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To advance the science and art of good land use

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Cover: A view of Hardscrabble Peak in the Bridger Range north of Bozeman, Montana. Montana is the host state for SCSA's 42nd annual meeting, August 2-5, 1987, in Billings. See page 95.

Photo by Phil Farnes, Soil Conservation Service, Bozeman.
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**

**Water will be less abundant**

An observation is offered as clarification and not rebuttal of the authors' main point [in "Managing the West's Water," JSWC, January-February 1987, pp. 8-13]: "Water...is no less physically abundant today than it was decades ago, but...is oversubscribed...."

Water, as others have pointed out, is inexorably linked to energy. Energy is needed to pump, deliver, and purify water. Water, in increasingly large amounts, is needed to boost energy output. It is with this latter case that clarification is warranted.

In its recent report on future energy patterns, the California Energy Commission discusses the use of natural gas consumption. By the mid 1990s, thermally enhanced oil recovery (TEOR) will be the single largest user of natural gas. The commission's report, however, fails to note that steam—the major component of TEOR—will also consume vast quantities of high quality water. Currently, secondary oil recovery uses large quantities of water. In many instances this is groundwater, often from poorly recharged aquifers. This deeply injected water is lost, for practical purposes, from the water cycle. Water today and tomorrow will be physically less abundant.

Edward McGowan
Ventura, California

**Heading in the right direction**

I have been associated with SCSA for about 26 or 27 years. I am a Charter Member and helped to organize the Golden Spread Chapter in the Texas panhandle. I worked for SCS [Soil Conservation Service] at that time. I have since retired from SCS and am now working with the Red River Authority of Texas, an organization that is also charged with the conservation and development of natural resources, primarily water. I think the recent decision to change the name of the Society is a good one. I like that we are giving water its due recognition. I am particularly impressed with the articles that have been in the JSWC about water quality, especially the one in the November-December 1986 issue by George R. Hallberg entitled "From Hoes to Herbicides: Agriculture and Groundwater Quality."

William B. Brooks
Red River Authority
Paris, Texas

I want to...use this opportunity to state how much I appreciate the JSWC. For me, it's gotten more and more informative as articles on policy issues have increased.

Keep us this important work.
Ron Kroese
Land Stewardship Project
Stillwater, Minnesota

**Environmental irony**

I was pleased to see George Hallberg's excellent article "From Hoes to Herbicides" in the November-December 1986 JSWC [pp. 357-364]. The issues he raises about herbicides are very important and ones that SCSA should ensure are given long overdue attention.

It was ironic, however, that the following article by William Koskinen and Chester McWhorter ["Weed Control in Conservation Tillage, pp. 365-370"] indicated that the answer to herbicide resistance of weeds will be found in the combinations of individual herbicides that offer the possibility of thousands of options for control. Who is analyzing what these potent combinations are doing to our water supplies?

Marilyn D. Lundberg
St. Paul, Minnesota

"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 their clarity and pertinence. Long letters may be shortened. —Editor.

"Cadillac Desert" is like a gripping historical novel by James Michener within the context of some prehistoric events and fundamental scientific parameters of an hydraulic civilization in an arid climate. The plot focuses upon irrigation development in the American West, largely by the U.S. Bureau of Reclamation. The cast of characters involves few heroes but many villains, derisively portrayed in terms of their physical characteristics, professions, and basic values. Quotations procured from these characters (whose real-life names are given) and from documentary evidence are used to give credibility to the author's findings and analysis. In this way the popular, modern historical novel approach makes substantial contact with apparent historical reality.

Reisner briefly covers the explorations of John Wesley Powell and his reflections on hydraulic civilization in an arid climate. The next four chapters provide a detailed description of methods to improve energy efficiency and sustainability in agriculture, regenerative agriculture, and water conservation. The author concludes with a section on future prospects and research needs, both of which are of value.

The next four chapters provide a detailed description of methods to improve energy
Poincelot then turns to agricultural questions that are of particular interest to geographers, soil conservationists, water managers, environmental quality planners, and environmentalists. In separate chapters he focuses on soil resources, water resources, and overall environmental quality, discussing the advantages and disadvantages of present and potential conservation techniques. It is curious, however, that he devotes so little space to dryland farming because he obviously sees this agricultural technique as an answer to many resource problems.

The final chapter, future technology, is perhaps the most unusual and, therefore, innovative chapter for a book on sustainable agriculture. It covers such emerging fields as computer technology, solar technology, windpower systems, hydroelectric and geothermal power, biotechnology, biomass, embryo transfer, and genetic engineering. The high-tech nature of this chapter also makes it perhaps the most controversial. Statements like "Most of the future progress in achieving a sustainable agriculture will rely on adoption of newly emerging technology and the creation of even newer forms" (p. 207) and "Biotechnology may be the salvation of agriculture someday" (p. 215) will no doubt cause some stir, particularly among social scientists.

These statements and others coupled with the fact that the last two photographs in the book are of a towering 650-horsepower Big Bud tractor and a large land imprinter tractor leaves the reader with the impression, perhaps in error, that Poincelot has complete faith in technology, that technology alone will pull America's farmers and farmlands out of the downward spiral. Although this chapter was meant to serve as a concluding chapter, a separate wrap-up chapter is still needed. This reader was left hanging.

Regardless, Poincelot's book is excellent and is must reading for anyone interested in sustainable agriculture. Whereas other books on the subject are vague about exactly how we get from here to there, Poincelot lays out a plethora of techniques and strategies. Because no book can be all things to all people, it would be wise for individuals, particularly classroom instructors, to balance Poincelot's apparent technological approach with the more humanistic approach of such authors as Wes Jackson, Wendell Berry, and Bruce Colman. In fact, the book they edited, Meeting the Expectations of the Land: Essays in Sustainable Agriculture and Stewardship (North Point Press) makes an excellent complement to Poincelot's text. Together, the two books provide a dynamite introduction to what many consider to be one of the most important and pressing issues of our time.—GARY A. KLEE, Environmental Studies Program, San Jose State University, San Jose, California.


