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To advance the science and art of good land use

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Cover: A natural resource manager leads students on a field trip in the loess hills area of northwestern Missouri (see page 405). Missouri Department of Conservation photo by Rodney J. Green.

The Soil Conservation Society of America is dedicated to promoting the science and art of good land use, with emphasis on conservation of soil, water, air, and related natural resources, including all forms of beneficial plant and animal life. To this end, SCSA seeks through the *Journal of Soil and Water Conservation* and other programs to educate people so that mankind can use and enjoy natural resources forever.

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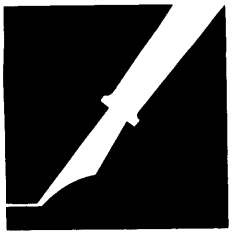

PEN POINTS

Lessons from recent history

I am surprised that the article, "Managing Salinity Lessons from the Past" in the July-August 1985 issue of the *JSWC* [p. 329] gives relatively little attention to drainage. Only once are drainage systems credited with the capability to control the accumulation of salts that has decimated earlier civilizations.

Modern drainage practice and its components of appropriately designed surface and subsurface drains make possible the control of salts. That is, drainage systems reduce the amount of salts which accumulate in the root zone and facilitate the removal by leaching of the salts which do accumulate. Such practices offer every promise of facilitating a permanent agriculture. Other water management practices which provide for uniform and measured applications of irrigation water permit the use of lower cost drainage systems than would otherwise be possible. Hopefully, lessons from history may also include lessons from recent history.

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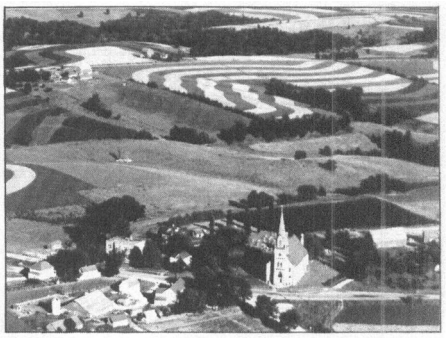
Setting the record straight!

"The Civilian Conservation Corps..." [*JSWC*, March-April 1985, p. 184] by Douglas Helms focuses heavily on the role of CCC camps in the early years of the U.S. conservation movement initiated by H. H. Bennett and the Soil Erosion Service. To one who was there, so to speak, the article is typical of so many that only rely on files of documents that not always carry the full historical story. For example, Helms writes, "Incoming president Franklin D. Roosevelt proposed on March 21, 1933, that Congress create a 'civilian conservation corps'...." The proposal did come from Roosevelt's Administration. It is interesting, however, that on that same date, March 21, 1933, Senate (bill) 598 was introduced.

Helms further points out that "congressional deliberations resulted in several alterations to Roosevelt's proposal" on what types of projects CCC labor could pursue. Facts are that, as introduced, S-598, in the view of some Wisconsin people, did not include soil conservation via erosion control. University of Wisconsin-Madison staff members, through their governor, got in touch immediately with their Senator Robert M. LaFollette, Jr., in Washington, who brought about alterations in a subsequent bill, which was signed into law by President Roosevelt on March 31, 1933. Subsequent creation of Civilian Conservation Corps was on April 5, 1933, and, by this act under which it operated, the CCC could carry on public works, including "the prevention of forest fires, floods, and soil erosion, plant pests and diseases." These behind-the-scene actions are probably not recorded in the archives.

It is true, as Helms indicates, that work on private land did cause concern for a short period. But not for long. Wisconsin's erosion control camps had enrollees working on private land by the summer of 1933, under the technical planning and guidance of University of Wisconsin-Madison staff. This was long before May 1934 when Helms indicates Fred Morrell visited the first SES watershed erosion control demonstration project at Coon Valley, Wisconsin.

Another example of where archival material fails to capture crucial events concerns creation of the Soil Erosion Service [see *JSWC*, January-February 1984, "Out of the Dust Bowl," p. 6]. It was far from a simple, self-motivated move, as Helms documents it, that Secretary of Labor (should be Interior) Harold Ickes allotted $5 million for soil conservation work on August 25, 1933, and on September 19, 1933, Bennett started heading the newly formed Soil Erosion Service. Facts are that this was previously settled when Hopkins, Shepard, and Bennett met with President Roosevelt earlier in the summer. Well before September 19, Bennett had already started firming his plans, beyond those earlier shown to President Roosevelt, to establish watershed demonstration projects for prevention of soil erosion and to put unemployed people to work. And before the $5 million was allocated, two other emergency agency actions preceded that of Ickes, which was only perfunctory, to carry out what was planned in early summer. Before the end of 1933 and early into 1934, SES employed hundreds of "unemployed" people before the agency had any CCC camps. Use of laborers in prevention of erosion was well demonstrated in the SES program before use of CCC enrollees. Yes, a subheading in the Helms article was fact and demonstrated well that "Coon Valley Leads the Way."



Monroe County, Wisconsin

Undoubtedly, the Helms' article serves as a deserving eulogy to CCC camps. Even today, CCC camps are remembered as having been of real importance in bringing about public recognition of the ravages of soil erosion. The article strongly tends to convey, though not literally, the message that CCC camps had a conservation program in themselves. This, of course, was not true. The technical staff for each camp was SES-directed. Those technical specialists did the planning for and supervision of erosion control installations and practices. Enrollees from the camp only worked on those labor-requiring measures planned by the technical staff, and agreed to by the farmer or rancher operating the land, under cooperative agreements with SES (later SCS). Furthermore, it should be emphasized, as the article did not do, that the inputs by the landowner and operator were very often as much or more than what came from SES-SCS, including CCC camp workers. This, of course, does not speak to the "golden stairs" for gully control in Georgia and several other instances around the country where engineers got carried away in planning needed erosion control measures!

It could be debated endlessly, without firm conclusion, on how the conservation movement might have fared if no CCC camp labor had been available to SES-SCS. The main purpose for CCC was to take young men from streets of

idleness and give them opportunity for worthwhile use of their time. The erosion and flood control programs of SES-SCS were not built around CCC camp labor, but that labor was interwoven into the technical, professional program of SES-SCS. The camp labor crews were so noticeable locally that it could appear the program was built around them. There was no intended permanency for location of a CCC camp; usualy it was 2 to 3 years, sometimes 4 years, for one location, then the camp moved to another. Often, such a move was a welcome relief because all feasible labor-requiring measures had been served at the initial location. Also, for various and good reasons, all farmers and ranchers did not welcome the use of CCC camp workers on their land (this fact is rarely mentioned).

Especially in the Midwest regarding erosion control CCC camps, those many aspects of a complete farm conservation plan that a farmer badly wanted (stripcropping, lime, seed, woodland plantings, terraces, pasture improvements, small gully controls, etc.) caused him to accept other parts of the plan entailing large labor inputs (major dams, fencing to exclude grazing of woodlands, streambank erosion controls, constructed terrace outlets, etc.). It was unusual if a farmer asked first for help on any large erosion control installation requiring sizeable amounts of labor. Local merchants wanted a CCC camp located in their area; this was understandable for trade reasons. Agricultural leaders wanted a camp because it would bring in the SES-SCS technical staff to plan soil erosion control. Congressmen backed the wants of their local (and vocal) constituents and competed among themselves for a new or relocated CCC camp. From the standpoint of labor per se, a CCC camp did not, in itself, only indirectly, generate a demand. The one exception occurred after the beginning of CCC camps when some preference was given to local, unemployed young men for filling a camp's enrollment quota. This generated a camp demand. There were, however, other types of public works that created local demand for CCC camp labor specifically.

It was my good fortune in SES-SCS to witness the first use of CCC camps. And later on, through 1943-1944, to keep a strict accounting of the locations and to follow accomplishments furthered by CCC camps of SCS throughout the country. There can be no disputing the favorable contributions made by CCC camps. To overplay their importance, however, does them a discredit, such as to say that their "real contribution, however lay in proving the feasibility of conservation." "Feasibility of conservation" was proven well in the SES watershed demonstration projects, even by the original 28 such projects in 22 different states, if not alone by the Coon Valley project. And CCC camp labor was not involved in the early part of many of these projects.

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The inevitability of soil erosion

Two research reports which appeared in the *JSWC*, "Productivity of Soils: Assessing Long-Term Changes Due to Erosion" [January-February 1983] and "Effect of Erosion on Soil Productivity: An International Comparison" [July-August 1985], disturbed me.

What was disturbing was not the quality of the research work, but the suggeston that this method be applied to land use planning and establishing policy. The productivity index approach in both articles assumed essentially unlimited or at least continued availability of energy and nutrient resources at current levels and "optimum" or at least constant management practices. The practical necessity of such assumptions to limit the time and resources needed to complete each research effort is apparent, but clearly such assumptions are not valid in the "real world." One may infer from both the articles that a major research effort would be required to accumulate sufficient data to first verify the validity of the method, and then, a veritable army of soil scientists to develop sufficient site data to allow practical application. One must consider that the human field experience of such an army, with or without the PI approach, would bring us much closer to resolving the economically feasible land use vs. conservation dilemma.

Further, "only the intrinsic or irreplaceable aspects of soil productivity... are modelled" [1985 article]. The soil biological aspects are ignored. Presumed replaceable? On what time scale? At what economic cost? Or ignored just due to lack of adequate numerical description of the biological aspects? Surely we cannot conserve productive soils by regarding these soils as immense sand dunes or silt beds which we have but to pour fertilizer onto and plow fuel resources into to obtain a desired yield.

The 1983 article suggests soil loss tolerances be adjusted for "planning horizons" and acceptable "percentage reduction in productivity." Both of which I presume are somehow determined on the basis of contemporary socio-politico-economic constraints. How different from the SCS definition, "The maximum rate of annual soil erosion that will permit a high level of crop productivity to be sustained economically and indefinitely"! Or the statement of SCSA/*JSWC* objectives which appears in each issue of the *JSWC*, "...good land use...conservation...so that mankind can use and enjoy these natural resources forever"! The suggestion in the 1983 article implies an assumed inevitability of erosion and loss in productivity for all erodible agricultural soils. I suggest that if conservation efforts and policy are based on methods which assume that soil erosion is a necessary consequence of economically feasible agricultural land use then indeed we shall find it to be so. Further, I suggest that achievement of SCSA's goal of "conservation...so that mankind can use...these natural resources forever" will only become achievable when we succeed in freeing ourselves and our efforts of the kind of pragmatic, fatalistic fixation on erosion and its assumed inevitability on agricultural land that is so subtly apparent in the articles mentioned and much of the rest of the soil conservation literature.

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Biological preserves on farms?

American agriculture today is often characterized as exploitation for immediate gain and criticized for its shortsightedness with respect to long-term

consequences. In fact, no one knows the extent of damage to the biosystem (soil, water, microorganisms) from the use of chemicals. Cultivation practices have effectively eliminated habitats for countless species of plants, birds, insects, and other organisms. Human insensitivity to life is putting all life on earth at risk, including human life. The time is long overdue for action to correct the situation.

A beginning and important step in the right direction could be legislative enactments which have immediate and long-term benefits for farmers and the public. An example would be an enactment securing the biological base of interdependent biosystems. Certain constraints would be put on agricultural practices. These constraints would result in the permanent use of fragile lands as conservancy areas, such as woodland, prairie, and wetlands.

Creation of nature preserves by government is perhaps as old as recorded history. In biblical times and in biblical lands, conservancy parks or "paradizes" were set aside specifically to preserve environments for plants and animals. These preserves were established also from consciousness of the need to preserve the best fruit for seed.

Worthy of legislative consideration is provision in the 1985 farm bill for establishment of scattered, natural preserves. These could come into existence via land tithing. Ten percent of every U.S. farm and ranch could be taken out of production and grazing and put into permanent reserve. Wetlands, prairie, and woodland should all be included to provide diverse habitats for regional fauna and flora. Fostering of indigenous populations could be done under the expertise of landscape scientists, zoologists, and botanists. A wealth of science expertise exists in land grant universities. Nature preserves would provide undisturbed habitats for basic research, so important to long-term interests of human societies. Fragile land logically should be the first to go into permanent reserve. Implementation of the program could be through the Soil Conservation Service, for example.

Immediate benefit could come to farmers surrendering land to permanent, public use in the form of cash payments. This would provide badly needed cash for farmers in the short-term and benefit the public in the long-term. Nor should the moral and aesthetic value from such enactment be overlooked. Greater sensitivity to life should be a natural consequence.

The ubiquitous distribution of nature preserves across the United States would provide habitats for narrowly distributed plants, animals, etc. Game, fish, fowl, fruits, nuts, wood, etc., could be harvested seasonally. Establishment of these lands must be in perpetuity to protect the undisturbed habitats from the cutting edge of the plow and chainsaw.

As intelligent creatures, humans above all must live with the realization that the success of all life depends upon biological variation. In biological variation is the future of humankind. Societies must seriously invest in the future by securing biological variation now. That this is in everyone's best interest should be obvious.

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"Pen Points" is a forum for comment on published material or land and water management issues in general. Readers are invited to express their views in a letter to the editor. Letters are judged on clarity of expression and pertinence. They should be as brief as possible. Long letters may be shortened.—Editor.

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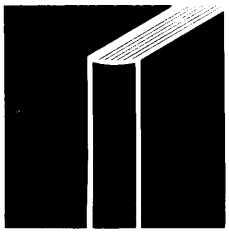
11. I certify that the statements made by me above are correct and complete.—*Walter N. Peechatka, Executive Vice-president, Soil Conservation Society of America.*



BOOKS, ETC.

Eroding Soils: The Off-Farm Impacts. By Edwin H. Clark II, Jennifer A. Haverkamp, and William Chapman. 252 pp., illus., refs., index, 1985. The Conservation Foundation, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036.

In *Eroding Soils...*, Clark, Haverkamp, and Chapman offer the first comprehensive attempt to quantify the off-farm economic impacts—estimated at $6 billion a year (1980 dollars)—due to soil erosion. The study focuses specifically on nonpoint-source pollution caused by sediment and related contaminants released by soil erosion to surface waters. Because of limitations in the available data base, the authors do not attempt to distinguish between agricultural and nonagricultural sources of erosion and erosion-related impacts. But the cost estimates are ultimately apportioned between cropland and other sources.

Leading up the estimate of economic impacts is a summary, in chapter 2, of the chemical, physical, hydrological, and ecological principles that help explain the processes by which eroded soil causes off-farm impacts. Chapters 3 and 4 summarize the literature on the extent and severity of off-farm impacts.

Chapter 5 contains estimates of the economic costs of these impacts. Chapter 6 follows with a summary of the available information on the costs and effectiveness of control techniques, while chapter 7 discusses some of the public policy issues related to programs for controlling off-farm impacts.

From the outset, the authors recognize that the state-of-the-art knowledge about both the impacts and their economic consequences is rudementary at best. In fact, they suggest that "given all these problems, prudence might suggest abandoning any effort to estimate monetary costs." Fortunately, however, they make the plunge and thus provide at least a general indication of how serious the economic damages may be relative to other national issues.

The estimates of economic damages apply at the broad level across the United States as a whole. No attempt was made to estimate costs on a regional basis. The estimates were derived mainly from the literature. In some cases additional analyses were performed on data from other authors to derive cost estimates.

The scope of impacts considered is extensive, covering both in-stream and off-stream impacts. The section on in-stream impacts contains cost estimates for damages to recreation, water storage in lakes and reservoirs, and navigation. No estimates are given for biological/ecological impacts, commercial fisheries, riparian property values, and "preservation values" due to major limitations in the available data.

Off-stream impact estimates cover flood damages (sediment-related), drainage ditches, irrigation canals, pumping costs, water treatment, municipal and industrial use, and irrigation.

The discussion of principles in chapter 2 and the literature review in chapters 3 and 4 will be of interest to anyone seeking an overview of the problems and their causes. In-depth information on these topics is available from the lengthy list of literature citations included at the end of each chapter.

Chapter 6 discusses in general terms the range of land management practices available for nonpoint pollution control and some principles for choosng among these. In reviewing the scope of existing and potential policy tools, the authors summarize the pros and cons of each and again address the difficult issue of choosing from among these policy options.

The book is highly readible, remarkably free of technical jargon, and should be read by anyone interested in the issue of nonpoint-source pollution and its control. —*D. R. CRESSMAN, Ecologistics, Ltd., Kitchener, Ontario.*

Water

Water Resource Data and Preliminary Trend Analysis for the Highland Silver Lake Monitoring and Evaluation Project, Madison County, Illinois, Phase III. By Thomas E. Davenport and Martin H. Kelly. 216 pp., refs., apps., 1984. Division of Water Pollution Control, Illinois Environmental Protection Agency, Springfield, 62706.

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Wetlands and Water Quality: A Citizen's Handbook on How to Review and Comment on Section 404 Permits. By Gerald A. Paulson. 47 pp., illus., refs., apps., 1985. Lake Michigan Federation, Chicago, Ill. 60603.

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