

**CONTENTS****EDITOR'S DESK**

- 4A Rising expectations for conservation in water-scarce times**  
Mark Anderson-Wilk, editor

**YOUR LETTERS**

- 5A Readers' Forum**

**HOME FRONT**

- 6A Resilience**  
Craig A. Cox, executive director of the Soil and Water Conservation Society

**VIEWPOINT**

- 7A Answers and analysis needed to guide the use of biofuels as a renewable energy source**  
Jean L. Steiner

**CONSERVATIONIST PROFILE**

- 8A Jonathan May, Timberville, Virginia**

**IN THE NEWS**

- 9A Protecting southern Quebec's last wild watershed**  
John McDonnell

**CONSERVATION IN ACTION**

- 10A Wyoming ranch welcomes National Grazing Lands Conservation Initiative**  
Kindra Gordon

**IDEAS & INNOVATIONS**

- 11A New technology to increase irrigation efficiency**  
Kirk T. Taylor

- 12A High-quality fiber and fertilizer as co-products from anaerobic digestion**  
Chad Kruger, Shulin Chen, Craig MacConnell, Joe Harrison, Richard Shumway, Tianxi Zhang, Kay Oakley, Clark Bishop, Craig Frear, Debra Davidson, and Keith Bowers

**CONSERVATION IN PRACTICE**

- 14A Treatment wetlands: Cost-effective practice for intercepting nitrate before it reaches and adversely impacts surface waters**  
Richard Iovanna, Skip Hyberg, and William Crumpton

**FEATURES**

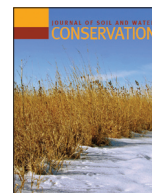
- 16A Collecting and monitoring on-farm water data using satellite data collection technology in the Arkansas Delta**  
Dennis K. Carman

- 19A Soil health and productivity benefits of low-tillage organic systems: The common ground between organic and no-till farming practices**  
Cheryl Rainford

**CONSERVATION PARTNERSHIPS**

- 22A US-China collaboration on conservation**

**On the Cover**  
Snow and field.  
Photo by S. Coffman.





- 24A** **TECH TRANSFER BRIEFING**  
**Nutrient supplement placement best management practice for changing beef cow distribution**  
 Melvin R. George, Neil K. McDougald, Wayne A. Jensen, Royce E. Larsen, David C. Cao, and Norman R. Harris

- 25A** **A sinkhole filter for protection of karst groundwater**  
 Douglas G. Boyer

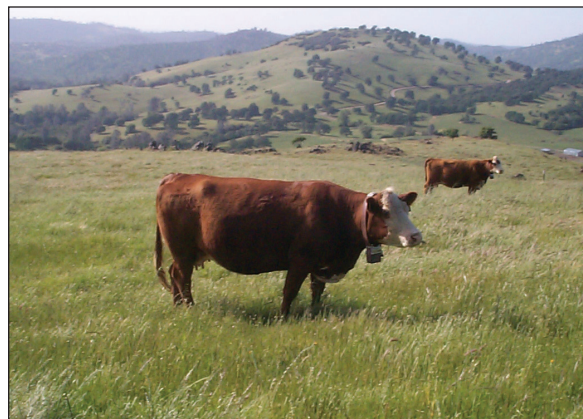
- 26A** **Conservation within the Big Walnut Watershed of Ohio: Potential for rural/urban conflict**  
 Ted L. Napier, Kelly McCutcheon, and Jennifer Fish

- IMPLEMENTATION UPDATE**  
**27A** **Managing pine straw harvests to minimize soil and water losses**  
 Daniel H. Pote and Tommy C. Daniel

- APPLIED RESEARCH**  
**1** **Geographical information system erosion assessment at a military training site**  
 R.L. Gaffer, D.C. Flanagan, M.L. Denight, and B.A. Engel
- 11** **Effectiveness of nutrient supplement placement for changing beef cow distribution**  
 M.R. George, N.K. McDougald, W.A. Jensen, R.E. Larsen, D.C. Cao, and N.R. Harris
- 18** **Factors affecting natural resource conservation investments of residents in the Lower Big Walnut Creek watershed, Ohio**  
 T.L. Napier, K. McCutcheon, and J. Fish
- 28** **Evaluating a crop residue cover index for determining tillage regime in a cotton-corn-peanut rotation**  
 D.G. Sullivan, D. Lee, J. Beasley, S. Brown, and E.J. Williams
- 37** **Patterns of water and tillage erosion on topographically complex landscapes in the North American Great Plains**  
 S. Li, D.A. Lobb, M.J. Lindstrom, and A. Farenhorst
- 47** **Assessment of a sinkhole filter for removing agricultural contaminants**  
 D.G. Boyer

Recent research demonstrates that strategic placement of nutrient supplements can be an effective tool for altering beef cow distribution during the dry season, thus minimizing the environmental impacts of grazing livestock.

For a summary, see page 24A.  
 For the full paper, go to page 11.



Printed on 100% recycled paper  
 with vegetable-based inks.

Published by  
SOIL AND WATER CONSERVATION SOCIETY  
945 SW Ankeny Road  
Ankeny, IA 50023 USA  
www.swcs.org

EXECUTIVE DIRECTOR  
Craig A. Cox

EDITOR  
Mark Anderson-Wilk

EDITORIAL ASSISTANT  
Jacqueline Smith

RESEARCH EDITOR  
Jorge A. Delgado, USDA Agricultural Research Service

ASSOCIATE EDITORS  
Mahdi M. Al-Kaisi, Iowa State University  
Francisco Arriaga, USDA Agricultural Research Service  
James C. Ascough II, USDA Agricultural Research Service  
Grant E. Cardon, Utah State University  
Adrian Chappell, University of Salford  
Zhibao Dong, Chinese Academy of Sciences  
Moustafa A. Elrashidi, USDA Natural Resources Conservation Service  
Ali Fares, University of Hawaii  
Bradley A. King, USDA Agricultural Research Service  
Peter J.A. Kleinman, USDA Agricultural Research Service  
Kokoasse Kpomblekou-A, Tuskegee University  
Raúl S. Lavado, University of Buenos Aires  
Birl Lowery, University of Wisconsin–Madison  
Loretta M. Lynch, University of Maryland  
Maurice J. Mausbach, USDA Natural Resources Conservation Service  
Laura M.J. McCann, University of Missouri  
Guy R. Mehuys, McGill University  
Kenneth N. Potter, USDA Agricultural Research Service  
Mary E. Stromberger, Colorado State University  
John R. White, Louisiana State University  
John D. Williams, USDA Agricultural Research Service  
Wanhong Yang, University of Guelph  
Ted M. Zobeck, USDA Agricultural Research Service

EDITORIAL ADVISORS  
Lynn Betts, USDA Natural Resources Conservation Service  
Warren J. Busscher, USDA Agricultural Research Service

BOARD OF DIRECTORS  
Peggie James, President & West North Central Director  
Don Wysocki, Vice-President & Western Director  
Jean Steiner, Secretary & At Large Director  
Ira Linville, Treasurer & South Central Director  
Robert Abercrombie, Southwestern Director  
Ashley Andrews, Student Director  
Joseph Arbour, Canada Director  
Theo Dillaha, Southeastern Director  
Clark Gantzer, At Large Director  
Jerry Hatfield, At Large Director  
James Hotelling, Northeastern Director  
Mary Miller, Northern Plains Director  
Gary Steinhardt, East North Central Director

The *Journal of Soil and Water Conservation* (ISSN 0022-4561) is published bimonthly by the Soil and Water Conservation Society. © 2008 by the Soil and Water Conservation Society. All rights reserved.

For subscriptions or membership, please visit [www.swcs.org](http://www.swcs.org) or call 1-800-843-7645. POSTMASTER: Send address changes to *Journal of Soil and Water Conservation*, 945 SW Ankeny Road, Ankeny, IA 50023. Periodicals postage paid at Ankeny, IA, and additional mailing offices.

Submit comments, contributions, advertising queries, and requests for reprints and permissions to the editor at [pubs@swcs.org](mailto:pubs@swcs.org). Articles in the section without a letter "A" after the page numbers have undergone the journal's peer review. The Soil and Water Conservation Society assumes no responsibility for statements and opinions expressed by contributors.

## Focus on soil functions, not symptoms

Many articles continue to focus on tools and symptoms instead of solutions to natural resource problems. Tools—such as models (to predict the symptoms of erosion, sedimentation, runoff, pollution, etc.), conservation programs, and best management practices—are just that, tools. In the hands of a skilled practitioner with a clear understanding of the problem to be solved, tools can work wonders.

Soil erosion and impairment of water quality are symptoms of soil that is not fully functional. The real issue we face today is that many well-intentioned and industrious conservationists do not have a working knowledge of how soil is supposed to function. In addition, few know how the management of agricultural soils impacts how well soil can perform its functions (regulating water, sustaining plant and animal life, filtering and buffering and cycling nutrients). T. Francis Shaxson's letter in the September/October 2007 spoke to the lack of soil function as the root of the problem we are striving to address. I think Mr. Shaxson has hit the nail on the head!

Soil quality is defined by the USDA Natural Resources Conservation Service Soil Quality Team as "... how well soil does what we want it to do. More specifically, soil quality is the capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation. Soil organic matter and soil biology play a major role in soil quality." Understanding soil quality is also understanding the hydrologic cycle, the carbon (energy) cycle, nitrogen cycle, phosphorous cycle, and soil biology, and how they are all inextricably linked.

In his letter, Mr. Shaxson made the point that the soil is a biologic system that hosts the water, nutrient, and energy cycles on which plant and animal life depend. The sooner we heed Mr. Shaxson's words and understand soil quality, the sooner we will truly become skilled practitioners of the soil and successfully address natural resource problems instead of simply measuring the symptoms.

Jon Stika  
SWCS Fellow

## Summaries helpful

I really like the Tech Transfer Briefing pages. I don't always have time to read through all of the detailed research articles in the journal. With the Tech Transfer summaries, I can quickly determine if the topic is something I should read more detailed information on and then I can flip right to the full research piece. This new feature will help me balance my continued learning with my heavy workload. I really appreciate it.

Sarah VanDelfzijl  
Environmental Quality Analyst  
Michigan Dept. of Environmental Quality  
Kalamazoo, Michigan

## Correction

Volume 62, Number 6 (November/December 2007) contained the following error. On page 458 of White et al. (Sediment retention by forested filter strips in the Piedmont of Georgia), the labels were missing from the y axis (travel time). The tick marks from bottom up should have read 0, 10, 20, 30, 40, 50, and 60 sec m<sup>-1</sup>).