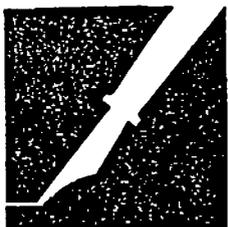


# Journal of Soil & Water Conservation

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**NONPOINT WATER POLLUTION**  
A SPECIAL ISSUE



## 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 alleged 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 alleges 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 un-

called 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 occasion, 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 in-between 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

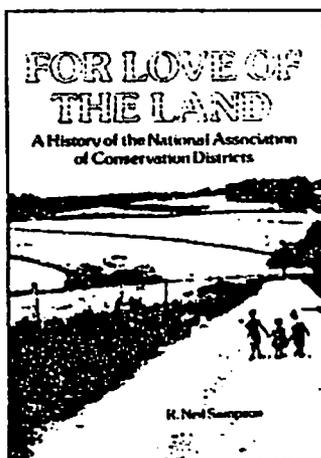
rates of erosion continue, the annual loss of corn and soybean production 100 years from now would be about \$4 billion. That's about in the middle of the range of the Conservation Foundation's estimate of current annual off-farm damage. (Incidentally, the CF estimates have been revised sharply upward 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.



*Farmland or Wasteland: A Time to Choose*, a comprehensive overview of soil conservation data and issues in the U.S.

360 pages, hard cover, 45 photographs, 22-page chronology, index, and listing of NACD officials. Pre-publication price of \$14.95 postpaid from: NACD Service Dept., P.O. Box 855, League City, TX 77573, (713) 332-3402. Available February 1985.

## CONSERVATION DISTRICTS GAIN A NATIONAL VOICE

*For Love of the Land* is the story of the National Association of Conservation Districts, how it came into being, who shaped it, what it fought for over the years, and where it is today.

The people whose bold ideas sparked the conservation movement highlight the story. The issues provide a track record of the accomplishments -- and the unfinished agenda -- of the soil and water conservation program in America.

Author Neil Sampson, Executive Vice President of the American Forestry Association, was Executive Vice President of NACD from 1978-1984. He is the author of