

surveys in some localities in Kansas, Virginia, West Virginia and Texas. He summarized the results in *Geographical Review* in 1928.²⁰ In selecting sites for the soil erosion and moisture conservation experiment stations Bennett ordered similar erosion surveys. These surveys differed from later erosion surveys in that there were few categories of information gathered. They consisted mainly of the depth of soil and sub-soil losses along with measurements of erosional debris on footslopes and valley lands.²¹

But the erosion survey that was to influence the operation of the Soil Conservation Service came later. In 1933 the Georgia Experiment Station of the University of Georgia and several bureaus in the U. S. Department of Agriculture collaborated on a study of Georgia's land use problems, with a view towards improving the economic and social life of the rural population.²² Glenn L. Fuller, who had been in charge of soil surveys in Georgia, which were conducted cooperatively with USDA, headed the survey of erosion conditions in the lower Piedmont--popularly called the Old Plantation Belt--where fifty per cent of the farms had been abandoned between 1920 and 1930.²³ Never one to quell his enthusiasm on the importance of his calling, Bennett wrote to a colleague they were working on "some real erosion surveys, the first ever made in the history of the world so far as I know of."²⁴ The surveying method involved classification of land based on soil, slope, degree and kind of erosion. What made it unique--the first in world--to Bennett was that they tried "to classify and map erosion conditions in their relation to other physical characteristics of the land and to the agricultural capacity and needs of the land."²⁵

The authors did not use the term "land capability," but there are clearly precedents to the land capability classification. The items in the survey were similar to those later used by SCS in farm planning and in determining the place of land use in the land classes of LCC. Moreover, the Georgia study, including the erosion section, was to be a planning document. The erosion survey

should not only map erosion, but also suggest the possible and desirable uses of the land. In the section pertaining to the survey the authors averred that it was an "effort to account for the present conditions of the land in terms of slope and use as a basis for determining the best major use for lands of various soil types in the Lower Piedmont counties."²⁶ In this regard, it was the philosophical predecessor to the LCC.

The detailed survey covered five areas of 8,000 to 10,000 acres plus a strip one-eighth mile wide and 210 miles across the lower Piedmont from the Savannah River to Alabama.²⁷ During the survey, the investigators found it necessary to modify their categories. Eventually they settled on 4 slope groups: A (0 to 3%), B (3 to 7%), C (7 to 12%), and D (over 12%). There were twelve erosion classes with the description including information on the amount of A horizon lost due to sheet erosion, the amount of B horizon lost due to sheet erosion, and whether the gullying was shallow or deep. Other categories covered frequently overflowed land, and land too gullied to permit cultivation. An underscored numeral in the system indicated reestablishment of cover that had stopped gullying. Other survey indicators covered soil series and land use.²⁸ The survey allowed for some correlations by soil type. Due to soil formation processes soil was often correlated to slope groupings; and therefore some land use recommendations could be made based on soil type. In their recommendations the authors placed all the upland soils in five groups, a thru e, with general recommendations of land use and where terracing, and "soil improvement" were needed.²⁹

Later in the same year, 1933, Bennett had the opportunity he wanted--a chance to demonstrate the value of soil conservation; the notion that farmers could safely raise crops without excessive soil erosion. In the demonstration areas where the newly formed Soil Erosion Service would work with farmers there was a need to first gather information about the land, its current condition and uses, so as to plan the on-farm conservation measures. Bennett,

the chief of the new service, selected areas near the experimental stations so that the information learned there could be of use, but there remained a need for a survey of individual farms as means of planning. The soil surveys being made by the Division of Soil Surveys in the U. S. Department of Agriculture were of little help in farm planning, according to Bennett, other than in identifying soil types. It was not on the scale needed, and had little or no information on slope, kind, and degree of erosion, and current land use.³⁰

The newly formed Soil Erosion Service would conduct its own surveys for purposes of farm planning. They decided to use aerial base maps on a scale of one inch to 500 feet because of the detail desired in farm planning.³¹ A Section of Conservation Surveys, headed at first by Bennett's collaborator from Georgia, Glenn Fuller, established procedures and issued instructions. The survey centered on four factors: (1) character and degree of erosion, (2) present land use or cover, (3) percent and class of slope, and (4) soil.³² The information was expressed in the following order:

Erosion - Land Use

Slope - Soil

Thus, the hypothetical composite symbol,

3 7 R F' -- L

6B - 12

taken from *Procedure For Making Soil Conservation Survey* meant:

3 - 25 to 75 percent of the topsoil lost by sheet erosion with erosion stabilized

7 - occasional gullies, uncrossable by tillage implements

R - 25 to 75 percent of the A horizon lost by wind action

F' - wind accumulations 0 to 6 inches deep, covering less than one-third of the area delineated from which the topsoil previously has been removed and the accumulations are now partially stabilized

L - cultivated

6B - slope suitable for cultivated crops, with a dominant slope of 6 percent for area delineated

12 - Cecil sandy loam³³

With this information in hand for individual farms it was then time to plan conservation measures. The task was to translate the complex symbols, denoting the physical conditions of the land, into recommendations of corrective land use. Concurrently, the farm planners had to explain the need for changes with the farmers. The result of these needs were first called "classes of land according to use capabilities."

The procedures for developing the capability classes were published in the *Soil Conservation Survey Handbook* of August 1939 under the name of E. A. Norton, who then headed the Physical Surveys Division.³⁴ But J. Gordon Steele, a staff member, recalled that the system was developed somewhat earlier and that the handbook represented the culmination of a team effort.

It came about between 1936 and 1936. We were all thinking, all the time, all of our soils men all over the country, about how to interpret these surveys for practical use. This grouping into land capability came about quite naturally I think as a joint effort. I suppose Roy Hockensmith and I had probably as much to do with it as anyone. But who furnished us our ideas I do not know.... We were looking for a practical and a

simplified, some people said over simplified, interpretation of technical details.³⁵

The original system, and the explanations of its development and proposed use, are interesting in light of later revisions and uses of the land capability classification.

There were to be four classes of arable land, Roman numerals I thru IV. The classes indicated the most intensive tillage that could be used while permanently maintaining the soils.³⁶ The farmer could cultivate Class I without special practices, while Class II could be used with simple practices. Class III required complex or intensive practices, and Class IV was not recommended for continuous cultivation. Class V, because of topography, stoniness, erosion, poor drainage, or some other feature could not be used for even occasional cultivation. Classes VI through IX were reserved for grazing regions. The first three of these classes, VI through VIII, applied to grazing land that should be managed with an increasing degree of care; while Class IX was land unsuited to grazing.³⁷ In setting up the classes according to use capability, soil conservation surveyors should consider four factors: "(1) permanence of the soil if cultivated (susceptibility to erosion); (2) productivity of the soil as conditioned by native fertility, capacity for retention and movement of water, salt content, aeration, or other factors; (3) the presence of any factor that would interfere with cultivation, such as stoniness or a hardpan layer; and (4) the climatic environment, particularly temperature and precipitation."³⁸ Thus, the thinking that went into the first version of the system included some of the limiting factors that would later be formalized into subclasses.

The originators of the system also realized that classes of land were not permanent. Any number of changes in the land such as accelerated erosion, accumulation of salts, artificial drainage, or supplies of irrigation water would call for reclassification of the area. Likewise the introduction of new crops and farming methods would call for a reappraisal.³⁹ As Norton explained later at

a land classification conference, his soil surveyors did not necessarily see the system as permanent. They hoped "merely to establish a national basis of classification which would be good for a generation or two."⁴⁰

In the field, technicians were to develop the tables with information to show where land should be placed in the capability classification based solely on physical characteristics. Then the SCS technicians, other state and federal agricultural agencies, and the local people were to develop tables showing the alternatives--cropping systems, practices, measures, and soil treatment--recommended for each class of land.⁴¹ The Physical Surveys Division directed the field offices to complete the tables by the time the soil conservation survey was completed.⁴²

In developing the tables, SCS technicians were to rely on their observations as well as the experience of farmers so as to combine "local experience with technical knowledge."⁴³ According to Norton the "experience of the local farmers and ranchers is interpreted in scientific terms and both science and local experience are combined to develop a classification designed to assist in obtaining good land management."⁴⁴ Norton and colleagues who produced the first instructions realized the implications of such a procedure and that "the classes developed for different areas may not be precisely comparable."⁴⁵ Without stating so, they undoubtedly saw this as a minor problem. The objective was conservation farming, not uniformity among regions.

The first instructions also left some room for development of what were to become the subclasses. To assist in farm planning, technicians were allowed to develop symbols for groups of practices to correct erosion problems or unfavorable physical conditions such as poor drainage or stoniness. But any further subdivisions, for specific practices, were discouraged in the interest of maintaining the simplicity of the system.⁴⁶ About a year after the *Soil Conservation Survey Handbook* had been issued,

Norton elaborated on the issue of further dividing the system. Subdivision of the major classes, based on "soil types, topography, or some other physical factor," would be advisable provided the recommendations for correction by crop rotations, practices, and measures could be made uniform. But he did not want further sub-units on the maps. After all, the purpose was to simplify the information from the soil conservation surveys. When productive indexes were available, they could be included, but in tables, not on the maps.⁴⁷

Norton and colleagues anticipated some of the coming criticism that the system was not attuned enough to the economics of farming. He admitted that there were "physical, economic, and social factors," involved in changes needed to maintain land in a permanently productive condition while, at the same time, using it for agriculture. But it was best to start with a classification based solely on physical conditions, against which the economic and social factors could be "correlated to make a complete land classification."⁴⁸ What this meant in practice was that the SCS technician and farmer worked out these matters in the farm conservation plan.

Major changes were not long in coming to the land capability system. In September 1940, SCS divided Class V into four classes, V thru VIII. Apparently over the objections of some eastern SCS officials, the western contingent won.⁴⁹ The range management specialists preferred their range surveys to the capability classes.⁵⁰ The revision reserved the first four classes for cultivatable land, and established three non-cultivatable classes, V - VII, which could produce permanent vegetation for grazing and woodland under increasing limitations. The final class, VIII, did not produce vegetation for agriculture.⁵¹ The earlier version had divided the land capability into classes for arable regions and classes for grazing regions. The revision attempted to establish a national system.

As with any new system there were some problems in implementation. When Norton's assistant, Roy Hockensmith, visited Kansas

and Nebraska in 1941 he found that there was "a tendency for the field men to map capability classes direct, rather than map the soil, slope, and erosion as it actually existed in the field." Such a procedure, or shortcut, has often been a temptation, here and abroad.⁵² J. Gordon Steele told the author that someone was always coming up with the idea of expediting capability classification, by dispensing with detailed soil surveys on which to base the capability classification.⁵³ On the national level the staff tried to achieve uniformity of the capability classifications between regions--ensuring that the same soil type was placed in the same class in each region. The regional office had the same chore in regard to classification on the state and area level. According to Hockensmith, both control groups had problems achieving uniformity.⁵⁴

Two events influenced the conservation surveying work--the rapid formation of conservation districts and World War II. After local areas began forming districts in 1936, the operations of the program expanded rapidly, while World War II removed experienced personnel. To meet the increased demand under these conditions, SCS changed its surveying techniques in 1943. They developed a new type map which would be immediately available. This map denoted "land units that have uniform management requirements." The Service claimed that little detailed information of value was lost and that they could speed up their surveying with this method. This survey, like the more detailed soil conservation survey, was used to classify land capabilities. The over 31,800,000 acres surveyed in fiscal year 1943 made for a total of more than 156,000,000 acres covered by detailed surveys. The surveys section and their workers, by October 1943, had completed the land capability tables and recommendations on more than 800 conservation districts.⁵⁵ Most of the districts in 1943 which had completed classification recommendations were in the southern states, where the early district movement was strongest.⁵⁶ The surveyors preferred to make surveys of whole sections of soil conservation districts, counties, or watersheds. Throughout the

course of the war increasingly they had to give up this concept and map individual farms for conservation planning.⁵⁷

Although some surveyors in the military returned to SCS after the war, the survey work was further strapped by the increased needs of conservation planning. During most years, the surveyors were mapping more than 30,000,000 acres. One result of the work load was to allow experienced and trained farm planers to make their own maps for use in conservation planning. At least two regions adopted this policy.⁵⁸

After World War II, the Soil Conservation Survey Division turned its attention to improvements in the land capability classification. It seemed that different states and regions continued to classify similar soils differently. Studies were under way to harmonize the discrepancies across state and district boundaries. In areas other than the humid cropland sections of the east, surveyors were having some problems in classifying land. Committees were appointed in the late 1940s to study particularly nettlesome problems, namely how to map and classify wetlands, land needing irrigation, and dry-land farming areas.⁵⁹

Also, there were changes in the system after the war. By 1947 subclasses had been authorized to show particular limitations and problems within a class. The attitude had always been to keep the subclasses from proliferating so as not to make the system more complicated. Roy Hockensmith, who succeeded Norton as head of the Physical Surveys Division, wrote that the subclasses should be "used only when absolutely necessary."⁶⁰ According to Albert A. Klingebiel, who worked on one of the committees on LCC in the late 1940s, Bennett finally settled the matter by decreeing that there would be no more than four subclasses. Some of the soil conservation survey staff believed that the uses of LCC would have been served better by including a few additional limitations for subclasses.⁶¹

By 1949 the land capability units had been added. The capability unit was the lowest

grouping in the three-tiered system. The capability unit could provide a great deal of interpretive information to the farmer. The unit consisted of soils that were nearly uniform in "possibilities and management needs."⁶² Where detailed information was available from research and practical experience on the best cropping systems and conservation measures, the material would be available in field offices in technical guides for the farmer. Obviously the recommendations and interpretations tied to the capability units needed constant updating as new technology became available.⁶³

In addition to the primary purpose of farm planning, SCS was making other uses of land capability classification. Two other uses included area land use planning and inventorying conservation needs. Beginning in 1938 SCS issued a series of "Erosion and Related Land Use Conditions," which were renamed "Physical Land Conditions" in 1941. The surveys were made by the soil conservation survey methods mentioned earlier, and usually covered a demonstration project, a watershed, a soil conservation district, or a county. Beginning with the publication of the erosion survey of the Crooked Creek Project near Indiana, Pennsylvania in 1940 by J. G. Steele and R. G. Mowry, the Service began using LCC to tabulate the acreages of particular soil groups, cropland, idle land, pasture, and woodland in each capability class. The grouping suggested the land use adjustment needed and the conservation treatment needed, but the maps were not produced in sufficient detail to enable on-farm planning.⁶⁴ In creating soil conservation surveys and the capability groupings SCS made the distinction between the published survey made on a scale for areawide planning and the more detailed unpublished surveys for on-farm conservation which were kept in local SCS offices.

In 1945 SCS issued *Soil and Water Conservation Needs Estimates for the United States* which included estimated current acreages of land use--cropland, grazing land, and woodland-- under four groupings: (1) classes I, II, and III, (2) class IV, (3)

classes V, VI and VII, and (4) class VIII. SCS had started collecting the data and making the estimates in 1942.⁶⁵ Almost coincidentally with introducing LCC as a farm planning tool, SCS had added other objectives, inventorying resources and areawide planning.

By the late 1940s the Service was referring to its soil conservation surveying activities as the "National Land-Capability Inventory." In appealing to Congress, Bennett said the inventory should be completed as soon as possible. His rationale was that in a national emergency we would need full production--without harming the resources. The national inventory would supply the information needed in the effort.⁶⁶ Gradually in the late 1940s the land capability classification was proposed for uses other than planning on-farm conservation, most often for tax assessment. Roy Hockensmith, then head of the Soil Conservation Surveys Division, advised that LCC maps when "properly interpreted may serve as a valuable guide in rural land assessments." He advised keeping the physical, or fairly permanent factors, separate from the economic, temporary data when setting up the system of assessments.⁶⁷

One reason SCS adopted the LCC for other uses was that it was the only source of soils interpretation the agency had.⁶⁸ It was this difference in attitude and approach that had been a source of contention between Bennett and his SCS and Charles Kellogg's Division of Soil Surveys in the USDA's Bureau of Plant Industry, Soils, and Agricultural Engineering. The Division and its predecessors had been carrying out soil surveys in cooperation with the land grant universities since the late 1890s. But the funding was low and only a small portion of the country had been surveyed when SCS started its soil conservation surveys on a much larger scale to service the action side of its program--farm planning. The attitude of the Division of Soil Surveys as explained by Charles Kellogg, its chief, was that the soil survey should be a comprehensive inventory of the soils' properties and characteristics. Then soil scientists made predictions of how one could expect soils to

react under various uses--or "interpretations" as they were called. From this point of view the soil conservation survey was too attuned to one objective, or interpretation--land capability classification for farm planning. In Kellogg's view, by gearing the survey of soil properties to one purpose, the survey could fail to meet other needs or interpretations and another survey would be necessary.⁶⁹

But the SCS surveys were more extensive than surveys completed under the Division of Soil Surveys, and were in fact the only surveys available for much of the country. When SCS's Division of Conservation Surveys was mapping 30 million acres in 1950, it had 700 surveyors compared to fewer than 100 surveyors in Kellogg's Division of Soil Surveys.⁷⁰

The land grant college association had long called for the merger of the two surveys. Bennett's retirement made possible the merger of the two divisions into SCS with Kellogg as its head. Henceforth, there would be one soil survey. The merger also had profound implications for soil survey interpretations, including the land capability classification. It linked the main user agency, SCS, with the group making standard soil surveys. As such it sped up the interpretation of soil surveys for various uses.

Also, Kellogg ordered a revision of LCC. Albert A. Klingebiel in the 1950s worked on a revision of LCC which would give soil scientists a "specific basis, criteria, and assumptions to use to place soils into units, subclasses, and classes."⁷¹ It was an effort to make the system national and to tighten the criteria in an attempt to ensure that any particular soil would be classed similarly wherever it occurred. It would leave less room for individual interpretations in classifying soils.

Classification had tended to be relative within a state and area covered by SCS regional offices. The best soils would be placed in Class I and the other soils would be judged and classified relative to Class I. For instance, SCS staff in Alaska had clas-

sified some soils--the best in that state--as Class I, but they were directed to move these soils to a higher category because of climatic limitations.⁷² The studies and work that went into Agricultural Handbook 210, *Land-Capability Classification*, issued in 1961, reconciled some of these discrepancies of classification. Also, the published soil surveys, after the merger of the two soil surveys, began placing the soil series in the LCC. This provided another means of striving toward uniformity in classifying soil series into only one class or subclass.

The attempt to create a uniform system illustrated one of the important points in the evolution of LCC. Originally the system allowed a great deal of flexibility at the local level. Local experience and observations were relied on in placing soils in a class and especially in developing conservation treatments. Simultaneously, the use of LCC for inventorying the need for further conservation work and the quality of land available created a desire that the system be uniformly applied throughout the country. These rather disparate objectives were difficult to reconcile to everyone's satisfaction.

Another trend noticeable in the evolution of LCC has been the constant refinement. Originally LCC was heavily weighted to cropland in humid areas. Through the 1940s, individuals and committees worked on problems of classifying rangeland, woodland, irrigated land, and dry farming areas. Also, the originators of the system were aware of problems in farming other than erosion hazards--other limitations which might cause a crop failure. Conceptually, these were included, but there was a tendency to try to refine LCC to better define the system in terms of limitations. Thus, there was the formal addition of the subclasses. Here again there was tension between differing objectives. When one considered the educational value of LCC in getting farmers to look at their land in terms of conserving it based on inherent capability, there was a desire to keep the system simple. At the same time, in attempting to create a national system, soil scientists tried to devise a system that

would provide guidance for the classification of all soils throughout the country.

In the field, land capability classification was well received and well suited to its intended purpose of serving as a guide to on-the-farm rearrangement of fields and crops as well as the adoption of conservation practices. The terminology of LCC was well understood by people in the soil conservation profession. Discussions of prime farmland and land subject to erosion were often couched in terms of the LCC. Therefore it was understandable that the subclasses within LCC were proposed for the 1985 farm bill to designate erodible land.

But the LCC is not the system preferred by some professional soil conservationists, especially soil scientists. Briefly stated, their position is that the LCC is not the best system for identifying highly erodible soils. The contention is that LCC neither identifies particular soil characteristics such as erodibility, nor provides a means of measuring those soil properties. In the LCC, it is the combination of soil characteristics, and more specifically the interaction among those properties, that results in the placement of a particular soil in a class or subclass. The classes identify these combinations of limitations for use, not specific limitations such as erodibility.

Their other argument is that they have a better method. Beginning with the establishment of the erosion or conservation experiment stations in the early 1930s, USDA began gathering quantifiable information on the factors involved in erosion. By 1956 there were 7,000 plot-years and 500 watershed-years of basic data available.⁷³ The information made possible the development of the Universal Soil Loss Equation which, in the words of one of its advocates, "brought systematic quantification to farm planning," for soil conservation.⁷⁴ The six factors--rainfall erosiveness (R), soil erodibility (K), slope length (L), slope steepness (S), cropping and management practices (C), and supporting conservation practices (P)--provide a prediction

of expected soil loss, and indicate a set of alternative conservation measures to reduce soil loss.⁷⁵ As in the case of LCC, the system was developed mainly for the purpose of planning conservation measures, but with the possibility of measuring the influence of the various factors. For use in the 1985 Farm Bill, a study team of SCS and Economic Research Service experts proposed an erodibility index composed of the RKLS factors and a T factor which indicates permissible soil loss while maintaining productivity.

Representatives of some farmers, especially the National Association of Conservation Districts (NACD), favor retaining the land capability classification for identifying highly erodible lands. Their reasoning is that LCC is well known to USDA agencies and to farmers. They fear that the mathematical formula in the erodibility index will be understood by few, even in some USDA agencies which will have to carry out provisions of the farm bill. In the words of Charlie Boothby, Executive Vice-President of NACD, "the Universal Soil Loss Equation is not universally understood."⁷⁶ Also the implementation of the sodbuster and conservation reserve, if they become law, will not please every landowner. In such cases, it is argued, having a system which the land owner understands will be preferable. Also, they are concerned about who will make the calculations under the erodibility index for all the farm and ranch land involved.

However the matter is resolved, the attempt to identify erodibility has illustrated once again the nature of government's use of science, in this case soil science, in carrying out its authorities. From the 1930s, USDA, and especially SCS, has needed a means of making judgements about the causes of soil erosion in order to operate programs designed to conserve soil. Government funds were put into the scientific effort to devise a system. The result has been the land capability classification and the universal soil loss equation. While precision in measurement was desirable, it was not always necessary for furthering the program. When these planning tools were

proposed as a means of making precise measurements there were of course differences of opinion about their suitability.

Endnotes

- ¹ For a discussion of the various means of measuring erodibility see Donald E. McCormack and Ralph E. Heimlich "Erodible Soils: Definition and Classification," A and P Staff Report No. 85-2 (Washington, DC: Soil Conservation Service, March 1385).
- ² For a discussion of what is implied by the term "land classification" see Charles E. Kellogg, "Soil and Land Classification," *Journal of Farm Economics* 33 (November 1951): 499-513.
- ³ A. A. Klingebiel and P. H. Montgomery, *Land Capability Classification*, Agriculture Handbook No. 210 (Washington, DC: Soil Conservation Service, U.S. Department of Agriculture, 1961), pp. 1-3.
- ⁴ For a discussion on this and similar questions see Linda K. Lee and Jeffrey Goebel, "The Use of the Land Capability Classification System to Define Erosion Potential on Cropland," A and P Staff Report No. 85-1 (Washington, DC: Soil Conservation Service, November 1984).
- ⁵ Hugh H. Bennett, "The Classification of Forest and Farm Lands in the Southern States," *Proceedings of the Third Southern Forestry Congress. July 20-22, 1921*, p. 74.
- ⁶ *Ibid.*, p. 75.
- ⁷ *Ibid.*, p. 82.
- ⁸ *Ibid.*, p. 93.
- ⁹ Hugh H. Bennett, "Geographical Aspects of Cuban Soils," *Geographical Review* 18 (January 1928): 80.
- ¹⁰ Hugh H. Bennett, "Geographical Relation of Soil Erosion to Land Productivity," *Geographical Review* 18 (October 1928): 587.
- ¹¹ *Ibid.*, p. 587.
- ¹² *Ibid.*, pp. 584 and 589.
- ¹³ *Ibid.*, p. 590.
- ¹⁴ Bennett to J. Russell Smith, November 7, 1932, Bennett Correspondence, RG 114, Records of the Soil Conservation Service, National Archives. Hereinafter, the abbreviations RG for record group and NA for National Archives will be used.
- ¹⁵ Bennett to Douglas C. Ridgely, July 2, 1930, RG 114, NA.
- ¹⁶ *Ibid.*
- ¹⁷ Hugh H. Bennett, "The National Program of Soil and Water Conservation," *Journal of American Society of Agronomy* 23 (May 1931): 370; and *Agricultural Department Appropriation Bill 1930*, 70th Congress, 2d sess., p. 312.
- ¹⁸ *Appropriation Bill 1930*, p. 315.
- ¹⁹ Bennett, "Geographical Relation of Soil Erosion," p. 584.
- ²⁰ *Ibid.*, pp. 579-605.
- ²¹ Hugh H. Bennett, "Adjustment of Agriculture to Its Environment," *Annals of the Association of American Geographers* 33 (December 1943): 185; and Bennett, "Geographical Relation of Soil Erosion," pp. 579-605.
- ²² W. A. Hartman and H. H. Wooten, *Georgia Land Use Problems*, Bulletin 191 (Experiment: Georgia Experiment Station, May 1935), foreword.
- ²³ Glenn L. Fuller, "Charting the Effects of Erosion in the Old Plantation Belt of the Southern Piedmont," *Transactions of the American Geophysical Union 1934*, Part II (Washington, DC: National Academy of Science, 1934), p. 495.
- ²⁴ Bennett to J. Russell Smith, May 31, 1933, RG 114, NA.
- ²⁵ Bennett, "Adjustment of Agriculture to Environment," p. 186.

- 26 Hartman and Wooten, *Georgia Land Use Problems*, p. 91.
- 27 Fuller, "Charting the Effects of Erosion," p. 495.
- 28 Hartman and Wooten, *Georgia Land Use Problems*, pp. 94-96.
- 29 *Ibid.*, p. 122.
- 30 Bennett, "Adjustment of Agriculture to Environment," p. 186.
- 31 For an example of a published farm planning map taken from aerial surveys, see *Soil Erosion: A Critical Problem in American Agriculture* (Washington, DC: Government Printing Office, 1935), pp. 36-39.
- 32 Glenn L. Fuller, *Procedure for Making Soil Conservation Surveys: Outline No. 4* (Washington, DC: Government Printing Office, 1936), p. 1.
- 33 *Ibid.*, pp. 19-20. A discussion of the survey may also be found in Glenn L. Fuller, "A System for Correlation of Land Forms and Covers with Soil Classification," *Soil Science Society Proceedings* 1 (1936): 463-468.
- 34 E. A. Norton, "Classes of Land According to Use Capabilities," mimeographed, Soil Science Society of America, New Orleans, November 1938.
- 35 Interview with J. Gordon Steele by Douglas Helms, August 22, 1985.
- 36 Norton, *Soil Conservation Survey Handbook*, p. 14.
- 37 *Ibid.*, pp. 16-20.
- 38 *Ibid.*, p. 15; E. A. Norton "Classes of Land According to Use Capability," *Soil Science Society of America Proceedings* 4 (1939): 380.
- 39 Norton, *Soil Conservation Survey Handbook*, p. 14.
- 40 E. A. Norton, "Land Classification as an Aid in Soil Conservation Operations," *The Classification of Land. Bulletin* 421. (Columbia, Missouri: Agricultural Experiment Station, December 1940), p. 298.
- 41 Field Memorandum 848-A, April 10, 1940, Roy Hockensmith Papers, University of Wyoming, Laramie; and District Circular 17, February 8, 1940, SCS offices Washington, DC.
- 42 Norton, *Soil Conservation Survey Handbook*, p. 15.
- 43 Norton, "Land Classification as an Aid," p. 296.
- 44 *Ibid.*, pp. 296-297.
- 45 Norton, *Soil Conservation Handbook*, p. 14.
- 46 *Ibid.*, p. 18.
- 47 Norton, "Land Classification as an Aid," p. 302.
- 48 *Ibid.*, p. 295.
- 49 R. L. Von Treba to R. D. Hockensmith, June 30, 1947, Notebook #5, Hockensmith Papers.
- 50 Interview with J. Gordon Steele by Douglas Helms, August 22, 1985.
- 51 Field Memorandum SCS #848-B "Supplementing definitions of classes of land according to use capability", September 28, 1940, Hockensmith Papers.
- 52 R. D. Hockensmith to E. A. Norton, October 30, 1941, Notebook #11, Hockensmith Papers.
- 53 Interview with J. Gordon Steele.
- 54 R. D. Hockensmith to E. A. Norton, February 9, 1942, Notebook #11, Hockensmith Papers.
- 55 *Report of the Chief of the Soil Conservation Service, 1943*, p. 26.

- 56 R. D. Hockensmith and J. G. Steele, *Classifying Land for Conservation Farming: Farmers' Bulletin No. 1853* (Washington, DC: U.S. Department of Agriculture, 1943), back cover.
- 57 *Report of the Chief of the Soil Conservation Service, 1944*, p. 24, and *Report of the Chief of the Soil Conservation Service, 1945*, p. 29.
- 58 Henry R. Adams to M. R. Hershberger, August 12, 1947, and Ralph O. Lewis to All State Soil Scientists, September 25, 1947, Notebook 20, Hockensmith Papers.
- 59 "Soil Conservation Survey Division, Annual Report 1947," typescript, September 18, 1947, Notebook #20, Hockensmith papers; *Report of the Chief of the Soil Conservation Service, 1947*, pp. 27-28; *Report of the Chief of the Soil Conservation Service, 1948*, p. 30.
- 60 R. D. Hockensmith, "The Scientific Basis for Conservation Farming," *Journal of Soil and Water Conservation* 2 (January 1947): 14.
- 61 Interview with Albert A. Klingebiel by Douglas Helms, July 30, 1985.
- 62 R. D. Hockensmith and J. G. Steele, "Recent Trends in the Use of the Land-Capability Classification," *Soil Science Society of America Proceedings 1949* 14 (1951): 384.
- 63 *Ibid.*, p. 387.
- 64 J. G. Steele and R. G. Mowry, *Erosion and Related Land Use Conditions on the Crooked Creek Project near Indiana, Pa.*, Erosion Survey No. 16 (Washington, DC: Soil Conservation Service, 1940), pp. 14-15.
- 65 "Soil and Water Conservation Needs Estimates For the United States," (Washington DC: Soil Conservation Service, 1945), p. 1.
- 66 David R. Gardner, "The National Cooperative Soil Survey of the United States," (Ph. D. diss., Harvard University 1958), p. 362. The Gardner thesis has been extremely valuable to the author because of information on LCC as well as leads provided in the bibliography.
- 67 Roy D. Hockensmith "The Use of the Land-Capability Maps for Rural Real Estate Assessments," reprinted from Proceedings of the Forty-First Annual Conference on Taxation, sponsored by the National Tax Association, 1948.
- 68 Interview with Albert A. Klingebiel, July 30, 1985; and Gardner, "National Cooperative Soil Survey," p. 276.69.
- 69 Kellogg, "Soil and Land Classification," pp. 493-513.
- 70 Gardner, "National Cooperative Soil Survey," p. 274.
- 71 Interview with Klingebiel.
- 72 *Ibid.*
- 73 L. Donald Meyer and William C. Moldenhauer, "Soil Erosion by Water: The Research Experience," in Douglas Helms and Susan L. Flader, eds., *The History of Soil and Water Conservation* (Washington, DC: Agricultural History Society, 1985), p. 96.
- 74 *Ibid.* p. 97.
- 75 L. D. Meyer, "Evolution of the Universal Soil Loss Equation," *Journal of Soil and Water Conservation* 39 (March-April 1984): 102-103.
- 76 Conversation with Charlie Boothby, Executive Vice-President, National Association of Conservation Districts, August 30, 1985.

Eroding the Color Line: The Soil Conservation Service and the Civil Rights Act of 1964

Reprinted from *Agricultural History* 65, no. 2 (Spring 1991): 35-53.

by Douglas Helms
National Historian, Soil Conservation Service

As a young graduate in agriculture from North Carolina A&T University in the depression year of 1938, John Maynard Jones had difficulty finding a job in his discipline. Teaching agriculture in high school was one possibility. Working for the state extension service was another possibility, since most of the extension services in the South hired black county agents on a segregated basis to work with black farmers. Indeed Jones knew these jobs existed because the county agent had occasionally visited the family farm near Bahama, North Carolina. As with many of the white farm children who went off to the land-grant college and earned a degree in agriculture, their first choice was not necessarily returning to the family farm. Upon finishing college Jones' first job was as the principal of a three-teacher school. During World War II, he worked at a hospital at Fort Bragg in Fayetteville, North Carolina. The hospital paid better than high school teaching. An announcement posted on the bulletin board prompted him to take the civil service exam for jobs in agriculture in the U. S. Department of Agriculture.

The Soil Conservation Service offices in Washington, D. C. and the regional office at Spartanburg, South Carolina, offered interviews. Preferring to stay in North Carolina, Jones took the initiative and contacted the state office of SCS in Raleigh. After an interview with Earl Garrett, the state conservationist in North Carolina, Jones began his career at the SCS office in Wadesboro, Anson County, North Carolina.¹

Jones thus became the first black professional "soil conservationist" in North Carolina. He was one of a very small corps of black employees of the Soil Conservation

Service in the South who worked with black farmers. This paper describes the first Blacks working in the Soil Conservation Service and examines the efforts in response to the Civil Right Act of 1964 to expand equal opportunities for employment as well as equal access of minority farmers to government programs.

The organization that John Jones joined, like many another in the burgeoning Department of Agriculture, had its birth in the Depression. Hugh Hammond Bennett, who grew up near Wadesboro, North Carolina, where John Jones was first employed, had completed nearly three decades as a soil scientist in USDA when his crusade against soil erosion culminated in receiving some of the emergency employment funds, with which he planned to employ people to demonstrate the value of soil conservation. The passage of the Soil Conservation Act of April 27, 1935 gave some assurance that the agency would continue even after the Depression emergency had passed. Beginning in 1937, President Franklin D. Roosevelt and the Department of Agriculture began encouraging local groups to form conservation districts and elect local supervisors who could then sign cooperative agreements with USDA. Through the 50 years since that time, the main support given to the nearly 3,000 conservation districts has been placing trained soil conservationists throughout the countryside to work directly with farmers and other landowners. It was this corps that John Jones joined.

The Soil Conservation Service, like its other New Deal-born brethren, the Farm Security Administration and the Agricultural Adjustment Administration, dealt directly with farmers from the Washington office through regional offices. It encountered

some Washington conflict with the state extension services, a cooperative venture between the U.S. Department of Agriculture and the states, especially the land-grant universities. State extension services were fairly autonomous with few nationally directed mandates. Nonetheless, most of the extension services in the southern states made some attempt to hire trained black agriculturalists to work with black farmers.²

Before the Civil Rights Act of 1964, the Soil Conservation Service seems not to have had a consistent policy either in working with Blacks or in hiring graduates of the 1890 universities to work on a segregated basis with black farmers. The first black college graduates working with SCS seem themselves to have taken the initiative in applying for jobs. Undoubtedly there was resistance in sections of the South to hiring Blacks, and the existence of the few testifies to the lack of a policy for building a large black field force.

Texas seems to have progressed the farthest toward developing a separate and segregated service to work with black farmers in East Texas. Again the origins seem to have been based not so much on design, but partially upon chance. Richard Moody was the person selected to work with these farmers, but again the SCS did not seem to go out looking for an individual. The individual came to them. Moody was born near Giddings in Lee County, Texas, where his father owned a small farm. The Depression interrupted his education at Prairie View A&M, and he joined the Civilian Conservation Corps (CCC). Along with the Forest Service and the National Park Service, SCS supervised the technical aspects of the work projects that the young CCC enrollees undertook. During the life of the CCC, SCS supervised the work of more than 800 of the 4,500 camps. Black youths made up more than 100 of those CCC companies, many of which worked on private land.³ Numerous CCC supervisors and enrollees came to work for the Soil Conservation Service, especially after the Soil Conservation Act of 1935 opened thousands of new jobs. However, there were few such

opportunities for employment of the black enrollees. Richard Moody was the exception. The enrollees of Moody's company learned to lay out and build terraces, to seed and fertilize pastures, to run contour lines for stripcropping and contour rows, as well as other vegetative, mechanical, and engineering measures. It was here that Moody says he both acquired an interest in and knowledge about soil conservation: "Having experiences with various duties like that led me to believe that there still was a lot of help that was needed for farmers, and particularly black farmers. I found that black farmers are very easy to work with."⁴

Moody returned to Prairie View, received his degree, and then started teaching at Hempstead, Texas. While there he took the Civil Service entrance exam and recalls that he refused to indicate race on the form, believing he would have little chance for job interviews if he listed his race. Shortly afterwards he was contacted by the Soil Conservation Service about a job in Tyler, Texas. Dubious of the sincerity of the job offer, he requested a 60-day leave of absence from the school board so that he could return to his teaching job if the new employment was unpleasant.

Moody went to work in the Soil Conservation Service office in the Federal building in Tyler, Texas, in 1942. The CCC experience served him in good stead in building terraces and putting in other conservation measures. After accompanying SCS technicians for a while, he started conducting meetings and speaking to other SCS work units in an effort designed to test the acceptance and the possibility of opening up black units to work predominantly with black farmers. After working out of the SCS office in Tyler and proving his abilities and knowledge of conservation matters, Moody opened an office about a block away. While continuing to work with the black farmers in the area, he took in black trainees. The trainees learned the technical aspects of soil conservation while working with black farmers of Smith County. Some of the black farmers of the area already had been acquainted with the Soil Conser-

vation Service. One of the early demonstration projects, Duck Creek, in Smith County, had included some black-owned farms. In fact the first cooperators to sign an agreement with the Soil Erosion Service had been Bragg and Julia Ann Morris, black farmers of the area. Louis Merrill, who had directed the Duck Creek project, was now the regional director for the SCS region covering Texas, Louisiana, Arkansas, and Oklahoma.⁵

Moody and the trainees worked on the same things that had been emphasized in the project, such as terraces and stripcropping, and tried to convince more farmers to use cover crops, especially legumes, that would prevent erosion while adding fertility to the soil. In an effort to increase income and to shift some land from row crops, they emphasized improving pastures by utilizing fertilizer. Not infrequently, Moody and his trainees had to do their best to overcome superstitions that hindered adoption of new ideas. Some of Moody's trainees began moving to new locations where there were sufficient black farm owners for a new office. One trainee, Floyd Sanders, opened an office in Jefferson, Texas in 1944. Other trainees went to other locations in Texas. Unfortunately, several of the trainees, as well as Moody, became victims of a retrenchment after World War II when preference was given to returning servicemen.⁶

Evidently SCS did not contemplate hiring Blacks as soil conservationists in the early days. At the Log Cabin Center in Hancock County, Georgia, in 1946 Hugh Hammond Bennett told the assembled black farmers: "In those earlier days of the program, we hardly foresaw either, that in a few years we were going to have a corps of colored technicians--capable, trained soil conservationists to go out into the fields and work understandingly with the farmers in developing and applying complete farm conservation plans."⁷

At that time, according to Bennett, the SCS southeastern region had 50 black technicians, of whom 11 were in Georgia. In 1950 Thomas S. Buie, director of the SCS south-

eastern regional office at Spartanburg, South Carolina, said that in nine states in his region--excluding Texas, Arkansas, and Oklahoma--there were eight full-time technicians and five full-time aides working exclusively with black farmers. There were an additional 276 part-time aides and laborers on the SCS payroll.⁸

As Bennett saw more of the work of the employees, he seemed inclined to increase hiring to reach the South's black farmers. As he prepared for the annual meeting of the regional directors in 1950, he wrote to them: "I have been doing some thinking recently about the opportunities for trained Negro agricultural workers in the Soil Conservation Service. I have run into a few of them in my travels across the country--and they seem to be doing good work--and the thought occurs to me that we might use to advantage a number of additional technicians over and above those already employed."⁹

Bennett asked the regional directors to give some thought to the best means of increasing the work-force. He added that the student trainee program could be used, and that SCS could give some advice to the educators in the region as to the college courses required to qualify as a soil conservationist. These two methods of increasing enrollment were, of course, those used after the passage of the Civil Rights Act. Bennett also proposed granting leave without pay to black employees who might want to improve their education. Bennett further asked the regional directors to come up with some ideas for the summer meeting.¹⁰

Claude A. Barnett, director of the Associated Negro Press, prodded Bennett to increase employment of Blacks.¹¹ According to Barnett, the two had "talked about this problem for several years." Barnett employed the statistics on black farm ownership in the South in making his case, and promoted the Extension Service and Farm Bureau in North Carolina as examples of using trained black agriculturalists to work with farmers.¹²

Again Bennett planned to discuss the matter with the regional directors. "I agree with Barnett that we should try to have some negro technicians, and this is a matter that must be taken up with the Regional Directors during the summer meeting."¹³ Barnett's arguments about the amount of land controlled by Blacks would have appealed to Bennett, who had elements of simplemindedness endemic to crusaders. The effect of land concentration on SCS program delivery was becoming obvious to the SCS people and raised the question of objectives. Was it the number of farmers assisted that was important, or was it the amount of land covered by conservation measures? The emphasis in the popular press and the newspapers in the last few decades on the loss of small farms has disguised to a certain extent the degree of concentration of farm land that existed in earlier decades. The concern was not strictly related to black farmers, but it certainly applied to them. In 1951, 43.5 percent of the farms SCS assisted were less than 100 acres, while only 7.6 percent were over 500 acres. Yet the conservation farm plans on the former group totalled 50 million acres, while the land in the latter group was 90 million acres. Bennett also planned to discuss this matter at the meeting.¹⁴

Bennett would soon be out as chief of SCS when he reached the mandatory retirement age. The reorganization of SCS in 1953 abolished the regional offices and placed administrative matters, including hiring, at the state office level. However, reviews of the starting dates of black employees in the SCS reveal that quite a number started in the early 1950s, so Bennett's interest in the very early 1950s probably had some limited effect.¹⁵ In Louisiana, A. G. Fasen had been working out of an office at Grambling College. When Fasen decided to take another job, SCS located Leon Blankenship, who was teaching agriculture at a nearby high school. Blankenship grew up near Saline, Louisiana, where his parents owned a 600-acre farm. Both parents were public school teachers. All six of the children attended college; only Leon chose agriculture as a career. He attended Tuskegee

University before being drafted into the Army. After the war he returned to Tuskegee for his degree in agriculture. He was in his second year of teaching vocational agriculture at Bernice, Louisiana, when the district supervisor of vocational agriculture approached him to replace Fasen as the work unit conservationist at Grambling College.

When Blankenship took the job in January 1951, he had two technicians and a clerk to assist him in working a six-parish area around Grambling. Unlike many of the white conservationists, Blankenship received no structured training at other SCS field offices before starting work. He received most of his training from the SCS technicians who travelled out from the area and regional offices to assist local field staff with aspects of engineering, agronomy, forestry and other matters. He recalled that engineer Robert Wilder was particularly helpful in training him in laying out terracing, ponds, and writing conservation plans for the farm. There was also a considerable amount of woodland improvement and pasture improvement to be done as fields in row crops were being converted to pasture and woodland. In addition to assisting farmers with the technical aspects of conservation, Blankenship helped them apply for cost-sharing money. Many farmers had difficulties acquiring money to apply practices. Often minorities would not seek financial assistance due to fear, lack of knowledge, or a history of poor service. Blankenship would take them to the local Agricultural Stabilization and Conservation Service office to apply for cost-sharing. When Blankenship went to work, many minorities in the areas had not heard of the Soil Conservation Service. He began holding night meetings to acquaint farmers with SCS. Blankenship's impression of the status of SCS's work with Blacks was that assistance was provided to the more aggressive, and progressive, black farmers who would ask for assistance. Since the white work unit conservationists had plenty of work, they were not making the effort needed to recruit, persuade, and encourage. Later in Blankenship's career, he was in the state office in Alexandria, Louisiana, and

was responsible for increasing minority participation in programs. He stressed that actively seeking out minorities had to be a part of the job requirement of the district conservationist if progress were to be made.¹⁶

In response to the Civil Rights Act and reports of the U. S. Commission on Civil Rights in the mid-1960s, SCS closed its segregated offices and Leon Blankenship had to close his office at Grambling College and move to the Soil Conservation Service office at Ruston. Unlike most Blacks working for the Soil Conservation Service, Blankenship had been a work unit conservationist under the general direction of the area conservationist. Now he was on the staff of a work unit conservationist, but he generally continued working with Blacks and continued to have his staff under his direction. In the new arrangement he worked with soil conservationist Don Spencer, whom he had known since childhood. Spencer had worked with Blankenship's father, who was a cooperater with the Soil Conservation Service. Evidently Spencer was one of the white work unit conservationists who attempted to involve all people in SCS programs. As Blankenship described it "He did what he could to make sure minorities got services."¹⁷ Spencer had worked with vocational agriculture teachers in the black schools to get conservation into the curriculum. When Spencer decided to retire, he recommended that Blankenship succeed him as the district conservationist to head the office since he knew the area and the farmers. But he was not selected for the job. It was not until 1974 that Blankenship moved from working primarily with Blacks. He moved to Shreveport to work with the Trailblazer and Twin Valleys Resource Conservation and Development project. For the first time he had whites working for him primarily doing work vegetating school grounds, city parks, roadsides, and drainage ditches. From that job, he went on to the state office of the Soil Conservation Service in Alexandria. It was his job to increase participation of minorities in SCS programs.¹⁸

At Ruston Blankenship had worked in the hill area of Louisiana where most of the black farmers were congregated. Evidently the state authorities decided that farmers in the delta near Tallulah should receive similar assistance. The Resettlement Administration had purchased lands in the 1930s for projects to provide farms to black farmers near Mounds. Most of the land needed drainage to be productive cropland. But it seems this crucial need had not been taken care of in the 1930s. The need remained in the 1950s if farmers were to have a chance to succeed.¹⁹

One day Blankenship received a call from Don Richardson, the area conservationist, inquiring whether he knew someone who might work with farmers near Tallulah, Louisiana. He recommended Obie Masingale, whom he had met at Southern University. Masingale was born in Texas and grew up on a farm in Marion County about fifteen miles southwest of Jefferson, Texas. Like Blankenship, Masingale had known of the work of the Soil Conservation Service. His father had been a cooperater with SCS. Floyd Sanders had been a vocational agricultural teacher in the county before going to work with SCS in Jefferson.

Masingale trained under Blankenship until the fall of 1953 when he went to work near Tallulah as a work unit conservationist with an office in Thomastown High School. Masingale believed that drainage was crucial to success on the former Resettlement Administration projects. Few of the black farmers had good, well-drained soils. Because of the slight relief and high water tables, Masingale believed that the average farm would produce a crop only one out of three years. Thus, there was the need for drainage if the land were to be used for row crops. As in the case of Blankenship, Masingale had to go out and recruit farmers. Since drainage was the main work needed, money was more of a constraint here than in some other conservation work. Most farmers needed financial assistance. Some assistance was available in the form of cost-sharing from the Agricultural Stabilization and Conservation Service. A

few farmers knew about the aid. Masingale recalled,

It was an educational process to most of the black farmers. In the first place, a lot of them didn't know what was available through the ASCS (Agricultural Stabilization and Conservation Service) office in cost-sharing. You had to explain that to them. Many of them were willing to carry out the projects and do the drainage, but they didn't have the money, or were too much in debt to get it.²⁰

At least Masingale believed the reason for hiring black soil conservationists in Louisiana, few as they were, was to try to reach people who were being ignored. He believed that:

...the SCS people in the country would work with those people who could do the drainage, or get the terraces made, or plant the pastures--the elite black farmers who understood and they had money or could get it. So they worked with them. They wouldn't lose time with the fellow that you had to court and explain to him, really explain to him. Because he did not know about ASCS. Many of them didn't. We've had to take them in. They were scared to go in the office. We've had to take them in and apply. Let them see that you could apply and then get it.²¹

He continued his work in Louisiana until 1961 when he was asked to transfer to the SCS state office at Nashville, Tennessee. There he was to replace James Hughes, who had moved to the national SCS office in Washington, D. C.²²

Hughes had been selected to work on a program to increase black employment in the agency in the early 1960s. He probably came to the attention of the national office of SCS because of his work on the Johnson Creek Watershed, where the cooperation of black farmers was needed in order for the project to succeed. This watershed, one of the many projects SCS worked on under the Watershed Protection and Flood Prevention Act of 1954, was one of the first to be studied for its effects on the incomes of the residents. Conservation education leader Martha Munzer had high-lighted the act in her book, *Pockets of Hope*. After his work on the watershed, Hughes moved to the SCS state office in Nashville, where he worked on programs to improve service to minorities in the state. There, the state conservationist in Tennessee, J. Ralph Sasser, was the most active of the state conservationists in the South in promoting more services to black farmers. Hughes moved to Washington to help in the effort to provide equal opportunity in hiring and programs.

President John F. Kennedy placed Vice-President Lyndon B. Johnson in charge of the President's Committee on Equal Employment Opportunity (PCEEO).²³ Johnson insisted that in contracting and employment, the federal government should not merely follow a negative nondiscriminatory policy. Rather, they should take affirmative action to ensure participation by minorities. The committee commenced collecting statistics on minority employment in the government. Former Secretary of Agriculture Orville Freeman recalled a telephone call late one night in early 1961:

The telephone rang and it was then Vice President, Lyndon Johnson, and he said to me very sternly that looking over the records he was not at all satisfied with the minority representation in the Department of Agriculture and that it was about time that I got busy and did something about it.²⁴

But USDA continued to have the reputation of being the slowest of the cabinet departments to hire blacks. Of the people in the department in a position to have an impact, the Administrative Assistant, Secretary Joseph M. Robertson, weighed in on the side of activism. Robertson believed the department would make little progress as long as routine procedures were followed. He advised the Secretary:

The inertia in this area is unbelievable until you see it at first hand. We continue to live in a pattern of culture that has been developed over the last century, and to get us out of this is going to take, in my opinion, direct involvement by the Secretary of Agriculture and by his agency heads and that this program must be given a different order of priority from sugar, or rural areas, or any other commodity. If not, we will make about the same rate of progress that we have made²⁵ in the past two years.

In his role as in-house advocate, Robertson also sent Freeman Martin Luther King's famous and eloquent letter of April 16, 1963, written from the Birmingham, Alabama city jail. King was responding to clergymen who had referred to King's action in the civil rights movement as "unwise and untimely."

The Secretary was becoming more involved and authorized Joe Robertson to require monthly reports.²⁶ Administrator Donald A. Williams of the Soil Conservation Service reported to Freeman that he held a meeting of the state conservationists on June 18, 1963, and "all but two (of the state conservationists) had made special effort during the past year to employ Negroes in various vacancies." Several states were focusing on working with the 1890 schools on their curriculum. But the state conservationists of the southern states obviously did not want to be alone in efforts and "voiced the

opinion that it was highly important that positive moves to employ Negroes not be limited to one agency alone."²⁷

At the urging of the new president, Lyndon Johnson, Congress passed a major Civil Rights Act in 1964. In addition to placing greater emphasis on equal employment in hiring, the act also focused on the equality of participation in government services, by stating that: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."²⁸ Among government departments, elimination of discrimination had required special emphasis in the Department of Agriculture. Through the years the transfer of scientific and technical information, the administration of price-support, acreage controls, voluntary soil conservation activities, and other programs, and even the use of regulatory type activities had relied on cooperation and acquiescence at the state and local level. State and local committees composed of appointed or selected volunteers often helped administer USDA programs.²⁹ Overall it was a system that made for effective delivery of programs to the countryside. But it was not designed to respond immediately to national laws and priorities, still less to deliver a rapid response to the spirit of the Civil Rights Act, which went against the grain of local mores, such as segregation.

The United States Commission on Civil Rights reviewed farm programs in 1964 and issued their report in 1965: *Equal Opportunity in Farm Programs: An Appraisal of Services Rendered by Agencies of the United States Department of Agriculture*. In the 16 southern states there were 6,100 Soil Conservation Service employees in July 1964. There were only 40 Blacks in that work force. Half of the 40 were in jobs classified as professional. The survey of SCS operations covered 67 counties where there were large numbers of black farmers. Sixty-six of the counties had one conservation farm plan for every four white farm owners. Twenty-six of the counties

reported one plan for every four black farm owners. The study also revealed that hiring black soil conservationists to seek out black farmers had increased participation in those counties. The study included one anomaly: Madison County, Mississippi, where the white soil conservationist had prepared conservation plans for 54 percent of the white-owned land and 77 percent of the black-owned land.³⁰ While accumulating the information, SCS found that of the Blacks who had conservation plans "a satisfactory number were applying conservation practices." The agency believed it an indication that greater efforts to reach Blacks would result in increased conservation farming in the South.³¹ Despite the inequities, the commission found that SCS had been making efforts to recruit more black professionals and had been working toward eliminating segregated offices. The larger task remained, to provide equal opportunity in employment as well as ensuring that "the quantity and quality of service available to Negro landowners [was not] dependent upon the number of Negro staff in a given area."³²

Soon after the passage of the Civil Rights Act, agencies were being required to make reports on progress. The Inspector General of USDA studied SCS operations in the South. SCS could quickly end the segregation in offices. They undertook a study to determine whether Blacks were being promoted as rapidly as whites. Such actions only involved internal decisions. Others actions involved the good will of the agency's clientele--the farmers. Black soil conservationists were no longer to be restricted to working with black farmers. Black landowners were not to be restricted to receiving help only from blacks. The service was to try to make sure that the black SCS employees participated in meetings of conservation districts as did their white counterparts. While there had been exceptions to all these cases before the Civil Rights Act, Administrator Donald A. Williams conceded the situation needed to be corrected. He was soon asking state conservationists in the South to report on progress. Williams also reminded the field that the attitude of the white staff in SCS

field offices in the rural counties was crucial to accomplishing integration in work assignment and work with districts by smoothing the way.³³

The other major thrust of the Civil Rights movement was, of course, to increase employment of Blacks in SCS. With Carl Lindstrom and Jim Hughes of the personnel section of SCS taking the lead, the agency had a short-term and long-term goal. Short-term goals involved quickly increasing the number of black employees through recruitment and working with the 1890 land-grant schools to suggest easily achieved curriculum changes that would quickly increase the number of qualified applicants for jobs in SCS. The longer-term goal in Lindstrom's strategy was to work with the 1890 universities on curriculum changes involving major realignment in course content, to the end that graduates would be well qualified for professional positions.³⁴ The curriculum work was crucial because most of the jobs with promotion potential in SCS required college credits in the agricultural and natural sciences. The heads of field offices, the soil conservationists, had college training in agriculture. Through tradition, many of the jobs in personnel, budget, finance, and other administrative support were filled by people with degrees in agriculture and who had worked at the field level as soil conservationists.

In addition to the people at the SCS state office, Carl Lindstrom and James Hughes travelled to the 1890 schools advising them on the changes needed in curriculum and recruiting students for the student-trainee program. Some of the small number of Blacks who already worked for the SCS in the South also recruited, while themselves serving as role models for those who wanted to pursue a career in agriculture. The program had a marked effect on the colleges of agriculture and SCS. Grant Seals, who went to Florida A&M University as Dean for Agriculture and Home Economics in 1969, recalled the impact:

Upon my arrival, I found the summer SCS program

already operative...The first few participants from FAMU had been agricultural education or agronomy majors. Upon the advice of SCS, FAMU had employed a soil scientist to teach soil survey and any other needed courses to constitute qualifying agronomy graduates. Students were recruited in high school and were hired out each summer thereafter as trainees learning about soils. They were also earning moneys for their tuition. As our recruiting program got stronger for the School (of Agriculture) as a whole as well as for soil science, the number of SCS enrollees increased. At its peak, we must have had nearly fifty students in all four years of training. We were graduating an average of 8-10, half of whom were then recruited by the Forest Service which hadn't invested anything in the program. But we still placed at least half to two thirds in SCS.³⁵

The increase in hiring is also reflected in developments at Southern University. As early as 1965, the university added a course in soil science. Some agricultural majors had taken summer jobs with SCS. Hezekiah Jackson, Dean of the College of Agriculture at Southern University, wrote to SCS'S administrator Donald Williams on October 20, 1965, "You might also be interested in knowing that our recent relations with the Soil Conservation Service have contributed to increasing our agricultural enrollment 500% over the last year."³⁶ Working with 1890 universities to ensure that their graduates had the necessary courses to place them in position to pursue a career was laudable in many respects for it served both the interests of the students and the agency. But the changes in enrollment starkly revealed the sad state of affairs that preceded the Civil Rights Act. That a single

agency in USDA could, by offering job opportunities, cause these dramatic increases in student enrollment demonstrated the impediment that lack of job opportunities had been to the development of the agricultural curricula at the 1890 schools.

From a very low base, the number of black employees grew. There were 83 Blacks on the rolls in 1962, 94 in 1963, 146 in 1964 and 368 in 1965. As of September 30, 1990, there were 12,821 permanent full-time employees of the Soil Conservation Service. Black employees numbered 926 of whom 627 were male. Of greater importance, 409 of the black males were in "professional" job series, where there is a greater chance for advancement in the organization. Another 132 Black males are in the "technical" jobs where there is a chance for advancement if some education goals are met. The numbers for females are 43 professional, 63 administrative, 54 technical, and 117 clerical. Thus the number of black females is significantly lower than the percentage of black females in the labor force. Like most other government agencies, the Soil Conservation Service has an equal employment program to try to address problems such as the overconcentration of black females in clerical jobs. The increase in black employment, from the days where there were only 40 black employees in the South out of over 6,000, has not eliminated all concerns about discrimination. There are sufficient formal complaints filed (under the procedures of the Civil Rights Acts) throughout the agency to attest to the fact that individuals believe they are being discriminated against because of race.

The degree to which Blacks have been able to move into the top jobs is also a concern. Whatever the makeup of the top administrative jobs should be, it is clear that some individuals have advanced in the administration. With the exception of the two top jobs in SCS--the Chief and the associate chief--blacks have served in most other job categories throughout the organization. A black employee has now served as a state conservationist in Arizona, California, Maine, Maryland, Massachusetts, New Jer-

sey, Nevada, and Wisconsin. A University of Arkansas-Pine Bluff graduate, Pearlle Reed, was the Deputy State Conservationist in Arkansas before moving on to the state conservationist's position, first in Maryland and currently in California. At the national office, Sherman Lewis and Platter Campbell have been division directors. Lewis is currently an assistant chief. Jacqueline Sutton was the deputy associate chief for administration.

In summary, the few Blacks who worked for the Soil Conservation Service in the 1940s and 1950s served their clientele well by focusing on those who were not being reached. To take one example, John Jones recalled that when he went to work in Anson County, North Carolina there were a few Blacks, those with fairly large farms, who were cooperators with SCS. But some of the black farmers in the northwest corner of the county around Burnsville and other communities did not have conservation plans. By the time Jones left the county, all the black farmers of the county were cooperators with SCS.³⁷ Jones and his contemporaries were role models for the generation of recruits who joined SCS after the Civil Rights Act of 1964. The response to the Civil Rights Act involved some innovative approaches in working with the 1890 schools to gain recruits. Some of the recruits of the mid-1960s have progressed through the administrative levels of the agencies. Yet, it remains obvious that continued vigilance is needed to ensure that those who do the public's business serve all the public and provide equal employment opportunities for those interested in soil and water conservation.

Endnotes

¹ Interview with John Maynard Jones, Bahama, North Carolina, September 29, 1990. During the course of the interview, the interviewer discovered that his great-uncle Luther Ross had worked with John Jones at Wadesboro laying out soil conservation practices.

² Allen W. Jones, "The South's First Black Farm Agents," *Agricultural History* 50 (October 1976): 636-44; and "Thomas W. Campbell: Black Agricultural Leader of the New South," *Agricultural History* 53 (January 1979): 42-59; Wayne D. Rasmussen, *Taking The University to the People: Seventy-five Years of Cooperative Extension* (Ames: Iowa State University Press, 1989), 7, 52, 68, 72, and 103.

³ Douglas Helms, "The Civilian Conservation Corps: Demonstrating the Value of Soil Conservation." *Journal of Soil and Water Conservation* 40 (March-April 1985): 187.

⁴ Interview with Richard A. Moody, Tyler, Texas, May 17, 1990.

⁵ Louis P. Merrill, *Soil and Water Conservation in the Western Gulf Region: Part II, The U. S. Soil Erosion Service, Project No. 20, Duck Creek, Smith County, Texas* (Temple, Texas: Soil Conservation, 1982), 72.

⁶ Interview with Richard A. Moody, Tyler, Texas, May 17, 1990.

⁷ Hugh Hammond Bennett, "Conservation Farming for Better Living," Address prepared for delivery by Dr. Hugh H. Bennett at the annual soil conservation jamboree at Log Cabin Center, Hancock County, Georgia, August 13, 1946, p. 5. (Hugh Hammond Bennett Papers, Department of Special Collections, Iowa State University Library, Ames, Iowa, hereafter HHB Papers.)

⁸ The seeming decline in black technicians may be due to increased hiring during World War II and then the loss of jobs to returning servicemen. "Negro Soil Conservationists," Notes prepared for use by Dr. T.S. Buie in panel discussion on "The Changing Status of the Negro in Southern Agriculture," Rural Life Conference, Tuskegee Institute, Tuskegee, Alabama, June 18-20, 1950, T.S. Buie Speeches. Soil and Water Conservation Society, Ankeny, Iowa.

- ⁹ Hugh Hammond Bennett to All Regional Directors, August 22, 1950, HHB Papers, Folder 22/3.
- ¹⁰ Ibid.
- ¹¹ My former boss at the National Archives, Harold T. Pinkett tells me that he met Barnett's widow at an Association for Afro-American History meeting. She told him that Barnett was one of the "dollar-a-year" advisors to the three successive secretaries of agriculture, Henry A. Wallace, Claude Wickard, and Ezra Taft Benson.
- ¹² Claude A. Barnett to Hugh Hammond Bennett, May 5, 1951, HHB Papers, Folder 22/3.
- ¹³ Hugh H. Bennett, Memorandum for discussion at Regional Director's Meeting, June 7, 1951, HHB Papers.
- ¹⁴ Ibid.
- ¹⁵ Study of Blacks in SCS in 1964, Records relating to civil rights, History Office, Soil Conservation Service, Washington, D.C.
- ¹⁶ Interview with Leon Blankenship, Alexandria, Louisiana, May 15, 1990.
- ¹⁷ Ibid.
- ¹⁸ Ibid.
- ¹⁹ Donald Holley, *Uncle Sam's Farmers: The New Deal Communities in the Lower Mississippi Valley* (Urbana: University of Illinois Press, 1975), 112-13.
- ²⁰ Interview with Obie Masingale, Baton Rouge, Louisiana, May 12, 1990.
- ²¹ Ibid.
- ²² Study of Blacks in SCS in 1964, Records relating to civil rights, History Office, Soil Conservation Service, Washington, D.C.
- ²³ Hugh Davis Graham, *The Civil Rights Era: Origin and Development of National Policy* (New York: Oxford University Press, 1990), 38-40.
- ²⁴ Orville Freeman, Oral History, February 14, 1969, p. 2, Lyndon B. Johnson Presidential Library, Austin, Texas.
- ²⁵ Joseph M. Robertson to Orville Freeman, June 6, 1963, Folder "Civil Rights," General Correspondence, Record Group 16, Records of the office of Secretary of Agriculture, National Archives and Records Administration, Washington, D.C. Hereinafter the abbreviations GC, RG, and NARA will be used.
- ²⁶ Orville Freeman to Don Williams, July 11, 1963, Folder "Civil Rights," GC, RG 16, NARA.
- ²⁷ Donald A. Williams to Orville L. Freeman, June 24, 1963, Folder "Civil Rights," GC, RG 16, NARA.
- ²⁸ Secretary's Memorandum No. 1560., Implementation of Civil Rights Act of 1964, July 10, 1964, Folder "Civil Rights," GC, RG 16, NARA.
- ²⁹ For a recent and important interpretation of USDA working relationships, see David E. Hamilton, "Building the Associative State: The Department of Agriculture and American State Building," *Agricultural History* 64 (Spring 1990): 207-18.
- ³⁰ *Equal Opportunity in Farm Programs: An Appraisal of Services Rendered by Agencies of the United States Department of Agriculture: A Report of the United States Commission on Civil Rights* (Washington, D.C.: GPO, 1965), 85-89.
- ³¹ Ibid., 89.
- ³² Ibid., 89.
- ³³ Donald A. Williams to State Conservationists, Advisory LEG-10, March 17, 1965, Civil Rights Records, History Office, Soil Conservation Service, Washington, D.C.
- ³⁴ Carl A. Lindstrom, Memorandum, Equal Employment in SCS, July 15, 1965, Civil Rights Records, History Office, Soil Conservation Service, Washington, D.C.

35 Grant Seals to the author, September 12, 1990.

36 Hezekiah Jackson, Dean of the College of Agriculture, to Donald A. Williams, October 20, 1965. Civil Rights Files, History Office, Soil Conservation Service.

37 Interview with John Maynard Jones, September 29, 1990.

SCS and '1890' Graduates: Of Mutual Benefit

Reprinted from *Soil and Water Conservation News* 11, no. 2 (July-August 1990): 8-9.

by Douglas Helms,
National Historian, Soil Conservation Service

The number of black employees in the Soil Conservation Service has increased at varying rates over the years. A few were hired in the 1940s, primarily to work with black landowners. Greater numbers joined SCS following civil rights legislation in the 1960s.

Over the years, many of the blacks who have worked for SCS have been children of landowning black farmers. Blacks have owned farmland in the United States since before the Civil War, although the number increased fairly dramatically toward the end of the 19th century.

Though a distinct minority, some free blacks in the South acquired land before the Civil War. By 1830, some 647 rural free blacks in Virginia had acquired land. On the eve of the Civil War in 1860, there were 1,316 black farmers and rural landholders in Virginia who had property valued at \$369,647. Maryland's rural black landowners numbered 519 in 1830 and 2,124 in 1860.

Despite the financial obstacles and the resistance to selling land to blacks, they continued to acquire land after the Civil War. Between 1870 and 1890, in the upper Southern States of Kentucky, Maryland, Missouri, and Virginia, the number of black landowners increased from 6,859 to 39,859. One out of three black farmers owned land. In the lower South, where resistance to selling land to blacks was greater, the progress was slower. Usually, less than one out of five black farmers owned land.

A passion for education accompanied the yearning to own land among many of the former slaves. Missionary societies established some of the first colleges for blacks after the Civil War. There were a few

private colleges. But the schools called for in 1890 in the second Morrill Act constituted State-supported higher education for blacks in much of the South, because the first Morrill Act had benefited whites only.

Many of the blacks who have worked in the Soil Conservation Service are products of this environment. They are graduates of the 1890 Institutions and Tuskegee University, children of the landowning farmers.

During the 1940s, SCS hired a limited number of blacks to work in counties with large populations of black landowners. Bishop Holifield held such a position in Florida, as did John Jones in North Carolina, Howard Hardy in South Carolina, and Maurice Godley in Virginia.

In Texas, Richard Moody, a Prairie View A&M graduate, went to work for SCS in Tyler. In addition to working with black farmers in Smith County, Moody and his staff helped train additional blacks as soil conservationists to work in other parts of Texas. One of the trainees, Floyd Sanders, opened an SCS office at Jefferson, Texas, where his staff assisted black landowners in the Marion-Cass Soil Conservation District.

In 1951, SCS established the first of two offices in Louisiana to work with black farmers. Leon Blankenship and his staff at SCS's Grambling College office worked with hill country farmers on terracing, pasture improvement, woodland development, and farm ponds. Work unit conservationist Obie Masingale began work in the Delta parishes in January 1952 and helped farmers with landleveling, pasture renovation, and drainage.

The civil rights movement of the 1960s focused attention on securing the fundamental right to vote for all Americans and

ending segregation. The Federal Government began emphasizing equal opportunity in employment and equal access to Government services.

The establishment of the President's Committee on Equal Employment Opportunity in 1961 spurred Federal agencies to hire additional qualified blacks. SCS in Tennessee and North Carolina signed up a few trainees from "1890" universities in 1963. Also in 1963, James Hughes, from Tennessee, became special assistant on intergroup relations at SCS national headquarters.

In response to the Civil Rights Act of 1964, SCS closed segregated offices and moved swiftly to eliminate segregation in work assignments, which had been deemed discriminatory.

A 1965 policy stated that "SCS personnel who are members of minority groups are not to be restricted to working solely with minority group landowners and operators." Furthermore, "SCS minority group employees will meet with district governing bodies in their regular meetings."

The United States Commission on Civil Rights issued a report in 1965 on the programs of the U.S. Department of Agriculture. Of 6,100 SCS employees in 16 States in the South, the Commission found that 40 were black and only about half were in job categories considered professional.

SCS's strategy to hire more black professionals included signing up student trainees to work in the summer. The students could determine if this was the type of career they wanted, and could tailor college courses accordingly. The number of SCS student trainees increased in the years immediately following the Civil Rights Act, from 9 in 1965 to an estimated 60 in 1968.

SCS also hired "1890" university professors for the summer to familiarize them with the agency's work. SCS hoped the professors would incorporate their newly gained knowledge in the next year's courses

and encourage students to undertake careers with SCS.

During the 1960s, SCS staff met with college presidents and officials and urged them to increase course offerings in soil science, one of the main requirements for qualifying as a soil conservationist.

With the prospect of employment by SCS and other agencies and the option of additional courses in agricultural fields, enrollment in agricultural degree programs increased. For example, the 1965 freshman class at Florida A&M included 40 students in the School of Agriculture--twice the enrollment in 1964.

How much or how little progress has been made toward fulfilling the promise of equal opportunity in both the Federal Government and society can be debated. The graduates from the 1890 Institutions and Tuskegee University who joined SCS in the 1960s have now spent more than 20 years with the agency. During that time, they have served at practically all levels in SCS.

More importantly, the racial makeup of the corps of soil conservationists in SCS is far different than it was on the eve of the civil rights movement.

Women in the Soil Conservation Service

To be published in *Women in Natural Resources* 14, no. 1 (September 1992).

by Douglas Helms,
National Historian, Soil Conservation Service

"Tama Jim" Wilson, who served for the longest tenure of any Secretary of Agriculture (1897-1913), found the importuning for jobs in the department the most vexing part of the job. "Finding places for deserving women on the request of Senators who righteously plead their cause is the greatest difficulty I meet with," he wrote to a senator.¹ He found the situation of the unmarried women particularly distressing, as he confided to an old friend. "This is a great national eddy where human driftwood lodges. Young ladies are begging for the cheapest kind of labor here, who should go into families and do housework....So you see I have to look at the sad side of life here and sometimes I feel like taking my hat and going home to Iowa."² The few women in the early days found employment in the lower paid jobs. In March 1864, nearly two years after the creation of the U. S. Department of Agriculture, the Commissioner received authority to employ women as clerks. In 1891 there were 169 women in the U. S. Department of Agriculture, constituting about 12 percent of the employees. Throughout the government about 14 percent of the government typists were women.

The Bureau of Animal Industry hired women in field offices to do routine microscopic examinations of meat, which was required by an 1891 law.³ A few women slowly found their way into professional positions. Among federal government departments USDA was the largest employer of women scientists, hiring about two-thirds of the government total in the 1920s and 1930s. *American Men of Science* listed 19 women scientists in USDA in the 1921 edition and 61 in the 1938 edition, two of whom were in the Soil Conservation Service. The Bureau of Plant Industry was a leader in government in hiring women scientists, especially plant pathologists. The

Bureau of Chemistry hired a number of female chemists. Others found employment in the Bureau of Home Economics where the bureau chief, Louise Stanley, was the highest paid and highest ranking woman scientist in the federal government. But Stanley was the exception as other women scientists did not have the opportunity to advance in rank and remuneration.⁴

Women librarians worked in the Department's library, which in time became the most outstanding agricultural library in the world. During the early twentieth century several women held the post of Librarian of USDA. World War II was perhaps the high point in women's employment in USDA. In 1939, 20 percent of the employees were women. The figure was 34.09 per cent in 1943, before dropping back to 21 percent in 1947.⁵

Probably the first female employee of the Soil Erosion Service, predecessor to the Soil Conservation Service, was Lillian H. Wieland. On September 19, 1933, Hugh Hammond Bennett transferred from USDA to the Department of the Interior to head the Soil Erosion Service. The following day Lillian H. Wieland entered on duty as his secretary. Among the 12 employees in the Washington office in October 1933 were Wieland, Laura G. Fitzhugh, and Alberta Stanback.⁶ Most of the early women employees of the Soil Erosion Service and the Soil Conservation Service, as it was renamed in 1935, were in secretarial and clerical positions where they were integral to the success of the operations. From its beginning as a few scattered demonstration projects, SCS developed into a national organization with upwards of 3,000 offices and more than 15,000 employees. The main work of the agency was working directly with farmers and ranchers on conservation problems. Such a far-flung organization

relied, in part, on competent professional secretarial and clerical work.

During the rapid initial growth of the organization, everyone felt the pressure to make a favorable impact so that the work would continue. Frances Hershberger recalled the early office work in Maryland. "[I] think all of us secretaries felt we helped to get the project for SCS in Maryland off to a good start. We worked diligently from 8 to 5, & for the first few months worked overtime. We not only worked 5 full days a week but also 1/2 day on Saturday."⁷ Though the early secretarial staff may not have worked personally on conservation practices on the farm, they could enjoy the sense of group accomplishment. Estella B. Williams started working in Waynesboro, Pennsylvania, in 1935 and later transferred to Maryland. At the age of 91 (in 1989) in a retirement home in Hagerstown she wrote, "I still love to go through the country and see the strip cropping etc."⁸

Like their male counterparts, quite a number of the women who found employment in the early days made a career of the work. Secretaries throughout the organization have often been invaluable in providing continuity in cases where heads of office changed frequently. They know the organization and the key conservation partners in state agencies, conservation districts, and other areas.

Some states did not have clerks for districts; the area clerk would travel to the districts to do the work. Marjory A. McTavish, the area clerk at Butte, Montana, made work trips to each of 11 district offices four times a year. Now, when she speaks to groups and encourages young women to consider a career in the federal government, she uses a story to illustrate some of the attitudes that were all too prevalent about women's role in the federal government in the 1960s. "I was making a three-day trip, spending a day at Three Forks, then Townsend, and then Helena. I stopped in East Helena for gasoline. Now--this is in the early 1960s, and I am driving an olive green government sedan with decals on the door saying USDA-SCS and displaying

government license plates. I drive into this station, roll down the window as an old fellow, the attendant, approaches the car, and I say, 'Fill it up, please.' He doesn't answer, just looks at me--then he proceeds to walk around the car. When he gets back to the open window, he says, 'Does the government let women drive their cars?'"⁹

In addition to the Soil and Water Conservation Society, SCS also has had a long association with the conservation districts and their national organization, the National Organization of Conservation Districts. Women have also played a large part in this cooperation--probably none more so in the formative period than Mrs. Ellen Cobb of Spartanburg, South Carolina. While a secretary with the Soil Conservation Service, she began helping with the meetings of South Carolina's state association of conservation districts. By 1941 she regularly attended and kept notes at the meetings and assisted with the growth of the organization.¹⁰ E. C. McArthur, the first head of the state association, led an effort to organize a national meeting of district officials. Mrs. Cobb went to the meeting in Chicago in 1946 when the National Association of Soil Conservation District Officials was organized. Later Mrs. Cobb recalled the mood of the meeting that was so instrumental in the history of the conservation movement in the United States. It "was hot as Hades when those 17 men, plus McArthur, plus little me, sat around a table in the Morrison Hotel, and discussed the merits of a national organization, and I won't deny that some of them were doubtful; but after much talk, that great leader McArthur sold his idea."¹¹ The group authorized McArthur to hire Mrs. Cobb as the Executive Secretary. McArthur died in an automobile accident in 1947, and Kent Leavitt of Millbrook, New York, was elected as the president. Mrs. Cobb was clearly the most knowledgeable person about McArthur's plans for the infant organization. Mrs. Cobb moved to Millbrook and lived in a rented house which served both as her home and the office of the National Association of Soil Conservation Districts. With the organization on a better footing, Mrs. Cobb

resigned in June 1948 and returned to Spartanburg.¹²

Although most of the women in SCS during the 1930s and 1940s were in the secretarial and clerical fields, there were some women in the sciences and technical specialties. At the urging of the Science Advisory Board, the Soil Erosion Service set up a Climatic and Physiographic Division to do research in climate, ecology, geomorphology, and erosion history. Within the division Lois Olson headed the Erosion History Section, whose staff researched maps, documents, and records to determine the character of the natural landscape. This information could be used to establish datum points for studies in climatic change, the extent and rate of soil erosion, and changes in plant cover.¹³ Olson had B.S. and M. S. degrees in geography from the University of Chicago. She had studied at the London School of Economics and had worked with the American Geographical Society before taking the job with the Soil Erosion Service.¹⁴ In addition to supervising the work of the section, Olson published articles from the research work in *Agricultural History*, *Geographical Review*, *Nature*, and *Soil Conservation*.

Due to the need for geographers to help with the war effort during World War II, Olson left SCS to work for the Office of Strategic Services; later she worked with the Department of State and the Central Intelligence Agency. During the period September 1942 through October 1943, SCS lost about 23 percent of its employees, many of whom went into military service or transferred to other government agencies. During that year 32 female employees joined the military services.¹⁵ In the civilian labor force "Rosie the Riveter" had come to symbolize women's contributions to the war effort by working in jobs usually reserved for men. It seems SCS did not use this method a great deal, although there were some exceptions. Mary C. Baltz, a graduate of Cornell University, joined SCS as a "Junior Soil Surveyor" during the war labor shortage and continued with the agency as a soil surveyor until the early 1960s when she resigned.¹⁶

Another person in technical and informational work in the early history of the Soil Conservation Service was Charlotte Whiteford, later Charlotte Colton. Whiteford was elected to Phi Beta Kappa and then earned an M. S. degree in botany at Ohio State University before taking a job as a secretary with the soil science staff at the SCS office in Zanesville, Ohio in the mid 1930s. Her scientific training served her well in working with the staff. J. Gordon Steele, a soil scientist who had been in a plant ecology class with her at Ohio State, found his former classmate at the Zanesville office. In the late 1930s Steele was involved in publishing SCS reports entitled "Erosion and Related Land Use Condition," concerning the various SCS project areas. He recruited Whiteford to come to Washington as an assistant soil technologist to work on the reports. The job required both knowledge in soil science and editing. Whiteford took courses in editing and soil science in the USDA graduate school. At least one of the reports, *Physical Land Conditions on the Leatherwood Creek Demonstration Project, Lawrence County, Indiana*, included her as an author. Charlotte Colton continued to work as an editor, especially on soil surveys, and eventually became head of the publications staff of the Soil Conservation Service. She retired in the 1980s.¹⁷

A few women worked as public information specialists and editors during the early history of SCS; more joined in the 1960s through the 1980s. Phoebe Harrison regularly wrote and compiled the book review section of the early issues of *Soil Conservation*. Later she worked on the international aspects of soil and water conservation before retirement. Ruth Nordin headed the editing shop and from there helped women such as Georgie Keller, Catherine Blakely, and Juanita Grasty move up from lower grades to be publications editors. Nordin also taught editing in the USDA Graduate School and gave workshops on clear writing to SCS managers. Kay Mergen worked in the area of conservation education in the 1960s and 1970s.¹⁸

The work of SCS in farm planning, soil surveys, and other activities has relied in part on expertise in cartography, use of aerial photography, and remote sensing. Some women found employment in the cartographic center at the regional offices and later the technical centers, although often in the lower paid jobs of cartographic aid and cartographic technician. Probably the best known of the women who worked in the Soil Conservation Service in the late 1940s up into the 1960s was Verna C. Mohagen, director of the Personnel Division. A native of North Dakota, Mohagen went to work for the Veterans Bureau as a clerk-stenographer in 1927. In 1929 she moved to Washington, DC, to work for the Bureau of Chemistry and Soils. Like many another young person who came to the capital to work for the federal government, she soon found the local colleges and universities to be an opportunity to gain an education and to improve job prospects. By attending George Washington University at night over eight years while working full-time, she earned a B. A. degree (1934) and an M. A. degree (1937) in economics. She also took courses in public administration at American University. Miss Mohagen joined the Soil Conservation Service in 1935 and progressed until she was director of the Personnel Division in 1946.¹⁹

Mohagen advanced the career development concept in SCS. It was derived from the notion that leaders in the Soil Conservation Service, especially the state conservationists and the national headquarters leaders, should have work experience in more than one state and in a variety of programs. Previously, most of the people who advanced to state conservationists had long experience in one state. The concept that state conservationists should have experience in other states was regarded as revolutionary. Also, the Personnel section often identified young conservationists who should be given opportunities to get the experience needed to advance to national headquarters or to a state conservationist's position.

Mohagen had the support of the Administrator, Donald A. Williams, in this area. Thus, the young people in SCS throughout

the field, especially those interested in progressing upward in the organization, knew of Miss Mohagen and the fact that they needed to be mobile and to acquire the experience needed to advance. Mohagen also pioneered in using the student trainee program and in using trainee programs to develop professionals in certain areas. SCS developed an administrative trainee program to develop administrative professional staff for SCS offices.

Black women were limited in opportunities not only by gender but also by race. Juanita Grasty was one of the few black women, if not the only one in fact, in the national office of SCS prior to the passage of the Civil Rights Act. Due to administration policy, SCS had begun efforts to hire more minorities in the 1960s. This effort was greatly strengthened by the Civil Rights Act of 1964.²⁰ Ermine F. Bates became the first black female hired in North Carolina when she joined the state office staff in Raleigh in 1964. She remained until her retirement in 1984. Martha Marbury joined SCS in 1967 and through her career became the first black personnel officer and the first black branch chief in the personnel division in the national headquarters. Maxine Barron joined SCS as the first GS-14 black female in SCS as a program analyst in 1980. Jackie Sutton moved from the USDA administration to become associate deputy for administration in 1983, and was the first female to occupy a Senior Executive Service job in SCS.

Legal changes in the 1960s and 1970s began to open more opportunities for women. Title VII of the Civil Rights Act of 1964 prohibited sex discrimination in employment in the federal government. Executive orders 11246 (1966) and 11478 (1969) required federal agencies to develop affirmative action plans.²¹ The Equal Employment Act of 1972 (P. L. 92-261) required agencies to write EEO plans with "provision for the establishment of training and education programs designed to provide maximum opportunity for employees to advance so as to perform at their highest potential."²² The Civil Service Reform Act of 1978 further stated that the policy of the

federal government was to provide a federal work force reflecting the nation's diversity.

In 1973, about a year after the passage of the Equal Employment Act, women occupied approximately 11 percent of the permanent full-time positions in the Soil Conservation Service. Eighty-nine percent of the women were in clerical fields, 5.3 percent in administrative and technical fields, and a scant 0.2 percent in professional fields. The average grade was 4.86.²³ At that time women comprised about 20 percent of USDA's work force and 40 percent of the work force of the federal government.

Agencies were required to develop Upward Mobility Programs to give greater opportunities for women to move into professional ranks. SCS's plan had been approved by October 1974.²⁴ Between 1970 and 1975, three years after the passage of the Equal Employment Act, the agency had made some progress in improving employment in the middle grades. Those in grades GS-7 and above increased from 24 to 44. The average grade for women moved from 4.72 to 5.24. There were 123 women in professional and student trainee positions.²⁵

Currently about 24 percent of the permanent full-time and part-time employees of SCS are women. Thus the percentage has more than doubled. Of greater significance is the fact that women have opportunities in a wider variety of jobs. The Upward Mobility Program afforded some women the possibility of using a mixture of formal and on-the-job training to move into professional positions. In November 1975 there were 64 upward mobility positions filled and another 31 advertised. Greater emphasis on hiring allowed women to move into the technical specialties or to become soil conservationists. SCS had nearly 3,000 field offices working closely with soil and water conservation districts. Work in the field offices gave women an opportunity to work with the agency's primary clientele, the rural landowners. This experience was traditionally the route of advancement in SCS to management positions at the state offices and national level. Roberta

Stevenson became the first woman district conservationist on October 12, 1975 at Welton, Arizona.²⁶ As of July 1991 there were 185 female district conservationists out of a total of 2,478 for the agency.²⁷ Four women have been state conservationists and the director of the Pacific Basin area is a female.

Various professionals in staff positions support the field operations of SCS. The changes brought on by the Equal Employment Act gave women who are interested in agriculture and natural resources opportunities to seek these positions. Among some of the professional categories, the number of female employees as of February 1992 were 85 soil scientists, 59 civil engineers, 30 range conservationists, 30 biologists, 21 agricultural engineers, 12 cartographers, 11 agronomists, eight geologists, 4 foresters, two hydrologists, one wildlife biologist, and one botanist.²⁸ Just to take one example of the changes, prior to 1984 there were no female professionals on the staff of the plant materials centers. There are now seven professionals on the staffs nationwide.²⁹

At the national headquarters several women have been national specialists in their disciplines. Only one woman has been a division director, while three women have been associate deputy chiefs.

Listed below are the numbers and job categories for women in SCS. Only job series with over 50 people are included:

<u>Number</u>	<u>Job Classification</u>
595	soil conservationist
517	secretary
262	soil conservation technician
220	clerk
145	student trainee
139	computer specialist
137	clerk typist
85	soil scientist
77	personnel clerk
73	personnel management spec.
67	public affairs specialist
61	budget analyst
59	civil engineer

56 computer clerk
53 contract specialist

Women numbered 3,153 of the 12,825 permanent full-time and permanent part-time employees, or 24 percent, in 1992.³⁰ The continuation and expansion of equal opportunities for women constitute not only the just and legal path to take, but also the one most beneficial to the agency. For a natural resources agency such as SCS to continue with a well-trained, dedicated work force, it will need to make even greater efforts to recruit the best of those available of whatever gender, race, or ethnic group.

References

- American Men of Science*. 1968. 11th edition. R. R. Bowker Company, New York.
- Baker, G. L. 1976. "Women in the U. S. Department of Agriculture." *Agricultural History*. 50: 190-201.
- Biographical Sketches, History Office, Soil Conservation Service, Washington, DC.
- Civil Rights. Files concerning USDA's implementation of equal employment laws may be found in the subject folder "Civil Rights," Record Group 16, Records of the Office of the Secretary of Agriculture, Washington National Records Center, National Archives and Records Administration.
- Employment data bases. 1992. Personnel Division, Soil Conservation Service, Washington, DC.
- Federal Personnel Manual System.
- Geiger, R. L., Jr. 1955. *A Chronological History of the Soil Conservation Service and Related Events*. Soil Conservation Service, Washington, DC.
- Keepers of the Land*. 1972. South Carolina Association of Soil Conservation District Supervisors, Columbia, South Carolina.
- Report of the Chief of the Soil Conservation Service, 1935*. U. S. Department of Agriculture, Washington, DC.
- Report of the Chief of the Soil Conservation Service, 1943*. U. S. Department of Agriculture, Washington, DC.
- Rossiter, M. W. 1982. *Women Scientists In America: Struggle and Strategies to 1940*. Johns Hopkins University Press, Baltimore, Maryland.
- Sampson, R. N. 1984. *For Love of the Land: A History of the National Association of Conservation Districts*. National Association of Conservation Districts, League City, Texas.
- Wilcox, E. V. 1930. *Tama Jim*. Stratford, Boston.
- Wiser, V. 1987. "Women Scientists in USDA." Typescript. History Office. Economic Research Service, U. S. Department of Agriculture, Washington, DC.
- Women in SCS. 1989. File of information supplied by SCS state offices in response to memorandum of John W. Peterson to State Conservation, Subject: History of Women in SCS, January 26, 1989. History Office Soil Conservation Service, Washington, DC.

Endnotes

- 1 James Wilson to W. J. Sewell, December 15, 1897, Secretary's Outgoing Letters, Records of the Office of the Secretary of Agriculture, Record Group 16, National Archives. Quoted in Gladys L. Baker, "Women in the U. S. Department of Agriculture," *Agricultural History* 50 (January 1976): 190.
- 2 Quoted in Earley Vernon Wilcox, *Tama Jim* (Boston, Mass.: Stratford, 1930), p. 37.
- 3 Vivian Wiser, "Women Scientists in USDA," Typescript. History Office, Economic Research Service, USDA, Washington, DC., 1987.
- 4 Margaret W. Rossiter, *Women Scientists In America: Struggle and Strategies to 1940* (Baltimore, Maryland: Johns Hopkins University Press, 1982), pp. 223-235.
- 5 Baker, "Women in the U. S. Department of Agriculture," 190-201.
- 6 Robert L. Geiger, Jr. (Compiler) *A Chronological History of the Soil Conservation Service and Related Events* (Washington, DC: Soil Conservation Service, June 30, 1955), p. 1.
- 7 Information supplied by Fran Hershberger, Rivera Beach, Florida, 1989. Responses to memorandum of John W. Peterson to State Conservationists, Subject: History of Women in SCS, January 26, 1989, File "Women in SCS," History Office, Soil Conservation Service, Washington, DC. The letter requested information from offices in SCS about women significant in the history of the organization. Hereinafter, footnotes in this article will cite the accumulated files of responses rather than individual ones.
- 8 Estella B. Williams to Eileen E. Gough, February 4, 1989, File "Women in SCS," History Office, Soil Conservation Service.
- 9 File "Women in SCS," History Office, SCS.
- 10 *Keepers of the Land* (South Carolina Association of Soil Conservation District Supervisors, 1972), pp. 39-43
- 11 Quoted in R. Neil Sampson, *For Love Of The Land: A History of the National Association of Conservation Districts* (League City, Texas: National Association of Conservation Districts, 1984), p. 51.
- 12 Sampson, *For Love of the Land*, pp. 49-71.
- 13 *Report of the Chief of the Soil Conservation Service, 1935* (Washington, DC: Government Printing Office, 1935), p. 39.
- 14 *American Men of Science*. 11th edition. (New York: R. R. Bowker Company, 1968), p. 1201.
- 15 *Report of the Chief of the Soil Conservation Service, 1943* (Washington, DC: U. S. Department of Agriculture, October 1943), pp. 14-15.
- 16 Information compiled by Fred Gilbert of the SCS state office in Syracuse, New York, March 22, 1989. File "Women in SCS," History Office, SCS, Washington, DC.
- 17 Gordon Steele to Douglas Helms, March 31, 1989, File "Women in SCS," History Office, Washington, DC; telephone conversation with Charlotte Colton, February 14, 1992.
- 18 Telephone conversation with Lee Shields, February 5, 1992.
- 19 Biographical Sketches, History Office, Soil Conservation Service, Washington, DC.
- 20 For a description of the impact on SCS see Douglas Helms, "Eroding the Color Line: The Soil Conservation Service and the Civil Rights Act of 1964," *Agricultural History* 65(2): 35-53.
- 21 "Preliminary Guidance on the Federal Equal Opportunity Recruitment Program,"

enclosed with Joan S. Wallace to Dale E. Hathaway, August 23, 1979, "Civil Rights," Record Group 16, Records of the Office of the Secretary of Agriculture, Washington National Records Center, National Archives and Records Administration.

²² Federal Personnel Manual System, FPM Letter No. 713-27, June 28, 1974, Ibid.

²³ S. B. Pranger to Robert W. Long, "Reports of Progress in Equal Employment Opportunity," May 15, 1973, Joseph R. Wright to Robert W. Long, "Progress in Equal Employment Opportunity, September 5, 1973, Ibid.

²⁴ Joseph R. Wright, Jr. to Robert W. Long, October 18, 1974, "Civil Rights," Ibid.

²⁵ R. M. Davis to Robert W. Long, November 26, 1975, "Civil Rights," Ibid.

²⁶ R. M. Davis to Robert W. Long, November 26, 1975, Ibid.

²⁷ Statistics from employment data bases, Personnel Division, SCS, Washington, DC.

²⁸ Statistics from employment data bases, Personnel Division, SCS, Washington, DC.

²⁹ Information supplied by Curtis Sharp, National Plant Materials Specialist.

³⁰ Statistics from employment data bases, Personnel Division, SCS, Washington, DC.

Small Watersheds and the USDA: Legacy of the Flood Control Act of 1936

Reprinted from Rosen, Howard, and Martin Reuss, eds. *The Flood Control Challenge: Past, Present, and Future*. Proceedings of a National Symposium, New Orleans, Louisiana, September 26, 1986. Chicago: Public Works Historical Society, 1988. pp. 67-88.

by Douglas Helms,
National Historian, Soil Conservation Service

The Flood Control Act of 1936, followed by the Flood Control Act of 1944 and the Watershed Protection and Flood Prevention Act of 1954, made the U.S. Department of Agriculture (USDA) one of the federal participants in flood control work. The act initiated the most thorough examination yet of agriculture's relationship to flooding. The period of study and investigations of watersheds springing from the 1936 act affected the structure of future water resources programs in USDA. The experiences of the earlier period were incorporated in the provisions of the 1954 act, the legislation under which most of USDA's flood control work has been carried out.

While this paper will not concentrate on individual projects and field activities in flood control, a general idea of the programs that resulted from the process begun in 1936 will help in understanding the events of the intervening years. The Agriculture Department's small watershed program, as it has come to be called, is generally limited to upstream tributary watersheds of less than 250,000 acres. Many of the projects have utilized combinations of floodwater-retarding structures, channel modifications, and other engineering works to reduce flooding along streams. The department has generally provided financial assistance for these aspects of flood control projects. USDA also offers assistance, often a technically trained soil conservationist, to help apply conservation practices on farm and ranch lands in the watersheds above the structures.

In the parlance of USDA the former type of assistance is called flood prevention and the latter, watershed protection. In addition to flood prevention, most projects involved additional purposes. Drainage has been

involved in 22 percent of the projects, recreation in 19 percent, municipal and industrial water supply in 12 percent, fish and wildlife habitat enhancement in 7 percent, and irrigation in 7 percent. Since the Flood Control Act of 1944, the department has been involved in 1,387 projects covering more than 87 million acres.

The nature of these projects has been shaped to a certain extent by the results of scientific research and technological developments. To an equal or greater degree they have been influenced by attitudes--attitudes about the interrelationships of land cover, soil erosion, and flooding; attitudes about the most desirable working relationship between federal, state, and local entities; attitudes about who should benefit from and who should pay for flood control projects; and attitudes about small watersheds in comprehensive river basin planning. Such attitudes influenced the flood control legislation for upstream work. But the legislation left leeway for administrative decisions. Thus, changes in attitudes on how the program should be operated have been important and likely will continue to influence the program.

Underlying the decision to have a flood control program in the headwaters, the upstream tributaries, or the little waters was the belief that humans, through their activities, affect the frequency and severity of floods, especially by removing vegetation and inducing soil erosion and rapid runoff. Undoubtedly there are many ancient examples of this belief, but for an early American example the observations of the colonial naturalist John Bartram should suffice. He observed in New England that pasturing the woodland caused little hollows which "wear to ye sand & clay which it

bears away with ye swift current down to brooks & rivers whose banks it overflows."¹

The question of the scientific relationship of forests and flooding entered the public policy arena in the late nineteenth and early twentieth centuries. Those who believed the relationship to be close felt that good forest cover regulated streamflow by enhancing infiltration. Watershed protection for water supply was a primary intent of the 1892 legislation that allowed the president to establish forest reserves from the public lands, reserves which became the core of the national forest system. The Weeks Act of 1911 permitted the purchase of lands in the East to establish national forests. The rationale that satisfied constitutional objections was that forest cover influenced streamflow; therefore the government could purchase watersheds under the power to regulate commerce. Watershed protection also played a part in Senator Francis G. Newlands' plans to legislate for a comprehensive water resources development program--plans that included, in part, forests and reservoirs as an alternative to levees for flood control. The U.S. Army Corps of Engineers particularly protested what they viewed as an overemphasis on forests and flooding. Thus, hydrologic theories became embroiled in the controversy over water development policy, and the debate gradually moved from the professional journals to popular magazines which could influence public opinion.²

The generation of young men then beginning their public service, who would head government programs during the New Deal, seemed more swayed by the land-cover advocates. President Franklin D. Roosevelt looked upon forests as beneficial to flood control. The Civilian Conservation Corps (CCC), a Roosevelt creation, would work on "forestry, the prosecution of soil erosion, flood control and similar projects." Concerned about public criticism of CCC work on private land, he insisted that such work be directed to solving flood control problems over broad areas rather than benefiting an individual parcel of land. Such an attitude revealed his faith in the value of forests in reducing floods.³

The Civilian Conservation Corps helped another new conservation agency, the Soil Erosion Service, later the Soil Conservation Service (SCS), begin its work. The CCC camps, as well as the Works Progress Administration labor, allowed Hugh Hammond Bennett to test his theories about soil conservation. Bennett, a career soil scientist in USDA, concerned himself mainly with the impact of soil erosion on loss of productive capacity, but he was not unmindful of the question of the relationship of soil erosion to flooding. Where soil erosion was prevalent, the floods covered fertile bottomlands with stones and infertile sand. Erosional debris reduced the capacity of stream channels and reservoirs. Particularly destructive floods could remove the fertile alluvium, leaving only stones, a condition which he said required levees or dikes.⁴ But he also believed that there could never be "any far-reaching permanent flood control if erosion is not put under control over the watersheds feeding the streams of the nation." In addition to the troublesome results of sedimentation, soil erosion "speeded up runoff of surface water from bared slopes to accentuate flood peaks and to augment the cutting power of stream flow." The soil profiles that Bennett so loved to dig showed a difference in the nature of the alluvium deposited since European settlement. The variations reflected, Bennett believed, a change in the velocity of floodwaters.⁵

Bennett's chief of research, Walter Lowdermilk at the new Soil Erosion Service, had conducted some of the seminal studies on the relationship of forest influences on runoff. His travels in China brought him to the conclusion that the watersheds must be treated in the interest of flood control.⁶ Naturally Bennett and Lowdermilk were interested in the effect of their soil conservation program on runoff and sedimentation. The soil conservation program for farmlands involved a myriad of interrelated and mutually supporting farming practices and mechanical and engineering measures. Among the plans for America's farmlands could be found terraces, grassed waterways, contour plowing, stripcropping, longer crop

rotations, and improved pastures and woodlands with controlled grazing to maintain a healthy ground cover. Soil conservationists came to call this package of measures land treatment. In addition to maintaining productivity and farm income, soil conservationists believed that land treatment on a watershed basis helped to reduce the height of floods in the small tributaries. As they began setting up watershed-based demonstrations, they also began to make provisions to measure the influence of land treatment on streamflow.⁷

Another influential New Deal figure who emphasized land treatment on farmlands as a part of river basin development was Morris Cooke. He had more influence with President Franklin D. Roosevelt than other advocates of the same idea. As administrator of the Rural Electrification Administration (REA), Cooke promoted the publication of *Little Waters: A Study of Headwater Streams and Other Waters, Their Use and Relations to the Land*, which was issued by REA, SCS, and the Resettlement Administration. In his presidential message transmitting the report to Congress, Roosevelt held that disastrous floods "originate in a small way in a multitude of farms, ranches, and pastures." National plans should not neglect major rivers in favor of the little waters, but the plans should "envisage the problem as it is presented in every farm, every pasture, every wood lot, every acre of public domain."⁸ The Water Resources Committee of the National Resources Committee tried to counter what they regarded as a very unscientific view with their own publication *Low Dams: A Manual of Design for Small Water Projects* (1939). The slim volume received its due in hydrologic circles, but was no competition for Cooke's adept promotion of *Little Waters*.⁹

The question of land treatment and its value in flood control received a review from all points of view at the Upstream Engineering Conference in 1936. Abel Wolman spoke for the friends of soil conservation who believed that the concept was being called upon to do too much. He said, "The case for soil conservation and

reforestation is so good of itself that one must naturally wonder why it should be ruined on the rocks of overstatement, overpromise, or undervaluation of scientific principles."¹⁰

The Upstream Conference, another of Cooke's ideas, was held three months after the passage of the Flood Control Act of 1936 to discuss implementation of one of the act's significant provisions.¹¹ The legislative journey of the Flood Control Act of 1936 began in response to the spring floods, but emerged as a national policy on flood control. To expand the national policy providing for "investigations and improvements of rivers and other waterways" to the entire hydrologic unit, an amendment on the floor of the Senate added the phrase "including watersheds thereof." The amendment also assigned authority to the secretary of agriculture for "investigations of watersheds and measures for run-off and water flow retardation and soil-erosion prevention on watersheds."¹² In submitting these amendments to the White House, Senator Carl Hayden of Arizona had characterized them as "showing how I think the flood control bill should be amended to conform with the president's message on *Little Waters*."¹³ With the support of the White House, the amendments were included in the final bill.

In addition to Joseph Arnold's excellent analysis (in *The Flood Control Challenge: Past, Present, and Future*, edited by Howard Rosen and Martin Reuss) of the complicated sequence of events leading to the passage of the act, one other factor should be mentioned. Earlier Hayden and other Arizona politicians had sought the assistance of SCS in controlling floods on the Gila River. He went specifically to Walter Lowdermilk, assistant chief of the Soil Conservation Service, whom he had known in Arizona. The plans for flood control, to which the downstream irrigators objected, included twelve floodwater detention dams along with land treatment on the upper Gila. Hayden thought the scheme should be applied to all upstream areas. He and Lowdermilk worked on national legislation and Hayden stood ready

to promote the upstream program in 1936 when the occasion arose.¹⁴

After Roosevelt signed the bill, Secretary of Agriculture Henry A. Wallace decided to neither assign responsibility to a single bureau in the department nor establish a large flood control office. The various bureaus would do the technical works while a small group in the secretary's office, the Office of the Land Use Coordinator, under Milton Eisenhower, would coordinate the work. The chiefs of the Soil Conservation Service, Forest Service, and the Bureau of Agricultural Economics formed an advisory committee.¹⁵ The act left much to administrative decision, but it was generally understood that the Department of Agriculture would make a survey of flood and sediment damages, devise a remedial plan, and submit the plan to the president and then to Congress.

But the surveying and approval did not proceed quickly. Not until May 1940 did Agriculture Department officials believe they would be ready for the action part of the program. Field survey work had been completed on eleven watersheds, and these reports were undergoing technical review in the department. After three or four surveys had been coordinated with the plans of the Corps of Engineers, it was anticipated that the reports would be submitted to the president for allocation of the \$4 million already appropriated.¹⁶ But it would be more than a year, October 1941, before USDA submitted a report on the Los Angeles River to Congress. After World War II interrupted the work, USDA reached an agreement with the Bureau of the Budget to concentrate on surveys nearest to completion and to suspend flood control work on July 30, 1943.¹⁷

By September 1944 the department had completed 154 preliminary surveys covering nearly 1.25 million square miles. Thirty surveys revealed insufficient benefits in flood control and sediment reduction to warrant detailed surveys. Of the 124 calling for detailed surveys, 18 had been completed and submitted to Congress for authorization. USDA recommended eleven of the

watersheds be funded under the flood control acts. Of the remaining seven that did not have sufficient flood control benefits, USDA suggested that six should be funded under other authorities because the suggested program would benefit the watershed.¹⁸

Certainly Congress and the Department of Agriculture in 1936 envisioned some work in the field, not just completion of reports, after more than five years. In the history of flood control work in USDA, the delay is important for our consideration. One must wonder whether the history of flood control activities would have been different had the department managed to get surveys approved and to undertake field operations in a number of projects before the onset of the war.

The organizational structure of the flood control survey work probably was a major reason for the delay. The idea of coordination had not worked. Arthur Ringland, a career Forest Service employee who had studied headwaters control in Europe, served as chairman of the Flood Control Coordinating Committee of the Office of the Land Use Coordinator. After several years of dealing with the problems, without much authority, he stated that "the flood control program is the victim of institutionalism at its worst." To correct the "confusion and diffusion of responsibility," he said there should be a department-level official with administrative authority. The Forest Service and Soil Conservation Service should have "straight line undivided responsibility and authority for all flood control project work in the field of whatever character."¹⁹

The ill-advised organizational decisions accentuated the difficulties that naturally came with a new function. The 1936 act stated that benefits should exceed costs. Some work had been done on evaluating on-farm conservation measures, but the department had a new task in evaluating the downstream or off-site benefits.²⁰

There was another need for information and analysis--the need for hydrologic

information for the small watersheds. In late May 1936, less than a month before the passage of the flood control act, the National Resources Committee published "Deficiencies in Basic Hydrologic Data," which called attention to the need for information on rainfall and runoff to support government programs. Ringland lamented, then and later, that USDA delayed too long in enlisting the Weather Bureau's cooperation in acquiring information on the intensity and duration of rainfall in small watersheds. When called upon to comment on the flood survey reports, the Weather Bureau repeatedly emphasized that more data were needed in order to evaluate the flood potentials.²¹

Looming over and complicating the technical and organizational details were the various institutional and political opinions and rivalries on what constituted an upstream program. The Bureau of the Budget, which advised the president on approval of flood control projects, believed that flood control authorities should not be used to fund conservation measures when the Department of Agriculture already had authority under the Soil Conservation Act of 1935. The Bureau regarded such work as an intensification of the regular soil conservation program. The Bureau of the Budget prevailed, at least temporarily, in that opinion when the Flood Control Act of August 18, 1941, restricted expenditures by USDA to "works of improvement which the Department is not otherwise authorized to undertake."²²

Other differing opinions were being fought out in the flood control survey approval process. Not all of the participants were from the federal agencies. States, particularly those with water resources agencies, looked to the new legislation as a means to help finance their flood control plans. The Oklahoma Water Resources Board under the energetic leadership of Don McBride had already devised a plan for controlling floods on the Washita River. Forsaking any dams on the main stem of the river, the plan called for twenty-five reservoirs on the tributaries. McBride believed that such a system would best

protect and retain the valuable bottom land.²³ Since flood control surveys by a federal agency were a prerequisite to financial assistance, Oklahoma would have them--one each by the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the Department of Agriculture.²⁴ As the surveys proceeded, McBride was already prepared to speak for the Washita folks in saying that "We are all agreed that we need the dams on the tributaries of the river to protect our fertile farm lands and our towns."²⁵ McBride believed that he had succeeded in getting the new water resources agency, the Department of Agriculture, to accept the plan. But on a trip to Washington in 1940 he found that the "reservoir section had been taken out of the Washita Report."²⁶ While some in USDA and SCS would have accepted the role of assisting Oklahoma, the Office of the Land Use Coordinator, especially Arthur Ringland, viewed reservoir building as outside the purview of the department's charge under the 1936 act.²⁷ Such starts and reversals did delay the approval of surveys as various attitudes about what an upstream program should be were debated.

In the Flood Control Act of 1944, Congress authorized eleven projects that USDA had submitted to Congress between 1941 and 1944. Work would not begin until after the war was over. These projects, most of which are still active, would be the only department projects authorized under the procedures of the Flood Control Act of 1936. But experiences from the project planning and implementation would be the model for future USDA flood control activities.

While there was understandable disappointment over the progress of completing and approving reports, the period of study had profound influence on the future of flood control work. The studies had added a new understanding to the relationship of land treatment to floods. One of USDA's hydrologists on the flood control work, Howard Cook, believed that the effects of land treatment on flooding involved some of the most difficult problems in hydrology and that the surveys "did a great deal to dry up

the source of this controversy by making possible hydrologic and economic studies of unprecedented scope and intensity."²⁸ Field and plot studies often showed dramatic increases in infiltration on pasture and woodland compared to bared land. But the field- and plot-sized results could not be extrapolated to an entire watershed. On thin soils, floodwater came from subsurface, as well as surface, runoff. Thus, land treatment measures to enhance infiltration had limitations in preventing floods. It was true that watershed characteristics had an influence on flooding, but vegetation and land treatment were only part of the characteristics. The combined hydrologic and economic studies found that watershed treatment reduced flood and sediment damages by as much as 40 percent in some cases, but as little as 5 percent in others. Generally the benefits of conservation practices to increased income exceeded flood and sediment damage reduction benefits of the program. The flood control benefits, according to the surveys, were not what many might have expected when the 1936 act was passed.²⁹

However, another revelation of the surveys augured well for an upstream flood control program. The analysis showed that the crop damages in the numerous tributaries from frequent flooding far exceeded the agricultural damages in the wide alluvial plains of the rivers. The implication was that while the control of floods in upstream tributaries had limited influence on floods of major rivers, a small watershed program of flood prevention had considerable economic value.³⁰

After the war the Department of Agriculture began receiving appropriations to resume flood surveys and to begin work on the eleven authorized projects. Also, the Soil Conservation Service began writing sub-watershed work plans, plans of actual work, for the approved watersheds.³¹ In these sub-watershed plans, especially those in the Washita, Trinity, and Middle Colorado in Oklahoma and Texas, SCS planned to install what were categorized as "small upstream floodwater retarding structures for temporary storage to regulate

storm runoff and reduce peak discharges."³² By mid-1949 they had completed some twenty-five of these structures. Completed sub-watershed plans included another 410 structures which could store 227,385 acre-feet of water.³³ When this matter came to the attention of the solicitor in the Department of Agriculture, the ruling was that SCS did not have authority to build such structures.³⁴

This development was related to the manner in which the reports were approved. The approved congressional documents outlined a general plan of remedial action, but were not written in legal language. Thus, the reports were subjected to a great deal of interpretation as to what activities had actually been approved for federal expenditures. Within the Agriculture Department, the solicitor held that the congressional documents did not approve floodwater-retarding structures. To correct this problem, USDA and SCS went before the agriculture subcommittee of the House Committee on Appropriations and requested an amendment. In their prepared statement, the Soil Conservation Service had to, if not deny, at least deemphasize the value of land treatment for controlling floods. SCS told the committee, "Our experience to date indicates that the works of improvement originally authorized to be installed by this department in the eleven approved watersheds are inadequate to control the movement of water from the watershed lands until it reaches the points where the Corps of Engineers take over."³⁵ The subsequent amendment to the appropriations bill allowed funds to be spent on "gully control, floodwater detention, and floodway structures."³⁶ In this manner, without debate in Congress, and without comment by the U.S. Army Corps of Engineers or the Bureau of the Budget, SCS secured authority for building floodwater-retarding structures.

Undoubtedly, the clarification of this issue by including floodwater-retarding structures in the upstream program was a seminal point in the history of the Agriculture Department's water resources program. Without the more structurally oriented program, the Soil Conservation

Service would have had great difficulty in differentiating land treatment under the flood control act from the agency's other field work under the Soil Conservation Act of 1935. Conserving topsoil retained its primary place in the conservation mission, but there had been a trend, almost from the beginning, to include upstream structures in the program. The Soil Conservation Service's work with CCC camps had involved some small reservoir construction. As Lowdermilk's plans for the upper Gila indicated, some elements in the Conservation Service were not averse to including floodwater-retarding structures. Even before the passage of the 1936 act, the research division of SCS had expanded its runoff studies from plots to natural watersheds.

By the late 1930s there was sufficient sentiment in SCS in favor of combining the structures with land treatment to include them in the reports to Congress. But at the departmental level, in the Office of the Land Use Coordinator, such plans were blocked, mainly due to the objections of its head, Milton Eisenhower.³⁷ That the Department of Agriculture did not include floodwater-retarding structures in the flood control surveys was more a matter of choice than a lack of authority under the 1936 act. The bill simply made USDA responsible for "measures for run-off and water flow retardation and soil-erosion prevention on watersheds." Stymied at the departmental level, SCS tried for more direct authority. An agency-initiated Senate bill (S. 1812) in 1944 would have authorized Agriculture Department flood control plans to include "structures for the catchment and detention of flood waters or sediment which shall not exceed a cost of \$100,000 for any single structure." The bill would have circumvented any coordinating groups by providing that the secretary would "administer the provision of this title through the federal agency known as the Soil Conservation Service."³⁸ The bill did not pass, but after the war there was no need for it. SCS no longer had to report through the Office of the Land Use Coordinator. Under Clinton Anderson and Charles Brannan, the attitude of the

secretary's office had changed to one that was more receptive to flood control in rural areas as part of the Agriculture Department's mission.³⁹

Now that the Soil Conservation Service had legislative authority to include flood control structures in the eleven authorized projects, the proponents of this type of USDA/SCS program could look forward to a favorable reception for their inclusion in other projects to be authorized by Congress under the provisions of the 1936 act. This, however, was not to be the future of the flood control program in the Department of Agriculture. After the war there continued to be difficulties in completing surveys and forwarding them to Congress. USDA seemed about ready to submit several plans to Congress in 1949, when the secretary's office issued an amendment to the procedures calling for revisions in the economic analysis.⁴⁰

There were other factors leading to delay and an impasse. Under Secretary Charles Brannan, the Agriculture Department was emphasizing comprehensive river basin planning with the flood control surveys as a part of the process. The department made surveys in the Missouri and Columbia basins a priority. Another disagreement within the department involved the flood control structures, which SCS favored, while the Bureau of Agricultural Economics and the secretary's office wanted the surveys to include money for land treatment as part of a comprehensive watershed project.⁴¹ The Bureau of the Budget continued to object to the land treatment aspects of the flood control projects that could be carried out under USDA's regular conservation program. In this attitude they were, perhaps unwittingly, the allies of some in SCS who had wanted a greater emphasis on structures to control floods.⁴²

Finally, there were problems with Congress. The Flood Control Committee, whose duties passed to the Public Works Committee under the Legislative Reorganization Act of 1946, had authorized the eleven survey reports. Originally, funds for the surveys had gone through the War Department to