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January-February 1985
Volume 40, Number 1

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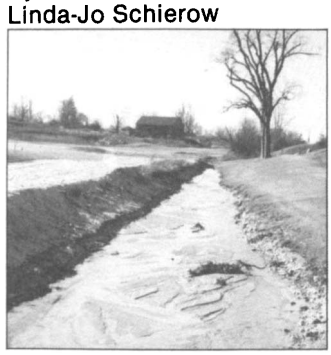
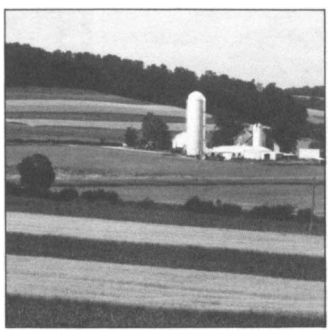




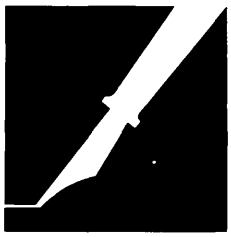
Journal of Soil & Water Conservation
To advance the science and art of good land use

Cover: As many as seven concentrations of water colorants are visible in this spectacular photograph of the point where Lake Huron empties into the St. Clair River between Port Huron, Michigan, on the left and Sarina, Ontario, on the right. The brown tones toward the Michigan side of the river are the result of silty clay material eroded from the Lake Huron shoreline. The dark middle of the channel is the relatively clear water from the open lake. The white tones along the Ontario shoreline are created by suspended rock material from a concrete operation. The St. Clair River connects the upper Great Lakes and Lake Erie. Photo by John Lyon, Ohio State University.

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 these natural resources forever.

The *JSWC* (ISSN 0022-4561) is published six times a year in January, March, May, July, September, and November.

Subscription is by membership in SCSA or by subscription. Membership dues: $32.00 a year ($37.00 outside the U.S. and Canada). Institutional and individual subscriptions: $22.00 a year ($25.00 outside the U.S. and Canada). Address mail to SCSA, 7515 N.E. Ankeny Rd., Ankeny, IA 50021. Phone: (515) 289-2331. Second class postage paid at Ankeny and Des Moines, Iowa. Postmaster, send form 3579 to *JSWC*, 7515 N.E. Ankeny Rd., Ankeny, IA 50021-9764.



PEN POINTS

Allan Savory responds

Our worldwide desertification problem and the plight of American ranchers is just too serious for me to let a letter such as that of Dr. Bransby [*JSWC*, November-December 1984, pp. 346-347] go unanswered.

At all times we are seeking genuine criticism of holistic resource management (HRM) which promises to be a solution to much of the continuing degradation of our environment. We are so encouraging informed criticism that I have offered a number of times in public to publish any such criticism in our own regular newsletter and to send it to any journals that will publish it. In short, I do not fear informed criticism but go out of my way to seek it, and I have done so for many years.

I was sad that, as a reputable journal, you published Dr. Bransby's letter with so much criticism of myself and my alledged lack of training and yet not one word of criticism about the HRM process. The closest he came to criticizing HRM was his reference to "hoof action," but he showed no indication of understanding how, when, and if this is applied in the HRM process.

According to Dr. Bransby, all his work and experience is with grazing systems and rotations. What that has to do with HRM he does not clarify.

Dr. Bransby is apparently critical of me for constantly improving HRM, which he believes would have remained unchanged for these last 25 years if I had been "properly trained" as he was in range science. He alledges the changes are due to failure. The Wright Brothers taught us that machines heavier than air could fly. Are our planes of today like those of the Wright Brothers? Have they improved because of failure? Obviously they have improved with many years of work, many mistakes, a constant open mind, and many successes, just as HRM has advanced.

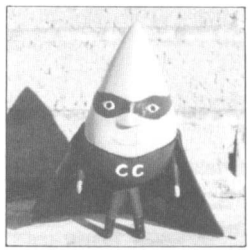
I should point out that despite Dr. Bransby's claim of an intense interest in HRM over many years he has never made any approach to me to attend a talk, meet, come to a school, nor has he ever written to ask any questions.

Finally, Dr. Bransby's effort to belittle Dr. Brian Sindelar's position on the board of this nonprofit center was uncalled for. We formed this center to bring people together to develop this promising technology further. We are pleased that Dr. Sindelar and many other range scientists have joined us and are serving on various of our boards, as they have much to contribute once they have understood the new concepts. Two range scientists in fact are now working through the center as accredited consultants and, in the process, benefiting many ranchers.

Allan Savory
Center for Holistic Resource Management
Albuquerque, New Mexico

Still another mascot!

I have created a cartoon character that could be used in films, slide shows, cartoon books, and advertisements to promote soil conservation. I call this figure Captain Conservation. Other names could be used, but I feel there are unlimited possibilities for this character.



Cartoon characters are being used effectively by educators and other organizations today. Look what Smokey the Bear has done for the Forest Service or Woodsy Owl for the fight against pollution.

Glenn H. Lawson
Brownwood, Texas

Exciting times (and writing)!

Pierre Crosson [in "New Perspectives on Soil Conservation Policy," *JSWC*, July-August 1984, pp. 222-225] presents interesting evidence for his closing statement, "While the details of these new perspectives remain clouded, one thing is clear: it's an exciting time to be in soil conservation." The writings and analysis of Crosson certainly contribute significantly to this "exciting time."

Two points concern me regarding the article:

In the analysis associated with the second perception, the reasoning is not clear. The $3.1-billion figure for the annual cost of off-farm damages probably includes damages from all types of agricultural practices as well as those from urban activities, highways, etc. This value is then compared with a cost of $40 million to $200 million per year from the loss of corn and soybean productivity due to the on-site damages. Because corn and soybeans represent a small portion of the land in different farming activities, one must ask whether this comparison is really valid? What about the productivity losses from land producing wheat, cotton, etc. Although the soil loss estimates may not be as large (in absolute values), relative to the initial soil resource available, the loss of productivity for future generations may be every bit as important economically and to our conservation ethic. Further, because the acreage in corn and soybeans relative to the total cultivated acreage is small, the total dollar loss may be much larger and may raise the on-farm productivity losses to a much larger figure.

The arguments in the third change of perception seem to overlook an important point. Control of on-farm erosion damage often involves runoff management practices that reduce overland runoff rate (and, on occassion, volume). Reducing the runoff rate on-farm should also reduce the off-farm runoff rate (i.e., reduce flood peaks), and, in turn, the off-farm sediment transport should be reduced. As Crosson states, "...the movement of sediment through a watershed from places of origin to places of deposition is a halting, complex process." However, it is well accepted that sediment concentration is proportional to the instantaneous water discharge, but that because of the logarithmic relationship generally observed, reductions in peak flow will reduce the sediment yield even if the total runoff remains constant. Thus, the argument for on-farm erosion reduction should be made from two perspectives: (1) the reduction of sediment into the channel system and (2) the reduction of peak discharges,

which will reduce downstream sediment yield because of the associated reduction in sediment transport capacity.

The arguments regarding the soil-loss-tolerance (T-value) standard being inadequate because it lacks an economic dimension are certainly true. Other physical aspects of the soil loss tolerance should not be ignored either. For example, T-values are generally assumed to be 5 or less tons per acre, although 10 tons per acre is frequently discussed also. That seems to me to be analogous to pricing an item as $5 or $10 when a truer or more exact cost anywhere inbetween could be set. The reason for using 5 and 10 tons is not always clear, but certainly it must involve the fact that these are easy numbers to remember. Not to be ignored was the fact that the values were developed with an absence of data to define the loss that would maintain the productivity of a specific pedon for a specific crop.

Technology currently reported by Williams, et al. [*JSWC*, September-October 1983, pp. 381-383] with a model titled EPIC does permit a more rational approach to assigning a T-value that would maintain soil productivity or permit economic optimization of erosion control versus soil productivity. This physically based computer simulation model considers the elements known to affect soil productivity with the possible exception of the processes controlling the soil-forming mechanisms, i.e., physical and chemical weathering of parent materials. As models such as EPIC are used to develop soil loss tolerances for the matrices of soils, crops, climates, and management practices that are consistent with current economic and social policy, we will have still another reason to say "it's an exciting time in soil conservation."

Kenneth G. Renard
Southwest Rangeland Watershed Research Center
Agricultural Research Service
Tucson, Arizona

A response

It is true that the Conservation Foundation estimates of costs of erosion damage count erosion from all sources. However, the 1977 NRI indicated that most erosion is on agricultural land. In considering the cost of off-farm erosion damage it is proper to focus primarily on agricultural land. On-farm (productivity) damage, however, occurs mostly on cropland, indicating that for estimating costs of that kind of damage cropland is the proper focus.

You say that corn and soybeans "represent a small portion of the land in different farming activities." But as I look at the evidence, it appears that these crops occupy virtually all the land on which erosion poses a threat to productivity. Erosion in the Palouse threatens wheat yields, but that is a small portion of all land in wheat. Studies we have done here indicate that between 1950 and 1980 erosion had no significant effect on the growth of wheat yields in major wheat growing areas as a whole. On some land cotton is a highly erosive crop, but cotton occupies only some 10 to 15 million acres out of 340 to 350 million harvested acres. And much cotton is on irrigated land not subject to high erosion.

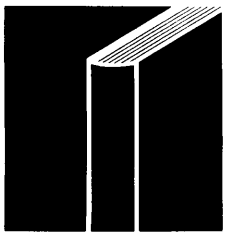
You mention the impact of productivity loss on future generations, and I accept that as an entirely proper issue. The numbers I used show that at present erosion losses are mounting at a rate of about $40 million per year. So if present rates of erosion continue, the annual loss of corn and soybean production 100 years from now would be about $4 billion. That's about in the middle of the range of the Conservation Foundation's estimate of *current* annual off-farm damage. (Incidentally, the CF estimates have been revised sharply upward from those that I used, and will be published in a forthcoming article in the *JSWC*). Surely in deciding what to do about soil erosion control we ought to give more weight to a current cost of X dollars than to a cost of X dollars 100 years from now. After all, we do owe something to the present generation as well as to those that will come after us.

I lack the expertise to fully understand your second point. Sometime I'd like to explore this with you.

I am in close touch with the work on EPIC. In fact, I'm doing some work on the economic costs of erosion-induced productivity damages using EPIC as a principal source of information.

I'm gratified that my article stimulated you to respond.... I hope others will be similarly stimulated, in their thinking if not in writing.

Pierre Crosson
Resources for the Future
Washington, D.C.



Water Rights: Scarce Resource Allocation, Bureaucracy, and the Environment. Edited by Terry L. Anderson. 470 pp., illus., tbls., bibliog., index, 1983. Pacific Institute for Public Policy Research, San Francisco, Calif. 94108. $35.00, hardbound; $11.95, paperback.

This book consists of a collection of papers commissioned by the Pacific Institute for Public Policy Research. The conservative perspective of this institute is successfully reflected in each paper. Pretty much the entire volume focuses on the thesis that the solution to water problems universally rests in reducing government bureaucracy and increasing the role of private markets.

Four major water policy issues in the West are addressed in the volume: (1) allocation of surface water to out-of-stream uses, (2) in-stream uses of water, (3) groundwater management, and (4) water quality. But the succession of nine papers in the volume are organized around three academic rather than policy topics: Part I, "Property Rights and Decision-Making"; Part II, "Institutions and Institutional Reform; and Part III, "Toward Privatization."

This organization reflects the narrow economic efficiency paradigm adopted by the authors. This paradigm holds that the resources available to society will be optimally used if the role of government is limited to the establishment of private property rights and to the provision of institutions that facilitate the transfer of property rights by private markets, including protection from third-party effects. Proponants of this paradigm contend that as long as property rights are well-defined and freely traded, resources, including water, will be allocated to those purposes that society values most. As advocates of this paradigm, the authors accordingly devote much of their attention to discussing how the rights to water might be specified and the transfer institutions established pursuant to achieving an "efficient" allocation of water resources. Using well-designed conceptual arguments and aptly selected case studies, the authors develop a seemingly strong case for achieving more efficient water resource allocation, in terms of both quantity and quality, through more extensive use of private markets.

It is unlikely that readers of the book will have a neutral reaction to the arguments set forth. Water policy participants who have strong philosophical inclinations to favor a reduced governmental presence in the natural resources arena will probably trumpet the virtues of the volume. Other readers will likely be critical of the volume on the grounds that it fails to consider adequately water policy objectives other than economic efficiency. Most economists, except for the minority who unabashedly embrace the narrow economic efficiency paradigm used by the authors, will probably view the book with considerable alarm, considering it to be naive at best and pure propaganda at worst.

This range of potential reactions to the book correctly implies that it is a biased, incomplete treatment of water rights issues. Perhaps the most telling evidence of bias is that the authors never acknowledge that the holy grail of efficiency is truly a house of cards. The authors are among that minority of economists who speak of private markets contributing to economic efficiency as if the allocation of resources that results from perfectly functioning markets necessarily optimizes social welfare. This narrow perspective of efficiency fails to recognize that if wealth were distributed differently, or if property rights were initially defined in a different manner, the "efficient" allocation of resources provided by markets would be very different. In other words, the presence of economic inefficiency, given some existing distribution of resources, does not necessarily mean that society would be better off if efficiency improved because of increased reliance on private markets or any other factor. An "inefficient" allocation of resources may well be the social optimum from the perspective of people who believe that wealth (market-place votes) should be differently distributed. Correspondingly, the authors'

thesis that more extensive use of private markets leads to improved allocation of water resources has credence only if it can be argued that the existing distribution of wealth is socially desirable. Unfortunately, this issue was completely ignored.

These deficiencies make the book relatively useless as a contribution to water policy discussions. Indeed, there is some danger that the book will be misused by people in the water policy arena who are philosophically inclined to favor water markets but lack the background in economics necessary to recognize the deficiencies in the arguments extolled by the authors. The narrow perspective and philosophical bias that characterize the book are especially unfortunate because there is clear justification in some instances to consider more extensive use of private water markets. Perhaps the book can serve as a foundation upon which to build a more objective and thorough analysis of an important topic.—*RAY SUPALLA, Department of Agricultural Economics, University of Nebraska, Lincoln, 68583.*

Pollution

Effects of Pollutants at the Ecosystem Level. Edited by Patrick J. Sheehan, Donald R. Miller, Gordon C. Butler, and Philippe Bourdeau. 443 pp., illus., index, 1984. John Wiley & Sons, Inc., Somerset, N.J. 08873. $59.95, plus $1.09 postage.

Water Quality and the Public Health: Proceedings of a Conference, Worchester, Massachusetts, May 1983. Edited by T. C. Crusberg, R. D. Cheetham, and A. H. Hoffman. 187 pp., 1984. Worcester Consortium for Higher Education, Worcester, Mass. 01609. $16.75.

Dissolved Loads of Rivers and Surface Water Quantity/Quality Relationships. Proceedings of the Hamburg Symposium, August 1983. Edited by B. W. Webb. 441 pp., 1983. Publ. No. 141. IAHS, Washington, D.C. 20009. $37.00.

Costs of Remedial Response Actions at Uncontrolled Hazardous Waste Sites. By H. L. Rishel, T. M. Boston, and C. J. Schmidt. 144 pp., refs., tbls., bibliog., apps., 1984. Noyes Publications, Park Ridge, N.J. 07656. $32.00.

Solid Wastes

Managing Sludge by Composting. 322 pp., illus., tbls., 1984. BioCycle, Emmaus, Penn. 18049. $44.95.

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Rural Land Uses and Planning: A Comparative Study of the Netherlands and the United States. By R. Burnell Held and Dirk W. Visser. 445 pp., illus., tbls., 1984. Elsevier Science Publishers, New York, N.Y. 10163.

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Pleistocene Deposits: A Teaching Model for Field Interpretations, with an Example of Integration into a Landscape Trail. By Peter Keene. 53 pp., illus., 1982. Geography Section, Department of Social Studies, Oxford Polytechnic, Oxford, England OX3 OBP. $5.00.

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Windbreaks for Conservation: An Annotated Bibliography. 145 pp., index, 1984. Department of Conservation, Division of Land Resource Protection, Sacramento, Calif. 95814. $4.00.