



## PEN POINTS

### Conservation investment down?

The recent article by George A. Pavelis (*JSWC*, November-December 1983, pp. 455-458), on the decline of capital investments in soil conservation, is useful and interesting, but gives a misleading impression of what is happening in soil conservation.

Investments in "depreciable on-farm land treatment and management measures," as described by Pavelis, have no doubt declined; and a problem yet to be addressed is the cost of refurbishing or replacing many of these vegetative measures and engineered works as time takes its toll. However, a major advance in soil conservation (which historians may one day label revolutionary) is even now

being accomplished through the widespread and increasing adoption of conservation tillage. Large amounts of capital are being invested in agricultural machinery needed to perform the techniques of conservation tillage, but such investments appear in accounting ledgers as production costs, not conservation costs.

In some respects the term "conservation tillage" has become an unfortunate choice, for it tends to obscure the fact that tillage is first and foremost a practice performed for reasons determined by crop production requirements. To be sure, farmers are strongly moved to adopt conservation tillage for reasons of soil and water resource protection, but conservation tillage got its greatest boost by rising fuel costs, and it has to justify its use almost entirely on the basis of short-term costs and returns.

The dual nature of conservation tillage makes life exciting for economists and sociologists trying to define and quantify the hows and whys of its adoption and its cost effectiveness. In the Ladewig and Garibay article (*JSWC*, same issue), on common factor analysis of 13 reasons for using conservation tillage, it is not at all evident why the reasons numbered 6 through 13 are any more relevant to the category labelled "environmental concerns" than they are to "economic concerns." Only reasons 4 (reduced soil erosion) and 5 (improved water quality) can be considered almost exclusively environmental concerns. Of

course, the problem may simply be that I don't know the least thing about "pro-max rotated factor loadings."

Leonard C. Johnson  
Madison, Wisconsin

### Conservation heresy

I was amazed to read in the January-February 1984 issue of the *JSWC* (pp. 77-80) that you carried two articles which seemed to me to advocate double-cropping. To me that is heresy in a magazine supposedly devoted to soil and water conservation.

One crop per season for any ground is all that ground should be required to produce. To take two crops from any ground in any one year gives the earth no rest or time for recuperation. It seems to me it is like living on your interest and some of your principal each year. Or, a better example is overworking your horses, if you can remember farming with horses. If you abuse your land, you will not have it long.

Frederick H. Lauder  
Monmouth, Illinois

### A conservation mascot?

This year marks the 50th anniversary of the modern soil conservation movement. I believe it's time we consider a mascot—a symbol for the movement. It should be a loveable animal that lives in

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the soil. Prairie dogs, badgers, gophers, moles, foxes, and groundhogs come to mind. The following story about a groundhog named Grover might serve as well as any:

Grover and Geneva Groundhog have a nice snug hole in a fencerow between a crop field and a pasture. This particular spring a new grain program came along, and the farmer decided the fencerow had to go. The pasture would be included in the adjoining soybean field. The grader blade and plow soon accomplished this, and Grover's front yard and landscaping are soon gone, but Grover and Geneva stay on.

By July the beans are planted and growing well upstairs, while below, Grover and Geneva are nursing along three groundhog pups.

July is a month of hard thunderstorms

of great intensity, and the soil is often pulverized and dry with sparse cover before such a storm. Erosion conditions are at their worst. In this case the slope length was no longer broken by the fence row, and the farmer had plowed up and down the slope on the new part of his crop field.

Grover first noticed the rivulet, then a stream of muddy water came into the hole. He went upstairs to see what was happening. Meanwhile, upslope, a small dam of debris broke, and water and mud rushed into the hole, drowning Geneva and three nursing babies. Grover was the lone survivor. Grover could and should become a national symbol for soil conservation, much like Smoky the Bear's tragic story marks forest fire protection.

Smoky's forest will recover from the

burn in a hundred years or so, but the tons of soil washed from Grover's backyard will never be replaced unless the land is protected. The soil conservation movement is 50 years old this year. Isn't it time the movement had a symbol like perhaps Grover?

David E. McKinney  
Lenoir City, Tennessee

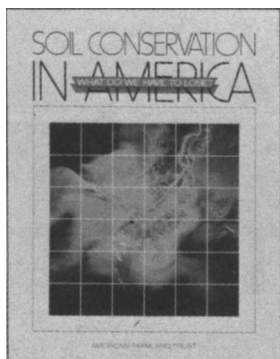
*"Pen Points" is a forum for comment on published material or land and water management issues in general. Readers are invited to express their views in a letter to the editor. Letters are judged on clarity of expression and pertinence. They should be as brief as possible. Long letters may be shortened.—Editor*

# SOIL CONSERVATION IN AMERICA

## WHAT DO WE HAVE TO LOSE?

One of America's most serious environmental problems, soil erosion on U.S. cropland, can be substantially solved, at a reasonable cost, within the decade. Accomplishing this goal will require important changes in the current federal programs for supporting crop prices and farm incomes. It will also require fundamental reform of soil conservation programs established in the USDA a half century ago. Otherwise, soil erosion will continue to cost the United States billions of dollars annually in damage to agricultural productivity and water quality.

The American Farmland Trust arrived at its conclusions in the course of an 18-month study. The research involved extensive analysis of re-



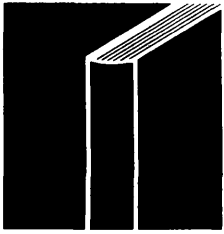
cent information—much of it previously unpublished—on soil erosion, conservation measures, and USDA conservation programs; hour-long personal interviews with 700 farmers in six states; the commissioning of 25 technical papers by widely regarded experts on a variety of conservation topics; and consultation with leading conservationists, including a special 22-member advisory panel for the project.

140 pages, 8½ x 11 inches softcover  
\$7.95 each, plus \$1.25 postage and handling (\$9.20 per copy).



**American Farmland Trust**

1717 Massachusetts Avenue, N.W.  
Washington, D.C. 20036



## BOOKS, ETC.

**Soils of Montana.** By Clifford Montagne, Larry C. Munn, Gerald A. Nielsen, Jack W. Rogers, and Harold E. Hunter. 95 pp., illus., maps, 1982. Bulletin 744. Montana Agricultural Experiment Station, Montana State University and Soil Conservation Service, U.S. Department of Agriculture, Bozeman, 59717.

This book's general soil map of Montana, published in 1978, is in color and has 132 mapping units. Additional material shown on the front and back makes the map useful independent of the book. Soil-mapping units are named by using one, two, or three great group names. These units (soil associations) are first grouped by geography into Intermountain and Piedmont sections and a Great Plains section. Next, soils are grouped in combinations of soil moisture and soil temperature, such as Ustic-Frigid and Aquic-Cryic. The scale of the map is 1:1,000,000.

"Soil-forming environments of Montana," the first major subdivision of the book, consists of discussions of geology, topography and physiography, climate, and vegetation. It contains many state maps, including three for geology. The map, "Glaciation of high gravel terraces and volcanic ash," which shows the location of recent surface mantles, is an especially excellent map. Readers may be surprised by the extent of the glacial lakes formed by ice blockage. Four block diagrams show some landscapes in relation to geology and soils.

Tables, maps, and charts are used effectively to discuss Montana's varied climatic conditions. The state's many kinds of vegetation are discussed in relation to climate, geography, geology, and soils.

"Soil," the second major subdivision, emphasizes how soils form in relation to conditions in Montana. Simple diagrams effectively illustrate how slope aspect, shape, and length modify the general climate of an area. A hypothetical soil profile is used to discuss different kinds of soil horizons. The soil characteristics used to describe soils in the field as well as some of the influences of these characteristics on soil behavior, are mentioned briefly.

"Land cover and use," based mainly on LANDSAT satellite imagery, is shown on a generalized land cover map. The key to the map includes irrigated crops, dryland crops, forest, range, and water.

"Montana's soil resources" includes colored landscape and profile photographs of 11 soil series, all prepared and photo-

graphed by Clinton A. Mogen. Also provided are information sources about soils and their use, management, and conservation.

"Map units for general soil map" consists of two tables, one describing soil map units, including map symbol, map unit name (great groups), parent material soil depth, percent land cover (alpine areas and rock outcrops, forest, range, dryland crops, and irrigated crops), area in thousands of acres, and reference soil series examples. These soil series that are listed for the mapping units are not present in each unit, but they illustrate the kinds of soils that are present. The other table, showing dominant properties and classification of reference soil series, includes for each series the following: available water capacity, soil depth, surface soil texture, subsoil texture, substratum, topography, landscape position, and soil classification.

The appendix includes a glossary.

This publication should be in the library of everyone dedicated to wise use and conservation of Montana's natural resources. Teachers of soils, agriculture, farm management, land appraisal, wildlife management, and conservation in Montana and elsewhere should find this book useful.

It is fitting that *Soils of Montana* is dedicated to Clinton A. Mogen, our most knowledgeable expert on the soils of the Northern Great Plains.—ANDREW R. AANDAHL, 1914 South 30th, Lincoln, Nebraska 68502.

### General

*Sacred Cows at the Public Trough.* By Denzel and Nancy Ferguson. 260 pp., illus., refs., index, 1983. Maverick Publications, Bend, Oreg. 97708. \$8.95.

*The Federal Lands Revisited.* By Marion Clawson. 302 pp., illus., tpls., app., index, 1983. Johns Hopkins University Press, Baltimore, Md. 21218. \$25.00, cloth; \$8.95, paper.

*U.S. Interests & Global Natural Resources.* Edited by Emery N. Castle and Kent A. Price. 147 pp., illus., tpls., 1984. Johns Hopkins University Press, Baltimore, Md. 21218. \$18.00, cloth; \$6.95, paper.

*State of the World.* By Lester R. Brown, William Chandler, Christopher Flavin, Sandra Postel, Linda Starke, and Edward Wolf. 252 pp., illus., tpls., index, 1984. Worldwatch Institute, Washington, D.C. 20036. \$15.95.

*Measuring the Social Impact of Natural Resource Policies.* By William R. Burch, Jr., and Donald R. DeLuca. 216 pp., illus., refs., index, 1984. University of New Mexico Press, Albuquerque, 87131. \$29.95.

*Physical Geography: A Landscape Appreciation.* By Tom L. McKnight. 488 pp., illus., refs., apps., gloss., index, 1984. Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632. \$32.95.

*Agricultural Computer Guide & Directory.* 162 pp., apps., 1984. Interstate Printers and Publishers, Inc., Danville, Ill. 61832. \$9.50.

*Plants of Western New South Wales.* By G. M. Cunningham, W. E. Mulham, P. L. Milthorpe, and J. H. Leigh. 752 pp., illus., 1983. N.S.W. Government Printing Office, Pyrmont, N.S.W. 2009. \$50.00.

*The Economic Transformation of American Cities.* By Thierry J. Noyelle and Thomas J. Stanback. 176 pp., 1982. Rowman & Allanheld, Totowa, N.J. 07511. \$28.50.

*Proceedings of the International Symposium on Hydrometeorology, June 13-17, 1982, Denver, Colorado.* Edited by A. Ivan Johnson and Robert A. Clark. 598 pp., 1983. American Water Resources Association, Bethesda, Md. 20814. \$49.00, plus \$6.00 for postage and handling.

### Forests

*Information for Forest Managers: A Case Study of Adequacy and Needs in Minnesota.* By Bernard J. Lewis and Edwin Kallio. 4 pp., illus., 1983. Res. Note NC-303. North Central Forest Experiment Station, Forest Service, St. Paul, Minn. 55108.

*Intensive Plantation Culture: 12 Years Research.* Compiled by Edward A. Hansen. 154 pp., illus., refs., 1983. Tech. Rpt. NC-91. North Central Forest Experiment Station, Forest Service, St. Paul, Minn. 55108.

*Working with Your Woodland.* By Mollie Beattie, Charles Thompson, and Lynn Levine. 310 pp., illus., apps., index, 1984. University Press of New England, Hanover, New Hamp. 03755. \$27.50, cloth; \$12.95, paper.

*Proceedings, Research and Management of Bitterbrush and Cliffrose in Western North America, Salt Lake City, Utah, April 13-15, 1982.* 279 pp., illus., 1983.

- General Tech. Rpt. INT-152. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Forest Habitat Types of Eastern Idaho-Western Wyoming.* By Robert Steele, Stephen V. Cooper, David M. Ondov, David W. Roberts, and Robert D. Pfister. 122 pp., illus., tpls., apps., 1983. General Tech. Rpt. INT-144. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Evaluating Nonindustrial Private Landowners for Forestry Assistance Programs: A Logistic Regression Approach.* By Ervin G. Schuster. 7 pp., illus., 1983. Res. Paper INT-320. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Silvicultural Systems for the Major Forest Types of the United States.* Compiled by Russell M. Burns. 191 pp., gloss., indexes, 1983. Agr. Handbk. No. 445. USDA, Washington, D.C.
- Grasslands**
- Evaluating Proposed Improvements of Public Rangelands.* By Fred J. Wagstaff. 4 pp., 1983. General Tech. Rpt. INT-150. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Range Economics Symposium and Workshop Proceedings, August 31-September 2, 1982, Salt Lake City, Utah.* 151 pp., 1983. General Tech. Rpt. INT-149. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Soils**
- No-Tillage Agriculture: Principles and Practices.* By Ronald E. Phillips and Shirley H. Phillips. 306 pp., illus., index, 1984. Van Nostrand Reinhold Co., New York, N.Y. 10020. \$34.50.
- Soil Biotechnology: Microbiological Factors in Crop Productivity.* By J. M. Lynch. 191 pp., illus., apps., index, 1983. Blackwell Scientific Publications, Inc., Palo Alto, Calif. 94301. \$21.60.
- Twentieth Century Soil Salinity Research in India: An Annotated Bibliography, 1901-1983.* By I. C. Gupta, K. N. Pehwa, and J.S.P. Yadav. 792 pp., 1983. International Booksellers and Publishers, Calcutta, India. \$70.00.
- Field Guide to Soils and the Environment.* By Gerald W. Olson. 224 pp., 1984. Methuen, Inc., New York, N.Y. 10017. \$18.95.
- Water**
- My Lake...Your Lake.* By Phil Fogle. 135 pp., illus., refs., 1983. Big Foot Publishing Co., Williams Bay, Wisc. 53191. \$12.95, cloth; \$8.95, paper; plus \$2.00 postage.
- Forging New Rights in Western Waters.* By Robert G. Dunbar. 278 pp., index, 1984. University of Nebraska Press, Lincoln, 68588. \$19.95.
- Principles of Water Resources Planning.* By Alvin S. Goodman. 563 pp., illus., app., index, 1984. Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632. \$34.95.
- Water Resources: Distribution, Use, and Management.* By John R. Mather. 439 pp., illus., refs., indexes, 1984. John Wiley & Sons, Somerset, N.J. 08873. \$40.00.
- Water Resources in the Southern Rockies and High Plains: Forest Recreational Use and Aquatic Life.* By Loren D. Potter, James R. Gosz, and Clarence A. Carlson, Jr. 329 pp., illus., refs., tpls., apps., 1984. University of New Mexico Press, Albuquerque, 87131. \$29.95.
- Passages of a Stream: A Chronicle of the Meramec.* By James P. Jackson. 138 pp., illus., refs., 1984. University of Missouri Press, Columbia, 65205-7088. \$9.95.
- A River No More: The Colorado River and the West.* By Philip L. Fradkin. 360 pp., illus., bibliog., index, 1984. University of Arizona Press, Tucson, 85719. \$10.95.
- pH in Streams Draining Small Mined and Unmined Watersheds in the Coal Region of Appalachia.* By Kenneth L. Dyer and Willie R. Curtis. 6 pp., illus., 1983. Res. Note NE-314. Northeastern Area State & Private Forestry, Berea, Ky. 40403.
- Advances in Infiltration. Proceedings of the National Conference on Advances in Infiltration, December 12-13, 1983, Chicago, Illinois.* 385 pp., illus., 1984. American Society of Agricultural Engineers, St. Joseph, Mich. 49085-9659. \$27.50; \$23.00 for ASAE members, postpaid.
- Ground Water in Water Resources Planning. Proceedings of the Koblenz Symposium, August-September 1983.* 1,212 pp., two vols., 1983. Publ. No. 142. IAHS, Washington, D.C. 20009. \$22.00.
- Hydrology of Humid Tropical Regions. Proceedings of the Hamburg Symposium, August 1983.* Edited by Reiner Keller. 468 pp., 1983. Publ. No. 140. IAHS, Washington, D.C. 20009. \$37.00.
- Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1974.* Compiled by James B. Burford, Jane L. Thurman, and Ralph T. Roberts. 417 pp., illus., 1983. Misc. Publ. No. 1437. Water Data Laboratory, Beltsville Agricultural Research Center, Beltsville, Md. 20705.
- Kentucky Model Flood Damage Prevention Ordinance.* apps., gloss., 1983. Kentucky Flood Control Advisory Commission, Frankfort, 40601.
- Water Conservation in Residential Development: Land-Use Techniques.* By Welford Sanders and Charles Thurow. 34 pp., illus., apps., 1982. PAS Rpt. No. 373. American Planning Association, Chicago, Ill. 60637. \$16.00.
- Introduction to Freshwater Vegetation.* By Donald N. Riemer. illus., bibliog., apps., 1984. AVI Publishing Co., Westport, Conn. 06881. \$35.00.
- Survey of Employment Opportunities in Water Resources.* American Water Resources Association, Bethesda, Md. 20814. \$10.00.
- Fish and Wildlife**
- Diversity of Vertebrates in Wildlife Water-Impoundments on the Chippewa National Forest.* By John R. Probst, Donald Rakstad, and Kathy Brosdahl. 22 pp., refs., apps., 1983. Res. Paper NC-235. North Central Forest Experiment Station, Forest Service, St. Paul, Minn. 55108.
- Proceedings of the Washington Environmental Foundation Wild Salmon and Trout Conference, March 11-12, 1983, Seattle, Washington.* 151 pp., gloss., 1983. Washington Environmental Foundation, Seattle, 98104. \$12.95 plus \$1.00 postage.
- Prediction of Wildlife and Fish Resources for National Assessments and Appraisals.* By Clifford L. Hawkes, David E. Chalk, Thomas W. Hoekstra, and Curtiss H. Flather. 21 pp., refs., 1983. General Tech. Rpt. RM-100. Rocky Mountain Forest and Range Experiment Station, Ft. Collins, Colo. 80526.
- Wildlife and Range Research Needs in Northern Mexico and Southwestern United States: Workshop Proceedings, April 20-24, 1981 Rio Rico, Arizona.* General Tech. Rpt. WO-36. 108 pp., illus., 1983. U.S. Government Printing Office, Washington, D.C.
- Snag Habitat Management: Proceedings of the Symposium, June 7-9, 1983, Flagstaff, Arizona.* 226 pp., illus., 1983. General Tech. Rpt. RM-99. Rocky Mountain Forest and Range Experiment Station, Ft. Collins, Colo. 80526.
- Managing Intermountain Rangelands: Improvement of Range and Wildlife Habitats. Proceedings of Symposia, September 15-17, 1981, Twin Falls, Idaho; June 22-24, 1982, Elko, Nevada.* 194 pp., illus., 1983. General Tech. Rpt. INT-157. Intermountain Forest and Range Experiment Station, Ogden, Utah 84401.
- Ecology**
- The Ecology of Neotropical Savannas.* By Guillermo Sarmiento. 235 pp., illus., refs., index, 1984. Harvard University Press, Cambridge, Mass. \$22.50.
- Concepts of Ecology* (third edition). By Edward J. Kormondy. 298 pp., illus., index, 1984. Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632. \$19.95.
- Land Use**
- Stress on Land.* 323 pp., illus., 1983. Canadian Government Publishing Centre, Ottawa, Ontario K1A 0S9. \$21.60.