Through these eyes:

The First 70 Years of Soil and Water Conservation in Minnesota

By Vic Ruhland

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Minnesota State Office, USDA Natural Resources Conservation Service

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About the author

Vic Ruhland was an employee of the USDA Soil Conservation Service/Natural Resources Conservation Service in Minnesota for over 44 years and witnessed many of the events discussed in this report. Through his years of employment, he had a chance to become acquainted with many of the early soil coservationists of Minnesota. He retired in 2003 and is curently serving as an Earth Team volunteer.

Vic Ruhland was born and raised on a farm in rural New Prague, Minnesota. Following his graduation from the New Prague High School, he assisted in the operation of the Ruhland farm until he was drafted into the US Army. Following his 2-year military duty, Vic attended the University of Minnesota where he earned a BS degree in Soils and a MS degree in Agricultural Economics. His employment with SCS/NRCS in Minnesota included working as a student trainee in Buffalo and Jordan, a soil conservationist in St. James and Zumbrota, a work unit conservationist in Duluth, an agricultural economist and a resource conservationist on the water resources staff in St. Paul until his retirement.

The family of Vic and his wife Jean (Murphy) consists of James (Jayne), Kenneth (Lori and daughter Paige), Kathleen (Steven Geis and daughters Faith and Claire), John and Brian. His hobbies include family genealogy, restoring antique cars, playing cards especially Schafkopf (Sheepshead) and playing his clarinet in a large Germanic band. He is also active in his church.

Acknowledgements

The development of this publication is based on a review/research of various published reports and historical files located primarily in the NRCS State Office in St. Paul and, to a lesser degree, at the Goodhue NRCS Field Office as well as other non NRCS offices.

I sincerely appreciate all the assistance given to me in developing this history. I want to especially thank William Hunt, State Conservationist, for his foresight and encouragement. Also, I want to thank Pattie West, Editor, and Lynn Betts, who spent countless hours formatting the final layout of the book. I take full responsibility for any errors that may exist.

Especially worth noting at the outset is the encouragement received from Mel Cohee, retired SCS employee. Cohee states, "I'm glad to help you, knowing that I'm the only living person who was there when Dr. Bennett started the great soil conservation movement, which swept the entire country in such short years. Also, I worked so close personally with him that I knew what he thought both technically and administratively - and I was personally close with Ward Shepard, Bureau of Indian Service, who had the idea for a SES and set up a meeting with FDR through their mutual friend Harry Hopkins [Administrator of National Recovery Act] in July 1933 to gain [approval for] such an organization and $5 million to start it. It, also, was Shepard who had the idea for soil conservation districts – first not supported by Chief Bennett, but later strongly pushed by Bennett (it took a lot of talking and persuasion by me and a couple others to get the Chief to let go of his 'demonstration projects' and onto SCDs)."

Mel made a presentation on the soil conservation movement to NRCS employees and retirees in St. Paul on August 14 and 15, 2000. His presentation on August 14 was videotaped and is on file. Mel passed away on January 14, 2001.

The people who helped me with this book who I thank and deserve recognition include:

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William Sillman
Barbara Sommer
Doug Thomas
Tom Steger
Pattie West

On the cover (color): *Contour stripcropping near Eitzen in Southeastern Minnesota.*
(Inset): *Cutting oats on a contour strip in Winona County in 1948.*

About our conservation history

The USDA Natural Resources Conservation Service invites you to read and study this book to obtain a better understanding of our soil and water conservation roots in Minnesota. Vic Ruhland has attempted to record the strong history of conservation that laid the foundation for the conservation ethic and resource accomplishments in Minnesota today.

This history from Vic's viewpoint is both interesting and valuable as we make decisions for the future. While we know we cannot get a complete accounting of all conservation efforts in Minnesota into one book, we appreciate this historical account from the viewpoint of a Soil Conservation Service/Natural Resources Conservation Service conservationist.

I would like to take this opportunity to thank Vic Ruhland for his outstanding volunteer effort in writing this book, and hope you enjoy it.

William Hunt

William Hunt, State Conservationist, Minnesota
U.S. Department of Agriculture
Natural Resources Conservation Service

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Introduction

The new soil conservation program introduced in 1933 was indeed successful as viewed today; in fact, it was very successful. The success of this effort is evident for Minnesota as well as for the nation and the world. How did this come about? What happened, where? How did the movement get started, and how did it move forward to the present time? What were the major events along the way? And who were the people involved in the process especially at the local and state level here in Minnesota that should be recognized? What information is available on this subject? Where is it?

This report attempts to summarize some of the major events, identify the primary people involved, and, hopefully, provide some answers to the above questions. This effort, conducted over the past several years, is broader than just compiling the history of the Soil Erosion Service (SES)/Soil Conservation Service (SCS)/Natural Resources Conservation Service (NRCS). It is an attempt to cover all aspects of soil and water conservation in Minnesota. It is not intended to cover the movement on a nationwide basis. However, some reference to the regional and national developments will be necessary. "The purpose of the effort," according to William Hunt, NRCS State Conservationist for Minnesota, "is to better document the history of the soil conservation movement in Minnesota for the benefit of present and future generations...."

In gathering information for the book, interviews conducted in the past were studied. Also, interviews and video recordings with other retired employees were made. The files in the National Archive (Record Group 114) were not researched. Reviews and comments by others were obtained and considered.

The narrative is organized into four time periods: 1933 to the early 1950's; the early 1950's to the late 1960's; the late 1960's to the Food Security Act of 1985; and 1985 to the present (2003). As may be readily apparent, the first period, especially the period up to WWII, is discussed in greater detail. Discussion of this period, covering the origin of the soil conservation movement and the names of people responsible for the movement, is probably of greatest interest to the reader. Conversely, the later time periods are discussed in less detail. Future writers will be in a better position to discuss the historical significance of events during these time periods.

Considerable documentation on the history of the soil conservation movement at the national level has already been done, especially by the SCS/NRCS Economics and Social Sciences Division, NHQ, Douglas Helms, National Historian. A series of Historical Notes has been published, including:

#1 – "Readings in the History of the Soil Conservation Service," 1992

#2 – "Engineering in the Soil Conservation Service," 1993

#3 – "Interviews with Chiefs of the SCS: Williams, Grant, Davis, & Berg," 1994

#4 – "The Soil Conservation Service Responds to the 1993 Midwest Floods," 1994

#5 – "Historical Changes in Soil Erosion, 1930-1992," 1996

The history section on the NRCS Website is available at http://www.nrcs.usda.gov/about/history/

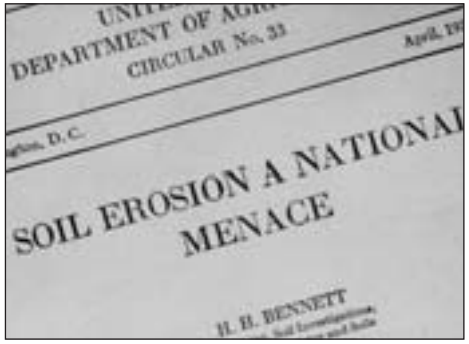
Another excellent report by SCS is "Organization and Development of the Soil Conservation Service," SCS-CI-13. (Appendix A contains a bibliography of the literature cited in this report).

The history of the National Association of Conservation Districts was prepared by Robert S. McClelland *Many Hundred Strong Still Serving* NACD, 1974 and by R. Neil Sampson *For Love of the Land* NACD, 1985. A detailed report on the state level is "History of Soil and Water Conservation Districts in Minnesota 1929-1965." This report was eloquently written in the mid-1960's and appears to be by Matt Thorfinnson, who served as Executive Secretary of the State Soil Conservation Committee (later Commission) during those years.

Major Events and Involved Personnel from 1933 to the early 1950's

The Spark

The spark that started the flame for soil conservation was Dr. Hugh H. Bennett's now famous "menace" bulletin issued in 1928. The title is "Soil Erosion, A National Menace." As a result, Congress invited Bennett to appear before the Appropriations Committee to suggest what could be done about the soil erosion problem. Bennett was convincing to the Congressmen. They appropriated $160,000 (Buchanan Amendment) to investigate the erosion problem in the nation. Bennett was assigned to head the investigations. Several soil erosion experiment stations were set up in 1929-31, including one at La Crosse, Wisconsin.



A bulletin by H.H. Bennett in 1928 sparked the conservation movement in the United States.

Hugh Hammond Bennett

Bennett had started his career in the Bureau of Soils in USDA in 1903. He saw first hand the effects of soil erosion. Bennett and his associates published several soil erosion findings hoping to arouse some interest in the erosion problem. Nothing happened. By 1918, Bennett had become more outspoken and began speaking and writing about soil erosion. For those "who measure a man's ability by the number of articles he can get published, Hugh Bennett should be something of an idol." His writings on the subject included five books, over 400 technical, semi-popular, and popular papers, and hundreds of soil survey reports, magazine articles, and miscellaneous materials. Included is a volume many consider a classic: *Soil Conservation*, a 1,000-page book. The "menace" bulletin, however, was the spark that started the soil conservation movement. See *Soil Erosion – A Partial Bibliography* for soil erosion publications as of 1933. "…[O]ne of the most intriguing facets in the whole soil conservation story was the evolution from total indifference to total interest in the attitude of many agricultural specialists." To the question, what did you do to sell conservation after so many years of rebuffs, Bennett responded, **"We decided on four steps; science, farmer participation, publicity, and congressional relations."**

Other complimentary statements about the man called the "father of soil conservation" include the following: "Few men in American history have combined science with showmanship as skillfully as Dr. Hugh H. Bennett did to get an urgent job underway quickly and efficiently"; and "one of the few immortals of agricultural history." (*And History is Already Shining on Him)*, an excellent detailed description of Hugh H. Bennett by Santford Martin)

Soil erosion in Minnesota on unprotected cropland before conservation treatment.

Earlier Local Efforts

Before the advent of the national movement, "some isolated efforts to correct the soil erosion problems were attempted in Minnesota. A few county agents (Extension Service) had come face to face with the (soil erosion) problem and a few farmers had tried to do something about it with varying degrees of success.

A few agents tried to introduce rough tillage of summer fallow and fallowing in strips…in the Red River Valley. However, too little information was available on strips.

In the southeastern counties many farmers were asking how they could stop gullies. The main authority county agents called on was Professor H. B. Roe of the Agricultural Engineering Division at the University… Mr. Roe recommended terracing (earth embankments constructed across the slope). He helped by speaking at a number of community meetings…and staked out a terracing system on one or two farms in each of the southeastern counties as demonstrations and even made arrangements with a contractor to do the construction work…terracing demonstrations occurred in Houston (10 acres on the I. C. Gengler Farm near Caledonia completed in April 1933 – considered to be the first terracing in Minnesota) and Winona Counties. No contractor was

available in Goodhue County, however, they were built by CCC camps a year later. Probably, Reuben Anderson of Lindstrom and Alfred Johnsrud of Spring Grove were the first farmers in Minnesota to build terraces…on their own during 1930-32" (Thorfinnson). Although they did not conform in design to SCS recommendations, the terraces were an attempt to control soil erosion.

"The use of contour strip cropping came into Minnesota long before terracing. A Swiss Immigrant, Von Arx … laid his fields out in contour strips in 1876… His authority was a German language Swiss encyclopedia of 1731 containing a detailed description of 'strifenacker' (stripped fields). His descendants followed in the same way. A soil survey 'some 20 years ago' (1940's) showed that the farm had about 5 inches more of original topsoil remaining than on neighboring farms. However, the neighbors have not followed the lead…not until some promotion (later) by the district (SCD) called it to their attention" (Thorfinnson).

Coon Creek Project

Franklin D. Roosevelt was inaugurated as the 32nd President of the United States on March 4, 1933. "The depression was in its depth. Eggs 5 cents a dozen, oats 5 cents a bushel, hogs 2 cents a pound. Of course the cultivator was cheaper, but many people didn't have jobs, and it was dry. What else, it was tough going" (Flueck, "Soil & Water Conservation in Minnesota").

In March of 1933, within a month of the president's inauguration, Congress passed the Emergency Conservation Work (ECW) Law, which established the Civilian Conservation Corps (CCC). The CCC employed young men to work on forest, park, and soil conservation projects. In June of 1933, Congress enacted the National Recovery Act (NRA). This legislation was a broad program (Public Works Administration, or PWA) designed to put people to work. It also provided funding for implementing soil erosion control measures as a means of providing unemployment relief.

On August 25, 1933, the Soil Erosion Service (SES) was established within the Department of the Interior (USDI) to carry out provisions of the NRA relating to prevention of soil erosion. Hugh H. Bennett was selected as the Director to head the agency. Bennett proposed having watershed demonstration projects to promote erosion control. President Roosevelt accepted the proposal personally made by Bennett and Ward Shepard of the Bureau of Indian Service (BIS) in the Department of the Interior (correspondence with Cohee).

The Coon Creek Soil Erosion Control Demonstration Project in Wisconsin set the stage for soil conservation that soon also occurred in Minnesota as well as in the rest of the country. The proposal (sometimes called the Coon Valley Project) was developed and submitted to Washington by Ray H. Davis, Superintendent, La Crosse Experiment Station (loaned to the SES from the USDA Bureau of Chemistry and Soils) in August and September of 1933. Davis had consulted with Noble Clark, Director, University of Wisconsin (UW) Experiment Station, E. R. Jones, UW Agricultural Engineering Department, and Aldo Leopold, Extension Wildlife Management Specialist, UW Agricultural Economics Department, about the proposal.

The La Crosse Soil Erosion Experiment Station had been established in 1931 on a 160-acre farm on Granddad Bluff overlooking the city. In February 1934, O. E. Hays became the superintendent, replacing Davis, who had joined the SES. Much research on soil erosion and conservation measures had already been started under Davis, and more was to occur before the station was closed in 1963. The station was transferred to Lancaster, Wisconsin, and the land was sold to the city of La Crosse for use as a park. As early as 1932, County Agents in southeast Minnesota toured the new station to learn more about soil conservation. Before the La Crosse site was selected, the county agent of Goodhue County had urged that the experiment station be located in Hay Creek Valley south of Red Wing. He had the support of Professor Roe. However, the owner of the land refused to sell his farm (Thorfinnson).

Coon Creek Project was selected by Bennett and Davis as the first project in the nation. It was officially started on October 10, 1933. Actual work started in November 1933.

Supervisors from three Minnesota soil conservation districts visited the Erosion Experiment Station at LaCrosse, Wisconsin in 1939.

Personnel included:

- Project Manager: R.H. Davis. He was appointed Regional Director of Wisconsin and Minnesota in October 1933, and the project was placed under his supervision.
- Four Planners (Erosion Specialists): Herb Flueck (started December 1, 1933), later first State Conservationist of Minnesota; Marvin Schweers, later first State Conservationist of Wisconsin; John Bollinger, later farm planner in Cochrane, Wisconsin; and Joseph Schaenzer, later Chief Engineer, REA (Rural Electrification Administration). Schaenzer was replaced in the summer of 1934 temporarily by Mel Cohee and then by Jack Cummings.
- Four Field Engineers: Loyal Van Doren with Flueck, George Fonken with Schweers, R. Calkins with Bollinger, and __ Johnson (or Jones) with Schaenzer.
- Four Aids: Martin (Pat) Keliher with Flueck, Fred Reber with Schweers, and one each (?) for Bollinger and Schaenzer.

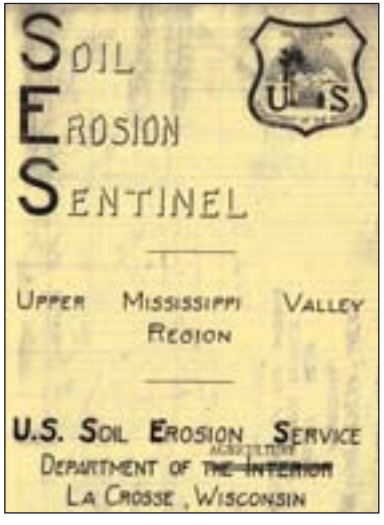
Field headquarters were set up in Coon Valley, a village in the center of the watershed. Coon Creek was an active project for about 3 years, after which it was placed on maintenance status in 1936. George Bowers and Jack Cummings continued as Soil Conservationists.

On file is Herb Flueck's copy of an "Erosion Manual" for the Coon Valley Project. It was prepared by the staff at the regional office in late 1933 and early 1934. This is the earliest erosion control manual I have located and gives an indication on the "state of the arts" for erosion control at the time. It includes a table showing percent runoff—soil loss values for various crops or treatments conducted at the La Crosse Erosion Station for the period 8-1-1932 to 7-30-1933. It also includes the names of 444 signers of a petition for the establishment of the Coon Creek Erosion Control Project.

Six available SES/SCS specialists (seven including Davis) located at La Crosse during the active project included: Farm Management (Economics)—Mel Cohee; Forestry—Warren Chase, Eric Quistgaard, and Al Laidlaw; Agronomy—Ike Landon and Vic Burckow; Wildlife-Biology—Ernest Holt; Engineer—Gerald Ryerson; and Soil Scientist—Art P. Nelson and Alex Robertson. The First Annual SES Report Project No. 1

Mel Cohee

(on file) for the year ending 6/30/34 discusses in detail the problems and treatment activities in the Coon Creek Project. Davis is listed as Regional Director at La Crosse. Cohee says he wrote the report with assistance from the other specialists. Also on file is a 20-page newsletter, "Soil Erosion Sentinal," dated April 1935, published by the Regional Office. It contains an excellent series of articles for the benefit of farmers and on the progress of soil conservation in the area.


SOIL
EROSION
SENTINEL

UPPER MISSISSIPPI VALLEY
REGION

U.S. SOIL EROSION SERVICE
DEPARTMENT OF ~~THE INTERIOR~~
LA CROSSE, WISCONSIN

Early articles were issued in the Soil Erosion Sentinel newsletter to help farmers deal with soil erosion problems.

The success and beauty of the Coon Creek Area as a result of the project has been reported numerous times through the years. Already in 1934, farms on Manske Ridge were show places. "It was the most used picture. The service used it all over the world" (Flueck). Hugh Bennett is reported to have said upon seeing the valley from St. Joseph Ridge during the 20th anniversary (1953) of the project, "It's the most beautiful sight in the world." This remark coming from a man who had traveled

The Coon Valley project in Wisconsin influenced early conservation work in Minnesota. Practices from the 1930's are upgraded but still in use today.

all over the world. The project played a key role in initiating soil conservation activities in Minnesota as well as in the rest of the nation.

CCC Camps in 1933/34

Soon after the passage of the Emergency Conservation Work Law in March of 1933, locations for CCC camps were sought. Six-month enrollees started April 1. By May 1933 selection had been made of nine sites for erosion control work in six counties in southeastern Minnesota. The work area of the nine sites included: 1. Red Wing - Cannon River and Hay Creek; 2. Wabasha - Zumbro and Mississippi Rivers; 3. Whitewater State Park -Whitewater River; 4. Winona - Gilmore Valley and Mississippi River; 5. Hokah - Root and Mississippi Rivers; 6. Caledonia - southern Houston County; 7. Preston - Root River; 8. Chatfield - Root River; and 9. Rochester - Zumbro River. These camps were established by June 1933 and housed 1,550 men (increasing to 1,800 by August, meeting the goal of 200 men per camp). Their headquarters were located in Rochester. Direction for the conservation work was provided by four agencies: the U.S. Forest Service, the University of Minnesota Farm School, the Minnesota Department of Conservation (Drainage and Water), and the Minnesota Highway Department. Conservation work included quarrying rock; construction of reservoirs, trout ponds, and check and wing dams; and erosion control work along highways. Some on-farm conservation work was also done, including construction of terraces.

The CCC was unable to obtain suitable winter quarters, so the nine camps closed in October and the men were transported to southern states. The following

A CCC Camp

spring (1934), soil erosion control camps were reestablished at Caledonia, Chatfield, Houston, Lake City, Lanesboro, Lewiston, Red Wing, and Rochester. The camp established at Whitewater State Park was designated a state park camp rather than an erosion control camp.

In November, all the camps again closed (except Whitewater State Park) and the men were transported to the northern part of the state where winter quarters were available. Barracks had been constructed at the Whitewater State Park providing the needed winter quarters. The CCC men remained here until October 1935, when they transferred to the Plainview camp. The Works Progress Administration (WPA) continued to use the facilities at the park until 1941, after which they served as a German prisoner war camp for two summers. The barracks were used as a youth camp after the war until they were destroyed by a tornado in 1953.

Demonstration Projects

SES work in Minnesota started in September of 1934 when Herb Flueck transferred from Coon Creek to Spring Valley as Field Director in charge of fieldwork in Minnesota. His job was to coordinate the opening of three new authorized soil erosion control demonstration projects in Minnesota. They were Gilmore Creek (Project MN-1) near Winona (5,600 acres), Deer-Bear Creeks (Project MN-2) near Spring Valley (49,600 acres), and Beaver Creek (Project MN-3) near Caledonia (34,400). A fourth project, Project MN-4, Prairie Creek (22,000 acres), near Faribault, was authorized a year later.

There appears to be an inconsistency in the reports as to when Gilmore Creek was established. A 1970 SCS publication (SCS-CI-13) includes Gilmore Creek with Coon Creek, Wisconsin, as the first soil erosion control demonstration project, which was established in October 1933. It also shows the Root River, Minnesota, project (No. 26) as including only Deer and Bear Creeks and Beaver Creek. Mel Cohee also gave me the same information.

From left: Herb Flueck, Minnesota State Coordinator; H.H. Bennett, SCS Chief; and Pat Keliher, Gilmore Creek Project Manager.

Locations of Minnesota projects and camps in 1935.

However, on file is a letter dated August 1934 by Dean and Director of the Department of Agriculture, University of Minnesota, to H. H. Bennett, Federal Erosion Service, requesting establishment of an erosion control project in Minnesota. The letter contains three possible tributaries in the Root River and the Gilmore Valley west of Winona as excellent potential projects. The first annual report for Project 26 (ending 6-30-35) states that all three were established in the late fall of 1934. The "Gilmore Creek Monograph" states that the project was established in November 1934. Further, an article by Al Laidlaw in the October 1935 issue of the *Soil Conservation* magazine references Gilmore Creek as being part of the Root River Project (number 26). The preponderance of the data suggests that Gilmore Creek was authorized as part of Project No. 26. Most references to Coon Creek as being the first erosion demonstration project in the nation do not mention that Gilmore Creek was also included in the first project.

This is what I believed happened. The Root River Erosion Control Project initially was authorized in September 1934 and included only the two units, Beaver Creek and Deer-Bear Creeks. However, a news article of

9-21-34 states that the Gilmore Valley Project may be added soon. This could have occurred in November 1934. That is the establishment date shown in the "Gilmore Creek Monograph" and in the first annual project report. All three units were to be administered from one central project office. However, the triple-unit system of operation proved to be inefficient, and so authority was later granted to operate the three units as separate projects.

Flueck, along with two engineers (Lloyd Van Doren and George Fonken), upon arriving in Spring Valley in September 1934, proceeded to develop a plat map of the Deer-Bear Creeks Watershed, supervised the quarrying of rock by PWA crews, and held local educational meetings. In January and February 1935, they were joined by four erosion specialists (John Staley, Dave Davidson, Sam Hill, and George Wight) and a forester-wildlife specialist (Gus Swanson). In the spring, two more erosion specialists (Morrie Bolline and Norman Boyce) and a soils specialist (F. Hocyt) were assigned to the project. Others to soon enter on duty were Howard Jackson (who became Project Manager), C. Welch, and Julius Kubier. Forty-seven farmers signed cooperative agreements between February and May of 1935. During the first half of 1935, two training sessions lasting 3 weeks were held involving 47 trainees. Most of these men were recent college graduates, trained in engineering or agriculture. A little more than half of the trainees were transferred to CCC camps during 1935 to take charge, in their respective fields, of the erosion control work. Many of the technicians appointed later on came to Spring Valley to receive training before being transferred to a work unit ("Deer-Bear Project Monograph").

Much work was done by CCC camps to control gully erosion.

Work in the Beaver Creek Project by SES also started

Terrace outlet with upper portion sodded and lower portion made of rock masonry in the Beaver Creek project.

in the fall of 1934 with an engineer in charge (possibly D. Ryan). Some terraces had been constructed in 1934 prior to SES involvement by an ECW (CCC) Camp (49 acres on five farms). The technical staff in 1935 consisted of a project manager (H. Tagge), three soil conservationists (Frank Martin, Floyd Higgins[?], and possibly Horace Thomas), a forester (Urban Nelson), an engineer (Dennis Ryan), a wildlife technician (Gus Swanson), and a soils technician (Iver Nygard). Contour stripcropping started in 1935.

Newly constructed gradoni terraces on a barren southwest-facing slope, opposite a densely timbered, equally steep north-facing slope.

Demonstration fieldwork in the Gilmore Creek Project by SES started in early 1935. The technical staff included a project manager (Pat Keliher), a forester (Alan Laidlaw; later Bill Lauer—see *A Passing Parade—The Better Part of a Century* by Bill Lauer), an agricultural engineer (Harold Ogrosky), an agronomist (Bill Sillman), later a soils technician (Iver Nygard), plus technicians and clerks. The project office was on the third floor of the U.S. Post Office in Winona. Other USDA offices were also located in the post office.

Soil erosion in the watershed was extensive. Bill Sillman, in his description of the conditions in the mid-1930's, provides us a clue of the severity of the soil erosion. He wrote, "…The date was the end of March 1935. Pat [Keliher, acting Project Manager showing the group how to survey contour strips] walked us to the middle of the slope where he explained soil erosion. The red colored soil we saw about us was sub-soil and the thin mantle of gray we saw here and there was the remnant of the original top soil which was, when the land was cleared, about one foot deep. There were gullies every 100 feet more or less. They were from two to three feet deep and about a foot wider than the depth. The channel of the gullies appeared to be bed rock. I had never seen such devastation in my life. It was like a bad dream. They can't possibly make a living on this land was my opinion. By the time contour staking was completed I would see a number of severely eroded fields. I don't recall Pat's reply but it most likely was to put soil conservation on this land and turn it all around. If someone were to tell me that in about seven years the Michael Farm would be a show place for soil conservation I would have said he was crazier than a loon…" (William Sillman, "Tour of Gilmore Project").

The Prairie Creek Project was authorized in September 1935 with George Wight as Project Manager. Other personnel included Herb Halverson as forester, Sam Hill as soils technician, Art Libby as agronomist, Sid Krogsrud as engineer, and Lansing Parker[?] as biologist. See Appendix B for more details about Soil Erosion Control Demonstration Projects.

The files show that petitions were also gathered in 1934 for the formation of a soil erosion control project in the Zumbro River Valley involving Dodge, Goodhue, Olmsted, and Wabasha Counties. This project evidently was not authorized.

SES Becomes SCS

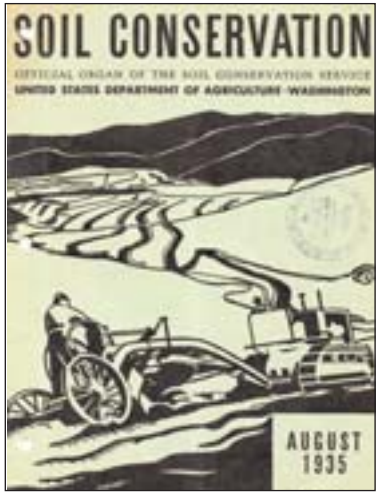
The first great dust storm occurred on May 11, 1934. This was followed by the second great dust storm on March 6, 1935. Clouds of topsoil from the Great Plains swept over Washington, DC, and other eastern cities and extended 300 miles out into the Atlantic Ocean. These storms raised major concerns among the people, including the Congress.

On March 25, 1935, the President moved the SES agency to USDA as recommended in a 1934 USDI committee report, chaired by Ward Shepard, Bureau of Indian Service (BIS), USDI. On April 1, 1935, all USDA's activities pertaining to soil erosion were combined within SES. This included the soil erosion investigations and ten experiment stations (including La Crosse) of the Bureau of Chemistry and Soils and the Bureau of Agricultural Engineering. It also included the 39 erosion control projects, the erosion control nurseries at 14 locations of the Bureau of Plant Industry, and the ECW camps for erosion control work on agricultural land. The 39 erosion control projects included the four already discussed: the three in Minnesota and Coon Creek in Wisconsin.

Great dust storm of the 1930's.

A month later, on April 27, 1935, Congress passed the Soil Conservation Act (Public Law 46) creating the Soil Conservation Service (SCS) within the USDA. The new agency included all the activities conducted under SES. Hugh Bennett was designated the Chief and Walter Lowdermilk the Associate Chief. The establishment of this new agency led to a rapid increase in personnel, funds, and responsibilities. "The next few months were hectic ones. Transfers, reassignments, appointments were daily occurrences. One never knew what to expect from one day to the next—or even if his job was secure" (Morrie Bolline, letter on file). The total number of SCS

employees on June 30, 1935, was 6,622. The total a year earlier had been 2,200. Later in 1935, all SCS employees were "blanketed" into the U.S. Civil Service. SCS started publishing the *Soil Conservation* magazine in August of 1935. The magazines of those first years document in an excellent manner the rapid adoption of soil conservation throughout the nation. The magazine continued to be published until the 1990's.



Cover of the first issue of the Soil Conservation Service magazine in 1935.

By June 30, 1936, SCS had grown to where it included 11 regional offices, 147 demonstration projects, 48 nurseries, 23 experiment stations, and 454 CCC camps. The number of SCS employees increased from 6,622 in 1935 to 10,394 in 1936 and to 13,245 in 1937. See Appendix C for a partial list of SES/SCS employees in Minnesota who began work in the 1930's and early 1940's.

A 243-acre nursery was established on the outskirts of Winona by SCS in 1935. It provided trees and shrubs for conservation and reforestation work. A 1938 report states that the nursery contained 18*1/2* million conifer and deciduous trees planted mostly from seed. Kermit Olson was the first manager. He was followed by Thor Berg. The nursery closed in 1954, when SCS's 24 nurseries in the nation were reduced to ten and converted to plant materials centers. The center in Bismarck, North Dakota, provided plant materials assistance to Minnesota from then on.

Stratifying acorns in Wisconsin for spring planting in field and nursery. Minnesota operations for forestry improvements were similar.

The Soil Conservation and Domestic Allotment Act of 1936 provided payments to farmers for installing approved soil conservation practices. The Agricultural Adjustment Administration (AAA) of the USDA was designated to administer the program. The agency was the forerunner of Production Marketing Administration, then the Agricultural Stabilization and Conservation Service, and now the Farm Service Agency.

Following a series of less effective programs, the Works Progress Administration (WPA) was established by executive order in May 1935. The name was changed to Works Projects Administration in 1939. Before the agency liquidated in 1942, it became the largest relief program in U.S. history, providing employment including work in soil conservation for millions of people. WPA laborers were also employed at the SCS demonstration projects, including those in Minnesota.

CCC Camps Assigned to SCS

The CCC soil erosion control camps established in 1933 and 1934 became known as the "temporary camps" and also as private erosion (PE) camps. Later reports refer to the 1933/34 conservation work as "work done under the old ECW setup." Evidently a more permanent home for CCC camps was needed. Also the decision had been made to transfer the camps from state to federal management—to SES in the case of the soil erosion control camps. Surveying units were engaged in preparatory work for possible camp location during the winter of 1934-35 at various sites, including Plainview, Lake City, St. Charles, Houston, Lanesboro, Zumbrota, Dodge, Nelson, and several other communities. Sites for the first units of CCC camps were selected by the regional SES staff. Sites were selected based on the interest of neighboring landowners to cooperate with the camps in doing erosion control work. The selections were soon made; a news article dated 5-9-35 states that 13 camps comprising 2,600 men would be engaged in conservation work in 1935. The camps were located at: Spring Valley -1, Caledonia -2, Zumbrota -3, Houston -4, Lanesboro -7, Red Wing-9 (Hay Creek), Waterville -10, Lewiston -11, Rochester -12, Plainview -13, Chatfield -14, Rollingstone -15 (camp 15 was never established, although preliminary work was done), and Lake City -16. New Prague was considered a side camp from Waterville. See Appendix D for more details on the SCS CCC camps.

"The CCC camps primary purpose was to furnish work for teenage boys, but at the same time they served a valuable purpose in demonstrating what could be done

to control erosion. Many young men just graduated from agricultural, forestry and engineering colleges, also got jobs as technicians where otherwise there were few, if any, openings.

These young men inspired by the leadership of Hugh Bennett, soon became crusaders for the cause of soil conservation" (Thorfinnson). Many of the conservation measures installed by the CCC camps are still functioning today.

Work crew building a fence in the Beaver Creek project (left); notch spillway dam in the Deer-Bear Creek project built with CCC labor (above).

The responsibilities for camps were shared between the U.S. Army and SCS. The Army was responsible for food, clothing, shelter, health, and discipline for the enrollees. Each morning the men were turned over to SCS, who supervised their workday (5-6

hours) until they returned to camp in the evening (Thorfinnson). SCS field personnel providing technical assistance to CCC camps were located at the individual CCC camp. Appendix E contains a partial list of SCS employees assigned to individual CCC camps.

All four projects as well as the CCC camps were initially located relatively close to one another, which facilitated personnel transfers from one to another. It also allowed some of the personnel to work in more than one assigned project or camp.

Project Accomplishments

The first SCS Annual Report for Project No. 26, ending 6-30-1935 (on file), contains 69 pages on the progress of work in the three demonstration areas. The report states that "approximately 155,000 man-hours of labor, almost entirely SCS and Trainees, were employed in the Minnesota areas." This amounts to about 76 man-years or an average of 25 man-years for each of the three projects. This included about 106,000 man-hours of skilled laboring positions for quarry work, fencing, forest planting, engineering, and agricultural work. The report continues, "under the College Trainee Program, 65 men were employed in all, contributing nearly 40,000 hour of work.... many of them are now planning and directing work, both on demonstration projects and in the ECW camps." Some labor (9,000 hours) was available from the CCC camps for work in the projects.

The next annual report (1935-36) contained 124 pages on SCS activities in the 4 projects and 12 CCC camps in Minnesota. A lengthy discussion of 12 topics appears. The report states that monthly reports were submitted to the central administrative office in La Crosse concerning data about farms worked on, conservation practices planned and applied, etc. Keeping records must have been a major time-consuming activity. The form used in each project and camp for the Statistical Summary included 167 line items.

The 1935-36 annual report also includes a detailed accounting of WPA and CCC labor (time and cost) for each demonstration project and camp. WPA labor for the 3 projects in 1935-36 amounted to 212 man-years at a cost of $127,000. CCC labor for the 3 projects and the 12 camps amounted to 383,000 man-days. No reasons were given why values for Prairie Creek Project were not included. Number of farms under agreement as of June 30, 1936 were: Gilmore Creek, 44; Deer-Bear Creek, 111; Beaver Creek, 106; Prairie Creek, 19; and ECW (CCC) Camps, 295; for a total of 575 farms (Appendix of the

Display model of before and after conservation farm scene built by the staff at the Deer-Bear project office.

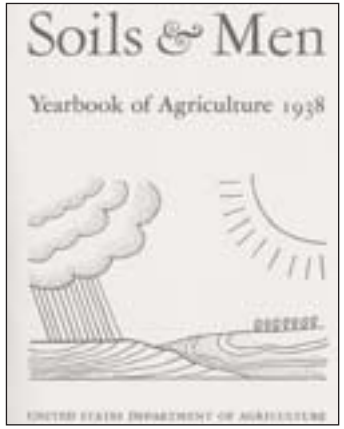
annual report). Detailed information for one of the camps, the CCC camp at Caledonia, is available. Company 1720 was assigned to the Beaver Demonstration Project to furnish the necessary government labor. The camp was under the supervision of a superintendent and a staff of engineers and a forester. During 1936, 206 CCC boys were enrolled at the camp, making about 175 available in the field. In addition, the camp had four terracers, a caterpillar, a bulldozer, and five trucks. A large amount of local labor--about 175 people-- was also involved ("Beaver Project Monograph/Outline of Project Work Program").

The 1936-37 annual report for the Gilmore Project includes a statistical summary of conservation application for the four attached CCC camps as well as the Gilmore Project. It also states that the type of program being applied in the camp areas did not vary greatly from that applied in the Gilmore Project. This was an important point, because the cooperators with the camps did not receive the financial incentive that those in the Gilmore project did. Their conclusion was that in the long run, the best cooperator is the one who received little or no material subsidy but rather puts forth his own resources and, therefore, is more careful regarding his investment. In addition to soil erosion control, the Prairie Creek Project also dealt with water conservation. The nearby CCC camp at Waterville was set up as a water

conservation camp and at first was confined to restoring lakes in this part of Minnesota. After 3 years, 32 dams had been constructed in cooperation with the Minnesota Conservation Department in Rice, Le Sueur, Scott, and Waseca Counties. Fifty thousand acre-feet of water is held by these 32 dams.

Documents for the projects already cited in this book contain many excellent photos of the huge soil erosion conditions that existed. They also include discussions of the effectiveness of the program, advances in techniques, physical progress, and administrative issues. Also on file is a seven-month collection of weekly diary reports (September 1937-March 1938) by Bill Sillman. It provides an amazing detailed record of each day's activities (Weekly Report, William Sillman). Documents for later established demonstration projects were not prepared or have not been located.

Also on file is a copy of a rather interesting farm plan/contract dated 2-15-38 developed with Henry Matthees and Armin Pasche of Rollingstone, Minnesota, by Carl Clardy, Soil Conservationist at the Lewiston CCC camp working with the Demonstration Project at Spring Valley. Included is a detailed narrative on the work the Government agreed to do (cut posts, furnish wire, construct fences, provide lime, furnish and plant trees, etc.) and the work and management the landowner agreed to do "Plan of Conservation Operations" with Henry Matthees and Armin Pasche].



Soils and Men, which included soil erosion summaries made in 1934 for the nation, is now recognized as a classic.

Soil Erosion Surveys

Soil Reconnaissance (Erosion) Maps were developed by SES for the nation in the fall of 1934. Alex Robertson headed the Minnesota effort.

The October 1935 issue of *Soil Conservation* lists the mapping for Minnesota (1 to 500,000 scale) as being completed. Results from the study showed that as a nation 37 percent of the total land in the nation had slight erosion, 41 percent had moderate erosion, 12 percent had severe erosion, and 3 percent was essentially destroyed. The remaining 7 percent was categorized as "other" (*1938 Yearbook of Agriculture, Soils and Men,* p. 90; this 1,232-page document, now recognized as a classic, was available for $1.75).

In Minnesota, the survey showed that 20 percent of the land had been affected by sheet erosion (one-fourth to three-fourths of the topsoil lost), 25 percent had been affected by wind erosion, and 15 percent had been affected by gullying. Fifty-four percent of the land had little or no erosion (Thorfinnson).

The Soil Survey Program expanded rapidly with the creation of SCS in 1935. The Program had been started in 1899 by the USDA's Division of Soils. It cooperated with the Land Grant Colleges in what was called the National Cooperative Soil Survey. About 18 county/area soil survey reports had been published in Minnesota by 1935.

A detailed erosion and soil survey (also called conservation survey) was undertaken by SCS in the four projects. (These surveys did not replace the soil survey program of the Bureau of Chemistry and Soils, later the Bureau of Plant Industry, Soils, and Agricultural Engineering.) The plane table method of developing surveys was used initially, especially in the flatter areas. Maps based on aerial photographs were used in the rough rolling areas and, before long, for all surveys. A total of 87,326 mapped acres was reported for the four projects as of June 30, 1936.

SCS State Coordinator

Herb Flueck, in addition to being in charge of fieldwork in Minnesota, also served as an assistant to R. H. Davis, the Regional Director. In May 1936, Flueck transferred to the La Crosse office as Assistant State Coordinator for Minnesota. Davis also served as the State Coordinator for Minnesota. Soil conservation work in Minnesota was jointly administered with Wisconsin from the La Crosse Regional Office from 1934 to 1937.

Flueck was designated as Acting State Coordinator for Minnesota in February 1937 by the Chief. Flueck's office was established at 2429 University Avenue West in St. Paul in April 1937. Davis had transferred to Washington, D.C. in February of 1937. The La Crosse Regional Office was closed. Wisconsin and Minnesota became part of SCS Region 5 (along with Illinois, Iowa, and Missouri) under Regional Director R. E. Uhland. Region 5 had been

Herbert A. Flueck

established with headquarters at Des Moines, Iowa, on December 11, 1935. The office was later transferred to Milwaukee, Wisconsin, in March of 1939 and became known as the Upper Mississippi Region. Later, R. H. Musser became Director of Region 5. The St. Paul office personnel for early 1937 included an Acting State Coordinator (Flueck), an Acting Assistant Regional Administrator (also Flueck), one in ECW [Emergency Conservation Work] (L.V. Tyner followed by C.C. Allemen), and two clerk-stenographers. Flueck became the State Coordinator for Minnesota later in 1937. An Assistant State Coordinator position held by Martin M. Keliher is included in the 1938-39 annual report. He left the agency shortly thereafter (probably in 1941).

A major administrative change in the organization of projects occurred in 1937. All technical, administrative, fiscal, and procurement business for SCS projects and camps was placed in project offices. Previously, these activities had been handled through the Regional Office in La Crosse (now closed). Large numbers of personnel transfers and a few appointments occurred in order to establish technical and business offices in each of the four projects. The Winona Project Office (Gilmore Creek) staff grew to 20 people, while the staff at each of the then four attached CCC camps had 10-11 people. This arrangement allowed for closer supervision of the work in the camps by the project office (Annual Report, Gilmore Creek Project, 1936-37).

This arrangement soon changed again. In 1938, all the CCC camps, except Spring Valley, Chatfield, Houston, and Caledonia, became administratively attached to the Prairie Creek (Faribault) Project. Initially, seven CCC camps had been attached to the Deer-Bear (Spring Valley) project and five camps to the Gilmore Creek (Winona) Project. Four of the active camps formerly administrated by the Spring Valley Project Office had been under Project Manager Howard Jackson prior to his transferring to a similar position at the Faribault Project Office in February 1938. Spring Valley, Chatfield, and Houston had become maintenance camps during the fiscal year. The Caledonia camp remained attached to the Beaver Project.

Extension Service Role in Soil Conservation

County agents (Extension Service) were involved from the outset in promoting soil conservation in Minnesota. The Extension Service and the Soil Conservation Service agreed at the Federal level in 1935 that the Extension Service assume responsibility and leadership for soil con-

servation educational work. In Minnesota, the Soil Conservation Advisory Committee in 1935-36 consisted of: Dean W. Coffey and Extension Director F. Peck of the College of Agriculture, University of Minnesota; Director E. Willard of the State Conservation Department; and R. Davis of SCS as the State Coordinator. Flueck replaced Davis on the committee in February 1937.

The CCC camp personnel and local county extension agents encouraged cooperators at each camp to organize soil conservation associations as a means of becoming better informed on soil conservation practices and to promote soil conservation in their camp areas. Prominent county agents were Harold Peterson, Francis Brady, G. J. Kunan, and Matt Thorfinnson. The local Farm Bureau helped with publicity and demonstration tours. A parent state association embracing the local associations was organized in February 1936 and named The Southeastern Minnesota Soil Conservation Association. The issue that really brought the local associations together was the need in late 1935 for a concerted action to retain the CCC camps in southeastern Minnesota to continue their conservation work. The Federal government had been planning to reduce the number of camps and personnel (Thorfinnson).

Matt Thorfinnson, Extension Soil Conservationist

In 1936, a joint SCS/University of Minnesota position, extension soil conservationist, was established and filled by Matt Thorfinnson, a former county agent from Goodhue County. His responsibilities were to work closely with the projects and camps and their respective soil conservation association. It soon became apparent to him as it did to others both nationally and in Minnesota that farmers located in the fringe areas of the camps and beyond would never receive assistance unless some new approach was devised.

One approach adopted in 1936 by the Extension Service and SCS to promote soil conservation in all parts of a state was for the county agents to select demonstration farms and for SCS to make soil surveys and develop conservation farm plans. The "Appleton Dust Bowl" in Swift County was one of the first areas selected for demonstration farms in Minnesota. In 1937-38, there were 21 farms selected in Minnesota. The Activities Map for 1938-39 shows over 60 cooperative demonstra-

tions farms in 17 counties. The removal of CCC camps at Houston and Chatfield in 1937 promoted an Extension Service/SCS study on the effectiveness of the camp demonstrations. The survey conducted by the Extension Service in early 1939 included farmers living in the camp areas. Interviews with county agents and SCS technicians were also made. A detailed report entitled "A Study of the Effectiveness of CCC Camp Demonstrations" (on file) was prepared by Thorfinnson. It summarizes the study including a summary of replies by 51 farmers to 27 questions. It also includes selected paragraphs of the soil conservationist's (Gardiner Graham) monthly reports for March-October 1939 on accomplishments and problems encountered in the Chatfield camp (an excellent insight on the day-to-day activities of the technician). The study showed that the camps were successful in controlling erosion on cooperators' farms. However, the spread of practices to other farms had not yet occurred to any great extent. Most respondents felt the camps moved out too soon.

Soil Conservation Districts

Formation of soil conservation districts (SCD's) by local people under state law proved to be the new approach that was needed. Early in 1937, President Roosevelt sent a standard soil conservation district law to state governors asking them to adapt it for their states and to have the law enacted. There was a great favorable response. Minnesota passed the law on April 21, 1937. The 1936-37 annual report contains a detailed discussion on how the Minnesota law differs from the Standard Act.

The Law called for soil conservation districts to be governmental subdivisions of the state, organized and operated by farmers for the purpose of conserving their soil resources. The affairs of the district were to be governed by an elected board of five supervisors who were responsible for developing a program of soil conservation for the district and for the application of this program on the land. The new approach allowed local people to develop district programs addressing their issues and concerns rather than having this development done by state and/or Federal government. Districts may call upon state and Federal agencies to assist them in implementing their respective programs.

The procedure followed in organizing soil conservation districts was generally as follows:

- Survey of conservation needs
- Educational meetings to discuss the needs and provisions of the law

- Establishment of local working committees to oversee the organizing effort
- Circulation of petitions and submission to the State Committee
- Conducting public hearings
- Obtaining consent of a majority of the landowners,
- State Committee, Scheduling of a referendum
- Creation of the district if a favorable vote occurred,
- Election of Supervisors
- Development of district program by Supervisors and implementation of the plan of work.

The Law also created a "State Soil Conservation Committee" (later the name Committee was changed to Commission). At first Soil Conservation Districts were established by watershed boundaries or township boundaries; later established districts included the entire area of respective counties.

The first district, Burns-Homer-Pleasant (townships in Winona County), was organized in 1938. Others soon followed, including: Rollingstone-Stockton-Gilmore Creek (Winona County) and Root River (Houston County) in 1939; East Fillmore County, East Goodhue County, Upper Zumbro (Olmsted County), and Dakhue (parts of Dakota and Goodhue Counties) in 1940; Lake Pepin (Wabasha County), Whitewater (Winona County), Scott County, East Agassiz (Clay, Norman, and Polk Counties), and Washington County in 1941; South Wabasha, West Fillmore, Rice County, and South Goodhue in 1942; and Wright County in 1943. Bulletins on file include: "Soil Conservation Districts in Minnesota," March 1941, and (same title) 1945. More information on establishment of operating units/offices between 1934 and 1945 is provided in Appendix F.

First governing body of the first soil conservation district in Minnesota, the Burns-Homer-Pleasant Soil Conservation District, with the SCS project manager and county agent.

Early conservation leaders in the private sector providing outstanding leadership in getting the Minnesota Soil Conservation District Law passed were Orval Haberstad, of Lanesboro, first president of the Southeastern Soil Conservation Association; Alfred Burkhardt, of Plainview, second president; August Lohman, of Zumbrota, third president; and Rev. E. Scharlemann, of Oak Center. Also important were Senators Mike Galvin of Winona and James Carley of Wabasha and George Kieffer of Lewiston in the House. Prodding when necessary was "Lefty" Hymes of the Winona Daily Republican. Herb Flueck and Matt Thorfinnson advised and responded to legislative committee needs (Thorfinnson's report). Clint Dabelstein (seated on the left in photo) served on the original 1938 Board of District Supervisors of the Burns-Homer-Pleasant SCD and continued to serve in that capacity until his death in 1985. He was the original chairman and present chairman when he died. A record! Nearly 50 years!

After 1938, the work of SCS nationally as well as in Minnesota began to change from a demonstrational character to strictly assistance to soil conservation districts and farmers and ranchers therein. As districts were organized, the demonstration projects became a part of their operations and a separate project entity became extinct. In reality, SCS work did not change, but SCD governing bodies now had the responsibilities for all conservation work, including the demonstration projects. For the most part, SCD and SCS offices were co-located, which allowed for close working arrangements in promoting and implementing the programs of both. Districts later became known as "soil and water conservation districts" (SWCD's).

The State Legislature made an appropriation of $2,000 to the State Soil Conservation Committee in 1941. The amount was $2,700 in 1943 and $19,000 in 1945. This trend has continued over the years, with more and more being appropriated.

Land Utilization Projects

Two Land Utilization Projects in Minnesota came under the jurisdiction of the SCS in November 1938. The Land Utilization Program had been authorized by Congress in July of 1937. The Minnesota projects included the Beltrami Island Project (a 742,000-acre area located in Beltrami, Lake of the Woods, and Roseau Counties) and the Pine Island Project (a slightly larger area, about 800,000 acres, located in Koochiching County). The

Minnesota Conservation Department, especially the Forestry and Game and Fish Divisions, were actively involved with all phases of the development work, starting 3 years or more before the 1938-39 fiscal year. It appears that the role of SCS was limited to administrative in nature, likely the handling of PWA and WPA funds.

These projects were not one of "soil conservation" but of "land utilization." "…[O]ver 527,000 acres of land (Beltrami Island Project Area) once held promise enough for settlers to gain title to it, and then later to be forced to relinquish that title through their inability to wrest from the acres sufficient income to support their families and to pay the taxes imposed on them by the state. Settler relocation has been accomplished over a period of 3 years to the extent that there are but a handful of resident owners in the Pine Island Project Area…. The county is extremely anxious that the Government complete the removal of settlers and purchase remaining privately owned tracts" (1938-39 Annual Reports for Pine Island and Beltrami Island Land Utilization Projects).

The program was one of wildlife and forestry development within the project areas. Technical improvements were made by personnel from the Wildlife and Forestry Divisions, Minnesota Conservation Department. Total estimated expenditures amounted to $150,000 for the Beltrami Island Project and $85,000 for the Pine Island Project. These expenditures were paid with WPA and PWA funds. There were no CCC camps nor Soil Conservation Districts within the two projects' area. There were base and side camps built earlier by the CCC which were used to house local and some transient labor necessary for the development of these areas. Fourteen remaining buildings of one of the camps (Norris) were added to the National Register of Historic Places (correspondence with Barb Sommer). The 1938-39 annual project reports contained plans including staffing and cost estimates to be incurred after the projects are turned over to maintenance. The two projects were assumed by the Minnesota Conservation Department during the 1940-41 fiscal year as per lease arrangement between the USDA and the State of Minnesota. The 1937-38 SCS annual report for Minnesota including the map makes no reference of the Land Utilization Projects. It appears, therefore, that SCS involvement with land utilization activities in Minnesota commenced in fiscal year 1938-39 and continued until fiscal year 1940-41.

SCS Area Office in Faribault

On April 1, 1939, the four demonstration projects and the remaining nine CCC camps in Minnesota came under the administrative and technical supervision of a newly established SCS Area Office at Faribault. SCS had established the "area office organizational policy" in December of 1938. The Faribault Area Office (Area 1 – the southern three tiers of counties in the state plus Dakota and Sibley Counties) now handled all the administrative and technical supervision of the operations in Minnesota. The plan was to eventually establish a second area office (Area 2) for the northern part of the state. Until such time, the personnel of Area 1 also carried out all operations in Area 2, with the exception of the Land Utilization Program.

SCS property at the projects was transferred from project office accounts to area accountability. Heretofore, each of the four projects had been a separate administrative unit accountable since 1937 to the Regional Office in Des Moines. Prior to 1937, the Regional Office in La Crosse handled the administrative business for all projects and camps. The State Coordinator's (Flueck) Office in St. Paul was not a state office. It had no administrative responsibilities; it mainly provided coordination between the state agencies and committees and the Regional Office. With the change, the number of administrative units in Minnesota was reduced from four to one. Howard Jackson, who had been project manager of the Prairie Creek Project at Faribault, was named as the Area Conservationist, accountable to the Regional Office now located in Milwaukee. The area office staff included ten positions by 1942; namely:

- Howard Jackson, Area Conservationist
- Iver Nygard, Area Soil Specialist
- W. Marian Roberts, Area Agronomist
- Lee Moore till early 1942, then Herb Halverson, Area Forester
- Lloyd VanDoren, Area Engineer
- Lansing Parker, Area Biologist
- George Bowers, Conservationist
- E. Pittenger, Administrative Assistant
- Secretaries and/or clerks

The project conservationists (as they were then called) included Harold Ogrosky (Gilmore Creek), Winona; Floyd Higgins (Beaver Creek), Caledonia; Urban Nelson (Deer-Bear Creeks), Spring Valley; and Herb Halverson (Prairie Creek), Faribault.

A news article (on file) states that this reorganization "is

putting a 'streamlined' army of trained erosion fighters into the field this spring," according to Flueck, state coordinator. "The purpose is to achieve greater economy and efficiency by placing more administrative responsibility in the field while leaving project staffs free to spend a greater portion of their time in actual field work." "…[P]rocess in the organization of soil conservation districts has placed increased responsibilities on the service which the reorganized staff is better able to carry." A scrapbook of newspaper articles covering the activities of the Faribault Area Office (1939-42) is on file.

Last Days of CCC Camps and Demonstration Projects

Several soil erosion CCC camp relocations occurred between 1939 and 1941; namely, from Rochester to Bayport—17 (1939), from Zumbrota to Winona—18 (1939), from Red Wing to Jordan—19 (1940), from Waterville to Maple Lake—20 (1940), and from Lake City to Fergus Falls—21 (1941). See Appendix E for names of SCS personnel assigned to each CCC camp.

In total, there were CCC camps in about 155 locations in Minnesota; 57 administered by the U.S. Forest Service, 45 by the State Forest Service, 21 by the Bureau of Public Parks, 9 private erosion camps, 12 by SCS, and 11 others. Barbara Sommer's unpublished manuscript provides an excellent coverage on all CCC camps and their accomplishments in Minnesota. What makes her work so unique is that she relies heavily on several Oral History Projects, quoting from interviews with former CCC enlistees. "Interviewees describe enrolling in the CCC, life in the camps, the work programs, use of free time, educational opportunities, and importantly, the impact the CCC had on the people who were a part of it." CCC camps officially closed June 30, 1942. Their story in Minnesota is interpreted at the Minnesota CCC History Building at Ironworld in Chisholm, Minnesota. The two surviving CCC work camps in Minnesota, the Norris camp in the Red Lake Wildlife Management Area and Rabideau Forest Camp in the Chippewa National Forest, have been added to the National Register of Historic Places. The latter is in the process of being named a National Historic Landmark. With the closing of the CCC camps, the challenge for continuation of any soil conservation work was left up to the farmers who needed to organize soil conservation districts.

One last word about the CCC camps involves Camp-19 at Jordan, close to my upbringing. The camp was moved from Red Wing in 1940 and "located on a barren, sandy

stretch of land containing no tree or brush growth. …Numerous small trees, grass and flower gardens have been planted." It evidently was not a very desirable piece of land. This was the third time that the portable buildings had been moved and reconstructed. Considerable labor was necessary to bring the buildings to acceptable standards. Many of them needed to be painted. Soft coal was used to heat the buildings. (Camp Inspection Reports of June 27, 1941 and February 27, 1942, on file) The camp existed for less than two years. An article in "The Jordan Independent" stated that "[u]pon closing of the camp in May 1942, the site and buildings served as a storage depot and supply center for CCC equipment and materials. Old model trucks, tools, clothing, beds, bedding and everything else that was formerly CCC equipment were brought to the Jordan camp from various camps in Minnesota, North Dakota, South Dakota and Iowa. The goods were cataloged and inventoried. Materials usable were taken over by the Army.

The balance was sold for junk salvage and the money turned over to the Army." The last CCC enlistee in Minnesota (Earl W. Dean) was discharged from the Jordan camp at 2 PM on July 31, 1942. (Earl informed me that since he was the head cook he was expected to clean up the kitchen after serving the noon meal to the last group of enlistees. They were discharged at 12 PM.) This writer recently visited the former camp site, now within a farmstead. The well and numerous concrete foundations still exist. Several photos were taken and are on file.

Three more soil erosion control demonstration projects were authorized just prior to WWII. They were Twin Valley in Norman County in 1939 for wind erosion with Art Libby as project conservationist; Clear Lake in Sherburne County in 1940, also for wind erosion, with Gardner Graham as project conservationist; and Storden in Cottonwood County, also in 1940, for water erosion, with Norm Boyce as project conservationist.

Limited data on the three were found. This may be because fewer reports were developed then was true for earlier projects, or because of limited resources in light WWII. Located were some test plot data on yields with various tillage implements conducted in the Clear Lake and Twin Valley Projects in 1942-43 (appears to be some early water conservation studies on sandy soils). SCS work in erosion demonstration projects officially came to an end on June 30, 1944. See report on "Gilmore Creek Erosion Control Project Revisited" in 2001.

Two farm forestry projects, Twin Valley and Winona, were established in 1940. The program was authorized by the Cooperative Farm Forestry Act of 1937. These were cooperative projects administered by SCS with cooperation from the Minnesota Experiment Station, the Extension Service, and the State Forestry Division. The program was an attempt to further coordinate the various phases of the farm forestry program. Bill Lauer was assigned as the SCS forester in Winona. The program was transferred to the Forest Service in 1945.

An exception to the many successful soil conservation activities in southeastern Minnesota was Beaver Valley in the lower Whitewater River Watershed. The early history of Beaver Valley is similar to that of other valleys in the area. The junction of Beaver Creek with the Whitewater River offered an ideal location for water power to grind the local grain. The village of Beaver began at this location in the mid 1850's and flourished into the 1900's.

However, as the valley was cleared of trees and either cropped for growing wheat and later corn or grazed as pasture first by cattle and later by sheep and goats, the hillsides became more and more exposed to soil erosion. Sedimentation in the lower valley amounted to as much as 10 feet of mud and sand. Floods became more common, but no one knew a way to stop them.

The record flood of 1935 was the beginning of the end for people in Beaver Valley and the lower Whitewater River floodplain. The village of Beaver was flooded waist deep for 3 hours, and then it flooded again 4 hours later as the Whitewater River went out of bank putting water levels still higher than the earlier flood. Each year thereafter the floods became worse. In 1938, the Whitewater River overflowed its bank 28 times. Highway 74 was closed longer than any other Minnesota highway. Farming became impossible, and families began to move out of the valley. Most of the village buildings were washed away, and those remaining were eventually torn down. The state began to buy up the abandoned land and converted the land into a wildlife management area. Eventually the area came to be known as the Richard J. Doerer Wildlife Refuge.

Flood Control Efforts in the 1930's and 1940's

The first stage of Federal legislation to help local governments and organizations bridge the gap between soil and water conservation work on individual farms and the downstream dams came with the Flood Control Act of 1936, as amended in 1937. The amended law recognized the

Willow abutment provided streambank protection in the Gilmore Creek project.

need for runoff and waterflow retardation on watersheds as a principal means of flood prevention.

The amended law authorized the Secretary of Agriculture to conduct preliminary examinations and surveys in nearly 150 localities in the nation. In Minnesota, Gilmore Creek, Root River, Zumbro River, and Whitewater River were included. WWII delayed actions under this law.

Flood prevention studies were conducted in the Whitewater River Watershed. The flooding problems of Beaver Creek and the Whitewater River were, no doubt, part of the reasons for the flood prevention studies in 1939-41. On file is a draft report on the study, entitled "Detailed Examination Report on Whitewater Watershed, Minnesota, for run-off and waterflow retardation and soil erosion prevention for flood control purposes" (correspondence with W. Lauer also confirmed the undertaking of the study). Alex Robinson was the party leader of the study, Harold Ogrosky the engineer, Charles Skaife the agronomist, Herman Welch the economist, and Harold Scholz the forester. The study showed that floodwater retarding structures were not economically justified. The alternative recommended was a change in land use. The 1938-39 SCS annual report states that "[e]ducational work is being carried on by the Extension Service in several watersheds in the southeastern part of the state. However, emphasis is being placed on the Whitewater drainage area."

The study was administered directly from the regional office. Upon completion of the study, the crew (part of the crew, I think) moved to Cherokee, Iowa, to undertake a similar study of the Little Sioux River Watershed. Whether flood control studies were ever undertaken in Gilmore Creek, Root River, or the Zumbro

River during this time period was not determined in my review.

On file is a copy of a preliminary report on the Minnesota River Watershed which was submitted to the Regional Office in Des Moines, Iowa, on 3-26-37. This was in response to a 3-18-37 request for available information on the study area. The report followed the outline sent out by the regional office, entitled "Preliminary Examination Compilation of Available Data Relative to Runoff and Water Flow Retardation and Soil Erosion Prevention." The report also states that the Lower Minnesota River Valley Flood Control Association had been formed on 2-2-37 at Mankato with Mayor A.D. Flor of Mankato being one of the Directors. It further states that the War (today Defense) Department had held a meeting to determine the damages done and possible cooperation.

The Flood Control Act of 1936 (dated 6-22-36) included the Minnesota River among those localities for study by the War Department. It appears that SCS agreed to cooperate with the Corps of Engineers by providing them available information on the Minnesota River.

It also appears that these types of efforts by SCS, which, very likely, occurred in other parts of the country, led the way for the Flood Control Act of 1936 to be amended by Congress (8-28-37) authorizing the Secretary of Agriculture to undertake flood control studies. Based on these studies, USDA submitted proposals to Congress.

The Flood Control Act of 1944 (PL-534) included approval for USDA of 11 proposed watersheds in the nation, including the Little Sioux Watershed located in Iowa and Minnesota. Watershed investigations for installing measures to reduce runoff and erosion in the Little Sioux Watershed were carried out by SCS in Iowa.

SCS State Office

On July 1, 1942, SCS went through another reorganization. Some regional offices were eliminated. Area offices and state coordinator offices were abolished. State offices were established with full responsibilities of all SCS work in a state. The Service adopted a line and staff organization, as is still the case. Herb Flueck became the State Conservationist in Minnesota with full administrative and technical responsibilities and reporting directly to the SCS Chief, Washington, DC. Previously these responsibilities existed at the regional level; their role now was to provide technical assistance to the states. The need for an expanded office resulted in the

Minnesota State Office being established at 180 Snelling Avenue North in St. Paul. In late 1943 or early 1944, the office was relocated to 517 Federal Courts Building in downtown St. Paul, where it remained until 1967. The responsibilities of the area office at Faribault were assumed by the newly created state office. The SCS state office staff with the reorganization grew to about 12 positions by 1954, including:

- State Conservationist—Herb Flueck (GS-13), 1942-68
- Assistant State Conservationist—Roy Bennett (GS-11), 1942-54
- State Soil Scientist—Alex Robertson (GS-11), 1944-70
- State Administrative Officer—Bill Russell (GS-12), 1953-54
- Administrative Assistant—Werner Schaenzer (GS-9), 1942-54
- Chief Clerk—Van Beran (GS-7), ?-54
- Procurement Clerk—? -52; George Schaefer (GS-4), 1952-57, plus five clerks and secretaries.

The name of Prof. A. C. Arny appears on the distribution list along with other state office personnel for the Soil Conservation Magazine from 1940 to 1945. Arny was an agronomist at the University of Minnesota. Whether he was actually located in the SCS State Office was not ascertained. See Appendix G for information about the locations of the state office 1937-2003.

Of the personnel located at the abolished Faribault Area Office:

- Howard Jackson went on special assignments evaluating conservation activities in the nation. Eventually, he became State Conservationist in Missouri.
- Iver Nygard returned to the University of Minnesota and completed a doctorate in soils.
- George Bowers, Herb Halverson, and W. Marian Roberts were reassigned to other SCS positions in Minnesota. Lee Moore had been reassigned earlier.
- Lansing Parker and Lloyd Van Doren resigned from SCS.
- The fate of the others is not known.

The state was divided among seven work groups (called regional offices in some newspaper articles) headed by a district conservationist (DC) in each, namely: Work Group 1, Twin Valley, later Moorhead: Art Libby, 1942-53; Work Group 2, Stillwater: Morrie Bolline, 1942-54; Work Group 3, Marshall: George Bowers, 1942-46/47?; Olaf Skramstad, ?-49?; Work Group 4, Belle Plaine: Herb Halvorson, 1942-45/6?; Work Group 5, Red Wing: Lee Moore,

1942-53; Work Group 6, Rochester: ? maybe Marian Roberts, 1942-71; Work Group 7, Winona: E. Norum, 1940-?, John Staley, 1942-49.

In late 1945 or early 1946, the boundaries and numbering sequence of the work groups were slightly revised. The office at Twin Valley was moved to Moorhead with Art Libby as the DC. The office in Belle Plaine was moved to St. Peter with Herb Halverson as the DC. Two new offices were established, one in Fergus Falls with Urban Nelson as the DC and the other in Owatonna with Frank Martin as the DC. The total of nine work groups is supported by a 1948 newsletter that mentions nine work groups with the Rochester work group including Dodge, Olmsted, Mower, and Fillmore Counties. The Winona Work Group was combined with the Rochester Group in 1949 with the retirement of John Staley.

The 1942 reorganization was again done "in the interest of economy of operation and to release a major portion of funds for field work," "to give farmers and ranchers more help with wartime production and conservation problems." Seventy-five area offices in the nation were closed. Also with this reorganization, the number of regional offices in the nation was reduced from ten to seven. Region 5, headquartered in Milwaukee, gained three states. Another reason was that cooperating state agencies wanted SCS to have full powers and staff within each state, not in regional offices.

Difficult Times of WWII

Maintaining a good staff during the Second World War was difficult. Many employees were drawn into military service, thus forcing a reduced overall operation. "It was a very difficult period," according to Herb Flueck. Over 3,000 employees in the nation were on military duty. (The number of full-time employees was 7,139 on 6-30-44. It had been 12,728 on 6-30-41, 11,294 on 6-30-42, and 7,301 on 6-30-43.)

State and County War Board activities required considerable time for the state conservationist and the field personnel. One activity was the Timber Production War Project that called for developing plans for woodland management and utilization. Another was the War Board Canning Committee, chaired in Minnesota by Flueck. Increased crop production was promoted. Drainage of wet soils was viewed as a way to increase food production.

Several reorganizations within USDA occurred during the war years. Various groupings of SCS with other agricultural agencies started in 1941. In 1943, SCS became

part of the War Food Administration (WFA). "The Administrator of WFA had equal powers with the Secretary of Agriculture and the Secretary of Agriculture had equal powers with the Administrator of WFA." (strange ?)

WFA directed USDA and its major agricultural production and protection agencies (SCS; Agricultural Adjustment Administration [AAA]; Farm Security Administration [FSA], forerunner of Farmers Home Administration, which is now Rural Development; and others) to work toward increased food and fiber production. Technical assistance came from SCS, fund payments from AAA, and other assistance from FSA.

To some extent the funding came through state war boards under policies from the WFA. SCS contributed much planning with the transfer of its national planning unit (headed by Mel Cohee) to the WFA. In June 1945, the WFA was terminated and SCS continued as a separate agency in USDA directly responsible to the Secretary.

Post-war planning is discussed in the SCS 1943-44 Annual Report for Minnesota. Discussions were held with district supervisors to formulate a program of action consisting of (1) determination of each district's conservation needs and (2) listing of all jobs necessary for a complete conservation program on every district cooperator's farm. It was to serve as the basis for requesting additional assistance in the future. Most district supervisors were not interested in returning to the old WPA type of Federal assistance. They saw this as a waste of labor and money.

The SCS Annual Reports for Minnesota (on file through 1946-47) repeatedly discuss the cooperative efforts of SCS with SCD's, Extension Service, AAA, FSA, Forest Service, State Conservation Department (now Minnesota Department of Natural Resources), and others. Although these cooperative efforts may have been real, there is no doubt that each agency pursued its own agenda first.

Post WWII Conservation Activities

The late 1940's saw rapid increases in conservation activities. The war years were over and SCS'ers returned to their former jobs. Food production was still a high priority. "Not only were farmers in new districts asking for help, but the demand also increased in older districts.

Green fields curving around the hill instead of up and down the slopes have become almost a trademark of soil conservation in much of the Midwest. They are one of many signs that a brighter day is dawning for the lands."

These are quotes from the 1946-47 annual report by R. H. Musser, Regional Conservator, Milwaukee (on file). Various views, no doubt, exist today on the extent that the brighter day did dawn for the lands in succeeding years.

A SCS training center for professional employees was established at La Crosse in 1943. In July of 1948, a training center at Coshocton, Ohio, was fully established. It combined the centers formerly located at La Crosse and Carbondale, Illinois. The training center moved from Coshocton to East Lansing, Michigan, in 1963. New SCS employees in Minnesota attended these centers for additional training.

Interest in drainage work is first mentioned in the 1942-43 SCS Annual Report for Minnesota. This was considered a significant development in the state. Abnormal rainfall is discussed in the report. It is discussed again in succeeding years through 1946-47 (the last year with annual reports on file).

Formation of SCD's during this period frequently occurred because of the wet soil problems. Needed assistance with drainage practices was considered important to landowners and the districts. Increasing food production was still viewed as public need. A total of 38 districts had been organized by the end of 1948. In 1949, the state legislature amended the Soil Conservation District Law by repealing the "fee owners consent" clauses so that only 25 signers were needed to initiate formation of a district. This change was significant, because it eliminated the need to get approval

Herb Flueck and Roy Bennett review progress of soil conservation district formation.

from a majority of the landowners before conducting a referendum. The result was four new districts in 1951, four in 1952, six in 1953, and ten in 1954. The 1949 legislature also amended the district law, adding four farmer members to the State Soil Conservation Commission.

The Southeastern Minnesota Soil Conservation Association, formed in 1936, was actually started a year before the soil conservation district law was passed. In 1941, the name was changed to Minnesota Soil Conservation Association; in 1948, it was changed again to the Minnesota Association of Soil Conservation Districts. Also established at this time were eight association areas with a director representing each area. In 1952, the association was incorporated.

A "Specialist in Soil Conservation" position was established and filled by Roger Harris in January 1948. The new position was financed jointly by the State Soil Conservation Commission and the Extension Service. The duties in many cases were similar to those of the "Extension Soil Conservationist" (Thorfinnson) who worked entirely on educational phases of soil conservation.

Harris's duties also included activities of the Soil Conservation Commission, primarily with SCD superiors. There was a division of counties between the two workers now where education work was involved. Soil conservation education topics discussed in Harris's annual reports (on file for 1948, 1951, and 1952) include teachers/students, 4-H clubs, land use judging contests, field days, county agent training, SCD's, and radio/press.

Cutting oats on contour strips in Winona County, 1948.

Minnesotans during this period were an active part of the National Association of Conservation Districts.

William Benitt, Hastings, was one of the founders at the meeting in Chicago in 1946. He was the keynote speaker at the first annual convention in 1947, also in Chicago. At that convention, Alfred Wiger of Ulen, Minnesota, was elected as director for a 3-year term.

Other non-governmental Minnesota leaders during this successful period of soil and water conservation include Dr. Malcolm Hargraves of the Mayo Clinic, who spoke to many groups in the state; Cy Crawford of the Watkins Company Experiment Farm; and farmers Ted Hegseth, Fergus Falls and Ed Goplin, Zumbrota.

Soil Conservation Society of America

Interest in forming a professional society of soil conservationists dates back to 1939. In that year, Dr. Bennett stated that "the objective of writing his book [*Soil Conservation*] was to present a comprehensive statement of the science and practice of soil and water conservation."

The American Society of Soil and Moisture Conservation was founded in November of 1941. The temporary officers agreed to serve until the first annual meeting. However, because of the war, holding a national meeting was not advisable. Meanwhile, during 1941-45, another association was being formed, the Soil Conservation Society of the Americas (SCSA), for the benefit of conservationists in Central and South America. These two organizations eventually merged, forming the new Soil Conservation Society of America, which included all the Western Hemisphere. The first annual meeting of this new society was held in Chicago in December of 1946 (*Journal of Soil and Water Conservation*, January 1947). A complete set of journals is on file in the Minnesota NRCS State Office.

Minnesota was well represented in the charter membership of the SCSA, including Dean Bailey, Herb Flueck, Alex Robertson, and W. H. "Chick" Kircher. Organization of a Minnesota Chapter occurred in 1951, primarily through the efforts of Chick Kircher, editor of *The Farmer* magazine, and H. Flueck.

Flueck informed me that "should the SCSA, Minnesota Chapter, ever want to designate a founder, Chick Kircher would be a prime candidate." The Society later became the Soil and Water Conservation Society (SWCS).
- from Minnesota SWCS Chapter historical files in the NRCS State Office.

Major Events and Involved Personnel from the Early 1950's to the Late 1960's

Soil Conservation After Hugh Hammond Bennett

Dr. Hugh H. Bennett, "Father of Soil Conservation," retired from Government Service in 1952. He died on Thursday, July 7, 1960. Herb Flueck, in his memo to SCS employees, called Bennett the "foremost soil conservationist in the world." Bennett was 79 years old.

Dr. Robert Salter succeeded Bennett as the Chief of SCS. Salter had been Chief of the Bureau of Plant Industry, Soils and Agricultural Engineering since 1942. He served as Chief for about 2 years and was replaced by Don Williams, a native of South Dakota. Williams served as Administrator until his retirement in 1969.
"Don Williams was noted for his management excellence. He put SCS on a business basis. He was farsighted, saw the need for project types of conservation to fill the gap between on-farm conservation programs and large projects built by Corps, TVA, and others.

With his technical ingenuity and ability, he developed, sold and put into operation the Small Watershed Program, the Great Plains Program, and Resource Conservation and Development Projects" (comments by Harry Major, published in "Soil and Water Conservation in Minnesota."

Closing of SCS Regional Offices

Another nationwide reorganization of SCS occurred in 1953-54 (effective 11-2-53). The regional offices, including the Milwaukee office, were abolished. The Milwaukee office was replaced with an Engineering and Watershed Planning (EWP) Unit. Greater responsibilities were given to state offices. Personnel at regional offices were transferred to state offices or the national office.

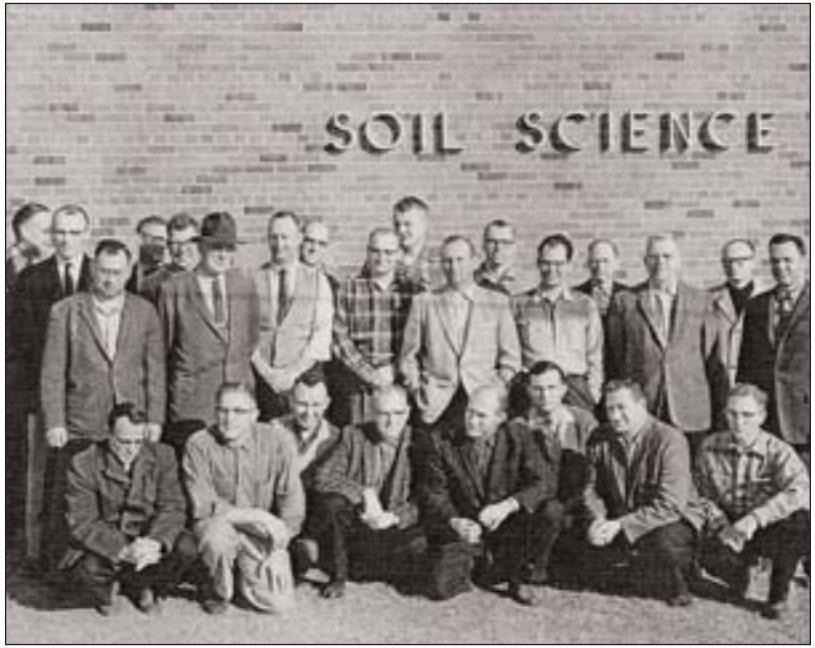
State Office personnel growth

The personnel in the Minnesota SCS state office grew rapidly following the reorganization, from 12 in 1954 to 36 in 1957, and eventually included, during this time period:

- State Conservationist: Herb Flueck, 1942-68
- Assistant State Conservationist: Morrie Bolline, 1954-59; Harlon Backhaus, 1960-69
- Assistant State Conservationist: Bill Russell, 1954/55-59 Al Laidlaw, 1959-71
- Assistant to the State Conservationist: Bill Brune, 1963-69
- State Soil/Resource Conservationist: Roy Bennett, 1954-65; George Holmberg, 1965-70
- Assistant State Soil Conservationist/Conservation Agronomist: Harold Poeschl, 1957-69
- State Soil Scientist: Alex Robertson, 1944-70
- Assistant State Soil Scientist: Woody Anderson, 1954-62; Francis Scilley, 1962-70
- State Conservation Engineer: J. (Red) Maher, 1954-60; Ross St. John, 1960-71
- Assistant State Conservation Engineer: Karl Klingelhofer, before 1959-63; Dave Ralston, 1963-65; Dick Phillips, 1965-67; Dick Winberg, 1967-71
- Watershed Planning Party Leader: Bill Brune, 1954-63; Jerry Gockowski, 1963-66; Fred Dansdill, 1966-71
- State Administrative Officer: Paul Hennig, 1954/55-58; Bill Neal, 1958?-64; Gill Schultz, 1964-74
- Personnel/Assistant Administrative Officer: Werner Schaenzer, 1954/55-69
- Biologist: Wallace Anderson (also Midwest Regional Biologist), 19?-60; Hans Uhlig, 1962-66; John Bedish, 1965-73
- Woodland Conservationist: Thor Bergh, 1963-66; John Hultgren, 1967-79
- Plus secretaries and clerks.

The State Office moved from the Old Federal Courts Building to the New Federal Building in the spring of 1967. The district conservationist title was changed to area conservationist in 1953. Several changes of area conservationists and respective locations occurred in 1953-54..

Mid 1950's photo of area clerks and state office administrative staff. Front row, left to right are Bernice Sniezen, Lucille Gearhart, Donna Arends, Dorothy Weston, unknown, and Gen Hagerty. Second row are Edna Kelley, Janet Heiren, Elma Mueller, Doris Archibald, unknown, Beulah Petersdorf, and Millicent Hallas. Back row are George Schaffer, Paul Hennig, Herb Flueck, Richard Zick, unknown, Cal Thomas, Jan Hemman, Werner Schaenzer, and Clif Gahm.



A 1960 photo of SCS engineers in Minnesota. In front kneeling are Earl Moss, George Sowada, Clarence Simonsen, J. George Dean, Bill Brune, Jim Fisher, Chet Weldon, and Frank Hoeft. Standing in back are Harold Behrens, Dave Ralston, Niels Anderson, Roland Kint, Ted Thorson, John Maher, Herb Adolphson, Carroll Henning, Tom Milbradt, Jim Gruye, Jerry Gockowski, William Chadwick, Don Petersen, Ralph Hauswirth, Al Wenner, Harold Olsen, and Karl Klingelhofer.

Soil Conservation Service planners and Extension Service personnel at the University of Minnesota in June of 1955. The people are, left to right, front to back: Robert Andersen, Ralph Nordstrom, Ingolf Sather, Arnold Aakre, Rudy Kehren, Francis Paulson, Henry Wilson, Orville Barry, Chas. Washburn, Elmer Miller, Ivan Burneson, Lester Swanson, Boyd Forrest, Wm. Sillman, Edw. Dragenmueller, John Russell, Wayne Ruona, Clarence Treumer, Leonard Connally, Orville Risser, Russell Jongeward, Edward (Bob) Amborn, Frank Janzen, Walter Twite, Robert Feldt, Robert Kloubec, Aldis Johnson, Lynn Skaife, Warren Gregg, Hector Olson, Don Lawrence, William Oemichen, Tony Marini, Grant Karlstad, Harold Dineen, Morris Blackburn, Herbert Halvorson, Les Pulkrabek, Harold Jones, Jay Ellis, Wilmer Baumann, Frank Martin, Joe Gabio, Harold Poeschl, Ernest Schober, Merle Rundell, Ernest McPherron, John Mullvehill, Dewey Hahn, Patrick Kennedy, Bob Schafer, Gail Sickeler, unknown, Lawrence Streif, Howard Stevermer, James Heglund, John McMartin, Harold Grothem, Vern Wagner, Warner Christeson, Einar Hendrickson, Floyd Higgins, Jay Kerr, Lloyd Larson, Gerald Simpson, Joe Pierre, Stanley Locke, Roy Bennett, Lee Moore, Nels Snustad, Julius Kubier, Herbert Waldeen, Don Broberg, Don Berg, Bill Kalton, Ward Aas, Matt Thorfinnson, Clarence Palmby, Skully Rutford, Herbert Flueck, Morrie Bolline, Leonard Bulklard, Bill Russell, Fred Tripp, and Al Foster. All are with SCS except Ellis, Jones, Mullvehill, Palmby, Rutford and Thorfinnson. Uncertain about Foster, Gregg and Schafer.

Area Conservationists in this time frame to 1964 include:

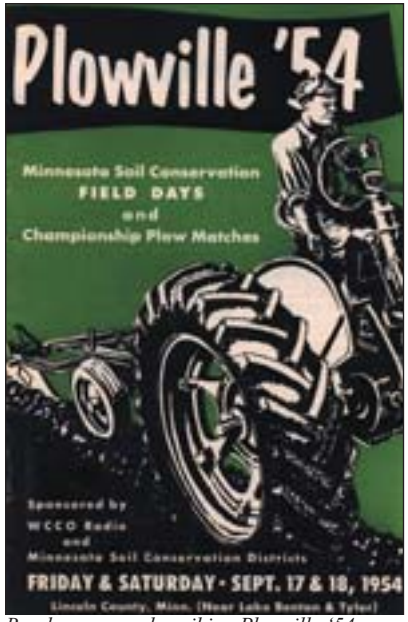
- Area 1 at Thief River Falls: Herb Halverson, 1953-65 (office moved from Moorhead in 1953)
- Area 2 at Fergus Falls: Urban Nelson, 1946?-?; Frank Janzen, 1950; Nels Snustad, 1951-66
- Area 3 at St. Cloud: Len Bullard, 1954-67 (office moved from Stillwater in 1954)
- Area 4 at St. Peter: Herb Halverson, 1945/6-53; Lee Moore, 1953-66 (Red Wing office closed; Moore moved to St. Peter, Halverson moved to Thief River Falls)
- Area 5 at Marshall: Olaf Skramstad, 19?-49?; Gerry Simpson, 1949-77
- Area 6 at Owatonna: Frank Martin, 1946-59; Ernie Schober, 1959-64
- Area 7 at Rochester: Marion Roberts, 1942?-71.

In 1964, an area office was established in Duluth and the Owatonna office closed.

Area number changes and Area Conservationists after 1964 included:

- Area 1 at Thief River Falls: Herb Halverson, 1953-65; Clarence Treumer, 1965-69
- Area 2 at Fergus Falls: Nels Snustad, 1951-66; Gail Sickeler, 1966-77
- Area 3 at Duluth: Ernie Schober, 1964-79
- Area 4 at St. Cloud: Len Bullard, 1964-67; Orville Berry, 1968-73
- Area 5 at Marshall: Gerry Simpson, 1952-77
- Area 6 at St. Peter: Lee Moore, 1953-66; Gerry Thola, 1966-67; Howard Stevermer, 1967-70
- Area 7 at Rochester: Marion Roberts, 1942?-71.

By the end of this period, most of the original SCS'ers had retired or died.



Brochure cover describing Plowville '54 field day

Soil Conservation Field Days

Thorfinnson also describes in detail the annual Soil Conservation Field Days and Plowing Matches held between 1947 and 1965. They were joint ventures by SCD's, State Association of SCD's, Extension Service, and SCS. Many thousands attended these events. Thorfinnson states that "the value

of those big events is probably mainly in publicity before and after the event and in the effect of crowd psychology on those farmers who are slower in accepting new practices." In 1952, the event was a national field day and plowing contest. It was held on several farms near Kasson in Dodge County, most notably the Henry Snow Farm, where Presidential Candidates Dwight Eisenhower and Adlai Stevenson appeared and addressed the crowd. Brochures of the 1952 and 1954 events are on file.

The "Daughters of the Soil," a Ladies Auxiliary group of the district supervisors, was started in Freeborn County in 1949. It was so successful that all the wives of district supervisors were invited to the 1951 State Convention. The women soon adopted a state constitution, and their organization was in "full swing." The Auxiliary continues to be an active group. Yvonne Hoese of the Carver SWCD is the current President.

A livestock and land institute was held in 1950 jointly with Iowa at Albert Lea with Wilson and Company as the main sponsor. Also taking part were the Extension Service, SCS, Farm Bureau, and the local SCD. Emphasis of the event was placed on the effectiveness of a pasture and roughage feeding program. Mel Cohee of SCS did most of the groundwork. The event continued to be held the following three years.

"Literally the soil conservation districts took to the air in 1951 to 1955," states Thorfinnson. Air tours to view erosion damages and control measures in effect were conducted in 1951 by 11 SCD's utilizing the airports at Flying Cloud, Stanton, White Bear Lake, and St. Cloud and a temporary airfield on a farm near Chatfield. A total of 685 people made the flights. In addition to the districts involved, the program was sponsored by the Extension Service, SCS, State Soil Conservation Commission, State Aeronautical Department, State Department of Agriculture, State Department of Conservation, Bureau of Entomology, Civil Aeronautics Administration, Minnesota Association of Airport Operators, and the Minnesota Flying Farmers. Air tours were conducted from 10 airports in 1952 and from 13 airports in 1953. Most of the events included soil conservation and other exhibits, extension programs, airplane spraying, and use of the pamphlet "Soil Conservation Air *Tours."*

The annual meetings of the State Association were important events for district supervisors. Thorfinnson devoted one or two paragraphs in his report for most annual meetings through 1966.

Growth of Conservation Districts

Twenty-five new districts were organized between 1955 and 1965, bringing the total in the state to 89 and leaving only Cook, Ramsey, and Hubbard Counties without districts. During this period, the multiple districts in Goodhue and Fillmore Counties consolidated as one district in each respective county.

Minnesotans continued to be active in the National Association of Conservation Districts (NACD). Alf Larson, Hayfield, was elected as director from Area III in 1952 and served as chairman of the NACD conservation education committee. Cyril Crawford, Winona, was elected Vice President from Area III in 1957 and served until 1960. He gave the keynote address at the 1959 convention. Del Krenik, Le Center, was elected director from Area III in 1968. (Areas are now called Regions).

Matt Thorfinnson resigned as Extension Soil Conservationist in January of 1955 to devote full time to the State Soil Conservation Commission. Roger Harris became the Extension Soil Conservationist and served until he retired in 1963. James Swan succeeded him.

A 1961 amendment to the district law passed by the state legislature called for a fifth farmer member to be added to the State Soil Conservation Commission and making the SCS State Conservationist an ex-officio member. Farmer members now had a majority on the Commission.

"Locating Elmer" was the slogan used during this period. Elmer was a coined symbolic term to identify a respected and progressive farmer-leader who could be effective in working with neighborhood groups of farmers to cooperate in the application of soil and water conservation practices.

Matt Thorfinnson retired as executive secretary of the Commission in July of 1965. He aided in the development of 89 soil and water conservation districts in Minnesota, starting with Burns-Homer-Pleasant in 1938. State Conservationist Flueck presented Matt with a citation for a job well done. Merlon Englund from Nebraska was hired in September 1965 to fill Matt's position. Merlon served until 1969, when he resigned and returned to Nebraska.

CO-01 Program

SCS's Conservation Operations (CO-01) continued to be the agency's main program devoted to the application of conservation measures on the land. This was and continues to be the work of the majority of the agency's personnel—the district conservationists and technicians,

Landowners and farm planner developing a farm plan in Redwood County in 1962.

soil scientists, and engineers in the field—working with landowners and operators. To recognize these people by name would be most appropriate; however, because of the enormity of such an effort, no attempt was made to do so in this report. SCS state directories are on file in the state office dating back to 1959. A sample of their accomplishments is contained in the July-August 1968 issue of "Current

Developments," which shows the following accomplishments for FY 1967:

- 32,386 landowners and operators assisted
- 105,014 services provided on planning and application
- 15,622 landowners and operators applying practice(s)
- 1,478 conservation plans developed
- 9,267 consultive services on conservation work
- 16,528 referrals serviced

A 3-day conference for SCS Soil Conservationists in Minnesota was held October 4-6, 1967, at the St. Paul Hotel. The theme was "total resource and community planning." This was the first meeting for soil conservationists in a long time. Flueck challenged the participants to "broaden their horizons, look at new opportunities, involve more people in resource work, yet keeping the districts to their original purposes—serving as the local action organization to get conservation on the land."

Five Percent Funds

The USDA Appropriation Act of 1950 contained language stating that up to 5 percent of the Agricultural Conservation Program (ACP) funds may be allotted to SCS for technical assistance in carrying out the program. Similar language appeared in subsequent appropriations. In Minnesota, serious discussions occurred between the two agencies for many years. Finally, in about 1956, these funds were made available to the SCS in Minnesota.

Soil Survey Functions Placed in SCS

Coordination between the soil survey division within the Bureau of Plant Industry, Soils and Agricultural Engineering (originally called Division of Soils) and SCS

Woodland conservationist discusses the role of soil surveys in timber production.

Soil scientists examine a soil profile in Ottertail County in 1965.

had occurred since 1935. However, conflicts developed. In 1952, the two were merged together and placed within SCS. Charles Kellogg headed the new combined soil survey division. Eight county/area soil survey reports had been published since 1935. In addition, 18 reports had been published before 1935, for a total of about 36 reports published prior to the merger. Cooperation between the National Cooperative Soil Survey and the Land Grant Colleges continued.

As the work of SCS changed from a demonstrational character to that of providing planning and engineering assistance to cooperating farmers within SCD's, soil survey areas tended to be scattered land tracts within each SCD. Eventually, when about 50 to 60 percent of the SCD had been mapped, attempts were made to complete the county mapping and publish the soil survey report. The first county reports to be published under SCS leadership included Fillmore (1958), Isanti (1958), Scott (1959), Dodge (1961), McLeod (1965), Wabasha (1965), Waseca (1965), and Wright (1968) ("History of Soil Surveys in Minnesota," Soil Survey Centennial Recognition, 1999).

Watershed Projects

Interest in flood prevention continued following the Flood Control Act of 1944. In 1953, Congress appropriated funds for starting 60 pilot watershed projects. One objective was to demonstrate the benefits of combining soil and water conservation on the land with upstream flood prevention structures. The other objective was to find out the best ways to achieve local-state-Federal teamwork in planning and implementing watershed protection and flood prevention. In Minnesota, pilot watershed projects were established in the East Willow Creek Watershed in Fillmore County and in the Chippewa River Tributaries/Hawk Creek Watersheds in Chippewa, Kandiyohi, Renville, and Swift Counties. A photo showing land conservation surrounding a watershed dam in the East Willow Creek Watershed was Minnesota's choice for the "America The Beautiful" photo collection. Each state

This scene of a watershed dam, terraces and contour stripcropping in the East Willow Creek Watershed Project in Fillmore County was selected to represent Minnesota in a series of photographs called "America the Beautiful."

had been asked in the early 1960's to select a photo to represent their state.

In August of 1954, the Watershed Protection and Flood Prevention Act (PL-566) was passed. It provided for a new project-type approach to soil and water resource development, use, and conservation. Interest in project action was great in Minnesota as well as elsewhere around the country. Six Minnesota watershed applications had been submitted by the end of 1954. Rush Pine Creek in southeastern Minnesota was the first project completed (1961). The program continued to grow, and by 1969, there were 64 applications for PL-566 assistance. Three more projects were completed: Zippel, 1968; Bear Valley, 1969; and Middle Fork Two Rivers, 1969. Of the other 60 projects, 6 had construction underway, 4 had been approved for operations, 7 had planning underway, 8 were on the priority list, 17 were on the waiting list, 12 were inactive, and 6 had been disapproved.

Floodwaters inundated this farmstead near Tintah in 1962.

A watershed planning staff (originally called watershed work plan party, or WWPP) was established in St. Paul in 1954. This was true for most states. Initial staff members and subsequent members through the 1960's included:

- Staff Leader: Bill Brune, 1954-63; Gerry Gockowski, 1963-67; Fred Dansdill, 1967-71
- Agricultural Economist: Wes Hofstad, 1954-56; Howard Johnson, 1956-59; Bill McKinney, 1959-60; John McMartin, 1961-66; Vic Ruhland, 1966-74
- Hydrology Engineer: George Dean, 1954-64; Frank Hoeft, 1964-66; John Torgerson, 1967-81
- Planning Engineer: Gerry Gockowski, 1956-63; Niels Anderson, 1963-74
- Geologist: Chet Weldon, 1954-78
- Technicians: Fred Anding, 1954-66; John Junck, 195?-73; Tom Faragher, 1966-84.

The U.S. Forest Service assisted with the forestry aspects of the PL-566 Program. The state's Watershed District Enabling Act came into being in 1955. It provided the legal means for implementing watershed plans. The soil conservation district law was amended that year to give district supervisors the necessary authority to cooperate with watershed projects. The State Legislature also appropriated funds to accelerate watershed planning for a number of years during the 1960's, amounting to $35,000 to $38,500 per year.

Tile drainage being installed in wet cropland.

The State Soil Conservation Commission hired Erling Weiberg as a Watershed Conservationist in February 1960. His assignment was to work with watersheds in all stages from preapplication to the construction stage. In June of 1963, he resigned to accept the position of executive secretary of the Minnesota Water Resources Board. Howard Grant was hired in April of 1964 to fill the vacancy of Watershed Conservationist.

The Engineering and Watershed Planning Unit (EWP) in Milwaukee closed for all SCS activities in 1964. Technical staff at Lincoln, Nebraska now provided EWP assistance to Minnesota. Cartographic assistance to Minnesota now came from Fort Worth, Texas. The Plant Materials Specialist, located in Bismarck, North Dakota, continued to provide assistance to Minnesota.

River Basin Studies

River Basin studies of the late 1960's included a Type I broad framework study in the Upper Mississippi, Missouri, Souris-Red-Rainy, and the Great Lakes River Basins. A Type IV detailed planning study occurred in the Big Sioux Basin, which involved Minnesota, South Dakota, and Iowa.

Soil Bank

The Agricultural Act of 1956 included the "conservation reserve" and "acreage reserve" programs. It soon became known as the Soil Bank Act. Land retired in the Soil Bank became an important issue in many local communities.

Although wildlife habitat increased, numbers of active farmers declined. This affected many local businesses in the smaller farming communities.

The Big Rain of 1957

The big rain of 1957 had a major impact on soil erosion, flooding, and established conservation practices. The "heavy rain area was from 4 to 10 inches and in one area immediately out of Lake Benton there was a 15 inches unofficial recording, most of the rain coming from 5:30 p.m. June 16 to 2:00 p.m. June 17.

The…pattern of the storm, the center line being from Pipestone to Marshall, Montevideo to Granite Falls to Willmar, extending north into Stearns County.… It seems that terraces, diversions and strip cropping with proper rotations did a very good job." Report by Flueck. (My first days with SCS in 1957 were spent studying the erosion and flood damages in Wright County. My recollections are that following this rain event the push was on within SCS in Minnesota to promote conservation practices, especially terraces). Conservation practices applied on farms in 1958 included approximately 653 miles of terraces and diversions.

Drainage Battles

Open ditch and tile drainage continued to be important practices through the 1950's and into the 1960's. These practices were needed to correct wet soil conditions for crop production.

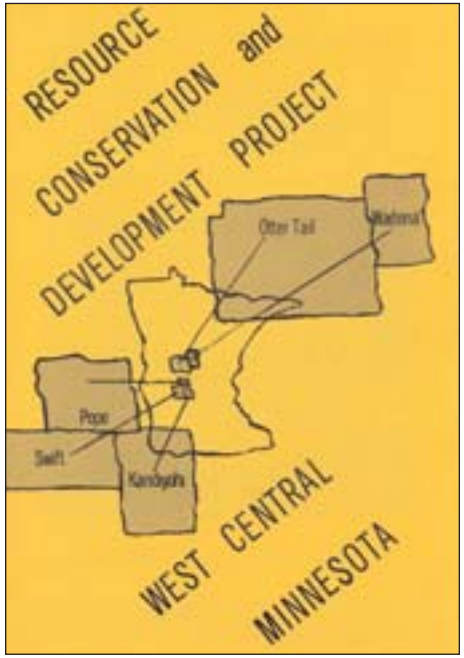
SCS and districts supported landowners and provided the needed technical assistance. In many cases, cost share assistance from ACP was available. However, these practices were being questioned by some people. Food shortages no longer existed; rather, surpluses were the norm.

Wildlife habitats were being destroyed because of wetland drainage. Early attempts to limit drainage activities included the requirement to limit assistance to only existing cropland. No new land was to be brought into production.

Nevertheless, wildlife people and other nonagricultural people continued to voice their concerns.

RC&D Authorized

The West Central Minnesota Resource Conservation & Development Project (RC&D; the name was eventually changed to WesMin RC&D) was approved in 1963 (formally authorized in 1964), the third in the nation to be approved.



The West Central Minnesota RC&D project, approved in 1963, was the third in the nation.

It originally included Kandiyohi, Swift, and Pope Counties. East Otter Tail and Wadena were added the following year. The project eventually grew to include 23 counties. Today it includes 14 counties; the southern 9 counties split off from the original group and formed the new Prairie Country RC&D Area. RC&D Projects, authorized by the 1962 Food and Agriculture Act, provide a vehicle for local people and public agencies to join hands as a family in solving their resource conservation and development problems.

Bill Oemichen was selected as the first Project Conservationist (position later called Project Coordinator). Working with a great caliber of local leadership, many project measures were undertaken; these ran the gamut of conservation, economic, and social needs of the areas. The program soon started utilizing the assistance of various state agency employees either on an informal cooperative basis or with more formal reimbursement arrangements. Farmers Home Administraton and Housing Urban Development loans and grants were used extensively. This interagency cooperation continues to this day.

Research Activities

The USDA Agricultural Research Service's North Central Soil Conservation Research Center was established in 1956 in Morris, Minnesota. Put in charge of the research activities was Dr. Cornelius Van Doren. Congressman H. Carl Anderson was instrumental in locating the research center in Morris.

Considerable research relating to soil and water issues has occurred since its establishment. A unique

erosion control activity for SCS in Minnesota during this period was the work with Erie Mining Company at Hoyt Lakes. It involved vegetating previously bare taconite tailings with grasses and legumes. High fertilization, mulching, and very close attention to planting techniques paid off.

Northern Great Lakes Region

A Land and People Conference, held in Duluth in September 1963, called attention to the depressed economy and concerns for improving the economic well-being of the Northern Great Lakes Region (NGLR). A special feature of the meeting was an address by President Kennedy. The northern parts of Minnesota, Wisconsin, and Michigan, amounting to 56 million acres, were included in the NGLR. In Minnesota, it included the 16 northeastern counties. The timber and mining industries had been greatly reduced from earlier days. Agricultural opportunities were limited. The purpose of the USDA Rural Area Development Program was to provide assistance to areas of low economic activity.

Resources and Recreation, a document developed by a four-member USDA task force, including Mel Cohee, underscored the need for broadened conservation programming. SCS, working with SWCD's and others, delineated the region into sizeable areas (1 to 2 million acres) wherein each had physical and cultural similarities throughout but bore recognized differences from adjoining areas. These were called "Broad Program Areas" (BPA's). The intent was to identify natural resources and opportunities for incorporating outdoor recreation into multiple use management of agriculture, forest, and recreation resources within each BPA. This information guided and assisted the multi-SWCD's leadership involved within a particular BPA to develop plans for the present and future. Initially, 15 BPA's were delineated in the Minnesota portion of the region. Later, with the establishment of the Upper Great Lakes Development Region, this assessment process involved 27 BPA's, including the northern two-thirds of Minnesota.

Considerable SCS personnel and SWCD supervisor time and effort were involved in assessing the BPA's during the 1960's. Mel Cohee served as a technical advisor in 1964-65 to the planners and district supervisors in reworking district programs and work plans to carry out the principles and specifics of the NGLR Program in the three states. On file are the "Framework Programs" for Lou-Tas-Kin BPA and Laurentian BPA.

Radiological Monitoring

SCS was assigned responsibility in 1959 for planning and placing in continued readiness a nationwide system for radiological monitoring of agricultural land and water, livestock, and farm commodities. SCS employees were given training in radiological monitoring. Attention to these responsibilities subsided during the 1970's. A need for radiological monitoring skills never arose. The program was ended around 1980. In that year, issued Civil Defense ID cards were recalled.

Contests, Awards, and News Media

The 1960's were noted for the existence of several contest and award programs. The National Goodyear Awards Program provided for the winning farmer and one supervisor from the first place district in each state to receive an all-expense-paid vacation trip to the Goodyear experimental farm at Litchfield Park in Arizona. "The Farmer" award started by the Webb Publishing Company of St. Paul was awarded to SWCD's in three categories: those having 400 active plans for the first time, those having 500 plans, and those having 1,000 plans.

The Minneapolis Star and Tribune Awards Program involved cash awards to winning districts and to the conservation farmer of the year in each district. These programs provided urban people with some understanding of rural issues.

A great deal of support for dissemination of information relating to soil and water conservation was obtained from local and Twin Cities newspapers as well as from farm magazines, especially *The Farmer* magazine. *The Farmer* magazine was and probably still is subscribed to by almost all the farmers of the state.

Editors for *The Farmer* who covered soil and water conservation activities included William (Chick) Kircher, who was succeeded by Robert Rupp and then by Tom Doughty. George Peterson of the *Minneapolis Star Tribune* not only wrote for the editorial page but also in his column called "The Farm on the Prairie." Al Stedman, writer for the *St. Paul Pioneer Press,* was very helpful in promoting soil and water conservation, as were the countless newspapers in local communities. Radio stations likewise promoted the conservation message. Maynard Speece of WCCO stands out as an excellent communicator.

Conservation Needs Inventory

The 1967 Conservation Needs Inventory (CNI) was completed by SCS for Minnesota in 1969 and published in 1971.

It was much wider in scope than the 1958 inventory and included more detailed information, such as watershed boundaries, land use treatment needs, etc. Primary sample units (PSU's) were randomly selected based on the nation's public land survey by the Statistics Laboratory located at Iowa State University.

The 1958 inventory, made for each county in the nation, was the first time SCS used statistical sampling to collect natural resource inventory data and the first time since the National Erosion Reconnaissance Survey of 1934 that new data were collected in the field.

The 1967 CNI Data were widely used by others as well as SCS until the mid 1980's. This inventory still is used as a benchmark of the 1967 conditions. A more limited inventory was undertaken in 1977 and is referred to as the 1977 National Resources Inventory (NRI).

Major Events and Involved Personnel from the late 1960's to the Farm Security Act of 1985

Minnesota after Herb Flueck

Herbert Flueck retired from SCS in March 1968. He had served as Minnesota State Conservationist longer (26 years) than any other state conservationist in the nation. This record stands even to this day. In addition, he had been the SCS State Coordinator in Minnesota for 5 years. Representative John Blatnik concluded remarks that he entered in the Congressional Record with, "if it is possible to summarize Herb Flueck's career in one phrase, I would say that he is a soil and water conservation pioneer in the truest sense."

Conservation exhibit using color transparencies and a rotating modular device in 1977.

Harry Major, an Assistant State Conservationist in Wisconsin, succeeded Herb as Minnesota's second SCS State Conservationist. Harry, a native of Missouri, had worked 13 years with SCS in his home state and 3 years in Wisconsin prior to coming to Minnesota.

Harry M. Major

Harry Major colorfully describes the start of this period: "So here we were in the late 1960's…driving full speed down the Conservation Road, wearing our white hats, and reciting our conservation mission, when we ran head-on into the modern day environmentalist. He had never heard of SCS, soil districts, Harry Major, or even Herb Flueck. He stuck up his hand and said, 'Hold on there, Boy!!! We don't like you or what you're doing to the environment,' and he slung mud all over my white hat. The thing that they were concerned with primarily was the project type conservation measure that we were doing in small watershed protection and flood prevention programs and RC&D projects. This was causing environmental concern." ("Those Turbulent *Years*", Harry Major, "Soil & Water Conservation in Minnesota").

Growth of Environmental Concerns

Concerns about damage to the environment grew during the 1960's. Rachel Carson's *Silent Spring* drew attention to pesticide poisoning of people and nature. Loss of wetlands and fish and wildlife habitats due to drainage activities received much criticism. Channel work in several watershed projects was cited as inappropriate. The role of SCS/SWCD in drainage activities was being challenged.

The National Environmental Policy Act of 1969 (NEPA) had a major impact on conservation activities, especially on the larger project type activities. This impact continues to this day. The Act called for evaluations and impact analysis of all planned actions by disclosing the decision making process and the measures to be taken to mitigate adverse environmental impacts. Environmental agencies, groups, and individuals now played an important role in project planning. Planning projects became more complex.

The U.S. Environmental Protection Agency (EPA) was established in 1970. Its mission then and now is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. It is an autonomous regulatory body establishing and overseeing the enforcement of environmental protection standards that are consistent with national environmental goals.

The Minnesota Pollution Control Agency (MPCA) was created in 1967 to protect the air, waters, and land in the state. Then as now, MPCA examines the quality of the state's environment, develops rules that protect the public health and environment, and helps local government, industry, and individuals meet their environmental responsibilities.

Minnesota developed similar environmental review requirements. They underwent several changes, and currently sponsors are required to complete an Environmental Assessment Worksheet (EAW) covering the proposal. The EAW is submitted to the Minnesota Environmental Quality Board (EQB) for review by the public.

Conservation Activities of This Time Period

The application of conservation measures on the land continued to be the main mission of SCS and the districts. By 1975, some 64,000 landowners and operators in Minnesota had become cooperators with SWCD's. The main credit for this accomplishment goes to the personnel at the field level: district conservationists, techni- A

cians, soil scientists, and engineers working directly with landowners. The 1975 published report, entitled "Soil and Water Conservation in Minnesota," gives an indication of the work of SCS/SWCD's in assisting landowners and operators during this period. See table from the 1975 report in Appendix H for a list of conservation practice applications.

The use of crop residue management/conservation tillage as an erosion control measure was being recognized and promoted more and more as being both physically and economically cost effective. At about the same time, contour strips and contour farming were disappearing. This was partially due to the introduction of larger machinery; operators preferred larger fields and straight (non-contour) farming. Conservation tillage was a new ACP cost-shared practice in 1980. Conservation tillage surveys for 1984 showed that 3.7 million acres met the criteria for conservation tillage; 2.5 million acres of this total involved corn and soybeans. Ridge tillage was promoted by Ernie Behn of Boone, Iowa. Behn is considered the "Godfather of Ridge Till in the Midwest." His book *More Profit with Less Tillage* is considered a classic. Research on tillage methods have occurred at the Morris ARS Experiment Station since the 1960's.

Conservation tillage, a practice that uses crop residues to cover the soil, protects against erosion.

Livestock/dairy numbers on pasture were decreasing as more and more confinement facilities were being established. Grass-legume seedings were more likely to be for critical area cover, wildlife habitat, and, later, CRP (Conservation Reserve Program) rather than for livestock pasture.

Considerable effort and investment in animal waste storage and disposal started to develop during this period. An early documentation of this activity is a symposium on animal waste disposal in agriculture held in November of 1968. SCS people from state and national offices attended.

Accomplishments for 1970 included 319 sites investigations, 135 plans developed, and 69 plans installed, including those where construction was suspended because of the weather. By 1980, about 2,500 agricultural waste management systems were in operation. They represented one of the major efforts put forth by SCS to

Feedlot pollution control using a concrete manure tank in a dairy operation in Carver County, 1980 (above). Spreading manure as part of a manure management plan (right).

protect the lakes, streams, and ground water in Minnesota.

Irrigation developments increased significantly during the 1970's, especially following the drought condition in much of Minnesota in 1976. SCS published an "Irrigation Guide for Minnesota" to assist landowners in planning, operating, and maintaining their irrigation systems.

A national survey of streambank erosion, including Minnesota, was made in 1969 to determine the extent and scope of damages. SCS agreed to assess streambank erosion on channels with less than 400 square miles of drainage area. Primary responsibility for the national survey was assigned to the Corps of Engineers. The Corps reported (House Document 91-11) that damages of some degree ($120-130 million annually) were occurring on approximately 549,000 miles, or 8 percent of the nation's 7 million miles of streambank. Summarized data were reported for each of the 19 water resource regions in the nation.

SCS Personnel of the Late 1960's to Mid 1980's

Kenneth E. Grant became Administrator of SCS in 1969, following the retirement of Don Williams. A native of New Hampshire, Grant served until 1975. He was followed by Mel Davis, who was born and raised in North Dakota.

Davis served from 1975 to 1979. Succeeding Mel was Norm Berg, who was born in Iowa but grew up on a family farm in Pine County, Minnesota. Norm served as chief of SCS from 1979 until 1982. Peter Myers from Missouri, the first politically appointed chief, served from 1982 until 1985.

Harry Major retired as SCS State Conservationist in 1983. He was succeeded by Don Ferren, who had been the Deputy State Conservationist in Minnesota. Don came to Minnesota from Vermont in 1974. In Harry's last report in "Current Developments," he included a summary (6 pages) on the happenings during his 15 years as State Conservationist in Minnesota. An interesting collection of things, events, and people for historians!

Donald Ferren

The principal SCS state office personnel in Minnesota during this time period included:

- State Conservationist: Harry Major, 1968-83; Don Ferren, 1983-86
- Assistant/Deputy State Conservationist: George Holmberg, 1970-74; Don Ferren, 1974-83; Duane Johnson, 1983-88
- Assistant State Conservationist: Bill Oemichen, 1971-81; John Edwards, 1982-89
- Assistant State Conservationist: Wally Ochs, 1969-70; Earl Terpstra, 1971-76; Jon De Groot, 1976-94
- State Conservation Engineer: Richard Winberg, 1971-73; Robert Bintzler, 1973-82; Richard Rovang, 1983-90
- State Soil Scientist: Maynard Scilley, 1970-79; Ray Diedrick, 1980-83; Dennis Heil, 1984-92
- State Resource Conservationist: Warren Curtis, 1970-81; Richard Baird, 1982-87
- River Basin and Watershed Planning Staff Leader: Ralph Mashburn, 1971-72; Herman Calhoun, 1972-75; Bernie Owen, 1975-78; Ivan Wilkinson, 1978-87
- State Administrative Officer: Gil Schultz, 1964-74; Gerry Easton, 1975-86
- Biologist: John Bedish, 1966-73; Allen Vaughn, 1973-76; George Pollard, 1976-89
- Woodland Conservationist: John Hultgren, 1967-79; Ray Blackbourn, 1981-86
- Agronomist: Eldor Mueller, 1969-76; Duane Breyer, 1976-81; Dave Breitbach, 1981-97

Area Conservationists included:

- Area 1: Gerry Young, 1970-80; Don Barron, 1981-83; Gerry Krause, 1983-86
- Area 2: Gail Sickeler, 1966-77; Robert Conklin, 1978-90
- Area 3: Ernie Schober, 1964-79; Wayne Oak, 1979-92
- Area 4: Orville Berry, 1968-73; Alfred Fischer, 1973-84; Harvey Sundmacker, 1984-2003
- Area 5: Gerry Simpson, 1949-77; Tom Fischer, 1977-90
- Area 6: Francis Conner, 1970-80; Ron Hardesty, 1980-99
- Area 7: Norm Doehring, 1972-74; Ken Rose, 1974-78; Ken Kaul, 1979-86

SCS employees at a 1970 statewide conference in Minneapolis:
Front row, l-r: *Bill Cherp, Harold Olson, Allan Gustafson, Clayton Smith, C. Dale Jaedicke, Darol Melby, William Van Dersal, Dick Paulson, Warren Curtis, Don Petersen, Joe Cummins, Al Laidlaw, Ray Lujon, Dick Wenberg, Ray Diedrick, Irvin Johnson, Cliff Gahm.*
Row 2: *Lyle Popma, Lynn Skaife, Gary Ewert, W.M. Roberts, Ernie Schober, Harry Major, Kenneth Grant, Wayne Ruona, Jim Wille, John Mall, Merlin Jennings, Dean Campbell, Don Berg, Don Benrud, Leon Chamberlain.*
Row 3: *Pat Kennedy, John Gunderson, Joe Gabiou, Duane Dykhuizen, James Murray, Charles Sutton, Orville Berry, Les Swason, Ralph Mashburn, Wes Cashman, Gail Sickeler, Bob Kloubec, Edward Amborn, Roger Hoff, Orville Whitaker, Herb Adolphson, Ron Hersom, William Geary, Ray Suhr, Bob Krause, Warren Christeson, Harold Grothem, Royce Lewis, Les Pulkrabek, George Holmberg, Ed Bruns, John Bedish, Bill Sillman, Carroll Carlson, Steve Crull, George Poch, Aldis Johnson, Bob Lueth, Tom Fischer, Gene Ulring, Bob Feldt, Bud Finney, Don Phillips, Maynard Scilley, Kon Bergum, Al Fischer, John Tordsen, Laurel Lappegaard, Norman Nellen, Walter Twite, John Harries, Paul Nyberg.*
Row 4: *Wayne Oak, Bill Oemichen, William Harju, Walter Ochs, Charles Starr, Norman Doehring, Morris Blackburn, Chet Weldon, Dave Vold, Hector Olson, Jerry Sharp, Mel Niehaus, Francis Dylla, Herbert Boe, Dave Pederson, Niels Anderson, Gordon Kelley, Russ Jongewaard, Richard Cullen, Tom Jewett, Boyd Forrest, Fred Dansdill, Dale Lorenzen, Malvern Jacobson, George Hagen, Don DeMartelaere, Don Erickson, John Schmidt, Don Barron, Jerry Schwarz, Bill Kalton, Larry Streif, Ted Thorson, George Moriarty, Alf Jorgenson, Justin Jeffery, Erwin Cederholm, Don Halvorson, Howard Midje, Vic Ruhland, Ordean Finkelson, Kermit Bjorlie, Lee Johnson, Jim Jenson, Ross St. John, Bill Kimm, Lester Schmidt, Dave Wester, Ed Sobania, Jim Williams, Hilding Hokanson, Jerry Hildebrandt, Clarion Neseth, Clarence Simonsen, Charles Lamont.*
Row 5: *Ernest Johnson, Jerry Young, Carroll Henning, Herb Gottfried, Charles Saari, Jim Busby, Duane Goerend, Ward Aas, Larry Schmidt, Ed Drogemuller, George Christy, Gil Schultz, William Davey, Martin Ziebell, Tom Milbradt.*

The position title of "Work Unit Conservationist" was changed to "District Conservationist" as of January 1, 1969. The name of the local office was changed from Work Unit Office to Field Office. The establishment of Agricultural Service Centers in counties for USDA agencies started in the mid 1970's. These centers are intended to provide landowners with one central location for their contact with USDA agencies.

The first Black SCS employee in Minnesota was Ray Brown, who started as a Civil Engineering Aid in the state office in the mid 1960's. Charles Loggins became the first Black Soil Conservationist in Minnesota in 1974, when he accepted the position of District Conservationist in Winona County. Mary Reetz in 1981 became the first woman District Conservationist in Minnesota. The role of Blacks, women, and other minority employees in the conservation movement has grown through the years. They contribute greatly to the growth and strength of the conservation movement.

In 1970, SCS employees in Minnesota voted to be represented by a union after several years of effective recruiting by SCS members of Local 2862 of the American Federation of Conservationists, American Federation of Government Employees, AFL-CIO. An agreement between SCS and Local 2862 was developed and signed in early 1972. It covered agreements on a number of grievance issues, many of which were later adopted nationwide. One of the major issues dealt with the need for vacancy announcements offering interested employees the opportunity to apply for the vacant positions. Gradually, as more and more of the grievance issues were resolved and as new employees replaced retirees, interest in the role of Local 2862 waned. In 1994, Local 2862 decided to disband.

SCS adopted a symbol in 1970. It was a blue drop of water in a green basin below the SCS letters—a modernistic design created by a designer in the USDA. The announcement states that this symbol fully depicts the involvement of SCS in conservation of soil and water as basic resources. This symbol today is called the NRCS logo. NRCS recently (2002) adopted the logo again, changing the letters SCS to NRCS.

Use of Computers

The introduction of computers has made major changes, not only for SCS/NRCS but for all of society. The earliest reference to the use of computers for SCS in Minnesota was found in correspondence dated June 26, 1962, which discusses use of an IBM 650 computer

located at the Corn Belt Work Shop in St. Paul (?). It was used to evaluate water surface profiles in the Joe River Watershed. (The Joe River flows into Canada, and the need for more data on project impacts may have been the reason the computer was used. Other projects planned prior to the late 1960's made no reference to use of computers.) Also, starting about the same time, administrative data for Minnesota were sent to the USDA National Finance Center (NFC) in New Orleans. Time sheets were filled out and mailed to the NFC for processing paychecks. This procedure continued well into the 1980's. Computer use for some hydrologic and economic evaluations started in the mid 1960's. In 1968, Minnesota started using the IBM 1130 main frame at the Lincoln Technical Service Center (TSC). Forms were filled out and submitted to the TSC, where the data was transferred to 3¼ x7-inch punch cards and read into the computer for analysis. Punching cards initially was an integral part of computer use that extended into the 1980's. In 1969, Minnesota SCS entered into an agreement with the Food and Nutrition Service (FNS) in Minneapolis for rental of their Univac 1107 computer terminal. The facility was used for entering data for water surface profiles, watershed economics, and channel yardage. At that point, Minnesota SCS had access to two computers; one at the TSC in Lincoln (moved to Ft. Worth, Texas, in 1973) and the other in Fort Collins through the FNS in Minneapolis. This arrangement continued during the 1970's. See Appendix I for later developments in computer usage in Minnesota.

Water Bank

The Water Bank Act of 1970 authorized the Secretary of Agriculture to enter into agreements with operators and owners of land located in important migratory waterfowl nesting, breeding, or feeding areas to preserve and improve the Nation's wetlands. Eligible wetlands (types 1 through 7) and appropriate adjacent land qualified for the program. Agreements were for a period of 10 years, after which expiring agreements could be renewed. The program was offered in 46 counties of Minnesota, those located generally in the southwestern one-half of the state. The program ended in 2003. In 1995, there were 1,385 agreements in Minnesota for over 77,000 acres with payments for the year of about $1.75 million. At that time, the total value of the remaining contracts was $8.5 million. Acreage in 1995 is considered to have been close to the maximum enrolled in Water Bank in Minnesota.

New RC&D Areas

The Onanegozie RC&D project was approved for operations in 1968. It included Aitkin, Carlton, Kanabec, and Pine Counties. Three more counties were added in 1990; namely, Chisago, Isanti, and Mille Lacs. Wayne Oak was selected as the first Project Coordinator.

Headwaters RC&D project was approved in 1973 and included Beltrami, Clearwater, Hubbard, Lake of the Woods, and Mahnomen Counties. Darol Melby was the first project coordinator. Headwaters RC&D changed its name to Giziibi after 1996.

Hiawatha Valley RC&D Project was approved in 1973 with Dale Churchy as its first coordinator. Hiawatha Valley included the 11 counties in southeastern Minnesota (Area 7).

Management of the RC&D program was difficult from time to time due to the uncertainty about the future of the program. Certain administrations continued to suggest a phase-out, while Congress maintained previous funding levels. This had the effect of strengthening the program by causing a shift from RC&D cost shared construction projects to the use of grant money from many different sources to finance a wide variety of resource and economic development activities.

Conservation Districts Cover the State

In 1973, Ramsey County became the 92nd soil and water conservation district to organize, giving Minnesota 100 percent coverage of SWCD's. Harold Peterson had a unique background with this development. He was the county agent helping to organize the first district in Minnesota, the Burns-Homer-Pleasant SCD, in 1938. In 1973, being a resident of Ramsey County, he became a district supervisor of the last district to be organized in Minnesota.

The 1969 state legislature passed an amendment to the Minnesota Soil Conservation District Law (Chapter 40) allowing SWCD's to cooperate with County Boards of Commissioners in carrying out watershed and RC&D resource projects. Scott County SWCD entered a statement in the board minutes in 1968 allowing staff to work with people in municipalities, not included in the district.

The 1971 state legislation called for SWCD's to include all lands including Indian Tribal land, municipalities and cities within their boundaries. Al Laidlaw served as Secretary/Treasurer of the Minnesota Association of S&WCD's for several years following his retirement as SCS Assistant State Conservationist in 1971. Minnesota SCS published an *Urban Runoff, Erosion and Sediment*

Control Handbook in 1976 to assist urban land users and land use planners.

By the late 1960's the days of the State Soil and Water Conservation Commission being an independent state entity were numbered. A number of activist groups were pressing the state legislature to place the commission in some state agency. In 1969 it was placed in the Minnesota Department of Natural Resources and moved from the University of Minnesota, St. Paul Campus, to the Department of Natural Resources building. It was renamed the State Soil and Water Conservation Board (SWCB) in 1975 and moved again to the Minnesota Department of Agriculture.

Marshall Qualls was appointed Executive Secretary for the State Soil and Water Conservation Commission in March of 1970. Qualls came from Kentucky and filled the vacancy created when Merlon Englund resigned. Qualls resigned as Executive Secretary in 1975 and was replaced by Vern Reinert to the newly named State Soil and Water Conservation Board. Vern was replaced with Ronald Nargang around 1983. Ron had been assistant director since 1976.

SWCD's became more active in the late 1970's and early 1980's with more employees and stronger program development. Regional SWCB representatives saw the need for this already in their first year of existence (1976-77). "… Motivating supervisors to take a lead role in the planning and implementation of these programs is the biggest job facing us. …[F]ailures are all the result of Districts failing to take an aggressive approach in hiring their own personnel, personnel capable of making management and administrative decisions on behalf of the Supervisors" ("Report of Activities from June, 1976-September, 1977" by Greg Larson, Regional SWCB Representative).

SWCB with their regional representatives began assisting districts more and more with their program needs and priorities for their annual and long-range plans. This led to most districts hiring a manager. At the same time, the type of conservation measures was changing—more urban measures with water management, sediment controls, state-sponsored conservation measures, and state cost-share programs. As SCS staffs were being reduced at field offices due to reduced budgets, district employees were taking their place.

These developments created conflicts at times, personal clashes, and public relations problems. SCS person-

nel had difficulties dealing with district programs and maintaining technical standards per the field office technical guide. Some districts developed their own handbooks and technical guides, thus adding to the conflict on program emphasis and practice application. Eventually, these problems subsided as greater emphasis was placed on "conservation team building" by SWCD's, SCS, the SWCB, and other agencies. SCS became more involved with training district employees and conducting joint training sessions with SCS and SWCD employees. District employees soon saw the need to be better organized and, by the early 1980's, had formed the Minnesota Association of Conservation District Employees (MACDE).

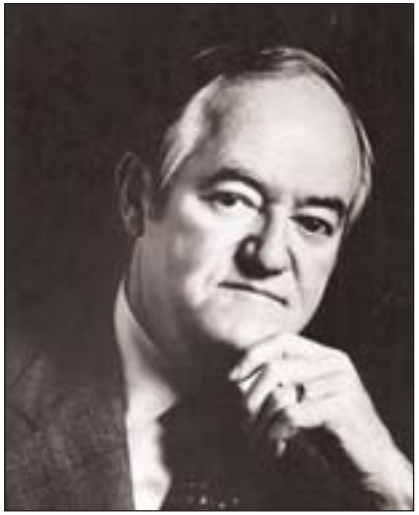
Soils men examining a soil sample core taken with a hydraulic power probe in Washington County, 1971.

Accelerated Soil Survey Program

In the mid 1970's, the Legislative Commission of Minnesota Resources (LCMR) sponsored a soil survey acceleration program with the Minnesota Agricultural Experiment Station, counties, and SCS. It called for the LCMR to provide financial assistance for the Experiment Station to hire additional soil scientists to assist with the soil survey effort. In 1977, the grant from LCMR amounted to $967,000. This assistance continued until about 1991, when modern soil surveys were available for most of the state. During this time period, 39 county soil survey reports were published. Over 30 additional soil scientists had been hired. At one point (1982), 18 county soil surveys were in progress.

Minnesota Politicians

Through the years Minnesota politicians have supported conservation efforts. Hubert Humphrey, Orville Freeman, Robert Bergland, David Durenburger, and, later, Gil Gutknecht and David Minge are examples. The list



Senator Hubert Humphrey delivered the keynote address to more than 1600 people at the 1976 Soil Conservation Society of America meeting in Minneapolis.

includes others both on the state and national levels. Politicians like these attended meetings, field days, and tours and strengthened the local leadership for soil and water conservation progress.

1976 Society Meeting

The Minnesota Chapter hosted the 1976 Soil Conservation Society of America Annual Meeting, which was held in the Leamington Hotel in Minneapolis. The theme for the meeting was "Critical Conservation Choices: A Bicentennial Look." More than 1,600 people attended the meeting. Harry Major, president of the chapter in 1976, when asked in 2002 to recall his memories of the annual meeting, stated that they included a meeting of the SCS Chief and two former Chiefs together with Senator Hubert Humphrey after his keynote address.

RCA of 1977

The Land and Water Resources Conservation Act (RCA) of 1977 gave SCS the responsibility to survey, monitor, and inventory all resources on private land. It required reports to the Secretary, the Congress, and the President every 5 years on the status of the resource base.

Secretary Bergland called it the most important legislation concerning soil and water conservation since the passage of the original soil conservation law in 1935. It will determine the future of soil conservation for the next 50 years.

Nearly 300 RCA public meetings covering resource concerns occurred in Minnesota during 1978. Generally, the public expected programs to solve resource problems at a much faster rate than they are funded to do.

Through the RCA, the 1982 National Resources Inventory (NRI) was conducted to update information on land use and treatment conditions. It contained some new and improved information compared to the 1967 and 1977 inventories. It was also the first inventory designed to provide consistent trends in land use and resource conditions over time.

SCS in Minnesota decided to spend additional time

and effort to develop NRI data reliable at the county level for approximately 85 percent of the state.

An inventory of the important farmland was likewise undertaken. The inventories and resultant maps were based on soil surveys. The information helped local and state officials protect prime farmland and unique farmland. Critical erosion and sediment-producing areas in the state were also inventoried. A “Soil Erosion Potential Map” was published for the state.

Targeting was the new approach for the USDA’s soil and water conservation program in 1982. The NRI identified designated target areas that were eligible for additional USDA funds to combat soil and water problems. Six counties in southeastern Minnesota and eight counties in southwestern Minnesota were included in targeted areas in 1983. A nine-county area in northwestern Minnesota was proposed for 1985. Additional staff assistance was made available to assist landowners in the targeted areas. ACP funds were also increased.

Expansion/Complexity of the Job

Work in soil and water conservation kept expanding and becoming more complex. The remarks by Assistant Secretary of Agriculture Cutler in 1979 clearly reflects this fact when he stated, "The definition of what conservation entails has broadened. So has the definition of conservation since SCS began in 1935. Your mission will be still broader in the future through open, broad and meaningful public participation. Your mission must include the full use of the biological, social and physical sciences to help bring about a harmony between mankind and nature that keeps all resources at a high level of productivity. And your mission will include two-way communication with the public about the problems and possible solutions."

Maintaining an active program during the energy crunch of the mid 1970’s was most challenging. SCS was expected to reduce energy consumption by 7 percent in 1974 from 1973 levels. Reducing vehicle usage by 22 percent was seen as the best opportunity to meet the energy conservation goal.

The State Conservationist stated that "one vehicle will have to do the work of three, district conservationists will need to make decisions on quantity and quality of work and on priorities, state and area staffs are not going to be able to provide as much on-site assistance and public transportation will be used at every opportunity." In 1976 the goal was 15 percent below 1973 levels. Conservation tillage was promoted not only as protect-

ing the soil and water resources but also as an energy conservation measure.

The need to preserve farmland became more apparent. The Metropolitan Agricultural Preserves Act, which safeguards farmland in the seven-county Metro area, was passed in 1980. It provided farmers with economic and agricultural benefits, including lower property tax rates and special assessments for sewer and water lines. A similar law for all of the state was pursued in 1981.

The Land Stewardship Project (LSP), a private, nonprofit organization, was founded in 1982 to foster an ethic of stewardship for farmland, to promote sustainable agriculture, and to develop sustainable communities. The group began by educating rural and urban people on the ethics of farmland stewardship through cultural programs and by creating a farmer-to-farmer network to help farmers move to more sustainable farming methods.

Later, in response to growing concentration of farmland ownership, they demanded that corporations owning farmland be held accountable for good land stewardship practices. In response to urban sprawl, they initiated discussions on smart growth and farmland preservation options. LSP currently has offices in White Bear Lake and in the rural Minnesota communities of Lewiston and Montevideo and has a policy office in Minneapolis.

The East Central Minnesota Small Farms Organization was established to provide information and assistance to operators of small farms in a five-county area.

Changing Times! The use of movie films for educational purposes took a setback early in 1971 when the Service closed out its film library at the Lincoln TSC. The reason cited was fiscal limitations. It meant that other means needed to be found for calling public attention to the work of the Service. Movie films continued to be used until the 1980's, when they were replaced by the use of videos.

Feedlot Evaluation Model

In order to have a uniform means of objectively evaluating potential pollution problems from animal feedlots, the Feedlot Evaluation Model (FLEVAL) was motivated by SCS and developed by ARS and published in 1982. Four agencies—ASCS, SCS, SWCB, and MPCA—along with the Cooperative Extension Service served as an advisory committee with ARS to develop the evaluation system. The model is simple to use, is quite precise, and provides

a generally equitable means of dispersing public funds for pollution abatement. The model is still used today.

RCWP

The Garvin Brook Watershed in Winona County was selected as a Rural Clean Water demonstration project (RCWP) in 1981.

RCWP was developed in response to the national concern for addressing water quality problems on a watershed basis. It used the services of several state and Federal agencies, with SCS spearheading the technical assistance role.

The problems identified in the watershed included sediment, nutrients, and pesticides in runoff from both feedlots and critical eroded areas. These problems also resulted in high levels of nitrates in the ground water made worse because of abandoned wells and the karst topography of the area. The program also included water quality monitoring and project evaluation.

Participation by landowners was less than expected. Many people did not want to correct all the problems on their farm—only some of the problems. For others, the practices were too expensive, especially considering the farm financial hardships for the years 1983-1987.

Nevertheless, producers became more conscious of the need to reduce nitrate levels in the well water aquifer. Agencies and groups involved were convinced that a positive effort was made in improving the water quality in the watershed.

Completed Watershed Projects

PL-566 watershed projects completed during this period included: Zippel, 1968; Bear Valley, 1969; Middle Fork of Two Rivers, 1969; North Branch of Two Rivers, 1970; Crane Creek, 1973; Joe River, 1973; Cooks Valley, 1974; Crooked Creek, 1976; Janesville Village, 1976; Upper Deer Creek-Lake Hendricks, 1976; Tamarac River, 1978; Norman-Polk, 1982; Lakes Okabena and Ocheda, 1985; and Belle Creek, 1985.

Congress approved the South Zumbro PL-566 Watershed Project for operations in 1982. The city of Rochester had a long history of serious flooding resulting in deaths and severe property damage. SCS watershed planners working with the sponsors had developed a plan consisting of six floodwater retarding structures and a multi-purpose flood prevention-recreation dam. The Corps of Engineers was also involved with channel work and levees within Rochester.

The largest dam built by SCS in Minnesota was constructed during the mid 1980's. It provides flood control

and a recreation lake to the city of Canby and the surrounding area. The dam is nearly 4,200 feet long and over 50 feet high and has a surface area of 156 acres. The structure was selected as the winner of the 1986 "Seven Wonders of Engineering Award" by the Minnesota Society of Professional Engineers. The dam is part of the PL-566 Watershed Project sponsored by the Lac qui Parle-Yellow Bank Watershed District and the SWCD's of Yellow Medicine and Lincoln Counties.

River Basin Studies

A SCS River Basin Party was established in Minnesota in 1970 to conduct river basin and watershed planning. It remained separate from the watershed planning party until 1971, when the two groups were combined into one staff. They undertook the Southern Minnesota Rivers Basin Study. The study also included the Southeast Minnesota Tributaries Basin. A Metro Level B study was completed in 1976. Several members of the staff assisted in the Sediment and Erosion Work Group of the Great River Environmental Action Team (GREAT). Several Federal, state, and private organizations supported the erosion and sediment control recommendations of GREAT for the area in southeastern Minnesota and southwestern Wisconsin.

The 639 study was a joint effort by the Corps of Engineers and SCS.

The Minnesota River Subbasins Implementation Study (639 study) by the Corps of Engineers and SCS commenced in 1978. The study plan showed that the 10-year study would require 150 person-years at a cost of $6.6 million. The Southern Minnesota Rivers Basin Commission had recommended use of the PL 87-639 authorities to solve the "crossover flooding" problems in Study Area 2, the Upper Minnesota River Subbasin.

Findings from the study showed that, except for several independent measures that could be installed with other authorities, no structural flood damage reduction

measures were feasible for implementing under PL-639.

Trivia

"We often question the value of work which doesn't show immediate results; however, perseverance pays! There is a birdsfoot trefoil selection called "Winnar" which the Canadians tell us has shown excellent results in their research work. And here is its amazing history.

The Canadians received the seed from our SCS plant materials center at Pullman, Washington, who had gotten it from our Winona plant materials center (nursery) in 1953 with the original selection made from a field in New York! Now SCS and the University of Minnesota want to bring it back 'home'" (1-17-68 issue of "Current Developments").

Major Events and Involved Personnel from 1985 to the present (2003)

Stripcropping on the contour in southeastern Minnesota.

Fiftieth Anniversary

The 50th anniversary of the establishment of SCS occurred on April 27, 1985. Numerous celebrations and activities were held at field offices and at state and national levels. *The Farmer* magazine carried a series of articles and interviews regarding the event, including the history of soil conservation, the current status, and the look ahead.

Commenting on the changing role of conservation districts, Don Ferren, State Conservationist, said that "conservation districts and their supervisors will be playing a greater role of resource management leadership in the future. It will be a broader role, with the districts working closely with all other natural resource agencies to protect soil, water quality and the environment.... we will be looking at more professionalism in administering state and local programs.

The district people will be working more closely with the DNR, EPA, extension service, farm organizations, farm commodity groups, and ASCS as well as the SCS. Conservation districts also will have increasing political clout. They already have strength in lobbying for resource agencies. The districts are organized on both state and national levels, with unity of purpose." Most

items cited in the series of articles have come to pass and in some cases have gone way beyond what was envisioned in 1985.

A year-long 50th NACD anniversary celebration occurred in 1996. NACD President Gerald Vap stated that "a group of 19 dedicated district officials met in Chicago back in 1946 to organize a national association that would serve as national voice for a growing number of local soil and water conservation districts. Our vision today is to keep that flame alive and continue to provide national visibility and services that will launch the local conservation districts into the 21st Century, where they will be asked to do even more to conserve our natural resources." Robert Wetherbee of Minnesota served as Vice President and President of NACD in the late 1980's.

Food Security Act of 1985/ 1996 Farm Bill

After 50 years in existence, SCS was about to change toward more of a regulatory agency because of the new farm bill. The Food Security Act (FSA) of 1985 included four major provisions: conservation reserve program (CRP), conservation compliance, swampbuster, and sodbuster. CRP provided landusers the opportunity to take land with a critical soil erosion problem out of crop production, thereby reducing soil erosion, improving water quality, and improving wildlife habitat. Ten-year contracts were developed with landusers whose bids were accepted.

Conservation compliance required landusers with highly erodible land (HEL) to have conservation plans by 1990 and have an adequate conservation systems applied by 1995 in order to remain eligible for other USDA programs. Landowners had to be informed of the conservation compliance provision. They were encouraged to consider CRP as a treatment option for their HEL.

The swampbuster provision required that any wetland converted after December 23, 1985, for the purpose of producing annually sown commodity crops resulted in the landuser becoming ineligible for USDA program benefits. The sodbuster provision required that any conversion of highly erodible noncropland occurring after December 23, 1985, for the purpose of producing annually sown commodity crops also resulted in the landuser becoming ineligible for USDA program benefits unless the land had an adequate conservation system applied.

The Conservation Reserve Program as well as the swampbuster and sodbuster provisions of the FSA provided incentives for the restoration of existing cropland

to wetlands. The popularity of these incentives in Minnesota is evident by the fact that tens of thousands of restored wetlands acres have occurred since 1985. Sharp increases in pheasant populations have been noted by the Department of Natural Resources. The same can be said for other grassland and wetland wildlife species.

Implementing the Conservation Provisions of FSA generated a heavy workload in Minnesota, requiring thousands upon thousands of additional staff hours. This work became the number one priority. Wetland and highly erodible land (HEL) determinations on all farms were undertaken. Long days and extra days were involved in educating landusers, writing contracts, and developing conservation plans. Because of the heavy workload resulting from the farm bill, field employees were unable to spend the necessary time to provide comprehensive planning, application, and followup assistance. Limited budget prevented acquiring more people and equipment.

This impact of the field workload on NRCS has continued even in some respects to the present time. No longer was "conservation operations" funding (CO-01) devoted to working on the land with landowners and operators to plan and apply conservation measures. More and more, the job involved "desk and computer work." Technical excellence in conservation planning and application began to decrease. New employees had fewer opportunities to learn these skills.

In recognition of these developments, an effort was made in 1995 to increase training in conservation planning and application. An agreement was executed between NRCS and the Board of Water and Soil Resources (BWSR) whereby NRCS provided technical consultation and training coordination (Justin Jeffery) to BWSR's State Revolving Fund staff for training of SWCD and NRCS employees.

District employees began to be trained along with SCS field staffs and were given job approval authorities. The effort proved to be highly successful and went a long way toward improving the technical skills of field personnel.

The 1996 Farm Bill reauthorized the CRP, conservation compliance, swampbuster and sodbuster provisions of the 1985 Farm Bill. It also established new conservation programs, including EQIP and WRP (discussed later). Under the 1996 Farm Bill, SWCD's were named as responsible agencies to help implement the new bill. This was

the first time, since the original Federal legislation in 1937 that organized them, that the districts gained the unprecedented management role in the conservation of natural resources. The need to build a strong foundation and work together more closely became critical for the Minnesota Conservation Partnership that included the NRCS, SWCD's, and other conservation partners.

SCS/NRCS Personnel of the 1980's to the Present

Wilson Scaling, active in grazing and conservation issues in Texas, became the eighth Chief of SCS in May 1985. Former Chief Peter Myers became the Assistant Secretary for Natural Resources and Environment. Scaling served until 1990. Bill Richards from Ohio became the new Chief in 1991. He was a strong advocate of conservation tillage. He served until 1993. Paul Johnson of Iowa followed him as the Chief of SCS. Pearlie Reed, a career employee, was appointed the Chief in 1998 and served until 2002, when he was replaced by Bruce Knight of South Dakota. Bruce had worked for agricultural producer groups and served on several Congressional staffs.

Gary R. Nordstrom

Don Ferren retired as SCS State Conservationist in Minnesota in 1986. He was replaced by Gary Nordstrom, who had been the national director of the SCS Resource Inventory Division in Washington, DC. Gary was born in North Dakota and grew up at Lanesboro, Minnesota. Gary returned to Washington, DC in 1995. Replacing Gary was William Hunt, Deputy State Conservationist in Pennsylvania. William was raised on a cotton-grain farm in Oklahoma. Bill worked diligently to diversify the workforce in Minnesota. He also encouraged greater involvement of the agency with Minnesota SCS/NRCS retirees.

William Hunt

The state office personnel during this period included (partial list):

• State Conservationist: Gary Nordstrom, 1986-94; William Hunt, 1995-present

- Deputy State Conservationist: David Benner, 1989-95
- Assistant State Conservationist: Roger Mussetter, 1989-2003; Ann English, 2003-present
- Assistant State Conservationist: Jon DeGroot, 1976-94; Tim Koehler, 1995-present
- State Conservation Engineer: Richard Rovang, 1983-90; John Brach, 1991-present
- State Soil Scientist: Dennis Heil, 1984-92; Joe McCloskey, 1992-95;
- Region 10 MLRA Leader: Joe McCloskey, 1995-present
- State Resource Conservationist: Roger Mussetter, 1988-89; Dennis Neffendorf, 1990-99; Paul Flynn, 2001-present
- Water Resources Staff Leader: Nick Pearson, 1988-91; Tim Koehler, 1992-95; William Stokes, 1996-2000; Barry Hamilton, 2001-03;
- State Administrative Officer: Tom Weber, 1987-88; Roger Hirschman, 1988-93; Gwen Wild, 1994-96; Wilmer Brandt, 2002; Charles Montgomery, 2003-present
- Public Affairs Specialist: Michael Price, 1983-93; Sylvia Rainford, 1997-2003; Julie MacSwain, 2003-present
- Biologist: G. Pollard, 1976-89; Mark Oja, 1990-present
- Woodland Conservationist: Paul Flynn, 1991-2001
- Agronomist: Dave Breitbach, 1981-97; Robin Zucollo, 1998-present
- Water Quality Specialist: Mark Waggoner, 1986-88; Tim Koehler, 1988-92; Jeff St. Ores, 1993-present
- Agricultural Economist: Leah Moore, 2002-present

Area Conservationists during this period included:

- Area 1: Gerry Krause, 1983-86; Glen Kajewski, 1987-present
- Area 2: Robert Conklin, 1978-90; Jim Ayres, 1990-present
- Area 3: Wayne Oak, 1979-92; Kevin Daw, 1992-present
- Area 4: Harvey Sundmacker, 1984-2003; Tim Wilson, 2003-present
- Area 5: Tom Fischer, 1977-90; Mike Appel, 1991-present
- Area 6: Ron Hardesty, 1980-99; Ann English, 1999-2003;
- Area 7: Gerry Krause, 1986-89; John Nicholson, 1990-present

The SCS state office moved from the Federal Building to the Farm Credit Building in 1988. The call during 1993-94 was "Reinventing Government." Acting SCS Chief Galen Bridge said "we live in a time when fundamental and rapid change in government and business is the norm. Change is upon us—we must change the public's perception of our role, outmoded operating systems, the way we provide services-- the way we look at change…"

Several "buyouts" occurred in the mid 1990's. The first was in April 1994, when 25 SCS employees in Minnesota took advantage of the plan and retired. Two others resigned. Buyouts left a huge void in the employment ranks for the agency. Earth Team Volunteers continued to contribute many hours of conservation in Minnesota.

SCS becomes NRCS

In October of 1994, SCS received a new name--Natural Resources Conservation Service (NRCS). With the change of the name came new program responsibilities and services. The organizational structure was designed to maintain more staff at the customer service level (field offices) while streamlining and consolidating functions and reducing overall employment at headquarters and regional levels.

The National Technical Centers were abolished. Their technical support functions were assigned to state offices. Management staffs were reduced. Some of the administrative and management functions were moved to six new regional offices. The regional office for Minnesota was initially announced as being in Milwaukee, but was later changed to Madison, Wisconsin.

Water Quality Concerns

With the increasing interest during this period for protecting and improving Minnesota's water quality, SCS realized a need for additional technical expertise. The position of Water Quality Specialist on the State Resource Conservationist's staff was established and filled by Mark Waggoner in 1986. This position at the state office level was the first in the nation and served as a model for SCS in other states.

By the late 1980's, working arrangements with other Federal and state agencies on water quality concerns were strengthened. Intergovernmental Personnel Agreements (IPA's) were developed. SCS shared its technical expertise with MPCA to prepare and publish a manual of Best Management Practices (BMP's) to address agricultural water quality concerns. Other assistance was provided to the Metro Council and the Board of Water

One of many Minnesota lakes

and Soil Resources. Agency and SWCD employees worked together more closely and effectively in developing innovative approaches to addressing Minnesota's agricultural water quality issues.

Role of Conservation Districts Expands

The role of the Soil and Water Conservation Districts continued to expand. The state legislators helped the conservation movement with the State Cost-Share Program in 1976, the Reinvest in Minnesota Program (RIM) of 1986, and the Wetland Conservation Act of 1990.

Individual SWCD's continue to be governed by an elected group of five supervisors. They operate from annual and comprehensive work plans, which indicate local conservation priorities and resource treatment needs. They continue to conduct surveys and demonstration projects, public information activities and assist landusers to implement conservation practices within their jurisdiction.

Best management practices for improving water quality included contour stripcropping,

Since the consolidation of the two districts in Winona County into one district in 1986, there are now 91 SWCD's in Minnesota. The role of the Minnesota Association of Soil and Water Conservation Districts also expanded. A staff person (Executive Secretary/Director) was hired in the late 1970's or early 1980's. The staff was increased to two persons in the late 1980's and to three in the late 1990's. LeAnn Buck serves as the current Executive Director.

Conservation districts remain a unique entity. They often are referred to as special purpose districts. They are not state government, nor are they county government. However, they are governed by state statute yet considered a local unit of government. Further, they are the only local unit of government covering the whole state charged with implementing government programs.

Board of Water and Soil Resources

In 1987, three state boards/councils (State Soil and Water Conservation Board, Water Resources Board, and the Southern Minnesota Rivers Basin Council) were merged into the Minnesota Board of Water and Soil Resources (BWSR) as an independent agency. BWSR provides leadership in local water planning, assistance to soil

and water conservation districts and watershed districts, protection of water resources, and protection of wetlands. Ken Tow from Iowa was the first Executive Director. Following him was Jim Birkholz, who was followed by the current Executive Director, Ron Harnack.

The first significant funding for conservation work by the Minnesota Legislature occurred in the 1970's. State funding to BWSR now exceeds $20 million annually. This amount, along with over $10 million per year from county governments, helps to support SWCD activities. Current BWSR staff numbers 45 people. The organization has grown considerably in recent years. Back in 1976, a staff of 5 was expanded to 12 when 6 field staff and one clerical positions were added.

Erosion/Pollution Reductions

"Soil and water conservation practices" were now also referred to as "best management practices" (BMPs). The adoption of conservation tillage continued to increase, helping to meet the goal of "T" or tolerable soil loss on Minnesota cropland. Periodic crop residue management surveys coordinated by the Conservation Technology Information Center at Purdue University bear this out. A number of developments in recent years helped the adoption of conservation tillage including the introduction of, new crop varieties which grow well in cooler conditions, "Roundup ready" soybeans that control weed growth with the use of herbicides reducing the need for tillage, and air seeders which permit seeding with little or no tillage into high amounts of residue. A greater appreciation for improving water quality also developed.

More contributions of technical and financial assistance occurred from SWCD staffs, BWSR, state cost-share programs, and RIM in addition to NRCS's CO-01 and other farm bill programs. Collaborative efforts were made with the Minnesota Department of Agriculture.

Conservation tillage was among the practices chosen to reduce soil erosion and improve water quality.

These efforts included development of grazing plans, coordination of EQIP with the state Agricultural BMP Loan Program, coordination of feedlot issues through the Feedlot and Manure Advisory committee, development of a memo of understanding concerning organic vegetative and animal production, development of the joint feedlot technical assistance LCMR project, and maximization of CRP signup. For an appreciation of application effort during this time period, see Appendix J, which contains individual reports on accomplishments including BWSR Biennial Report (FY 1992-93) February 1993, and NRCS Minnesota's Soil and Water Conservation Report, January 1995.

The methodology used by SCS/NRCS to report accomplishments has changed over time; developing totals or trends over many years is nearly impossible.

AGNPS Model

The importance of runoff from agricultural lands as a source of nonpoint pollution brought about an effort in Minnesota to develop a uniform method of analyzing the quality and quantity of the runoff. That effort was the development of the Agricultural Nonpoint Source Pollution Model (AGNPS) in the mid 1980's by the MPCA, SWCB, SCS, and ARS.

Dr. Robert Young of ARS (Morris, Minnesota) is credited as being the developer/collaborator of the model. The Feedlot Evaluation Model was incorporated into AGNPS. Much interest was shown in the model, which was used by many in Minnesota and in other states. It served as a great learning tool by helping users to better understand the process of nutrient transport not only in the studied watersheds but also in a general way for other watersheds.

However, considerable staff time was involved in collecting, entering, checking and analyzing input and output data. Its complexity increased as attempts were made to improve the model to better simulate actual field conditions. These reasons, along with the transfer of model support to ARS in Oxford, Misssissippi resulted in a decreased use of the model in Minnesota.

Association of RC&D Councils

The Minnesota Association of RC&D Councils held their first annual convention in 1988. The convention's excellent program dealt with new concepts of how RC&D fits into USDA's effort for rural development. Conventions have become an annual event for RC&D councils.

RC&D Areas established during this period include: Prairie Country in 1991 (with Randy Nelson as Project

Coordinator), Pembina Trail in 1992 (with Al Gustafson as Project Coordinator), Laurentian in 1996 (with Julie Smith as Project Coordinator), and Three Rivers in 2001 (with Amy Shogren as Project Coordinator). Prairie Country included the nine southern counties of the WesMin Area, Pembina included seven counties in northwestern Minnesota, Laurentian included the five northern counties in northeastern Minnesota, and Three Rivers included the southern nine counties of NRCS Area 6.

Currently, 67 of the 87 counties in the state are participating in the RC&D Program. This may soon change, as the nine southwestern Minnesota counties are in the process of forming a new RC&D Area called Coteau des Prairies.

The potential of growing large acreages of hybrid poplar to fuel a large megawatt whole tree energy power plant received much discussion and promotion during the 1990's. The WesMin RC&D Area along with MN-DNR became actively involved, as did a group in the St. Peter area. A Wood Energy Scaleup Project was established in the WesMin RC&D Area using CRP program funding and Department of Energy (DOE) grant funding as an incentive for landowners. Currently 12,000 to 13,000 acres have been planted to hybrid poplar in the Alexandria-Sartell area, much of this by International Paper for their plant in Sartell. Hybrid poplar use now appears more valuable as paper production rather than wood energy, which was the original concept behind WesMin's wood energy project. The effort in the St. Peter area failed. Renewable energy from hybrid poplar is now being promoted in the Hibbing-Virginia area to provide power to both cities, with closed loop energy from hybrid poplar and other wood sources. It also appears that slash, the tops and branches and poor quality trees that would remain in the field, could be a biomass resource or value-added product after trees are harvested for pulp. WesMin RC&D continues to work with hybrid poplars as and alternative agricultural crop.

Watershed/River Basin Activities

The Minnesota River Assessment Project (MRAP), a 4-year study led by MPCA and involving several federal, state, and local cooperators, was undertaken in 1989 to determine the feasibility of improving the water quality of the Minnesota River and its tributaries. The pollutants of greatest concern were sediments, nutrients, bacteria and oxygen-demanding substances. The study found that even though the majority of the cropland was eroding at tolerable levels, water quality problems existed. Small

Surface and ground water quality were addressed in Minnesota in recent years.

amounts of pollutant loss per acre, multiplied by millions of acres, significantly affected water quality. The majority of the nonpoint source pollution occurred during major runoff events, when large amounts of fine-particle sediment and nutrients were washed into the river system. A number of recommendations were made to implement conservation measures on all land, including transportantion, construction, agricultural and urban areas. As a result of the study, CREP and EQIP funds (discussed later) were made available in the Minnesota River Basin. The study also helped MPCA in their efforts to improve water quality in the Minnesota River.

Planning of a PL-566 "land treatment only" watershed project, the Kanaranzi-Little Rock Watershed, was completed in 1987. This project targeted highly erodible land using PL-566 funds to cost share for the installation of land treatment measures. Long-term contracts between the landowners and the watershed district were used. To date, more than $2.5 million including PL-566 funds and landowner costs have been spent to install conservation measures on about 20,000 acres. Construction of the Burnham Creek Watershed Project was completed in 1999. The project reduced average annual snowmelt flooding by nearly 4,000 acres and summer flooding by nearly 2,400 acres, providing average annual benefits of about $250,000 (1981 conditions). A multiple-purpose structure created a wildlife development of 338 acres as well as providing flood protection benefits.

Resurvey of Dr. Happ's 94 sediment ranges (cross sections) in the Whitewater River Watershed occurred during 1993-94. Dr. Happ (SCS) had originally surveyed a series of cross sections of the flood plain in 1939, leaving concrete and pipe markers at the end points of each sediment range. Soil borings in 1939 also located the original topsoil before 1850. Happ (ARS) resurveyed the sediment ranges in 1965. The purpose of the most recent survey was to determine sedimentation patterns among the various time frames as part of planning a PL-566

Project in the Whitewater River Watershed. Current plans are to publish the survey findings under the direction of Dr. Stanley Trimble, noted sedimentation specialist. Planning of the watershed project, consisting of land treatment measures, was completed in 1998.

Implementation of the watershed plan is currently underway. Use of PL-566 funds is through long-term contracts between landowners and the Whitewater River Joint Powers Board.

The Snake River PL-566 Watershed Project moved on a fast track following several large floods in 1996 and 1997. Planning on the project had originally commenced in 1979, when a field exam was prepared. Detailed planning continued during the 1980's, but gradually local support for the project disappeared, and planning was terminated in 1989. NRCS resumed planning activities in 1997 and developed a watershed plan with the sponsors. The Watershed Agreement was signed by the Middle River-Snake River Watershed District, the city of Warren and NRCS in 1999. Construction activities began in 2001.

The South Zumbro Watershed Project in southeastern Minnesota received an Outstanding Civil Engineering Achievement Award of Merit from the American Society of Civil Engineers at their award ceremony in Washington, DC in 2000. NRCS contributed $24 million for the construction of seven reservoirs while the Corps of Engineers contributed $100 million for channel work. The project was completed in 2000.

Anoka Sand Plain Demonstration Project

The Anoka Sand Plain Demonstration Project was established in east-central Minnesota in 1990 amid local concerns about ground water quality in the sand plain. The project was staffed jointly by SCS and the Minnesota Extension Service. Numerous tours centered on nitrogen, manure, and irrigation management; integrated pest management; and cultural versus chemical weed control.

To assist in their efforts to provide producers with irrigation management data, NRCS installed a climate station in nearby Sherburne County in 1990. The station, named Crescent Lake, uses a type of real time communication system similar to the SNOTEL (SNOw TELemetry) climate stations used by NRCS in the western states to forecast water supply quantities.

Data retrieved from the Crescent Lake station is still being used by SWCD personnel to calculate evapotranspiration estimates; they are posted daily on the internet for use in irrigation scheduling. Soil moisture and soil temperature data are also monitored at the site and

are being archived along with similar data from over 90 other climate stations nationwide, as part of the NRCS Soil Climate Analysis Network (SCAN).

Olmsted County HUA Project

The Olmsted County Hydrologic Unit Area (HUA) Project was an 8-year effort (1991-1998) addressing the contamination of water aquifers in six townships surrounding the city of Rochester.

It was part of a USDA national water quality initiative, the only one in Minnesota, to safeguard and enhance the quality of surface water and ground water resources. Staff from NRCS, UMES, FSA, SWCD, and MPCA worked together to help producers in the HUA address their resource concerns.

Survey results of agricultural producers in 1998 showed that because of the project over 90 percent of respondents were more aware of remedies to environmental problems and over 90 percent had implemented changes, such as integrated crop management, conservation tillage, contour strips, and nutrient management.

The 1993 Flood

A wet cool spring and early summer, saturated soils, and heavy rains combined to create devastating floods throughout Minnesota in 1993. Mike Appel, Area Conservationist, wrote, "A comparison of rainfall in Worthington shows a 19" departure from normal.

Over 500,000 acres were unplanted in Area 5 alone. Another 1-3 million acres were drowned out or have suffered from excess moisture. All of Area 5 was declared a Presidential disaster area…." Later, he wrote, "Our fears were finally borne out after the fall harvest was completed. Yields were down 20-40 per cent in almost the whole area…." Disaster declarations in one form or another included 84 of Minnesota's 87 counties that year.

Excessive rainfall, low temperatures, a short growing season, flooding, and disease and insect problems on all major crops reduced agricultural income and kept many producers from installing and maintaining soil conservation practices. Severe flooding also occurred in Iowa and along the Mississippi River.

MLRA Soil Survey Activities

With the loss of LCMR funding in the early 1990's, progress in soil survey activities slowed considerably for several years. In 1995, a new concept of mapping by Major Land Resource Areas (MLRA) took hold nationwide. Instead of mapping one county at a time, several counties within the same MLRA were mapped or updated together. A MLRA office was set up in the Minnesota

People attending the soil survey centennial banquet included, from left, Dr. Richard Rust, William Hunt, Richard Paulson, and Dr. William Larsen.

state office. In 1998, digitized soil maps moved soil survey into the Geographical Information System (GIS) arena.

Also in 1998, the Minnesota Soils Website made soil survey information in Minnesota available to the world. During this period, 28 soil surveys were published for the first time and six counties were updated. Currently, 22 counties have SSURGO (Soil Survey Geographic) certified digital soils information available on CD or from the Web.

In 1999, state funding again assisted the soil survey program, allowing digitation of soil surveys in four southeastern counties. Also, a cooperative soil survey centennial recognition banquet was held in Mankato. The program included an excellent review of soil survey activities in the state over the last 100 years. The future direction of the Soil Survey Program was also discussed ("History of Soil Surveys in Minnesota," Soil Survey Centennial Recognition, 1999). The Lester Soil Series was adopted as the “Minnesota State Soil ” by the Minnesota Association of Professional Soil Scientists in 1987.

American Indian Nations

SCS, NRCS, and SWCDs continue to provide technical and financial assistance to all 11 American Indian Nations in Minnesota– 7 Chippewa Tribes and 4 Dakota Communities. Assistance has ranged from planting native sweet grasses to construction of erosion control practices.

American Indian people in Minnesota participate on the Minnesota NRCS State Technical Committee. They are also providing input to NRCS through local work groups to advise NRCS how to utilize and invest farm bill funds to address natural resource issues locally and across the state.

A Center of Excellence Program for map compilation was established by NRCS and the Fond du Lac Tribal and Community College in 1998. Located in Cloquet, it enhances educational and employment opportunities for American Indian students and digitizes soil surveys. The program supports working relationships and partnerships between USDA agencies and the Fond du Lac Tribe.

MACRM

During 1995, the River-Friendly Farmer Program was initiated by the Minnesota Alliance for Crop Residue Management (MACRM). The focus of the program is to recognize farmers throughout Minnesota who are helping to clean up and protect the rivers in the state.

EQIP/WRP

In 1996, the Environmental Quality Incentives Program (EQIP) was established. EQIP combined the functions of the Agricultural Conservation Program (ACP), the Water Quality Incentives Program, the Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program.

Approximately $50 million has been obligated with agricultural producers from 1997 to 2003 to implement natural resource conservation practices. This averages to about $7 million per year, considerably larger than the $2 million, the largest year of ACP funding. Major focuses included practices related to animal agriculture, water quality, and soil erosion.

EQIP has become the largest conservation program throughout the state for NRCS.

The Wetlands Reserve Program (WRP) was also established in 1996. It is a voluntary program that offers landowners the opportunity and means to protect, restore and enhance wetlands on their property. NRCS and its many partners provide technical and financial support to landowners.

To date more than $50 million has been made available to Minnesota, primarily for the purchase of perpetual easements on more than 45,000 acres.

For 2003 alone, $21 million was available for the purchase of easements on more than 12,000 acres from about 90 landowners. It is the nation's premier wetland restoration program.

Buffer Initiative

In April 1997, USDA officially launched the new National Conservation Buffer Initiative and pledged to help landowners install 2 million miles of conservation buffers by the year 2002. Agricultural producers and other landowners installing buffers improved soil, air, and water

A buffer in southern Minnesota protects water quality and adds habitat for wildlife.

quality; enhanced wildlife habitat; restored biodiversity; and created scenic landscapes.

A total of 6,764 Continuous Conservation Reserve Program (CCRP) contracts were signed during FY 2001. To ensure a balanced agency budget, an all-out effort was made to obtain CCRP contracts. William Hunt, State Conservationist, describes the accomplishment of this "extraordinary feat" as representing hard work and dedication of NRCS employees as well as our partners.

CREP

The Minnesota River Conservation Reserve Enhancement Program (CREP) was officially launched in February 1998 as the second one in the nation. The program combined the USDA Conservation Reserve Program with the state's Reinvest in Minnesota (RIM) program to retire up to 100,000 acres of environmentally sensitive lands in the 37-county Minnesota River area.

CREP matched approximately 2.3 Federal dollars to each state dollar appropriated for RIM. Minnesota appropriated $81.4 million for the program. The initiative is one of the largest efforts to restore habitat and improve water quality in the Minnesota River—one of the nation's most polluted rivers—and its tributaries. The 100,000-acre goal was achieved in 2002.

Conclusion

This brings us to the present (2003). The soil and water conservation movement in Minnesota and for the nation is at the dawn of a new era. The 2002 Farm Bill offers opportunities never before imagined. The Farm Bill; new technologies in soil and water conservation, including global positioning systems, soil map digitization, and new or revised models; greater public awareness; and dedicated people will initiate the new era. There are challenges (even problems), to be sure. The personnel working in the field of soil and water conservation today are up to the challenge and will succeed. The extent of that success will be for future historians to assess.

APPENDICES

A. Literature Cited; B. SES/SCS Soil Erosion Control Demonstration Projects in Minnesota; C. Minnesota Employees of SES/SCS in the 1930's/early 1940's; D. SCS Soil Erosion Control CCC Camps in Minnesota; E. SCS and Other Personnel Assigned to the CCC Camps in Minnesota; F. Establishment of SES/SCS Minnesota Operating Units/Offices 1934-1945; G. Minnesota State Office Locations 1937-2003; H. Soil and Water Conservation Accomplishments in Minnesota, 1975; I. Use of Computers by SCS/NRCS in Minnesota; J. Soil and Water Conservation Accomplishments of the 1990's; K. Acronyms in the book.

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APPENDIX B 1/ SES/SCS SOIL EROSION CONTROL DEMONSTRATION PROJECTS IN MINNESOTA

Item	Gilmore	Deer-Bear	Beaver	Prairie	Twin Valley
Project Number	1	2	3	4	5
City	Winona	Spring Valley	Caledonia	Faribault	Twin Valley
Started	11/1934	Fall 1934	Fall 1934	Sept. 1935	Fall 1939
Size (ac)	5,600	49,600	34,400	22,000	45,000
# of Farms	44	111	106	61	
Start Soil Survey	6/36	4/35	5/35	10/35	
On maintenance	1938	1938	1938	1939	
Closed	1940				
Official End	1944	1944	1944	1944	1944
Reassigned SCD	Rollingstone- Stockton- Gilmore 11/39		Root R.		
Project Staff (partial list)					
Manager/Conser	M. Keliher 34-39 H. Ogrosky 39	H. Flueck 34 ? H. Jackson34-38 U. Nelson 38-	H.Tagge F. Higgins	G. Wight 35-38 H. Jackson 38-39 H. Halverson 39-39 F. Janzen 39-40 J. Kerr 40-	A. Libby 39-
Engineer	H. Ogrosky O. Hosmer	L. Van Doren G. Fonken	D.Ryan L. Nelson	S. Krogsrud	
Forester	A. Laidlaw 34-35 W. Lauer 36-40	K.Olson U. Nelson	U.Nelson	H. Haverson 35 E. Bullis	

APPENDIX B 1/ SES/SCS SOIL EROSION CONTROL DEMONSTRATION PROJECTS IN MINNESOTA

Item	Gilmore	Deer-Bear	Beaver	Prairie	Twin Valley
Agronomist	W. Sillman 35-	N. Snustad	H. Thomas	A. Libby, S. Hill	
			H. Johnson	J. Kerr	
Biologist	A.Laidlaw, C.Winters	G. Swanson	T.Evans, G.Swanson	L. Parker	
Soil Scientist	I. Nygard	I. Nygard, F.Hocyt	I. Nygard	G. Harms	
Soil Cons.	L. Richards	M.Bolline,S. Hill	D. Davidson,	F. Janzen	
	D. Davidson 37-	D. Davidson	W. Triplett		
		J. Staley, G.Wight	F. Martin		
		N. Boyce, J. Kubier			
		M. Roberts, C. Welch			
Farm Man. Spec.	A. Sanfort				
Agric Aide	L. Bullard 38-?				
Technician	A. Siebennaler		F.Janzen/L.Bullard		
Clerks	3		4	1) 11	
Mechanic	A.Kesler				
Labor Foreman	L.Hamilton		E. Miller		
CCC Camps	#4 '35 -'37	#1'35-'38	#2 '35-'39	#3 '37-'39	
	#9 '35-'37	#3 '35-'37		#7 '38-'39	
	#11 '35-'37	#7 '35-'38		#9 '37-'39	
	#13 '35-'38	#10 '35-'37		#10 '37-'39	
	#16 '35-'37	#12 '35-'38; #14 '35-'38		#11 '38-'39; #12 '38-'39	
				#13 '38-'39; #16 '37-'39	

1/ In addition to the 5 listed projects, Clear Lake Project in Sherburne County (Gardner Graham as project conservationist) and Storden Project in Cottonwood County (Norman Boyce as project conservationist) were started in 1940. Limited data exist, no doubt, due to WWII. All projects officially ended in 1944.

APPENDIX C MINNESOTA EMPLOYEES OF SES/SCS IN THE 1930's/EARLY 40's (PARTIAL LIST)

LAST NAME	FIRST	APPROX DATE/LOCATION					
Aakre	Arnold	Lanesboro 6/37-?	Plainview 41	Caledonia 42	Lanesboro ?-45-?	Preston ?-69	
Anderson	Robert	Winona Nursery 34-	Red Wing ?-42 & 45	WWII 43-45	Wanamingo 45-55	Montevideo 55-68	
Anderson	Sigurd	Caledonia 37	Lake City 37	Out of MN 37-45	St. Anthony Falls Lab	45-49	
Bennett	Roy	St. Paul 42-65					
Bergh	Thor	Houston?/35-	Winona Nursery 42-54	Renville 57?	St. Cloud 58-63	St. Paul 63-66	
Bolline	Morrie	Spring Valleysp/35	Bayport39-41	US Navy 43-45	Stillwater 46-53	St. Paul 54-59 to KS	
Bonde	Karl	Houston ?, 46, ?					
Bowers	George	Coon Creek, WI 34-	Faribault 39-42	Marshall 42-46/47	Milwaukee, WI 46/47		
Boyce	Norm	Spring Valleysp/35	Zumbrota?/39	Storden 41	Windom 46-54	Retired 54	
Boyum	Llewellyn V.			?58-77	Retired 77		
Bullard	Leonard	Caledonia 37-38	Winona 39	Moorhead 46	St.Cloud 54-67		
Bullis	Everhard	Rochester 35	Faribault 3?				
Bulter	Ken	Plainview 35-36	Red Wing 9/36, 37	Lake City 7/40			
Burnison	Ivan	Lewiston 39	Winona 46	Fairmount 50?-68			
Callinan	Harry	Zumbrota?/38,	Lake City 46-				
Carmichael	E. F.	Lanesboro	Jordan 40-42	WWII 42-			
Chapman	?	Spring Valley?/35					
Clardy	Carl	Rollingstone 35	Lewiston ?37-40	Jordan 40-42?	Winona ?46-		
Cline	H. Ray	Lake City 35-41?	McIntosh ?46-	Virgina ?-65	Retired 65		
Davidson	David	Spring Valley1/35	LaCrosse36-37	Caledonia 37-38	Winona 39	Rochester 42-	
Dean	J. George	Plainview?	Stillwater 41	St. Paul 54-67			
DeValois	Willis	Zumbrota?/38-41	Cannon Falls 41-55	Wanamingo 55-62			
Doughes	Don	Spring Valley 3?					
Erickson	Roy	IA-MO 34-39	Dakota Co. 39	WI40-47 also WWII	KS 47-50	Moorhead 50-?	Fergus Falls ?-65
Esser	J.	Lewiston 36-39?	Northrop-King Seed Co.				
Evans	Tom	Caledonia 3?					
Faunce	Charles	Plainview 39	Fergus Falls- died '58				
Flannigan	Clem	Rochester 37	Winona 39				
Flueck	Herb	U of WI	Coon Creek,WI 33-34	Spring Valley 34-36	La Crosse 36-37	St. Paul 37-68	
Fonken	George	Spring Valley11/34					
Freyburger	Edw	Winona 35					
Golla	George	Luverne ?, 46, ?					
Graham	Gardner	Chatfield	Clear Lake (St. Cloud)40-		St. Cloud 41		
Hacck	?	Spring Valley?/35	La Crosse 36				
Hagne	?	Spring Valley?/35					
Hahn	Dewey	Red Wing 35-40	Jordan 40-68				
Halverson	Herb	Faribault?/35-?, 39, 42	Houston 41	Belle Plaine 42-45	St.Peter 45-53	TRF 53-65	
Hanna	J.	Red Wing 39					
Harms	Gren	Spring Valley 35-35	Faribault 36-47 (also in other states)		Red Wing 47-60	Zumbrota 60-65	
Hattlestad	Edwin	Spring Valley 35	Faribault 36-39				
Higgins	Floyd	Caledonia 34-39+	Detroit Lakes 46-	Waconia ?-60			
Hill	J. E. (Sam ?)	Spring Valley1/35	LaCrosse36-37	Spring Valley 37	St. Paul 37	Faribault 37-	
Hocyt	F.	Spring Valley?/35					

APPENDIX C MINNESOTA EMPLOYEES OF SES/SCS IN THE 1930's/EARLY 40's (PARTIAL LIST)

LAST NAME	FIRST	APPROX DATE/LOCATION					
Hosmer	O.	Winona 3?-38/9	Moscow, ID				
Jackson	Howard	Spring Valley3/35	Faribault?/38-42	Left MN 42			
Janzen	Frank O.	Caledonia 35	Zumbrota	Faribault 39-40	Red Wing 40, 41	Fergus Falls 48	Fergus Falls ?-65
Janzen	Jake	Spring Valley ?/35	Marshall 46-				
Karlstad	Grant		Coon Valley, WI ?	Rochester ?- 69			
Keliher	Pat	Winona 11/34-38	St. Paul 38-40	Left SCS			
Kerr	Jay	RedWing?/36,	Faribault39-58	Retired 58			
Kjos	Goodwin	Lewiston 6/37,					
Knight	Lloyd	Houston 6/37,					
Krogsrud	Sid	Spring Valley 35	Faribault 36-39-?				
Kubier	Julius	Spring Valley?/35	Red Wing 40?-60				
Laidlaw	Al	Winona 35-36	LaCrosse36-37	Winona/Farib 37	WWII	WI 46-59	St. Paul 59-71
Larson	Lloyd	Red Wing 36-37	Zumbrota 37-	Winona ?-40	Jordan 40-	Ivanhoe 46	Wayata ?-70
Latvala	Hans	Plainview 36-41+D22	Cannon Falls 41	Fergus Falls ?-59	Retired 59		
Lauer	William	Winona 36-4?	Left SCS 4?				
Laugen	Bert	Spring Valley?/35					
Libby	Arthur	Winona36-	Faribault 37-	Appleton Area 37-38	Twin Valley39-45?	Moorhead 45-53	Breckenrdg 53-67
Luecke	Ed	Faribault?/35,	WWII 42-45	Owatonna ?-59 death			
Lynch	D.	Lanesboro 35					
Martin	Frank	Caledonia?/35,	Zumbrota5/35-5/38	LakeCity?/38-?	Fergus Falls 41	Owatonna 46-59	
Miller	Elmer	Caledonia ?37-38?	Winconsin ?-45	In MN ?	Albert Lea ?51-65		
Moore	Lee	Spring Valley?/36, 38	Faribault?/39-42	RedWing42-53	St.Peter53-66		
Moriarity	George	Tofte-Army 35	Zumbrota-Army 35	?	Caledonia ?	Aitkin 58?-73	
Nelson	Urban	Spring Valley?/35	Caledonia?/35	Spring Valley38-	Stillwater41	Jordan 42-	Fergus Fall 46-?
Nygard	Iver	Caledonia?/35,	Spring Valley	Winona	Caledonia	Faribault 39-42	U of M
Ogrosky	Harold	Winona?/34-?,					
Olson	Kermit	Spring Valley?/35	Winona Nurnsery 36-42				
Palmer	Vernon	Caledonia 35					
Parker	Lansing	Faribault?/39	Left SCS 2/41				
Paulson	Francis	Bayport 39?	Stillwater 41-68				
Quistgaard	Eric	Caledonia 35					
Rahn	Herman	Winona 34-?	Lake City 39	Lewiston - 58			
Reese	Carol	Spring Valley?/35					
Richards	L.	Winona 3?-38/9	Plainview 38/9-				
Risser	Orville	Dodge Center 46	Owatonna ?-70	Retired 70			
Roberts	W. Marian	Caledonia 35	Spring Valley?/37	Chatfield 37-	Faribault 39-42	Rochester 42?-71	
Robertson	Alex	LaCrosse (CoonCr)34-?	LaCrosse(MN) 34	LaCrosse(WI&MN)35	Whitewater 38	Milwaukee 39-44	St.Paul 44-70
Russell	John	Stillwater 46	Anoka ?-69				
Ryan	Dennis	Spring Valley?/35	Caledonia?/35	Rochester38	Bayport	Jordan 40	Belle Plaine 42
Schaenzer	Werner	St.Paul 42-69,					
Schelin	R	Zumbrota 39					
Shea	David		Lake City ?-?	Red Wing ?58-60	Zumbrota 60-73	Retired 73	

APPENDIX C MINNESOTA EMPLOYEES OF SES/SCS IN THE 1930's/EARLY 40's (PARTIAL LIST)

LAST NAME	FIRST	APPROX DATE/LOCATION					
Sickeler	Gail	WI 41-42	Lake City 42	WWII 43-46	Lake City 47-56?	Wabasha 56?-66	Fergus Falls 66-77
Siebennaler	Alex	Winona 45-?	Lewiston 58?-68				
Shogren	Hugo	Red Wing 36-40	Jordan 40-				
Sillman	William	Spring Valley 35	Winona 35-41	St.Charles 41-		Winona 47-?	Lewiston 49-73
Simpson	Gerald	Winona 36-?	Lanesboro 40,41	Luverne 46-49		Marshall 49-77	
Skramstad	Olaf	Waterville 35-42	Maple Lake 42	Marshall ?-52			
Smith	Dale	Rochester 39					
Snustad	Nels	Spring Valley 5/35-6/37	Zumbrota?/38	WWII		DodgeCenter46-50	Fergus Falls 50-66
Staley	John	Spring Valley1/35	LaCrosse36-37	Spring Valley 37		Winona 41?-49	
Swanson	Gus	Spring Valley?/35	Caledonia?/35				
Tagge	H.F.	Caledonia 35-37	Rapid City, SD 37				
Tetrud	William	Spring Valley?/35	Lewiston 8/38				
Thomas	Horace	Caledonia 35-37?	Lanesboro 41	U of MN			
Triplett	Leroy		Caledonia 37-40	Lake City 40-		Caledona 46	
Tripp	Fred	Red Wing 37, 38-	Houston ?	Waterville 39-		Cannon Falls 41-	Farmington 46-65
Tyner	L.V		Plainview 35	Lake City 36-37		Zumbrota	Bayport 42
Uptegrafft	Leroy	Spring Valley	LakeCity 37-	Rochester 41		Rochester 46	
VanDoren	Lloyd	Coon Valley 33-34	Spring Valley 34-	Faribault 39-42		Left SCS 3/42	
Voll	E.V.	Caledonia 3?					
Welch	C. Herman	Spring Valley?/35					
Wenner	Al	Plainview?/36	Waterville ?38-	Jordan ?, 43, ?		Owatonna ?48-62	Retired 62
Weswig	Carl		Lewiston				
Wight	George	Spring Valley1/35	La Crosse 35	Faribault 35-38		Left for SD 38	
Wilson	Henry	?	Sherborne Co ?46-	St. Cloud ?-66			
Winter	C.	Winona 36-?					
Workmeister	Emil	Faribault 39-?					

In addition the following individuals retired from SCS before 1976. Some of them, no doubt, also worked for the SES/SCS in the 30's and early 40's. Their names and date of retirement include: Paul F. Buecksler-59, Roy H. Quitney-61, Ardell W. Hansen-62, Joseph L. Vosejka-64, Dorothy L. Kilpatrick-64, E. Herbert Waldeen-64, John E. Ebensteiner-64, Merle E. Rundell-64, Orval D. Friedrick-65, Marvin E. Peterson-65, Richard V. Becker-65, Harold F. Maltby-65, Edwin J. Bender-66, Don E. Lawrence-66, Leonard T. Connelly-66, Fred B. Anding-66, Emory B. Lorenz-66, Einar L. Henrikson-67, Edgar M. Brecke-68, Forrest F. Schasker-69, Ralph W. Hauswirth-69, Joseph M. Stevens-70, Arthur J. Hylland-70, Warner A. Christeson-71, Charles E. Washburn-71, Willard H. Roeske-71, Beatrice E. McLeod-72, Haven J. Lee-72, Roy A. Lappier-72, Genevieve P. Hagerty-72, Harry A. Schuldt-72, Wayne A. Ruona-72, Alf M. Jorgenson-73, Angelo R. Bergantine-73, Boyd R. Forrest-73, George A. Moriarty-73, Gilmar E. Halvorson-73, Jeanne A. Cooper-73, John C. Harries-73, Ray A. Gunderson-73, Harvey H. Turner-73, Dorothy D. Kroening-73, Orval O. Barker-73, William M. Kalton-73, Ernest S. Johnson-73, Carroll M. Henning-73, Harold C. Olson, John N. Junck-73, LeRoy D. Lhotka-73, George B. Taylor-73, Woodrow A. Steffen-73, Wilmer A. Baumann-73, Elsie N. Pederson-73, Morris R. Blackburn-73, Charles F. Buchmayer-73, Albert Humann-73, Niels B. Anderson-74, Mayron E. Ritchey-74, Fred B. Wahlstrom-74, Iris H. Page-74, Russell V. Jongewaard-74, Merril D. Martig-74, Walter O. Twite-74, Raymond W. Suhr-74, Vernon H. Born-74, John M. Deere-74, Norman C. Berger-75, and Frances D. Lorenzen-75.

APPENDIX D SCS SOIL EROSION CONTROL CCC CAMPS IN MINNESOTA 1/

Camp Name	Camp No.	Start Date	Assign Demon. Project	Moved/ Reassigned	Maintenance Start Date	Discontinued 2/ Date
Spring Valley	1	6/35	Deer-Bear		4/37	1937
Caledonia	2	6/35	Beaver Cr.	Root SCD	7/40	1942
Zumbrota	3	5/35	Deer-Bear 3/	Winona	11/39	1939
Houston	4	6/35	Gilmore		10/37	1937
Lanesboro	7	6/35	Deer-Bear 3/	E. Fillmore SCD		1942
Red Wing	9	6/35	Gilmore 3/	Jordan	8/40	1940
Waterville	10 4/	9/35	Deer-Bear 3/	Maple Lake	8/40	1940
Lewiston	11	5/35	Gilmore 3/	Rollingstone-Stockton-Gilmore SCD		1941
Rochester	12	5/35	Deer-Bear 3/	Bayport	7/39	1939
Plainview	13	5/35	Deer-Bear 3/			1941
Chatfield	14	8/35	Deer-Bear		12/37	1937
Rollingst.	15	never occupied, staff started work summer of 1935 then discontinued.				
Lake City	16	8/35	Gilmore 3/	Fergus Falls	6/41	1941
Bayport	17	7/39				1942
Winona	18	11/39				1942
Jordan	19	8/40				1942
Maple Lake	20	8/40				1942
Underwood (Fergus Falls)	21	6/41				1942

1/ Prior to the establishment of the above camps, 9 temporary soil erosion control CCC camps existed during 1933 in Red Wing, Wabasha, Whitewater State Park, Winona, Hokah, Caledonia, Preston, Chatfield and Rochester. They closed for the winter. Temporary camps in 1934 were at Caledonia, Chatfield, Houston, Lake City, Lanesboro Lewiston, Red Wing, Rochester and the Whitewater State Park. See Barbara Sommer's unpublished manuscript for more details on the soil conservation camps.

2/ CCC camps officially closed on June 30, 1942.

3/ Camp assignment transferred to Prairie Creek (Faribault) Demonstration Project with 1937 reorganization.

4/ New Prague was considered a side camp from Waterville.

APPENDIX E SCS AND OTHER PERSONNEL ASSIGNED TO CCC CAMPS IN MINNESOTA (Partial List)

(Does not include Administrative Clerks, Enrollees, etc.)

Camp	Superintend.	Agronomist	Engineer	Eng. Aid	Forester	Soil con.	SC aid	Tech.	Foreman	Mechanic
Spring Valley -1	D. Ryan									
Caledonia –2		Triplett?, A. Aakre 41 H. Johnson				M. Roberts			C. Faunce41	A. Austin 4/
Zumbrota –3 1/	F. Martin 35 L. Tyner 38-39	L. Larson N. Snustad	N. Boyce		H. Callinan	W. DeValois F. Janzen 35-37 R. Schelin	L.Larson	P. Plasenoia	L. Appel H. Haapala L. Lyon B. Wallace	J. Pesek
Houston – 4		L.Knight 37			T. Bergh 35	F. Tripp H. Halverson 41		K. Bonde		
Lanesboro –7 1/	D. Myers 35-37 H. Hagen 37-38 E. Carmichael 38-40	A. Aakre 37	G. Dean		D. Lynch 35-	H. Thomas 41 A. Sanford 39				
Red Wing –9 1/	W. Gray 35-35 G. Jeffers 35-?	K. Bulter 37	L. Larson	H. Shogren	D. Hahn 35-40	J. Hanna F. Tripp 37-38		J. Fahrenholz	F. Elliott L. Converse, H. Woolery H. Pigeon F. Erdsteen J. Kerr	L.Hauschildt F. Janzen?
Waterville –10 1/	O. Skramstad 35-40	W. Erickson P. Hewitt E. Springer	A. Wenner	H. Smith		F. Tripp 39-40		L. Johnston	W. Cribbs O. Dickie W. Wochen O. Schwager M. Rosen	A. Schwarz W. Huseby
Lewiston –11 1/	R.Hazelton 35-38 W. Tetrud 38-?	A. Aakre G. Kjos	O. Carlson W. Chloupek		J. Esser C. Weswig	C. Clardy I. Burnson G. Kjos		C. Lush	T. Sheehan R. Appert F. Shepard O. Schwager B. Land C. Brabant	L. Goggins J. Veraguth

APPENDIX E SCS AND OTHER PERSONNEL ASSIGNED TO CCC CAMPS IN MINNESOTA (Partial List)

(Does not include Administrative Clerks, Enrollees, etc.)

Camp	Superintend.	Agronomist	Engineer	Eng. Aid	Forester	Soil con.	SC aid	Tech.	Foreman	Mechanic
Rochester –12 1/	E. Bullis 35-35 W. Stevenson 35-37 F. Kesler 37-39	D.Smith	D. Ryan		C. Flannagan	L. Mericle Bolline		T. Paulson	K. Colman D. Davison L. Geutzkow R. Weidlich	G. Nisja L. Uptograft? Dave Davidson
Plainview -13 1/	L. Tyner 35 K. Bulter 35-36 H. Johnson 36-? H. Burges 41	E. Springer A. Aakre	H.(G.?) Dean			L. Richards		H. Waldeen	C. Faunce ?-41 A. Wenner H. Latvala 36-41 W. Weigel	A. Austin ?-41
Chatfield -14		M. Roberts				G. Graham				
Rollingstone –15 (not established)	R. Palmer	C. Clardy	J. Harrington L. Hamilton	O. Hosmer M. Boyden O. Dickey	W. Lauer	W. Sillman				
Lake City -16 1/	L. Tyner 35-38 F. Martin 38-41	L. Uptagraft, K. Butler	Len Larson	R. Palmer	H. Cline Grussendorf	W. Triplett ?		R. Cox	R. Emerick H. Rahn, F. Perry H. Woodery, L. Foreman Lenz/Davison	H. York
Bayport - 17	M. Bolline 39-42 H. Burgess? 41-	F. Paulson	G. Dean, D. Ryan		U Nelson (wildlife)	L. Tyner 42 B. Bernston 41				
Winona - 18	G. Jefferson	L. Larson				J. Staley 41		T. Bergh 41 (nursery)		
Jordan - 19	E. Carmichael 40-42	L. Larson W. Erickson	H. Shogren C. Reese		D. Hahn 40-42	C. Clardy, U. Nelson 42		J. Fahrenholz	L. Converse F. Erdsteen O. Dickie, H. Pigeon	L. Hauschildt
Maple Lake - 20	O. Skramstad 40-42?					Al Morley 41				
Underwood - 21 (Fergus Falls)	F. Martin 41-42?									

1/ as reported in "Regional Auditor's of Prairie Creek Project and Attached Camps, 1939" (on file).
ITEM (▲ = established and/or existing office – approximate condition)

APPENDIX F ESTABLISHMENT OF SES/SCS MINNESOTA OPERATING UNITS/OFFICES 1934-1945

Fiscal Year	34-36	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45
# of Operating Units	(16)	(15)	(13)	(12)1/	(14)1/	(19)2/	(24)2/	(16)3/	(22)3/	(27)3/
Demonstration Projects (M= placed in maintenance status)										
Gilmore Cr. – Winona	▲	▲	▲	M/SCD 1		▲Forest	▲Forestry			
Deer-Bear - Sp Valley	▲	▲	▲	M	M	M	M			
Beaver – Caledonia	▲	▲	▲	M	M	M	M			
Prairie – Faribault	▲	▲	▲	▲	M	M	M			
Twin Valley- Norman Co.					▲	▲Forest	▲Forestry			
Clear Lake- Sheburne Co.							▲			
Storden – Cottonwood Co							▲			
CCC Camps										
Spring Valley	▲	Mainten								
Caledonia	▲	▲	▲	▲	▲	▲SCD 3				
Zumbrota	▲	▲	▲	▲	Mainten/camp to Winona					
Houston	▲	▲	Mainten							
Lanesboro	▲	▲	▲	▲	▲	▲SCD 4				
Red Wing	▲	▲	▲	▲	▲	Mainten/camp to Jordan				
Waterville/New Prague	▲	▲	▲	▲	▲	Mainten/camp to Maple Lake				
Lewiston	▲	▲	▲	▲	▲	▲SCD 2				
Rochester	▲	▲	▲	Mainten/camp to Bayport						
Plainview	▲	▲	▲	▲	▲	▲	▲			
Chatfield	▲	▲	Mainten							
Lake City	▲	▲	▲	▲	▲	Mainten/camp to Fergus Falls				
Bayport				▲	▲	▲	▲			
Winona					▲	▲	▲			
Jordan						▲	▲			
Maple Lake						▲	▲			
Fergus Falls						▲	▲			

ITEM (▲ = established and/or existing office – approximate condition)

APPENDIX F ESTABLISHMENT OF SES/SCS MINNESOTA OPERATING UNITS/OFFICES 1934-1945

Fiscal Year	34-36	36-37	37-38	38-39	39-40	40-41	41-42	42-43	43-44	44-45
Faribault Area Office				▲	▲	▲	▲			
SCD										
1 Burns-Homer-Pl/ Winona				▲	▲	▲	▲	▲	▲	▲
2 Roll-St-Gilmore/ Winona					▲	▲	▲	▲	▲	▲
3 Root River/ Caledonia-Houston					▲	▲	▲	▲	▲	▲
4 East Fillmore/Lanesboro						▲	▲	▲	▲	▲
5 East Goodhue/Red Wing						▲	▲	▲	▲	▲
6 Up Zumbro / Rochester						▲	▲	▲	▲	▲
7 Dakhue / Cannon Falls						▲	▲	▲	▲	▲
8 Lake Pepin / Lake City							▲	▲	▲	▲
9 Whitewhite/St. Charles							▲	▲	▲	▲
10 Scott Co. / Jordan							▲	▲	▲	▲
11East Agassiz/Tw Vally							▲	▲	▲	▲
12 Wash. Co./Stillwater							▲	▲	▲	▲
13 So. Wabasha/Plainview							▲	▲	▲	▲
14 West Fillmore/Sp. Vally								▲	▲	▲
15 Rice Co./ Faribault								▲	▲	▲
16 South Good/Winamingo								▲	▲	▲
17 Wright Co. / Buffalo									▲	▲
18 Dakota Co./Farmington									▲	▲
19 Sheburne Co/St. Cloud									▲	▲
20 East Polk / Mc Intosh									▲	▲
21 West Ot. Tail/ Fergus F.									▲	▲
22 Wilkin Co. / Breckenrid									▲	▲
23 Lincoln Co./ Ivanhoe										▲
24 Cottonwood Co./ Windon										▲
25 Rock Co. / Luverne										▲
26 Lyon Co. / Marshall										▲
27 Clay Co. / Moorhead										▲

1/ Plus 2 Land Utilization Projects 2/ Two Farm Forestry Projects 3/ Plus 7 Work Group Offices

An SCS office was established in Minnesota for the Acting State Coordinator (Herb Flueck) in the Minneapolis-St. Paul Building at 2429 University Avenue West in St. Paul on April 16, 1937. Technically, it was not the SCS State Office but rather the state coordinator's office. Herb became the State Coordinator later that year. The name of the building suggests that it was meant to capitalize on its location, being near the city line for the two cities. Today, the building serves as the location for the New Wine Church.

St. Paul City Directories for 1939, 1940, 1941, and 1942 and Telephone Directories for Winter 1940 and Spring 1941 show that the office remained at this location until 1942. Telephone number was MI-3011.

With the reorganization of SCS in July of 1942 additional space was needed. Area offices were closed and state offices established. In Minnesota the Area Office in Faribault was closed and the positions transferred to the newly created SCS State Office.

Two St. Paul Telephone Directories dated Fall 1942 and July 1943, show that the location of SCS State Office was at 180 Snelling Avenue North. It had the same telephone number. This would suggest that the move, very likely to a larger facility, occurred in the summer of 1942.

Starting with the May 1944 Telephone Directory, the SCS State Office is shown at 515 Federal Courts Building. Telephone number is CE-8033. Other Telephone Directories checked (March 1945, March 1946, and January 1947 all show the same information. This suggests that move occurred after July 1943 and before May 1944.

St. Paul City Directories were not published during the war years. They were again published in 1946. The city directories for 1946, 1949, 1959-51, 1952-53 and 1954 all show that the state office is located at 517 Federal Courts Building.

Considering that the Telephone Directories for 1944 to 1947 showing the same 515 address consistently and City Directories for 1946 to 1954 showing the same 517 address consistently suggest that they both apply to the same office. Minnesota SCS used the 517 Federal Courts Building as the official address.

The state office remained at 517 Federal Courts Building until the spring of 1967 when it moved to the new federal building with a new address of 200 Federal Building & U. S. Courthouse in St. Paul.

This location served as the state office until the spring of 1989 when it again moved, this time to Room 600 in the Farm Credit Building in downtown St. Paul. This is where the office is today.

APPENDIX H SOIL AND WATER CONSERVATION ACCOMPLISHMENTS IN MINNESOTA 1975
Soil Conservation Service

Conservation Progress Item	1975	Cumulative total
Conservation Districts		
District cooperators of record	2,859	64,000
Recipients of technical assistance	19,579	-----
Technical services offered	63,097	-----
Service recipients who applied more than one reportable practice	10,053	-----
Conservation plans prepared	1,677	36,900
Conservation plans revised	411	-----
Units of government assisted	1,002	-----
Groups assisted	758	-----
Conservation Practices Applied for Erosion Control		
Conservation cropping system	273,223 ac.	8,335,000 ac.
Contour farming	16,396 ac.	774,800 ac.
Critical area planting	4,903 ac.	207,000 ac.
Crop residue management	212,441 ac.	5,248,000 ac.
Diversion	223,114 ft.	6,728,000 ft.
Grassed waterway or outlet	1,269 ac.	38,500 ac.
Minimum tillage	66,438 ac.	1,709,000 ac.
Mulching	231 ac.	165,000 ac.
Streambank protection	2,300 ft.	199,000 ft.
Stripcropping	7,862 ac.	949,000 ac.
Terraces	247,405 ft.	18,018,000 ft.
Water management		
Drainage	10,051,000 ft.	511,188,000 ft.
Treatment of pastureland and hayland		
Pasture and hayland management	74,000 ac.	1,207,000 ac.
Pasture and hayland planting	21,000 ac.	831,000 ac.
Woodland treatment and tree planting practices		
Farmstead and feedlot windbreak	2,320 ac.	82,091 ac.
Field windbreak	1,600,000 ft.	41,874,000 ft.
Tree planting	3,270 ac.	574,700 ac.
Woodland improvement	586 ac.	65,400 ac

APPENDIX H SOIL AND WATER CONSERVATION ACCOMPLISHMENTS IN MINNESOTA 1975 (CONTINUED)
Soil Conservation Service

Conservation Progress Item	1975	Cumulative total
Practices for wildlife habitat improvement		
Pond	2,717	26,400
Hedgerow planting	80,986 ft.	523,200 ft.
Wildlife wetland habitat management	20,150 ac.	492,000 ac.
Wildlife upland habitat management	38,758 ac.	620,000 ac.
Land converted to wildlife and recreation	9,306 ac.	8,700 ac.
Erosion control and water management structures		
Floodwater retarding structure	10	973
Grade stabilization structure	513	12,900
Structure for water control	149	3,600
Assistance for recreation development		
Recreation area improvement	765 ac.	33, 200 ac.
Recreation trail and walkway	72,990 ft.	8,316,200 ft.
Other items reported in the 1975 progress report		
Resource Conservation and Development projects	3 (32 counties)	
RC&D measures completed	163	
River Basin studies in progress	10	
Watershed projects with construction complete	10	
Watershed projects with construction in progress	6	
Watershed projects in planning or awaiting planning	30	
Soil surveys completed	19.2 million ac.	
Soil surveys published	20 counties	

APPENDIX I USE OF COMPUTERS BY SCS/NRCS IN MINNESOTA

The introduction of computers has made major changes, not only for SCS/NRCS but for all of society. The earliest reference to use of them for SCS in Minnesota was found in correspondence dated June 26, 1962, which discusses use of an IBM 650 computer located at the Corn Belt Work Shop in St. Paul (?). It was used to evaluate water surface profiles in the Joe River Watershed. (Joe River flows into Canada and maybe for this reason the computer was used. Other projects planned prior to the late 60's made no reference to use of computers.) Also starting about the same time administrative data for Minnesota were sent to the USDA National Finance Center (NFC) in New Orleans. Time sheets were filled out and mailed to the NFC for processing paychecks. This procedure continued well into the 1980's. Computer use for some hydrologic and economic evaluations started in the mid-60's.

In 1968, Minnesota started using the IBM 1130 main frame at the Lincoln Technical Service Center (TSC). Forms were filled out and submitted to the TSC where the data was transferred to 3 1/4 x 7 inch punch cards and read into the computer for analysis. Punching cards initially was an integral part of computer use. Their use extended into the 80's. In 1969 Minnesota SCS entered into agreement with Food and Nutrition Service (FNS) in Minneapolis for rental of their Univac 1107 computer terminal. The facility was used for entering data for water surface profiles, watershed economics, and channel yardage. With that Minnesota SCS had access to 2 computers; one at the TSC in Lincoln (moved to Ft. Worth, Texas in 1973) and the other in Fort Collins through the FNS in Minneapolis. This arrangement continued during the 1970's.

In October 1980 a Harris remote job entry system was installed in the SCS State Office. The Harris system had 3 terminals in the state office for entering data files which were transmitted to Fort Collins for processing whereupon the processed files were returned to the state office for printing. "Electronic mail" now became possible as discussed in the January 1982 issue of Current Developments. By this time most SCS state offices had computer terminals allowing instant communications with the national office and other state offices, eliminating delays that occurred with regular mail.

The FOCAS (Field Office Communication and Automation System) computer program was adopted within SCS in 1984. It called for the automation of all area and field office (including SWCD's) via a microcomputer by 1988 with both hardware and software. The first state office microcomputer system (IBM-PC) was purchase in March 1984. The software consisted of Lotus 1-2-3, Microsoft Word Crosstalk XVI and P-C File. No longer were forms sent to the NFC in New Orlearns. They were now sent electronically.

About 1986 SCS and FmHA nationally awarded the FOCAS contract to Electronic Data Systems. The system was an ATT 3B2/400 which used the UNIX operating system and the ATT-PC 6300 as terminals. Ten systems were installed. By the end of 1987 all area offices were so equipped.

The introduction of CAMPS, a field office computer program, occurred in 1986. It was a client database used primarily by the field offices. SCS used the PC 6300's and IBM-PC compatible computers and R:Base to run CAMPS from 1986 to 1990. From about 1990 to 1992 SCS used UNIX CAMPS on the 3B2's. CAMPS was replaced with FOCS (Field Office Computing System) in 1994. From 1992 to 1996 SCS used UNIX FOCS. FOCS was replaced with Tool Kit.

The LAN/WAN/Voice (LWV) project started in 1996 and was completed in 1999. LWV installed a common telephone system

for NRCS, FSA, RD & SWCD's in all field offices, Common Local Area Network and Common Wide Area Network and internet access. In 1998 the Common Computer Environment (CCE) program was adopted by the federal agencies in agriculture (FSA, RD & NRCS/SWCD's). The CCE purchased Compaq Deskpro EP computers using the Windows NT4 operating system and Microsoft Office 97 software. In 1999 CCE purchased the Gateway E-4200 and Dell 400 Laptops with same software. In 2000 CCE purchased Dell 610 and Gateway P5300 and common printers, HP 4050 and HP 2500 for all offices.

State office personnel were equipped with their own personal computer or a UNIX terminal (DOS based) with the relocation of the state office in 1988. The windows based PC computer made its introduction in the early nineties. Several upgrades have occurred since then as technology has developed more powerful computers capable of doing more tasks. Also more uniformity in all aspects of computer use was occurring.

Gradually, more and more employees used computers to communicate electronically with others and to develop reports in near final form eliminating the need for other staff personnel to perform these tasks. This is readily apparent when comparing the number of clerks/stenographers/secretaries on the employment rolls of the pre-computer era to that of the current employment.

Minnesota's Soil and Water Conservation Report
USDA Natural Resources Conservation Service
January, 1995

The Natural Resources Conservation Service (NRCS) fiscal year 1994 efforts were enhanced due to cooperation and assistance among Minnesota's 91 Soil and Water Conservation Districts (SWCDs), the Minnesota Extension Service, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, State Planning, the Minnesota Board of Water and Soil Resources, the Minnesota Association of Soil and Water Conservation Districts, and the U.S. Fish and Wildlife Service.

Of 32,595 customers assisted during the year, 6,579 applied conservation practices. This effort provided conservation treatment to 316,643 acres of cropland. We have enrolled an accumulative 1,835,746 acres into the Conservation Reserve Program (CRP 1986-1993) through 27,726 contracts. Nationally, we rank eighth in the number of acres enrolled in the CRP, third in the number of CRP contracts, and sixth in annual rental payments. Our NRCS budget of $21.6 million (of which $2.5 million was for watershed financial assistance) supported 311 staff years. NRCS, in cooperation with SWCDs, provided technical help to 32,595 groups and units of government, as well as to 6,579 land users.

NRCS soil scientists mapped 1,006,105 acres in FY94. Four new soil survey updates were started in Swift, Rice, Waseca, and Wright counties. Mapping was completed in Renville County, and soil surveys were published for Winona and Morrison Counties. Our 1994 staff of 311 was a decrease of 4 staff years from 1993. Our annual staff has averaged about 302 for the past 8 years.

Minnesota Board of Water and Soil Resources
Biennial Report Highlights (FY 1992-93)
February 1993

Minnesota's Erosion Control & Water Quality Cost-Share Program traditionally receives about $1.4 million per year in funding. It goes out to SWCDs to work directly with landowners to put conservation practices on the land, paying up to 75% of the landowner's cost of projects such as field windbreaks, streambank stabilization, and many others.

In 1992, program funds were used to hire a north shore engineer to assist with the specific coastal needs of Lake Superior. The engineer anticipates working on three projects, affecting about 3,400 feet of eroding shoreline, during the 1992-1993 biennium. After completion, the shoreline will be be completely stabilized.

The program also received $250,000 from the Legislative Commission on Minnesota Resources (LCMR) for sinkhole treatment in southeastern Minnesota. Annual accomplishments based on the average for 1985-1989 are 4,120 acres treated through installation of erosion control structures; 146,000 feet of terraces; 40,000 feet of stormwater control systems; 651,000 feet of field windbreaks; 4,400 acres of critical area stabilization; and 1,400 feet of streambank, lakeshore and roadside erosion control.

APPENDIX K LIST OF ACRONYMS APPEARING IN THE BOOK

AAA- Agricultural Adjustment Administration
ACP – Agricultural Conservation Program
AGNPS – Agricultural Nonpoint Source Pollution Model
ARS – Agricultural Research Service
ASCS – Agricultural Stabilization and Conservation Service
BIS – Bureau of Indian Service
BMP – Best Management Practice
BPA – Broad Program Areas
BWSR – Board of Water and Soil Resources
CCC – Civilian Conservation Corps
CCRP – Continuous Conservation Reserve Program
CNI – Conservation Needs Inventory
CO-01 – Conservation Operation Funds
CREP – Conservation Reserve Enhancement Program
CRP – Conservation Reserve Program
ECW – Emergency Conservation Work
EPA – Environmental Protection Agency
EQB – Environmental Quality Board
EQIP – Environmental Quality Incentive Program
EWA – Environmental Assessment Worksheet
EWP – Engineering and Watershed Planning
FDR – Franklin D. Roosevelt
FLEVAL – Feedlot Evaluation Model
FmHA – Farmers Home Administration
FNS – Food and Nutrition Service
FS – Forest Service
FSA – Farm Security Administration (30's-40's)
FSA – Farm Service Agency (90's- 00's)
FSA – Food Security Act of 1985
GIS – Geographic Information System
GPS – Global Positioning Systems
GREAT – Great River Environmental Action Team
HEL – Highly Erodible Land
HUA- Hydrologic Unit Area
IPA – Intergovernmental Personnel Agreement
LCMR – Legislative Commission of Minnesota Resources
LSP – Land Stewardship Project
MACDE – Minnesota Association of Conservation District Employees
MACRM – Minnesota Alliance for Crop Residue Management
MLRA – Major Land Resource Area
MN-DNR – Minnesota Department of Natural Resources
MPCA – Minnesota Pollution Control Agency
MRAP – Minnesota River Assessment Project
NACD – National Association of Conservation Districts
NEPA – National Environmental Policy Act
NFC – National Finance Center
NGLR – Northern Great Lakes Region
NRA – National Recovery Act
NRI – National Resources Inventory
NRCS – Natural Resources Conservation Service
PL-566 – Public Law 83-566
PSU – Primary Sample Unit
PWA – Public Works Administration
RCA – Resources Conservation Act
RC&D – Resource Conservation and Development
RCWP – Rural Clean Water Project
RD – Rural Development
REA – Rural Electrification Administration
RIM – Reinvest in Minnesota
SCAN – Soil Climate Analysis Network
SCD – Soil Conservation District
SCS – Soil Conservation Service
SCSA – Soil Conservation Society of America

APPENDIX K LIST OF ACRONYMS APPEARING IN THE BOOK

SES – Soil Erosion Service
SNOTEL – Snow Telemetry
SSURGO – Soil Survey Geographic Database
SWCB – Soil and Water Conservation Board
SWCD – Soil and Water Conservation District
SWCS – Soil and Water Conservation Society
TSC – Technical Service Center
TVA – Tennessee Valley Authority
UMES – University of Minnesota Extension Service
USDA – United States Department of Agriculture
USDI – United States Department of the Interior
WFA – War Food Administration
WPA – Works Project Administration
WRP – Wetland Reserve Program
WWII – World War Two
WWPP – Watershed Work Plan Party