PREFACE

The year 1999 marked the Centennial Anniversary of the National Cooperative Soil Survey. Early historical records show that the early settlers in Nebraska noted the soil type, the topography and the vegetation of the land they were settling. It was not until the latter part of the 1800's that agricultural land use interest by the public and the United States Department of Agriculture (USDA) convinced the United States Congress to make an inventory of the nation's soils and their production potential. This interest in 1899 created the soil survey program under the USDA Division of Soils, directed by Milton Whitney.

The first areas to be surveyed in 1899 were the Connecticut River Valley area of Connecticut and Massachusetts, Cecil County Maryland, the Salt Lake Valley of Utah, and the Pecos Valley of New Mexico. The first surveys in the east were concerned mainly with soils and their ability to produce quality tobacco while those in the west were interested in determining the suitability of marginal land for agriculture uses.

From the very first, soil surveys were done in cooperation with state experiment stations, land grant universities, and other local agencies. This cooperation arrangement between the USDA, State universities, and other agencies is known today as the National Cooperative Soil Survey. Nebraska was one of the early leaders in getting the soil survey program underway. The Nebraska legislators in 1893 formalized the existence of a geological survey and later established the Conservation and Survey Division in 1921. The Conservation and Survey Division was a broad-based natural resources organization and became the state lead for the state part of the Federal State soil survey program.

Nebraska has had a rich and productive soil survey program. All except six counties in the Nebraska Sandhills were completed and published prior to 1940. A second series of soil surveys commonly referred to as modern soil survey was completed for all counties with Cherry County fieldwork completed in 1995. Several of these older soil surveys are being updated under the new Major Land Resource concept of maintaining quality soil surveys for all lands.

Acknowledgement

This document was prepared under the direction of a special committee of the Nebraska Society of Professional Soil Scientists. A special thanks and recognition is extended to all those who contributed to the extensive work and quality soil survey products produced by the soil scientists and other disciplines in this recognition of the National Soil Survey Centennial celebration. Principal committee members were Jim Culver, Norm Helzer, Mark Kuzila, Steve Schaeffer, Steve Scheinost, Glenn Borchers, Wayne Vanek, Charles Mahnke, Charles Hammond, Bob Pollock, and Don Yost.

This document on the History of the Nebraska Soil Survey is not all-inclusive. The committee was sincere in capturing significant events in the state soil survey program. However, this effort was tempered to some degree by the committee's ability to readily get all pertinent information, available resources, interest, and background of the committee members. The committees work was underway for several years, as this was a volunteer activity and priority for completion was accelerated in 1999 as part of the Soil Survey Centennial celebration. The committee apologizes for any omissions, oversights, and inconsistencies of the information presented in this document.

Individuals who wish to provide additional information or make corrections to any part of this report may send them to Jim Culver National Leader, Soil Survey Technical Services, NSSC, 100 Centennial Mall North, Room 152, Lincoln, NE 68508 or Norman Helzer at 1015 Lamplighter Lane, Lincoln, NE 68510.

This publication has utilized selected information from other reports, such as the "Resource Notes" by the Conservation and Survey Division-UNL, History of Soil Surveys of other states, NRCS State files, and personnel files of several soil scientists.

The content and format are designed to highlight the accomplishments of the soil scientists working in the state and not necessarily a chronological report of the state soil survey program. This report will serve to document some parts of the cooperative soil survey program. Highlighted are the 1) old legends for soil surveys, 2) contribution of the accelerated program and associated events and 3) the process of soil map finishing for publication of soil survey.

A number of photographs showing various phases of the Nebraska Soil Survey Program are included at the end of several sections. The committee chose not to give credit to who took each photograph. The photographs were a collection of original slides, color photographs, and black and white photographs. Many of the photos were from old Soil Conservation Service files, personal photographs of Don Yost, slides and photographs from Glenn Borchers and Jim Culver, and a variety of other sources.

The committee appreciates the excellent contributions and reviews of many soil scientists and others. Special thanks to Janet Bauer for assembling material for committee meetings and final drafts of the material during the last months of this project; Jim Culver and Norm Helzer for coordination and organization of materials; Richard Johnson for editorial assistance, and Stan Anderson for editing guidance.

The excellent assistance and leadership of Janet Bauer in preparing the final text document, Tammy Nepple in preparation of photographs and graphics for publication, and Suzann Meierdierks in the design of the cover are sincerely appreciated by the Committee and the Nebraska Society of Professional Soil Scientists. Their outstanding work significantly contributed to a quality, informative, and professional product.

Completed December 30, 1999

Contents

Preface	
Acknowledgements	i
Who We Are	
Honor Roll of Soil Scientists in Nebraska Making Soil Surveys for Resource Planning and/or Publication 1936-1999	1
Listing of Soil Scientists and Publication Dates of Nebraska Soil Survey Areas During the Past 40 Years	26
Development and Management of the Nebraska Cooperativ	e
Soil Survey	
First 50 Years	39
Second 50 Years	40
Management and Technical Leadership	40
Accelerated State Funding Opportunities	42
Financing	43
Operations	43
Nebraska National Cooperative Soil Survey	
State Leadership	46
Leadership of the Nebraska Soil Survey	
During the Past 50 Years	49
Legislative Bill 180 – Nebraska Soil Survey Fund	53
Special Interest Events	
Career of a Soil Scientist – Don Yost	65
Career of a Soil Scientist – Bob Pollock	71
Soil Scientists' "Tidbits"	73
Last Ditch Blitz to Complete Modern Soil Surveys	
for all Private Cropland in Nebraska	77
Nebraska Society of Professional Soil Scientists	79
Nebraska State Soil - Holdrege	87
Land Judging Contest - Nebraska	93
Soil Correlation - A National Overview for the Past 50 Years	97

Making the Soil Survey	101
How We Made a Soil Survey	
Initial Soil Survey Work by Soil Erosion Service	105
Aerial Photography Used In Soil Survey Field Mapping	109
Advance Soil Maps and Reports	111
General Soil Maps of the State	113
Nebraska State Soil Survey Legend	
Used for Conservation Planning	115
Soil Survey for SCS Programs	121
Soil Survey Field Equipment	127
Soil Survey Laboratory Analysis and Investigations	133
Development of STATSGO – A New Soil Survey Product	135
Manuscripts for Soil Publications	139
Introducing Soil Survey Reports to the General Public	140
Digitizing the Soil Survey	
MIADS - Soil and Interpretive Computer Maps	149
History of Soil Map Finishing (1975-1998)	151
Digital Soil Map Finishing – 1998	157
History of Cooperative SSURGO Effort Between	
NRC, UNL-CSD, and NRCS	163
New Concepts - Soil Survey of the Future	
Maintaining Soil Surveys by Major Land Resource Areas	165
Soil Survey Update Status as of February 1999	167
History of Soil Information Systems	168
National Soil Information System (NASIS)	169
Centennial Accomplishments of the Nebraska Cooperative	
Soil Survey Publication Program	
Overview of Nebraska Soil Surveys Published	
During the 1900-1999 Period	171
List of All Nebraska Soil Surveys Published During 1900-1999	177
List of Soil Surveys Published During the 1 st Fifty Years of the	
Nebraska Cooperative Soil Survey Program	179
List of Soil Surveys Published During the 1950-1999 Era	
of the Nebraska Cooperative Soil Survey Program	189

Figures

Figure 1	Goal and Acres of Soil Surveys Mapped by SCS & SCD from 1971-86	45
Figure 2	Proposed 12-Year Plan of Accelerating the Soil Surveys of Nebraska	54
Figure 3	A Current Inventory of Soils Resources for each Nebraska County	55
Figure 4	Acreage of Soil Surveys and Field Soil Scientist Required to Complete the 12-Year Accelerated Soil Survey of Nebraska	56
Figure 5	Additional State Funds Needed to Complete the Modern Soil Survey in 12 Years	57
Figure 6	Estimated Cost of a 12-Year Accelerated Soil Survey of Nebraska	58
Figure 7	Number of SCS Field Soil Scientists and CSD Field Soil Scientists Making Soil Surveys in Nebraska - 1973 to 1987	60
Figure 8	Explanation of the Symbols on Your Soils Map - National Coding Legend	117
Figure 9	Explanation of Mapping Symbols - National Coding Legend	118
Figure 10	Conversion Legends - Soil Type Legend; National Code and Farm Planning Legend	119
Figure 11	Map Showing the Location of Nebraska Counties	214
Figure 12	Status of Soil Surveys, October 1999	215

vi