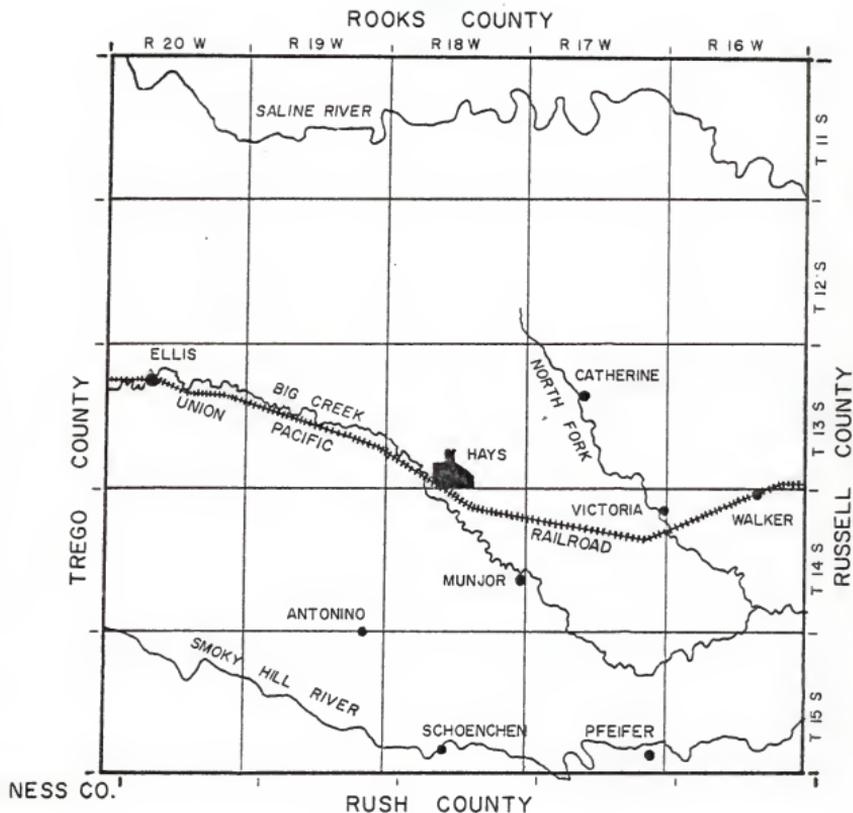
Several factors contributed to development of the cultural landscape of Ellis County. First, the general topography is that of a flat, gently rolling plain. Land adjacent to the larger streams is characterized by steep bluffs and low hills. Second, Ellis County lies in a semi-arid region. Average annual rainfall is less than twenty-three inches and temperatures usually vary greatly from winter to summer. The rectangular land division system of the Federal government imposed a square mile grid pattern on the landscape. This influenced settlement patterns and other landscape patterns within the gridwork.

Landscape of Ellis County - 1866

Ellis County encompasses 900 square miles of land (see Map 2) with an elevation of approximately 2,050. Within the Smoky Hill drainage basin, county lands slope from west to east. Three streams cross the county; the Saline River through the northern part, Big Creek through the center, and the Smoky Hill River through the southern part. They were described in surveyor's notes as having a constant flow of clear, clean water.¹

Big Creek, a tributary of the Smoky Hill River, divides the county into approximately two topographical areas with similar characteristics. The lands between Big Creek and the Saline River are rough, broken hills and in places limestone bluffs occur in the west (see Figure 1). These hills gradually merge into a gentle rolling plain toward the eastern boundary of the county. (see Figure 2). Along both banks of the Saline

¹Examples of surveyors notes are given later in this chapter.

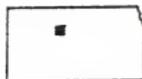


TOWNSHIP PLAT
ELLIS COUNTY, KANSAS



5 miles

MAP 2



KANSAS



Source: USDA - Soil Conservation Service

FIGURE 1

Rangeland in Ellis County, Kansas is characterized by steep bluffs and low hills. The sod is patchy and broken due to the underlying shale formation which does not allow water percollation.



Source: Ellis County Historical Society, Volga-German Centennial Collection, C-79

FIGURE 2

Agricultural land in Ellis County, Kansas, is relatively flat with low, rolling hills. German-Russian family shown here is harvesting wheat with horse-drawn cutter.

River limestone bluffs rise above rich bottom land along the river side. South of Big Creek the land is also rough hills and bluffs. Near the south center of the county these bluffs end abruptly and a level plain extends eastward a few miles then the hills and bluffs rise again at the southeast corner of the county.

Geologic materials include limestone, shale, loess and alluvial soils. Dakota sandstone, of the Mesozoic Era, is the oldest geologic formation and outcrops in the southeastern corner of the county along the Smoky Hill River.² Outcropping limestone and shale formations are found in nearly all sections of the county. Loess soils are located primarily in the southeast quarter of the county. Alluvial soils are found along the Saline River, Smoky Hill River, and Big Creek. Soils are grouped into seven general soil associations. Each is well-drained and is comprised of silty clay loam on the flood plains and silty clay subsoil and loam on the uplands.

Native vegetation within the county includes short and medium grasses on the rangeland, with trees and shrubs along the stream banks. The dominant grass species are little bluestem, side oats gramma, sand dropseed, blue gramma and buffalo grass. On wetter sites, big bluestem, switchgrass and Indian grass may occur. Trees were plentiful along waterways, both dry and flowing. Elm, Ash, Box Elder and Cottonwood are the major species found throughout the county. Other species, including Sycamore and Willow, are present.

Climate has a great influence on vegetation and appearance of any landscape. Characteristics of low rainfall and high evaporation are unfavorable to many plants. Cumulative statistics are usually given as an

²Daniel F. Merriam, The Geologic History of Kansas (Lawrence, KS: University of Kansas Publications, 1963; reprinted edition, 1975), 34, 35, 56-59.

average or normal. Weather data for Ellis County shows a wide variation in rainfall, temperature and wind conditions.³ Climatic cycles for the Great Plains Region are typified by two or three years of mild temperatures and moderate rainfall followed by two or three years of high temperatures and low rainfall. These characteristics limit vegetation to species which are drought and heat tolerant.

Rectangular Land Division System

The cultural characteristics of the rural landscape of Ellis County are dominated by the rectangular land division system which is in use throughout much of the Great Plains Region. Disposal of public land, establishing boundaries of new states, survey of public lands was addressed by the Continental Congress in the Ordinances of 1784 and 1785.⁴ The Ordinance of 1784 proposed boundaries for future states, within the Western Territory, along specific meridians and parallels. Since these lands west of the existing states and east of the Mississippi and Missouri rivers had not been thoroughly surveyed, the Congress sought to clarify the survey of government lands with the Ordinance of 1785. The order stipulated that lands would be surveyed in townships of 6 miles square, containing 36 sections of 640 acres each. All survey lines were to be run along true meridians with all intersecting lines at right angles. The section numbering system varied, with specific sections being reserved by the United States for unstated purposes and one section was to be school land. Alternate sections were to remain whole, while others were subdivided.

³Theodore Rosenof, Cultural Sensitivity to Environmental Change: The Case of Ellis County, Kansas, 1970's - 1900 (Madison: University of Wisconsin, The Institute for Environmental Studies, 1973). Rosenof analyzes the impact of local climate upon the German-Russian settlement group.

⁴Hildegard Binder Johnson, Order Upon the Land (New York: Oxford University Press, 1976), pp. 40-82. Much of the information in Johnson's work is condensed here to provide background regarding the rectangular division of land in rural Ellis County.

The Land Act of 1796 retained most of the features of the Ordinance of 1785 and was more specific about the method of survey. The second numbering system was fixed so that the first section was in the northeast corner of the township and proceeding west and east alternately through the township. Surveyors were instructed to make accurate notes in field books regarding the quality of land, location of water courses, mines, natural springs, roads, buildings; any physical feature encountered during the survey. Survey errors were to remain uncorrected. Original errors were to be measured carefully but no boundary changes would result from these errors.

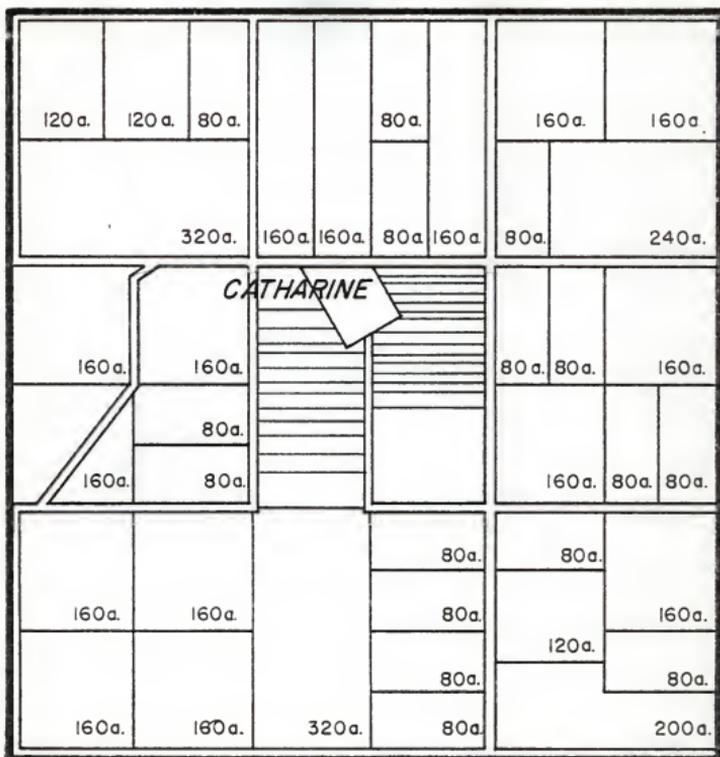
The problem of converging meridian lines was dealt with in 1804. The Surveyor General ordered that a true principal meridian and a baseline be laid out as coordinates at an arbitrarily selected point, from which townships were to be measured and counted. The principal meridian and baseline was changed as the land survey progressed westward.⁵ This allowed the establishment of east-west correction lines at specific intervals, along which true north township lines could be offset against township lines from the south, thus correcting the shape and size of townships.⁶

Subsequent legislation provided for sale of smaller parcels of land and reduced the minimum price for land. With each reduction in the acreage offered for sale, the north-south orientation of the system was emphasized (see Map 3). The government offered forty-acre tracts for sale beginning in 1832. In an effort to curb abuses resulting from the disposal of public land, Congress passed the Pre-emption Act of 1841 and the Homestead Act of 1862.⁷

⁵Ibid., p. 75. Johnson has a Federal Land Survey System map showing principal meridians and baselines.

⁶The south boundary of Ellis County is a correction line. The range lines of Rush County are offset from those in Ellis County.

⁷A more complete description of these Acts follows.



SOURCE: STANDARD ATLAS OF ELLIS COUNTY, KANSAS (1922)

A SELECTED PORTION OF THE 1922 ELLIS COUNTY TOWNSHIP PLAT

MAP 3



This township plat illustrates the variety of ways that individual sections of land were divided in Ellis County.

Public Lands in Ellis County 1866

The Federal government commenced the survey of public lands which would become Ellis County in the winter of 1866-1867.⁸ Townships, six miles square, were surveyed and staked at this time. Sections within the townships were surveyed and staked in the summer of 1867. Descriptions of the townships were recorded with plat maps and field notes. Though brief and somewhat promotional, these notes offer relatively accurate descriptions of the landscape, as the following examples indicate:

General description, Township 13 South, Range 19 West, 6th Principal Meridian:

The land in this Township is considerably above the common average. With the exception of secs. 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36, it will compare favorably for good farming lands. The land bordering on Big Creek is 1st rate and susceptible to irrigation from the Creek. There is good inducements to those who wish to improve a farm, as it lays near Fort Hays and Rome.

Big Creek flows through secs. 16, 17, 18, 20, 21, 22, 23 and 24, affording a fine supply of good clear, pure water and abundance of wood.

Several very fine springs were found along the Creek. Abundance of very fine building stone (soft white limestone) is found on secs. 31, 32, 33, 34, 35 and 36. The Union Pacific Railway, Eastern Division threads its way along the south bank of Big Creek, from the East to West Boundary of the Township.

General Description, Township 14 South, Range 19 West, 6th Principal Meridian:

The land in this Township is poor throughout, being 2nd rate. It is poorly watered and affords no timber whatever.

Some stone (lime) abounds in secs 1, 2, 3, 4, 10, 11 and 12, a very fine quarry is opened in sec. 1. The overland Mail route and United States Express, run through the lower tier of sections.

Lookout Station is situated in the N.E. Quarter of sec. 36. A wagon road leads from the station to Fort Hays, distance, 6 miles.

⁸U.S. Department of the Interior, General Land Office, "Township plats and field notes" (photocopies made in 1952 by U.S. Department of the Interior, Bureau of Land Management; n.d.

Included: T 13 S, R 18 W, 6 PM; T 14 S, R 18 W, 6 PM; T 13 S, R 19 W, 6 PM; T 14 S, R 19 W, 6 PM; T 14 S, R 17 W, 6 PM; T 14 S, R 15 W, 6 PM.

General description S. boundary Township 13 South, Range 17 West,
6th Principal Meridian:

This township is all high gently rolling Prairie, except the S.W. and N.E. corner. Big Creek runs through the S.W. and the North Fork of Big Creek through the N.E. corner, either of which has some good timber and bottom bordering on each side.

Timber consists of Elm, Ash, Box Elder and Cottonwood. Stone scarce, none observed except along the North side consisting principally of Limestone.

The township is well adapted to cultivation or grazing.

The township plat maps, prepared with their field notes, show the location of streams, ravines, roads, railways, and the general location of structures and settlements.

In 1873 government lands in Kansas were available by several means: The Pre-emption Act of 1841, The Homestead Act of 1862, The Timber-Culture Act of 1873.⁹ Each provided that 160 acres of public land could be obtained by any citizen 21 years or older who settled or made improvement on the land. There were specific rules for filing claim, time periods of residence and improvement of the land, and proof of the same. The purpose of these Acts was to provide public land to actual settlers rather than to land speculators. In Ellis County, acquisition of government land was achieved primarily through The Homestead Act. Most of the claims filed under The Timber-Culture Act were completed. However, the use of wood lot lands has subsequently changed.

Early Settlements in Ellis County, 1866-1885

Settlement of Ellis County did not begin in earnest until the late 1870's with the arrival of the German-Russian settlers.¹⁰ Prior to this

⁹Kansas State Board of Agriculture, 1873 Annual Report (Topeka: Kansas State Printer, 1874), pp. 156-163, "How to Obtain Government Lands."

¹⁰There is an abundance of literature regarding the early settlements of Ellis County. Some of the works are very colorful while others are as accurate as existing records permit. Among those referred to here are:

time the southern portion of the county was utilized as part of the Smoky Hill Trail, a track and travel route between Kansas City and Denver. The route had limited use due to the Indian activity in the vicinity. In 1866 the establishment of Fort Hays near the center of the county and the east-west route of the Kansas Pacific Railway nearby provided assurance to travelers and settlers that this area was relatively safe for settlement.¹¹

The location of the fort and railroad led to the establishment of the town of Hays in 1867, north of the fort. Most of the inhabitants were business oriented and served as a support community for the fort. Besides the land speculators, few persons ventured outside the town for settlement or farming. Groups from New York, Pennsylvania and Ohio attempted settlements east and west of Hays in 1873 and 1874. The harsh climate, problems establishing crops and insect problems discouraged settlers and caused many to leave.

Martin Allen, "A Brief Historical Sketch of Ellis County, up to the Close of the Centennial Year" (corrected by L.D. Wooster, August 3, 1959, from newspaper article in the Hays Sentinel of January 18, 1878) (Typewritten);

Fred C. Cook, "Settlement and Economic Development in Early Hays City and Ellis County: 1867-1880," Fort Hays Kansas State College, Hays, KS, 1972) (Typewritten);

"Ellis County, Kansas - History: A Bibliography," Materials available in Forsyth Library, Fort Hays Kansas State College, Hays, KS, 1955 (Typewritten);

James L. Forsythe. "Environmental Considerations in the Settlement of Ellis County, Kansas," (Agricultural History, 51:1, 38-50);

Old Settlers Association of Ellis County, Kansas, Historical and Biographical Sketches, Volume One, n.p., (1900);

Maureen Winter, ed., Indians to Industry (Hays, KS: The Ellis County Star, 1967).

¹¹Regarding Fort Hays see: Cecil Harold McVey, "Fort Hays, Kansas" (master's thesis, University of Colorado, 1951); and Leo E. Oliva, Fort Hays, Frontier Army Post, 1865-1899 (Topeka: Kansas State Historical Society, 1980). Regarding the Kansas Pacific Railway see: Leonard Wilson Thompson, "The History of Railway Development in Kansas," 2 Vols. (Ph.D. dissertation, State University of Iowa, 1942).

A large group of British settlers came to Ellis County beginning in the spring of 1873.¹² They had been lured to Kansas by George Grant, a British entrepreneur. Grant purchased many whole sections and partial sections of railroad land in an effort to establish many large estates owned by wealthy British.¹³ His efforts proved fruitful for a short time. The town of Victoria was founded and approximately fifty British settlers were part of the community from 1873-1878.

There were a variety of attempts at farming and grazing livestock. As is typical of local climate spring weather during this period was mild but the summers were hot and dry. Most crops flourished then failed, in part due to climate and the lack of farming experience of the British. Eventually there was a reduction of grain acreage and more emphasis on livestock production. As the plans of the British did not develop, a majority of the group became discouraged and left the area. By the 1880's only a handful of the original group remained.¹⁴

The largest and most successful settlement group came to Ellis County in 1876.¹⁵ The German Roman Catholics immigrated from the Volga region of Russia, where they had settled nearly a century before. They were a

¹²See Marjorie Gamet Raish, "Victoria: The Story of a Western Kansas Town," (master's thesis, Fort Hays Kansas State College, 1937), for one of the most complete descriptions of the British settlement.

¹³Grant contracted with the Kansas Pacific Railway Company in 1873, 1874, and 1877 to purchase a total of 48.75 sections of land. Most of these sections were south of Victoria and south of Hays. Ellis County Courthouse, Register of Deeds, Deed Record Books B, C, D, E, F, and G.

¹⁴The largest single land tract owned continuously by descendants of this group is the Philip Ranch, encompassing 6.25 sections southeast of Hays, on Big Creek.

¹⁵There is a large amount of reference materials regarding this group. Most of it was written by members of descendants of this group. An exception to these are the works of Albert Jepsen Petersen Jr., including "German-Russian Catholic Colonization in Western Kansas: A Settlement Geography," (Ph.D. dissertation, Louisiana State University, 1970), and "German-Russian Land Ownership Patterns in Ellis County, Kansas" (Typewritten).

parochial group, oriented towards their families, individual villages, and local churches. Having come from the semi-arid region of Russia they were accustomed to the climate and landscape they encountered on the Great Plains. As farmers they attempted to re-establish their land use patterns and farm cropping cycle. They assimilated their needs to the Kansas landscape by altering their cropping cycle, taking advantage of available farm land and produce. Wheat farming, a single crop, became characteristic of these farmers. They were considered to be very good farmers utilizing new seed varieties and new types of machinery.

The group of 1,200 German-Russians was comprised of emigrants from six separate villages on the Russian Volga steppes. Upon arrival in Ellis County the group divided and established six new villages: Liebenthal (in Rush County), Herzog (now Victoria), Catherine, Munjor, Pfeifer and Schoenchen. Choice of each village site was based upon three general criteria: (1) easy access to transportation; (2) a large expanse of arable land; and (3) the availability of a surface water supply. These criteria were easily met. The Kansas Pacific Railway bisected the county, so that any village site would be within reasonable distance of the railroad. In 1876 the county was not yet heavily populated and farm land was available from numerous sources. Several spring fed streams crossed the county and much of the land adjacent to the streams was unsold and unclaimed.

Each of the six villages was located along one or more section lines. The primary axis of street patterns was north-south, except Catherine which was relatively parallel to the stream west of the townsite (see Figures 3A and 3B). The village plats were a rectangular grid pattern with the village church centrally located. In each instance a full section of land was purchased for village site, cemetery site, and community pasture. As the



Source: USDA - Soil Conservation Service 1938 Aerial Photographs
 Section 16, Township 13 South, Range 17 West Ellis Co., KS

FIGURE 3A

The village of Catherine, KS and the German-Russian field patterns are shown in this photograph. The regular grid of the town plan relates to the angle of the stream bed. Long narrow fields ignore natural drainage patterns. This is one of the few locations of a half-section road within Ellis County.



Source: USDA - Soil Conservation Service 1980 Aerial Photographs
Section 16, Township 13 South, Range 17 West Ellis Co., KS

FIGURE 3B

The village of Catherine, KS and the German-Russian field patterns are still evident today. There has been some field consolidation with the narrow fields, contour farming in the southeast quarter section, and only a trace of the natural drainage pattern is visible in the northeast quarter section. Portions of the town grid plan have been abandoned.

settlers began to homestead other lands in the county the community pasture became obsolete and burdensome. By 1912 most of the common land had been subdivided into long narrow strips or sold as half or quarter sections to one of the settlers. The width of the strips varied from one settlement to another due to the number of settlers who were party to the subdivisions and the number of strips any one settler could acquire.

The subdivision of sections of land is not uncommon in Ellis County. Most sections are divided into quarters or eighths with the field orientation varying north-south or east-west. Only in the sections of land adjacent to the German-Russian settlements are the subdivisions as narrow as forty-four feet and as long as one-half mile (see Map 3). Orientation of these narrow strips is east-west in each case. Over time some of these strips have been consolidated into larger fields.

Landscape Patterns of Ellis County - 1938

By 1938 all open land within the county had been claimed. Field patterns were defined by rectilinear boundaries (property lines, roads, section lines) and topographic boundaries (stream beds, steep slopes, drainage ways).¹⁶ Machinery patterns on the fields were usually lengthwise. Work would begin at the field boundary and progress inward to the middle of the field. Often when a field was bounded by a topographic feature the pattern would reflect this edge. Tracts of land 1/8 to 1/4 section in size were sometimes subdivided into smaller fields. In most instances the machinery patterns ignored the natural drainage pattern. Range lands were located primarily on upland plateaus. Any land which had shallow soils or was too steeply sloped was left as range land. A majority of this type of

¹⁶Compiled from USDA - Soil Conservation Service, Aerial Photographs, 1938.

land is found adjacent to the Saline River flood plain in northern Ellis County.

Most county roads follow section lines and run straight north-south or east-west. Deviation from this pattern occurs due to topographic features such as steep slopes and stream beds. In some instances the topography was ignored and the section road was imposed on the landscape. U.S. Highway 40 follows the east-west route of the railroad. U.S. Highway 183 follows section lines and bisects the county north-south passing through Hays. Farm roads are short, straight and often follow field boundaries. Where necessary they follow the topography along stream banks, ridge lines, or at the foot of slopes.

Town sites are adjacent to streams, section roads and railroad. Orientation of city plats is primarily north-south. Towns which are divided by the railroad have a majority of their development north of the tracks or uphill from the stream bed. Villages are located on flood plains south of the streams. Antonino, an exception, is located at four section corners and along a ridge line.

Summary

By the early-1900's the cultural landscape pattern had been established. There was little impetus for change in the pattern until the drought and dust storms of the 1930's. The implementation of soil conservation led to little change in the grid pattern but substantial change to patterns within the grid.

Chapter 3

Soil Conservation: A Major Cause for Change in the Rural Landscape

The need for control of soil erosion was not a new idea in the 1930's. Soil erosion had been controlled for centuries in many countries by terraces of one type or another. European farmers utilized crop rotation and alternation to build fertility and protect the soil. These practices were not used on all fields and there was no comprehensive control.

Many colonists in America used cropland and grazing land until it was worn out. Then they moved elsewhere to new land and the process began again. There were American farmers who knew the solution to soil problems was not to move on. These farmers and scholars experimented with their fields, published their observations and attempted to educate their peers through agricultural societies and schools.¹ Some techniques, such as terracing, were utilized by more farmers at the beginning of the nineteenth century. However, the great majority of farmers and agricultural scientists viewed soil erosion as a problem limited to particular areas of the country. Gully erosion was considered more a nuisance to operation of farm machinery than an indication of soil loss. Sheet erosion was considered little more than muddy water running over the fields after a rain.

Soil erosion continued to be a problem on farm land in the eastern and southern states throughout the second half of the nineteenth century. The solution for many farmers was to move on to the western states and

¹D. Harper Simms, *Soil Conservation Service* (New York: Praeger Publishers, 1970) pp. 4-5. A brief list of these men and a description of their work is given here.

territories. During the last quarter of the nineteenth century the United States Department of Agriculture (USDA) conducted research and published a few bulletins regarding soil erosion control. By the late 1920's this work was being done by two bureaus within the USDA: the Bureau of Chemistry and Soils, and the Bureau of Agricultural Engineering.

The Bureau of Chemistry and Soils

Created in 1927, the Bureau of Chemistry and Soils primarily conducted research on the soils of the United States. The research included survey and mapping of soils, soil erosion problems, soil composition and fertility.² Long time staff member, Hugh Bennett, wrote and spoke extensively about soil erosion and was considered a leading expert by the late 1920's.³ In 1928 Bennett co-authored USDA Circular 33, "Soil Erosion, A National Menace." This brought him and the soil erosion problem to the attention of Congress. An appropriation of \$160,000 for soil erosion research, conducted by the USDA, was approved for fiscal year 1930.⁴ Ten erosion control experiment stations

²T. Swann Harding, Two Blades of Grass (Norman, OK: University of Oklahoma Press, 1947).

³Much has been written by and about Bennett and his importance to soil erosion control. See: Sellers G. Archer, Soil Conservation (Norman, OK: University of Oklahoma Press, 1956); Hugh H. Bennett, Elements of Soil Conservation (New York: McGraw-Hill Book Company, Inc., 1947), and Soil Conservation (New York: McGraw-Hill Book Company, Inc., 1939); R. Burnell Held and Marion Clawson, Soil Conservation in Perspective (Baltimore: The Johns Hopkins Press, Published for Resources for the Future, Inc., 1965); J.H. Stallings, Soil Conservation (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1957).

⁴Charles M. Hardin, The Politics of Agriculture (Glenco, IL: The Free Press, 1952), p. 54-55. Hardin points out that the research was cooperative effort between the USDA and land-grant colleges. The project was directed by a five-man board made up of one representative from three federal bureaus and two experiment stations. Once erosion control experiments were established the project began "to take on some log-rolling, pork barrel aspects" by the time the Soil Erosion Service was established in 1933.

were established. Bennett was in charge of the project, and the data compiled at these stations contributed to the development of the national soil conservation program.

The Bureau of Agricultural Engineering

The use of water in agriculture was always a primary concern of the Bureau of Agricultural Engineering. Research in farm irrigation, land drainage, sediment in canals and reservoirs began in the 1890's. Fundamental studies on the flow of water in irrigation and drainage ditches proved important to soil erosion control. In 1917 USDA Bulletin 512, "Prevention of Erosion of Farmlands by Terracing," provided general engineering principles for the design and construction of broad based terraces, and rules to be followed for their proper functioning. During the 1930's materials on the flow of water and rainfall intensity helped soil scientists understand soil erosion by water. USDA research resulted in a variety of solutions and recommendations to soil erosion problems. These included farm field practices, cropping recommendations, removal of certain lands from farming, and public education. Each became part of the national soil conservation program.

Soil Erosion Service 1933-1935

When the New Deal programs of the Roosevelt Administration began in 1933 the responsibility for soil conservation was placed with the Soil Erosion Service (SES) within the Public Works Administration. Hugh Bennett, who had been in charge of the Bureau of Soils erosion control experiment stations, was placed in charge of SES. He used the opportunity to strengthen soil erosion control programs of agricultural lands. Bennett's primary objectives were "(1) to demonstrate that soil erosion of good agricultural

lands could be controlled and prevented, and (2) to lay a foundation for permanent erosion control programs to meet the needs of the entire nation."⁵ SES utilized many of the USDA recommendations when it established erosion control demonstration projects in representative regions of the country.⁶ As an education tool, the projects enabled area farmers to observe the progress of the project and, in turn, establish appropriate conservation practices on their own farms. Implementation of conservation practices was shared by the individual farmer and the SES.⁷ Erosion control field practices included building field terraces, contour farming, seeding eroded areas, building check dams and stock watering dams, and planting tree shelter belts.

Soil Conservation Service 1935

Establishment of the Soil Conservation Service (SCS) arose from duplication of research projects and a lack of coordination between SES and various agencies in the USDA. SES was not utilizing the existing state extension organization and the experiment stations. Both the Senate and the House of Representatives introduced bills to establish SES as a permanent

⁵John U. Tomlinson, Jr., "An Analysis of the Government of Soil Conservation Districts in Kansas" (Ph.D. dissertation, University of Kansas, 1968), p. 20.

⁶Michael W. Schuyler, "Emergency Drought Relief Activities of the Federal Government in Kansas, 1933-1936" (master's thesis, University of Kansas, 1965) p. 61. Mankato, Jewell County, Kansas was site of one erosion control demonstration project.

⁷The SES provided technical and non-technical help to cooperating farmers. Civilian Conservation Corps workers accomplished much of the non-technical work. The CCC provided work experience and education to unemployed young Americans aged 18-24. The departments of Labor, Interior, Agriculture, and War cooperated in developing and maintaining the CCC. See Lawrence Harry Haus, "A Study of the Civilian Conservation Corps with a mental survey of Camp Lake Wilhite, Reading, Kansas" (master's thesis, Kansas State Teachers College of Emporia, 1935).

agency, but there was disagreement on whether the new agency should be in the Department of the Interior or the Department of Agriculture. When the impasse arose, President Roosevelt intervened and transferred SES intact from Interior to Agriculture.

Congress passed the Soil Erosion Act in 1935, which recognized the dangers of soil erosion and provided permanently for its control and prevention. The Secretary of Agriculture was given power to conduct research, carry out preventive measures, to enter into agreements, and to acquire lands when necessary to accomplish the purposes of the Act. The research and preventive measures could be carried out on any land owned or controlled by the United States. Regarding private lands the Secretary was empowered to provide for the prevention of soil erosion through state and local land use regulations and appropriations to any agency performing soil erosion control work. The Secretary of Agriculture was also allowed to transfer to the newly created Soil Conservation Service any of the erosion control activities of other agencies within the USDA or to develop "entirely new lines of authority to the individual farmer."⁸

To assist in implementing the Act a Committee on Soil Conservation was set up by Secretary of Agriculture, Henry Wallace. The Committee recommended that the SCS should perform its work through the existing state extension services and agricultural college experiment stations. A soil conservation committee would be formed in each state to develop and coordinate conservation programs within the state. Extension service staffs would be increased with conservation specialists and county agents to assist and encourage local soil conservation associations. These associations should be permanent in nature and have powers necessary to develop and

⁸Tomlinson, op. cit., p. 25.

maintain a complete erosion control program on the lands owned or controlled by members of the association. Finally, after July 1, 1937, all SCS work on private lands should be accomplished through associations organized under state law. Bennett objected to many of the Committee's recommendations since they relegated the SCS to a position somewhere within existing extension service.⁹ Secretary Wallace used some of the Committee's recommendations but allowed SCS staff to further develop the national soil conservation program.¹⁰

An important feature of the national program was the formation of local soil conservation districts. Under the Standard Soil Conservation Districts Law of 1936 districts were to be organized by means of local petitions and referendums. A State Soil Conservation Committee, made up of appointed and elected members would assist local districts in determining appropriate activities, needs and boundaries. Powers to be granted the districts included regulatory and non-regulatory. Regulatory powers enabled the governing board to enact and enforce land-use regulations and to enter into conditional agreements with land occupiers to conduct soil conservation activities. Non-regulatory powers were primary for carrying out soil conservation activities including research, demonstration projects, development of comprehensive plans, erosion prevention and control measures, purchase and supply of materials and machinery for use by members. There were no provisions for levying taxes, incurring bonded indebtedness, or the power of eminent domain in the Standard Law.¹¹

⁹Robert J. Morgan, Governing Soil Conservation: Thirty Years of the New Decentralization (Baltimore: The Johns Hopkins Press for Resources for the Future, Inc., 1965), p. 34. Morgan points out that the source of most of the Committee's recommendations was state extension service leaders.

¹⁰Tomlinson, op. cit., p. 28.

¹¹Tomlinson, op. cit., p. 31-32.

Soil Conservation Districts in Kansas 1937-1945

Kansas adopted the Soil Conservation Districts Law in 1937. The Kansas Law varied from the Standard Law in several ways. Generally, district powers were more restricted and rights of individual land owners were protected.¹² Formation of districts was initiated, in most situations, by the State Soil Conservation Committee. The Kansas committee met for the first time in May, 1937. The process of organizing local soil conservation districts spanned some 15 years and involved much organizational work and travel. There were many procedural problems to address such as conduct of referendum elections; eligibility of voters; filling vacancies on district supervisory boards.¹³ Strong support from the Director of Kansas State Extension Service and the existence of several soil conservation associations within the state enabled the State Committee to utilize existing information channels and Extension Service staff to establish itself as organizer for districts in the state. Local support for districts was apparent immediately as the Committee had three requests for information at its first meeting.

For a brief time there was some indecision on the part of the Committee about what boundaries to use to define the districts. Petitions were received in which the districts were based upon watershed boundaries while others used political boundaries. Some members of the Committee believed that larger districts would be necessary in the western half of the state. There was strong popular support for the county unit as basic district

¹²See Tomlinson, op. cit., pp. 98-133 for a thorough discussion of the Kansas Law.

¹³Gradually the State Committee and local districts have been provided with increased funding. This has allowed staff increases, development of a detailed report and data collection system, permanent offices and the publication of handbooks.

boundary and it has become the organizational unit for soil conservation districts.

While local support for soil conservation districts appeared to be strong there were two items within the Districts Law which caused early referendums to fail. First, in many referendums the need for 75 percent majority in favor of formation of the district was not obtained. This was due in part to low turnout of eligible land owners participating in the election. Second, there was fear of the provision for land-use regulations, and the duties and responsibilities of the technicians. The State Committee decided to devote more time for educational activities and to encourage the formation of districts in counties with soil conservation associations.

Once the referendum election took place the results were submitted to the State Committee. A large majority of eligible land occupiers had to participate, and the necessary majority vote in favor of formation of a district. Then the Committee would determine, by vote, if the operation of the district was administratively practical and feasible. If so, the Committee would appoint district supervisors and the Kansas Secretary of State would issue a charter to the newly formed district.

The soil conservation district entered into agreement with the U.S. Department of Agriculture in order to provide services and attain its goals.¹⁴ The district prepared a program of conservation outlining conservation problems of the district and proposed action necessary to correct these problems. This program was submitted to the State Committee for approval, then forwarded on to the USDA. The agreement, the Basic Memorandum of Understanding, bound both parties to a cooperative program of soil conservation. The USDA was obligated to cooperate and assist the

¹⁴Tomlinson, op. cit., p. 53-63.

district in carrying on erosion control and soil conservation work. This assistance was provided through supplemental memorandums of understandings or other agreements between the district and agencies of the USDA.

In return the district followed some specific operational procedures. An annual work plan was to be prepared as a guide for the year's work. Based upon this plan the district was to make recommendations to agencies of the USDA performing conservation work in the district as to the best methods for bringing the program to conclusion. When the district furnished aid to a land owner there were to be agreements stating the responsibilities of all parties involved. The kind, amount, and priority of work to be performed on each farm or ranch was to be determined by the district. There were to be no district charges for assistance granted by the USDA. Certain records were to be kept by the district and an annual report was to be filed with the State Committee and all cooperating agencies.

The district work plan was developed by the supervisors in cooperation with district SCS personnel. Typical work plans for Kansas districts include a brief statement of purpose of the plan, a list of educational goals and conservation practices to be accomplished, a statement of relative policies, procedures and priorities to be followed, and a statement of when meetings would be held.¹⁵ Work plans were updated annually to reflect the desires and purposes of the district.

The development of conservation plans for individual farms was based upon the district work plan. The land owner worked with district personnel to analyze the soil erosion problems and land use capabilities of his farm and develop a farm plan. The farm plan outlined soil conservation practices

¹⁵Work plans have changed little in most districts. Soil erosion problems remain the same in many districts while goals for some conservation practices have changed.

to be implemented, land use structures to be built, and farm organization changes to be made. These decisions were to be based upon recommendations of district personnel and the County Land Use Planning Committee. Once the farm plan was established, the land owner-district cooperative agreement was entered into by both parties. This agreement defined minimum land owner obligations and responsibilities, and assistance to be provided by the district.¹⁶

The Ellis County Soil Conservation District took its first step towards organization on April 5, 1945, when a county wide meeting was held to discuss possibilities of such a district. The petitions, totaling 256 signatures, were submitted to the State Soil Conservation Committee and a hearing was granted. The hearing resulted in favor of organizing a soil conservation district.

The referendum was held on August 14, 1945. The vote tally was 294 in favor and 18 against. Shortly after the referendum the State Committee appointed two supervisors. An election was held within the district to fill the three remaining supervisors positions. The first meeting of the Board of Supervisors was held October 15, 1945.¹⁷ The Board met regularly over the next four months to prepare the District's first Work Plan, issued on February 25, 1946.

¹⁶This process was modified in 1951 due to the lack of personnel available to develop farm plans for all farmers wanting to participate. The cooperative agreement was the first step, followed by the farm analysis, then implementation of conservation practices.

¹⁷The first Ellis County Soil Conservation District Board of Supervisors was comprised of W.D. Philip, Jr., R.L. Hall, John J. Gaschler, R.A. Leiker, and C.W. Kraus.

Chapter 4

Changing the Cultural Landscape of Ellis County: Ellis County Soil Conservation District, 1945-1980

Prior to 1940 relatively few of the 105 counties in Kansas had formed into soil conservation districts (SCD). Most of these were in portions of the state that had been hardest hit by the drought and dust storms of the 1930's. During World War II there was little progress in establishing SCD's due in part to the need of manpower and materials for the war effort.

After war ended in 1945 many counties acted quickly to form SCD's. Ellis County was part of this group. Some county farmers had utilized soil conservation techniques as early as 1926. The Fort Hays Branch Experiment Station of Kansas State University was conducting experiments on soil conservation in the 1920's. Undoubtedly some of this work was put in practice on a few county farms. But the effort to establish a soil conservation district for the entire county culminated in early 1946 with the first Ellis County Soil Conservation District Work Plan.

District Work Plan 1946

Preparation of the Work Plan was a joint effort of several groups, including county farmers, State Agricultural Extension Service staff, State Soil Conservation Committee staff, and USDA Soil Conservation Service staff.¹ The purpose of the plan was to (1) utilize soil erosion and

¹Office of District Supervisors, "Ellis County Soil Conservation District Work Plan," Hays, KS, 1946 (Typewritten).

related problems, (2) define methods for finding solutions to these problems, (3) establishing goals for resolution of the District's problems, and (4) to assess the past years accomplishments and prepare a plan for the following year. Many of the problems and objectives of this first work plan remain unchanged. Due to the voluntary nature of farmer-district cooperation many land tracts are not adequately protected by soil conservation practices. This is the primary goal of the district; that all land within the district should be protected by soil and water conservation practices.

The soil erosion problems of the district fall into two categories. The first deals with altering natural processes in order to gain limited control of them. Natural processes are primarily wind and water erosion. Solutions include reduction of wind blown soil, rates of runoff water, and conservation of water by improved farming and grazing methods. Shortage of water was noted as a continuous problem for farm and domestic purposes. Construction of ponds, and development of wells and springs were suggested for solutions. Runoff water from roads, ditches, and buildings was to be controlled by construction of diversions and waterways to prevent damage to farm land (see Figure 4). To help minimize the effect of winds on soil, the plan cites the need for more trees in the District. Trees were to be planted in farmstead wind breaks, shelterbelts, and wood land plantings.

The second category has to do with man altering his methods of land use. Loss of soil fertility, poor pasture management and improper land use are the primary problems addressed here. Improved tillage practices and crop rotation were suggested to stabilize organic matter in the soil and increase soil fertility. Removing marginal lands from cultivation and pasturage, including revegetation to adapted or native grasses and use of



Source: USDA - Soil Conservation Service

FIGURE 4

Grass waterway and field terraces in the southwest quarter, section 5, township 12 south, range 19 west. The waterway was shaped in 1956 and seeded with prairie grass mixture the following year. The field terraces were constructed in 1963 and 1964.

crops best suited to soil and moisture conditions were the solutions for improper land use. Overgrazing of pastures was also viewed as improper land use, and supplemental feeding of livestock was encouraged.

Under this category there were also problems for which long range planning was required. These included the development of irrigation water resources to correct the problem of water shortages; the development of stable livestock production through the establishment of feed reserves and supplemental pastures to correct periodic feed shortages; the creation of a soil conservation education program to increase public awareness of soil erosion problems and solutions; and the stabilization of farm tenancy through encouragement of long term leases. Solutions such as these required commitments from all farmers and land owners within the district. In a program such as soil conservation where land owner participation is voluntary some long range goals may never be achieved.

The Work Plan suggests two methods for implementing solutions to soil erosion problems within the District. First was the education of the public as to the purpose and goals of the District. This education program would include information about assistance available to land owners and farmers; the needs, costs, and benefits of conservation practices; and methods implementing and maintaining various practices outlined in individual farm plans. The District requested assistance in providing educational information from several state and federal agencies, specifying what was expected of each agency in order to carry out the educational program. The second method was referred to as operations -- the actual treatment of farm fields. This involved the analysis of existing land use on an individual farm. There were problems of soil erosion which could be corrected by use of basic conservation practices. Each farm conservation plan was

based on proper land use, economic feasibility, and ability of the land owner to implement the recommended practices. State and federal agencies which could provide technical assistance, staff, materials and equipment, and financial aid to District members were requested to do so.

The goals and objectives of the District during its first year reflect the desire to inform the public and demonstrate conservation practices. There was a concern that work accomplished be at farm locations which were highly visible, that work and use of equipment be done efficiently, and that meetings, tours, and demonstrations should be clear in their message for soil conservation. Specific goals for work to be accomplished during the first year dealt with both the control of natural processes and alteration of current land use.

Finally there was a statement of District procedures and policies. Participation in District programs was to be voluntary. The supervisors would set priorities for granting assistance, use of equipment, and fees charged for use of equipment. Complete files would be kept at District offices. Any reports required by the USDA would be completed and submitted. At the end of the year all activities would be reviewed in order to plan activities for the coming year.

Subsequent District Annual Reports and Work Plans

The District annual reports and work plans are not much different from that of the first year. Annual reports provide an itemized account of various conservation programs the District participates in. These programs are at both state and federal level. Each program has specific conservation practices that it utilizes to achieve its objectives. There is also an accounting of District activities including educational programs,

meetings, elections and appointments, awards received and given, and any action taken by the Board of District Supervisors regarding programs, activities, use of funds, etc. Finally there is a financial report for the previous fiscal year and a statement of conservation practices accomplished during the past year.

Conservation programs which the District participates in are the Agricultural Conservation Program, the Great Plains Conservation Program on the federal level, and the State Water Resources Cost-Share Program. Originally established in 1936, the Agricultural Conservation Program (ACP) was intended to provide some control over agricultural production.² In time its emphasis was shifted to soil conservation practices such as range seeding, constructive field terraces and grass waterways, windbreaks and shelterbelts, in order to maintain the basic productivity of the land. Soil conservation accomplishments under this program are entered into the annual total for the District.

The Great Plains Conservation Program (GPCP), established in 1956, has several features which link it closely to the original intent of the Soil Conservation Service.³ This program is utilized in one major agricultural region of the United States. Its objectives include long range programs of conservation and land use adjustment which are not found in other SCS programs. Farmers contract with the Federal government for three to ten years. Conservation plans must be for the whole farm. All conservation practices outlined in the plan must be utilized for the full period of the contract. Under other SCS programs, farmers may choose to implement a few practices, or include only part of his farm. The goal here is to

²Held and Clawson, op. cit., pp. 175-192. Held and Clawson provide a critical review of the Agricultural Conservation Program.

³Op. cit., pp. 79-86.

work out and implement a long range conservation program for whole farms that will be continued after the initial contract ends.

Accomplishments of the Ellis County Conservation District have been quite substantial in the thirty-five years from 1945 to 1980⁴ (see Table 1). By 1955 there were 456 land owners cooperating in the program. This represented 43 percent of the total number of farms and farmland acres in the county. The number of farms in the county had dropped to 977 by 1965 while the number of cooperators increased to 711, 73 percent of the total. Farmland acres under the program increased to 60 percent of the total acres in the county.

Statistics for 1980 indicate that there are more cooperators in Ellis County than there are farms. This discrepancy is due to the fact that the District figures are cumulative totals and the Kansas State Board of Agriculture figures are current totals. The average size of farms has risen from 484 acres in 1945 to 697 acres in 1980.⁵ Soil conservation programs have been implemented on 77 percent of the total farm acres in the county.

District Long Range Program 1980

The long range program for the district has replaced the annual work plan. Most of the problems and objectives outlined in the 1946 Plan remained unchanged through the years. Revision of the long range program occurs when necessary or at least every five years.⁶

⁴Sources for these statistics are the Kansas State Board of Agriculture Biennial Reports and the Ellis County Soil Conservation District Annual Reports.

⁵Based upon the total number of farms utilizing 540,000 acres of agricultural land for both 1945 and 1980.

⁶Ellis County Soil Conservation District Board of Supervisors, "Ellis County Conservation District Long Range Program, 1980," Hays, KS (Type-written).

Accomplishments for the Ellis County Soil Conservation District
(figures shown are cumulative totals for given years)

	1955	1965	1970	1975	1980
Contour Farming (acres)	43,282	76,213	133,527	172,591	198,051
Diversions (lineal feet)	182,160	276,463	332,125	357,819	367,962
Terraces (miles)	1,186	2,481	3,401	4,193	4,781
Restoring Terraces (miles)				85	94
Farm Ponds (number)		796	858	928	1,012
Recreation Dams (number)			2		
Range Seeding (acres)	3,394	10,907	13,539	14,873	16,089
Grass Waterways (acres)	572.3	2,600	3,226	3,572	3,991
Irrigation Land Leveling (acres)	693.6	3,898	5,143	5,525	5,612
Farmstead Windbreaks (acres)		479	558	581	605
Erosion Control Dams (number)		46	51		
District Cooperators (number/acres)	456/ 230,504	711/ 321,419	783/ 333,283	877/ 366,861	975/ 415,541
Farms* (number/acres harvested)	1,065/ 203,190	977/ 184,390	851/ 162,420	890/ 203,820	775/ 172,310

Source: Compiled from Ellis County Soil Conservation District Annual Reports and (*) Kansas State Board of Agriculture Biennial Reports.

TABLE 1

Beginning with general information about Ellis County, the program addresses a directive of the 1977 Soil and Water Resources Conservation Act to inventory and monitor the nations land resources. Problems listed in the program are similar to those originally outlined in 1946. These include the following: erosion of soil by wind and water, overgrazing grassland, conversion of prime agricultural land to urban developments, shortage of ground and surface water, loss of wildlife habitats.

In its assessment of conservation plans and practices the program is critical of documentation for conservation practices actually being utilized. This criticism is directed at the amount of paper work necessary to maintain accurate records of conservation plans. While cumulative totals for conservation practices and plans may be correct, the same records do not accurately reflect the number of land owners using conservation in their fields. The report cites rapid changes in land ownership and haphazard application of conservation field by field rather than for the entire farm as reasons for inaccurate records.

The report is also critical of a lack of adequate funding from federal, state and county governments for cost-sharing benefits. This has been the key to implementing soil conservation programs in the District. Funds are usually limited and intended primarily for new conservation plans. Little funding is available for maintenance of existing plans. Money for these programs is allotted without consideration of the land owner's actual costs for conservation work. The recommended solution is a contractual agreement between land owner and the federal, state and county governments for cost-share benefits for both farm conservation plans and single field conservation practices.

The problem of improper utilization of cropland and rangeland is addressed in two ways. First, it is viewed as a problem of educating farmers and ranchers about improved field and pasture management techniques. This includes, in some cases, construction of conservation structures such as terraces and stock water dams. Second, the use of cost-share funds for conservation practices on these lands is considered a necessity. The limited availability of these funds is viewed as a hindrance to correcting the problem.

Water quality management program is a relatively new concern for the District. Since 1979 the District has been responsible for establishment of a water quality management plan for agricultural runoff water in the three hydrologic planning areas within the District.⁷ The plan is intended to limit pollutants in runoff water to specific limits. The objective of the District is to achieve these goals by promoting the voluntary agricultural conservation programs currently in effect. The need for increased and continued cost-share funds to stabilize and strengthen this conservation program is stressed.

The 1980 Long Range Program also lists the planned activities for purposes of public education and assistance available from federal, state and county government agencies. These activities and government agencies are not much different from those listed in the 1946 Work Plan. The education program is intended to make the community aware of its responsibility in resource conservation and management, and to convince those land owners who do not participate in District programs that it is in their best interest to do so.

⁷Kansas Legislature adopted the Kansas Water Quality Management Plan in 1979.

At the end of the report is the District's Program of Action. The major goal of the District is to protect 100 percent of the land within the District with proper conservation practices by the year 2000. The program stresses promotion of cropland and rangeland management practices in order to limit soil erosion and water pollution caused by runoff water. There is a request for additional staff and cost-share funds in order to implement conservation practices and monitor the maintenance of cost-shared practices. Finally, the District states that it will work with government officials and other individuals and groups to assure that conservation programs are continued.

Impact of Soil Conservation Practices on the Rural Landscape

Soil conservation program has been very popular with farmers in Ellis County and across Kansas. It was quickly accepted as a permanent agricultural policy.⁸ This was due, in part, to the fact that farmers participating in the program benefited in two ways. First, the conservation practices implemented on the farms maintained, and in some cases, enhanced the productivity of the land. With a stable or increasing productivity level a farmer had a better chance of staying in business. Second, all soil conservation practices are provided with cost-share benefits. As a farmer constructs a field terrace or stockwater dam his costs are subsidized by the federal, state and county governments.

One of the first tasks of the District was to convince land owners that there were other, more beneficial, ways of using their land. While conservationists goals were to control soil erosion by improved farming methods the objectives did not include any concern for conserving cultural

⁸See Wilda M. Smith, "Reactions of Kansas Farmers to the New Deal Farm Program," (Ph.D. dissertation, University of Illinois, 1961) pp. 216-225. Smith provides a very comprehensive discussion of Kansas agriculture from 1929-1940.

landscape patterns. Conservation programs promoted by the District have always been voluntary. But at the same time a land owner who has needed assistance to control soil erosion has depended upon the conservationist to inform him of the correct action to take. This dependence has caused the rural landscape to be transformed from one set of cultural farming practices to another.

Tillage practices such as removing all crop residue from the field after harvest, no cover crop on fallow fields and excessive tillage for seed bed preparation were common on cropland in the District. These practices were a primary concern to soil conservationists because they contributed to soil erosion, loss of soil moisture and loss of soil fertility; thus the overall decline of farmland. Between 1867 and 1895 Ellis County farmers had tried to grow a wide variety of crops.⁹ Most crops were unsuitable for the semi-arid climate, others were not profitable. By 1900 winter wheat had become the primary crop grown in the county. There was little or no crop rotation.

Minimum tillage of fields after harvest and before seeding was stressed as a means to insure soil moisture conservation. Allowing crop stubble to remain as mulch cover for the soil aided moisture retention and control of soil erosion by wind and water. Fields within the District became a pattern of golden colored wheat stubble from harvest until fall planting time. There is little or no crop rotation occurring in the District due to the nature of its mono culture farm economy.

Much of the rain that occurs in Ellis County comes in the form of thunderstorms whether it be in quarter inch or two inch amounts. Rain usually falls with great intensity and storms have a short duration period.

⁹See Kansas State Board of Agriculture Biennial Reports 1874-1895.

For these reasons soil erosion, due to water runoff, has always been a problem. Conservation practices such as contour farming, terraces, diversions and grassed waterways have been implemented to correct this problem. In so doing the pattern of fields within the grid landscape has changed dramatically. Formerly, field patterns reflected field boundaries (see Figure 5A). Fields were tilled along their length regardless of the slope of the land. Current field patterns reflect the slope and contours of the field (see Figure 5B). Exceptions to this are relatively flat fields, small fields (80 acres or less), and fields on farms not participating in District programs. According to 1980 records, contour farming has been implemented on 64 percent of the cropland in the District (see Table 1). Field terraces, diversions and grass waterways are utilized in conjunction with contour farming to allow the retention of rain water, prevent gully washing and allow runoff water to be channelled into water flow structures and streams. These conservation practices emphasize the contours of fields on which they are used. Grass waterways are usually located along natural drainage ways so that field areas which may have been erosion gullies are now part of a beneficial water flow system.

There are only 8,600 acres of irrigated land in Ellis County. Gravity irrigation accounts for 92 percent of the total. These fields are located along the Cedar Bluffs Irrigation Channel in southwest Ellis County. The fields which are under sprinkler irrigation are located along the Saline River, Big Creek and the Smoky Hill River. All of these fields are circular and are single crop fields. There is one exception. An irrigated field adjacent to Big Creek has been subdivided by contour farming within the circular pattern (See Figure 6A and 6B).



Source: USDA - Soil Conservation Service
Section 6, Township 15 South, Range 18 West

1938 Aerial Photographs
Ellis Co., KS

FIGURE 5A

The farmsteads, at the top-center and bottom-center of the photograph are located on open and unprotected sites. Cultivation patterns are varied, repeat field boundaries, and ignore shallow drainage ways.



Source: USDA - Soil Conservation Service
 Section 6, Township 15 South, Range 18 West

1980 Aerial Photographs
 Ellis Co., KS

FIGURE 5B

The field in the lower left of the photograph shows contour strip farming. Lighter colored strips are sown in wheat while the darker strips are fallow field areas. Note that a grass waterway divided the field approximately in half. The additional farmstead in the lower left has a windbreak planted north of the buildings.



Source: USDA - Soil Conservation Service
Section 17, Township 13 South, Range 19 West

1938 Aerial Photographs
Ellis Co., KS

FIGURE 6A

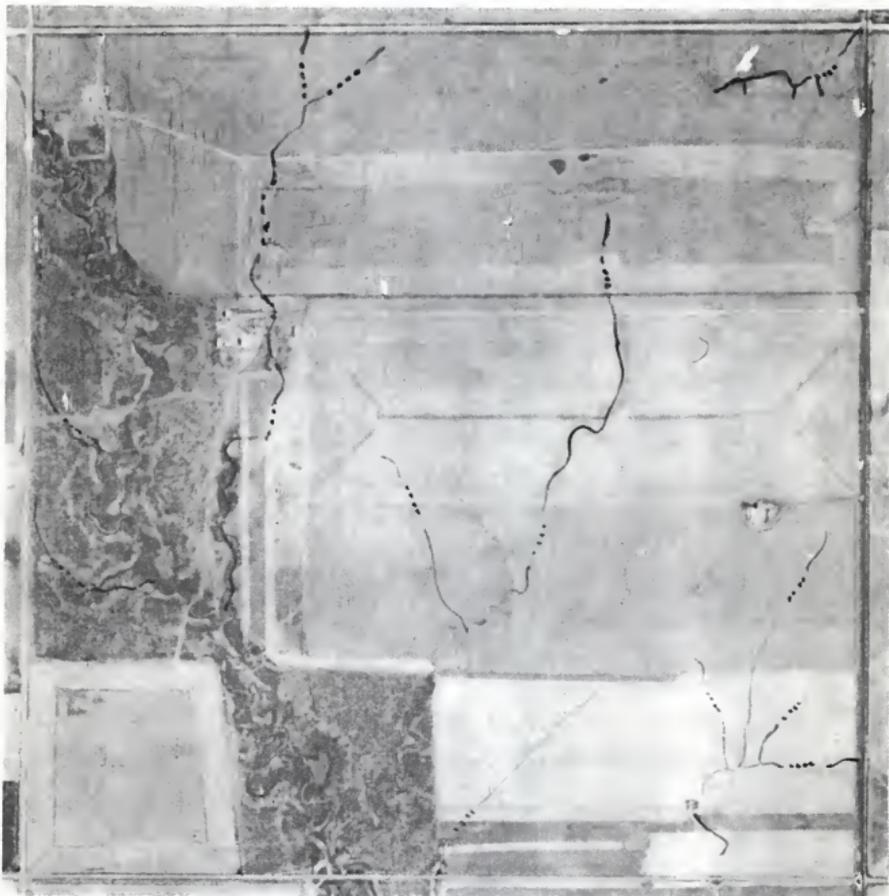
Fields are oriented north-south except where broken by Big Creek. Cultivation ignores natural drainage ways through the fields in the north half of the section. Note the open site around the farmstead (lower right). The Union Pacific Railroad crosses the southwest corner of the section.

Consolidation of fields has occurred primarily on farms where contour farming has been implemented. Most of the farms in the District are owned by original settlers or their descendants. The majority of cropland is in fields of 160 acres or less. Only in the recent past has there been any change in this pattern of ownership. Isolated tracts of land have been sold allowing farm size to increase but most farms are comprised of several land parcels which are separated by other parcels.¹⁰ As the ownership of land changes in the future, the pattern of the cultural landscape may change to greater extent.

In fields where contour farming has replaced traditional rectangular farming, the change of field patterns is very apparent. Large fields (160 acres or more) were often cultivated in rectangular portions, either for separate crops or because of the amount of land the farmer could work in one day (see Figure 7A). Natural drainage ways were often ignored and plowed under. With the implementation of contour farming these drainage ways have been turned from potential erosion hazards into grassed waterways (see Figure 7B). These waterways are long narrow strips of land that follow a meandering course through the field. Often they are the head of intermittent stream channels. In some fields they have taken the place of fences as the landscape feature dividing the field into two or three smaller portions.

Trees planted in the District for conservation purposes have been primarily for farmstead windbreaks (see Figure 6B). Relatively few trees have been planted for field shelterbelts. This reluctance to sacrifice

¹⁰The Philip Ranch, comprised of 6.25 contiguous sections, and the Bemis Farm, comprised of 4.25 contiguous sections of land, are two of the largest tracts in Ellis County.



Source: USDA - Soil Conservation Service 1938 Aerial Photographs
Section 29, Township 14 South, Range 18 West Ellis Co., KS

FIGURE 7A

Farm machinery patterns are oriented east-west and ignore natural drainage patterns. Access to the farmstead, located upper left of center, is from the east section road.



Source: USDA - Soil Conservation Service 1980 Aerial Photographs
Section 29, Township 14 South, Range 18 West Ellis Co., KS

FIGURE 7B

Most of the cropland is now cultivated by contour farming. Grass waterways follow natural drainage patterns and serve as field dividers. Access to the farmstead is from the west and a pond has been constructed left of center in the photograph.

valuable cropland for control of wind erosion is understandable, particularly when other conservation practices are adequate for the task. Farmstead windbreaks altered the appearance and visibility of farmsteads in the District. While providing wind protection, these windbreaks have created isolated microclimates around farmsteads. They have also caused farmsteads to take on the appearance of oases, dotting the section roads. The windbreaks have softened the relative isolation of individual farmsteads by lessening the sense of openness around farmsteads.

Stock water dams are located primarily in the broken hills of the grassland and pasture in the southwest and northwest corners of the District. The total number of dams is small, 51, and their locations are isolated. They are utilized as a source of water for cattle and for erosion control on steep natural waterways. The small number of dams and scattered locations has not significantly altered the rural landscape.

Summary

Soil conservation programs began as a way of implementing change on the rural landscape through recommendations to farmers for improving farming methods to control soil erosion. This change has been relatively gradual, over a 35-year period in the Ellis County Soil Conservation District. The programs are popular with local farmers as evidenced by the utilization of conservation on 70 percent of the agricultural land in the District. Conservation problems and solutions were readily seen and easily understood. No solution drastically changed the agricultural land use or economy of the District. The change in field patterns added to the diversity of field orientation, size and boundary lines. The basic square mile grid landscape pattern has remained intact.

Conservationists have worked with farms as they have found them. There has been a deliberate effort by conservationists to limit their recommendations to natural resources. Due to this limitation many of the cultural resources within the District have remained intact. The field patterns of the German-Russian settlements are visible in aerial photographs. Small stone and wood frame farm houses are still standing, some are presently in use. Several farmsteads built during the mid-1870's have been in use continuously, often by the same family.

Since 1945 rural landscapes have changed in many and diverse ways.¹¹ In some regions the economics of farming has forced changes in ownership patterns so that many small farms have been consolidated and all traces of earlier cultural resources have disappeared.¹² Within the Ellis County Soil Conservation District the changes have not gone that far. There is an opportunity to anticipate changes in the cultural landscape of the District based upon experiences elsewhere. Directing change in the cultural landscape by using techniques similar to those utilized by conservation programs could be a means of retaining significant cultural resources.

¹¹See Change in Rural America, Richard D. Rodefeld, et al. (St. Louis: The C.V. Mosby Company, 1978) for a thorough review and analysis of the complex causes for change in the rural landscape.

¹²Tom Hamburger, "Dramatic Population Reduction Inspires Technological Changes," in Changes in Rural America (St. Louis: The C.V. Mosby Company, 1978), pp. 26-28.

Chapter 5

Managing Change in the Rural Landscape

The rural landscape of Ellis County represents many types of change. Agricultural land shows the growth cycle of crops -- planting, growing and being harvested. Native vegetation in pasture land and along water courses reflect the seasons with change of colors and textures. These changes are controlled by natural rhythms.

Human settlement and division of the land occurred gradually. Early settlers tested and experimented with the prairie landscape, judging its suitability for agriculture. When enough success had been achieved fields were defined. Cropland and pasture replaced open grassland prairie. Incremental change such as this took place over a 40 or 50 year time span.

Rural landscapes also represent uncontrolled change. This can be seen as storm damage to vegetation and farm buildings. Alteration of land use at or near town boundaries often changes agricultural land to residential, light industrial or commercial uses. These changes occur quickly, changing land use from a rather passive activity to an intense one. There is limited control of these changes. The proper zoning, building permit, or variance allows change to respond to immediate needs and pressures without concern for long term effects.

Soil Conservation as a Model for Managing Change

Soil conservation programs have established a process for directing change in the rural landscape. The process is considered to be beneficial

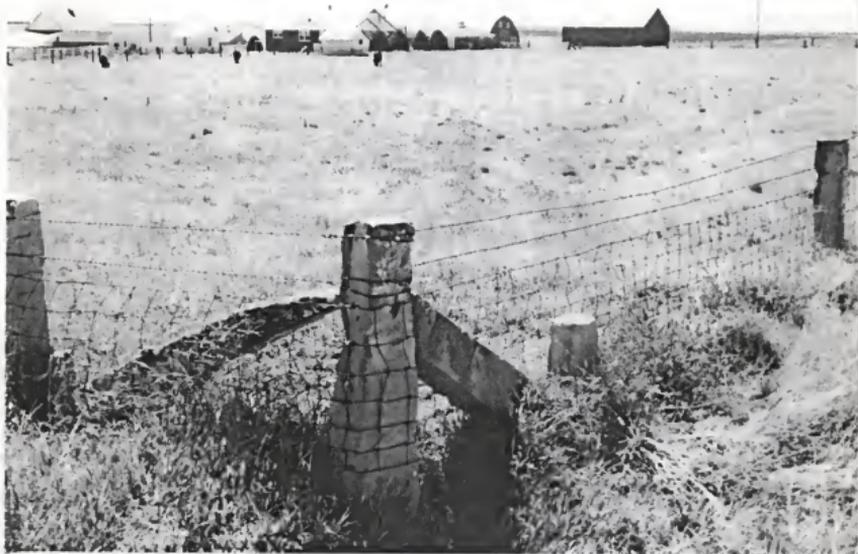
to the landscape and a stabilizing factor in agricultural regions. Other changes such as population shift, loss of agricultural land, expansion of farms, have occurred in the rural landscape. The results of these changes are considered by many to be detrimental to agricultural lifestyles. In so doing they also affect cultural resources found on the landscape. The primary forces behind these changes have been technological and financial in nature.¹

In dealing with future changes on the landscape there needs to be a process for controlling adaptation of cultural resources. Cultural resources of Ellis County are intact. There are native stone post fences, native stone buildings, farmsteads, villages, cemeteries and field patterns which have been present on the landscape for 100 years or more (see Figure 8). Some of these resources have been neglected; farm buildings are vacant, fences are untended (see Figure 9). While others have been in use continuously from the time of settlement up to the present. A stable land ownership pattern has assured that these resources will remain. Owners have links with the past through these resources. This does not insure these resources from destruction or deterioration. As outside pressures for change increase, these resources may disappear.

By using soil conservation programs as a model, cultural resource conservation programs may be developed. The resources protected through this program would be of local significance. Each settlement area has characteristics which set it apart from other areas.² The characteristics may be common and taken for granted by local residents. With assistance

¹See Richard D. Rodeflod, Jan Flora, et al. Change in Rural America (St. Louis: The C.V. Mosby Company, 1978).

²Settlement area has a broad meaning. It could be a settlement with natural boundaries, or a settlement with political boundaries, or a settlement crossing over natural and political boundaries.



Source: USDA - Soil Conservation Service

FIGURE 8

Stone fence posts surround this farmstead, south of Victoria, KS. The stone posts are Greenhorn limestone from a quarry nearby. The farmstead is typical for Ellis County with its modest buildings and open site.



Source: USDA - Soil Conservation Service

FIGURE 9

Abandoned farmhouse constructed of native limestone. Located north of Ellis, KS, this house is representative of many dwellings built in Ellis County.

from trained landscape architects, geographers and historians the residents can determine the value of characteristics unique to their area.

Cultural Resource Districts

Defining the cultural resource district may be a difficult task. Resources often are spread over wide landscape areas.³ Some geographers have suggested using one key characteristic to define a district.⁴ This can prove to be too limiting in the rural landscape. Urban areas are better suited to this type of district. The cultural resources in rural landscape are usually very diverse. In Ellis County there are resources of the German-Russian settlement group, the British settlement group, and the American settlement group (all settlers from states other than Kansas). Each of these groups has fit their land use to the grid landscape pattern, the political pattern.

The lesson learned by the SCS in defining district boundaries is valuable in this situation. The population of Ellis County participating in SCS programs is already accustomed to addressing the natural resources within its political boundaries. Cultural resources should be dealt with in the same way. Where resources are spread over a wider landscape area a conservation organization at the state or federal level should provide coordination of conservation efforts.

A local committee made up of residents from the rural landscape should be formed.⁵ This could include farmers, ranchers, village residents, a

³The stone fence post region spreads over much of north central Kansas, crossing many political boundaries. See Milton D. Rafferty, "The Limestone Fenceposts of the Smokey Hill Region of Kansas," Pioneer America, 6 (January 1974); 40-45, and Grace Muilenburg and Ada Swineford. The Land of the Post Rock (Lawrence, Kansas: 1975).

⁴See Alvar W. Carlson, "Designating Historic Rural Areas: A Survey of Northwestern Ohio Barns," Landscape, 22 (Summer 1978), 29-33.

⁵See Anne F. Frondorf, Michael Martin McCarthy, Ervin H. Zube, "Quality Landscapes: Preserving the National Heritage," Landscape, 24:1, 17-21.

representative from the local historical society and a representative from the state historical society. The committee's responsibilities might include the following: identification and conservation of cultural resources found on the rural landscape; establishing guidelines for directing change in those resources; developing and implementing an education program that would reach all segments of the local community. The local residents on the committee could be selected by their peers. Their terms on the committee could be staggered so that membership would change periodically.

Inventory of Cultural Resources

The identification of resources would involve some research of documents, photographs and field work. Records at the County Register of Deeds office and personal accounts at the local and state historical society could provide information on ownership, location and relative value of resources. Aerial photographs taken by the U.S. Department of Agriculture at approximately 10 year intervals since 1938 could simplify a gross inventory of resources.⁶ These photos could also provide indications of past changes and trends. Field work could provide verification of information gathered from other sources. Identification and survey work such as this has been accomplished in rural and urban areas by community volunteers and temporary employees.⁷ In Ellis County a limited inventory has begun. Rural farm buildings built by German-Russians have been located and recorded. The project was undertaken by one volunteer who has recorded preliminary information only.

⁶See Clyde F. Kohn, "The Use of Aerial Photographs in the Geographical Analysis of Rural Settlements," Photogrammetric Engineering, 17 (1951), 759-771.

⁷See Jane Silverman, "Rural America -- Love It or Lose It," Historic Preservation, 33:2 (March/April 1981), 24-31.

Conservation of cultural resources will not be as simple as their identification. The rural landscape has always been functional. Everything had its place and purpose. Anything that lost its purpose was replaced or renewed. Change occurred. Over time cultural resources became layered. Newer structures mixed in with the old. As needs and uses changed some resources remained while others disappeared (see Figure 10A and 10B). The layering is an important indicator of cultural values and historic continuity. Conservation of cultural resources must center on this issue: change is an inherent quality of these resources. Conservation must represent the past accurately while allowing change to occur. The rural landscape should be a blend of past and future so that decisions about cultural resources will contribute to rather than detract from the salient characteristics of the landscape.⁸

Public Education

The key to sound conservation decisions is an education program which reaches all segments of the local community. A program which is similar to the soil conservation education program is needed. Education in cultural conservation should become part of school history classes. Instructors should address local history as well as state and national history. Art poster and essay contests similar to those sponsored by other local organizations would aid students in understanding the importance of cultural resources. Emphasis should be on the role the resources from the past have in present and future landscapes.

Tours of historic sites including those which have remained unchanged, those which have become a blend of old and new structures, and those where

⁸ See David Lowenthal, "The Bicentennial Landscape: A Mirror Held up to the Past," Geographical Review, 67:3 (July 1977), 253-267; and David Shea, "Landscape Dichotomies: Pat Phrases and Preservation," Landscape, 20:1 (October 1975), 44-48.



Source: Ellis County Historical Society, Volga-German Centennial Collection, SC-74

FIGURE 10A

Farmsteads of early settlers were comprised of native limestone and wood structures. This photo, taken from a hill behind the stone barn, shows the farm house and cook house near the middle of the picture. The barn is built into the hillside. Note the stone fence posts in the middle ground. The Smoky Hill River crosses the photo beyond the house. In the background, the village of Schoenchen, KS is two miles south. Note the church at the center of the village.



Photograph by the author

FIGURE 10B

The stone barn is the only original structure remaining of the farmstead in Figure 10A. In recent years the barn has been the site for musical entertainment and dancing. The mobile home trailer is in the approximate location of the stone farm house. Volunteer trees have grown along the river bank, obstructing the view of Schoenchen.

only relics remain will provide insight to changes which are possible and resources which are valuable. Sites of major restoration efforts are as important as those where continuity of ownership and use has provided the means for their conservation. The local historical society could play a major role in coordinating these tours.

In Ellis County, the Historical Society is very active in promoting local history through its museum collection of local artifacts, traveling exhibits, the local "Oktoberfest" and recent construction of a traditional Volga-German house on the museum grounds. These activities need to be expanded to include the cultural resources of the rural landscape. Historic site tours could include farmsteads, houses, villages, schools, churches and cemeteries. Organized similar to historic house tours in urban areas, local newspapers could provide feature articles and news briefs one or two weeks in advance of the tour. Nominal fees could be charged to supplement expenses of the sponsoring organization. Volunteers could act as tour guides. Such tours would enable the community to realize that their history is a part of their daily lives, not just something they can view in a museum. The rural landscape should not be taken for granted. It contains many culturally significant features.

Regardless of how the community is made aware of its cultural heritage on the landscape or how much of these resources are conserved there will always be pressure for change in the resources. The central problem is a question of conservation "of what, for what purpose, for whom (what percentage of the population and for what percentage of their lifetimes)."⁹ Solutions to soil conservation problems were relatively universal in nature: for each problem there was a solution applicable regardless of locale.

⁹Stea, op. cit., p. 48.

The ultimate goal was to conserve natural resources utilized by man to feed himself and the rest of the world. To tell a farmer that his cooperation assured continuance of his lifestyle and improved his farms productivity was a message he could measure at the end of the growing season.

Solutions to cultural conservation problems cannot be as singular in purpose. Cultural conservation problems stem from economic pressures, technological pressures, political pressures, and other social pressures. Too often forces beyond the control of the individual or the community have instigated the changes in cultural resources. To deal with the complex pressures sociologists, economics, political scientists and other disciplines need to be included in the process of cultural resource analysis. Solutions generated by this analysis must address cultural resource conservation from its rural perspective.¹⁰ To try to adapt urban solutions to rural situations can have detrimental effects. Solutions should reinforce the existing social and economic framework or create alternatives which the community can utilize to allow controlled change.

Support from State and National Agencies

Recently state and national organizations have focused attention on cultural resources found on the rural landscape.¹¹ In some situations the

¹⁰See Ann Satterthwaite, "Some Social and Economic Underpinnings of Rural Preservation," in: New Directions in Rural Preservation, Robert E. Stipe, ed. (Washington, D.C.: U.S. Department of the Interior, Heritage Conservation and Recreation Service, 1980), 37-42.

¹¹See recent articles in "Kansas Preservation," Newsletter of the Historic Preservation Department, Kansas State Historical Society, Volume 5, Numbers 1-6, 1982-83; and the National Trust for Historic Preservation, Rural Project in rural communities in New York and Pennsylvania, see Silverman, op. cit.

attention has come after resources have been threatened by drastic change. This should not be the case. State and national organizations have long realized the value of rural cultural resources. The problem has been securing adequate funds and establishing programs to conserve these resources. State and national agencies have the use of their allocated funds directed by politicians and populations. In the past the majority has been with the urban centers.

If the 1980 census is an indicator of future trends in population shift, the concern for rural areas may increase as fewer people opt for urban living. The time to act on conserving rural cultural resources is at hand. Government agencies whose policies and programs affect rural living need to recognize the value of cultural resources. Conservation efforts need strong support from state and national agencies and organizations. Support must also be generated and, if possible, instigated from the local level in order to be meaningful.

Implementation of Recommendations

Implementation of the four recommendations of this thesis must begin on the local community level. Most cultural resources found in the rural landscape are important at this primary level. Managing changes in these resources requires an understanding of the social, economic, and political context in which they are located. True determination of the context can be accomplished only by local citizen input. In this way citizens become part of the management process.

Identification of community cultural resources is the first step in this process. The Ellis County Historical Society (ECHS) should be contacted about beginning an inventory of resources within the county.

Members of ECHS could undoubtedly name several cultural sites without the aid of an inventory. But the inventory provides a means for all resources, prominent or otherwise, to be listed. It should be representative of the man-made and natural landscapes found in the county. In order to conduct the inventory the county should be surveyed by defineable areas within the whole. By using existing political townships and utilizing volunteer residents as surveyors the inventory could be completed in a short amount of time.

Once the inventory has been completed the next step would be to analyze the information to determine the relative value of the resources. Citizen input is critical at this point in the management process. Establishing values of cultural resources serves as a consciousness raising for local citizens. Too often the inherent qualities and special features of these resources are taken for granted or overlooked. By asking local citizens to put a value on resources within the county and to explain why said value was given a basis for managing cultural resources can be established.

Identification and valuation of cultural resources are also important to the development of a public education program. The education program should do more than describe local history. It must also include instruction on how to incorporate cultural resource information into regular political, economic and planning processes at the community level. To achieve this goal an interdisciplinary team of educators, political scientists, economists, planners, and community representatives would be involved in program development.

There needs to be some investigation into the mechanics of establishing a special governmental district for conservation of cultural resources. What enabling legislation is available in Kansas? What police powers do

special districts have? How would local citizens participate in the districts' operation? The district would provide the vehicle by which citizens could voice their concerns for cultural resources. Defining objectives and goals for conservation of cultural resources as well as the management of changes in the resources could be the province of the district.

Gaining support from state and national agencies, such as the Kansas State Historical Society (KSHS) and the National Trust for Historic Preservation (NTHP), should be forthcoming. Recently, within both organizations, work has begun to address problems of conservation and development of cultural resources in rural landscapes. It is unclear at this time what form the support will take. Current work focuses on specific areas where concern for valued resources and pressures for development are high. Hopefully this will generate models and guidelines which will be applicable elsewhere.

Landscape Architects Role in Managing Cultural Resources

Landscape architects possess design and planning skills which enable them to express the impact that changes in cultural resources will have on the rural landscape. Anticipation of change is a critical part of any landscape design. Planning for both large and small scale projects includes concerns for current requirements and future needs. Design solutions are often directed at the present problems yet are flexible enough to allow future alteration. Utilizing visual analysis skills landscape architects can aid local citizens in identifying valued landscapes. Visual simulations could be used to enable citizens to realize the impact that proposed changes in land use would have on cultural resources. Design solutions could either heighten or lessen the impact of the change. By

planning for the use and management of large areas of rural landscape, landscape architects could synthesize raw data about cultural resources and use the refined information to develop management tools for achieving desired goals and objectives for the conservation of cultural resources.

Related Topics

This research has been limited in scope to the analysis of soil conservation programs in the relation to rural cultural landscapes. Other aspects of the rural landscape which might be investigated include:

Industrial development in the rural landscape

- What are the impacts of the oil industry on the rural landscape?
- How has the construction of power generation plants in rural areas affected the characteristics of the surrounding landscapes?
- What is the process used by corporations who decide to locate headquarters, factories, or fabricating plants in rural areas? Why are these locations attractive?

Analysis of the rural cultural landscape

- Can a method be developed for including human values in the cultural resource analysis process?
- How have mechanized irrigation systems altered cultural resources?
- Has the mechanization of farming affected the organization of farmsteads?

Government influence on rural landscapes

- How have U.S. Department of Agriculture - Agriculture Extension Service publications affected the physical and visual characteristics of the rural landscape?
- What tax laws have been enacted since 1960 with the objective of protecting prime agricultural land from non-agricultural development? How successful has this effort been?

The topics above should provide an indication of the complex forces and influences acting upon rural landscapes.

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SOIL CONSERVATION AS A MODEL FOR
MANAGING CHANGE IN RURAL LANDSCAPES

by

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AN ABSTRACT OF A MASTER'S THESIS

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ABSTRACT

Since 1945 rural landscapes have changed significantly due to social, technological and political forces acting upon them. One vehicle for change has been government soil conservation programs. This study examines the successful implementation of soil conservation on the rural landscapes of Ellis County, Kansas. It also addresses the possibility of utilizing similar techniques for establishing a conservation program for cultural resources found on the rural landscape.

Aerial photographs of Ellis County recorded in 1938 by U.S. Department of Agriculture were used as a data base. Characteristics of the landscape at this stage of its evolution include rectangular division of land, square grid road patterns, land use and ownership patterns of the German-Russian settlement group.

Review of early development of the national program of soil conservation provided insight into problems which may be encountered in similar programs for cultural resources.

Data regarding the soil conservation on the local level was obtained from annual reports of the Ellis County Soil Conservation District and by comparison of aerial photographs from 1938 and 1980. By utilizing these photographs for inventory of cultural resources, establishing cultural resources conservation districts at the county government level, developing a public education program which reaches all segments of the local community, and providing strong support for local districts from state and national agencies similar success may be achieved.