



Table of Contents

A SECTION

READERS' FORUM

121A Commentary on "A possible trade-off between clean air and clean water" by Smith et al. (2017)

Wayne Robarge, Owen Duckworth, Deanna Osmond, Jot Smyth, and Mark River

Response to "Commentary on 'A possible trade-off between clean air and clean water' by Smith et al. (2017)"

Douglas R. Smith, Kevin W. King, Helen P. Jarvie, Rick Haney, and Mark R. Williams

FEATURES

124A The nitrogen dilemma: Food or the environment

B.A. Stewart and Rattan Lal

Looking for agricultural water quality protection practices: Denitrifying bioreactors

Christopher H. Hay and Keegan J. Kult

Confined animal feeding operations and state-based right to farm laws: Managing twenty-first century agriculture with a twentieth century framework in the case of Wisconsin, United States

Amy A. Schultz and Harvey M. Jacobs

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

I. Publication Title: Journal of Soil and Water Conservation. 2. Publication Number: 0282-8800. 3. Filing Date: September 6, 2017. 4. Issue Frequency: Bimonthly (January/February, March/Aprill, May/June, July/August, September/October, November/December). 5. Number of Issues Published Annually: Six (6). 6. Annual Subscription Price: \$140. 7. Complete Mailing Address of Known Office of Publication: 945 SW Ankeny Rd., Ankeny, IA 50023-9764. 8. Complete Mailing Address of the Headquarters of General Business Offices of Publisher: 945 SW Ankeny Rd., Ankeny, IA 50023-9764. 9. Full Names and Complete Addresses of Publisher; Editor, and Managing Editor: Publisher: Soil and Water Conservation Society, 945 SW Ankeny Rd., Ankeny, IA 50023-9764. 9. Full Names and Complete Addresses of Publisher; Editor, and Managing Editor: Publisher: Soil and Water Conservation Society, 945 SW Ankeny Rd., Ankeny, IA 50023-9764. 10. Owner: Soil and Water Conservation Society, 945 SW Ankeny Rd., Ankeny, IA 50023-9764. 11. Known Bondholders, Mortgages, and Other Security Holders Owning of Holding 1 Percent or More of Total Amount of Bonds, Mortgages. or Other Securities: None. 12. Tax Status: The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during preceding 12 months. 13. Publication Title: Journal of Soil and Water Conservation. 14. Issue Date for Circulation Data Below: July/August 2017. 15. Extent and Nature of Circulation:

Average no conies each issue

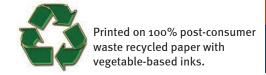
	during preceding 12 months	published nearest to filing date
A. Total No. Copies Printed (net press run)	1,987	1,867
B. Paid Circulation		
Mailed Outside-County Paid Subscriptions	1,815	1,707
Mailed In-County Paid Subscriptions	1	1
3. Paid Distribution Outside the Mailes Including Sales Through Dealers and Carriers,	92	89
Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS		
4. Paid Distribution by Other Classes of Mail Through the USPS	0	0
C. Total Paid Distribution	1,908	1,797
D. Free or Nominal Rate Distribution		
1. Outside-County	0	0
2. In-County	0	0
3. Other Classes Mailed Through USPS	0	0
Free or Nominal Rate Distribution Outside the Mail	0	0
E. Total Free or Nominal Rate Distribution	0	0
F. Total Distribution	1,908	1,797
G. Copies Not Distributed	79	70
H. Total	1,987	1,867
I. Percent Paid	100%	100%
16. Electronic Copy Circulation		
A. Paid Electronic Copies	1,444	1,444
B. Total Paid Print Copies + Paid Electronic Copies	3,352	3,241
C. Total Print Distribution + Paid Electronic Copies	3,352	3,241
D. Percent Paid (Both Print & Electronic Copies)	100%	100%

I certify that 50% of all my distributed copies (Electronic & Print) are paid above a nominal price. 17. Publication of Statement of Ownership: This publication is a general publication. Publication of this statement is required and will be printed in the November/December 2017 issue of this publication. 18. Signature and Title of Editor, Publisher, Business Manager, or Owner: Annie Binder, Editor, Soil and Water Conservation Society. I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

No. copies of single issue



On the Cover
Beautiful autumn scene at a tranquil fishing pond in Ohio.
Photo by Michael Shake.



RESEARCH SECTION

- Crop rotation effect on selected physical and chemical properties of Wisconsin soils M.J. Kazula, J.G. Lauer, and F.J. Arriaga
- Drainage water management effect on corn planting date in southeast Iowa L. Schott, A. Lagzdins, A.L.M. Daigh, C. Pederson, G. Brenneman, and M.J. Helmers
- 575 Susceptibility of cover crop plants to *Fusarium virguliforme*, causal agent of soybean sudden death syndrome, and *Heterodera glycines*, the soybean cyst nematode

 R. Kobayashi-Leonel, D. Mueller, C. Harbach, G. Tylka, and L. Leandro
- Soil surface cover on irrigated rotations for potato (*Solanum tuberosum* L.), dry bean (*Phaseolus vulgaris* L.), sugar beet (*Beta vulgaris* L.), and soft white spring wheat (*Triticum aestivum* L.) in southern Alberta
 F.J. Larney, D.C. Pearson, R.E. Blackshaw, and N.Z. Lupwayi
- Can soil crusting be reduced through application of gypsum, organic waste, and phosphoric acid?

 A. Almajmaie, M. Hardie, T. Acuna, and C. Birch
- Forestry best management practices for erosion control in haul road ditches near stream crossings
 A.J. Lang, W.M. Aust, M.C. Bolding, K.J. McGuire, and E.B. Schilling
- Improved water management of a poorly drained floodplain soil and the impact on forage production and nitrate concentration

P.R. Nash, K.A. Nelson, P.P. Motavalli, and R.P. Udawatta

- Late sowing with high seeding rate increases wheat water use efficiency under deficit irrigation B. Wang, Y. Zhang, B. Hao, M. Han, Z. Zhao, Z. Wang, and Q. Xue
- The influence of beliefs and norms on landowners' civic engagement in water resource protection A.K. Pradhananga, M.A. Davenport, and V. Perry

RESEARCH EDITORIAL

Ecosystem services find their federal footing: A history of the 2008 Farm Bill and 2012 Forest Planning Rule
J. Boyd

CONSERVATION

o n i n e

The Journal of Soil and Water Conservation is online.

AUTHORS

Please submit manuscripts using the online manuscript review system.

MORE INFORMATION
Go to www.jswconline.org

JOURNAL OF SOIL AND WATER CONSERVATION

Soil and Water Conservation Society 945 SW Ankeny Road, Ankeny, IA 50023 USA www.swcs.org

CHIEF EXECUTIVE OFFICER

Clare Lindahl

Soil and Water Conservation Society Ankeny, Iowa, USA

EDITOR & DIRECTOR OF PUBLICATIONS

Annie Binder Soil and Water Conservation Society

Ankeny, Iowa, USA

RESEARCH EDITOR & CHAIR OF EDITORIAL BOARD

Jorge A. Delgado Soil Management and Sugar Beet Research Unit USDA Agricultural Research Service Fort Collins, Colorado, USA

EDITORIAL ASSISTANT

Jody Thompson Soil and Water Conservation Society

Ankeny, Iowa, USA

FDITORIAL BOARD J. Gordon Arbuckle, Jr. Department of Sociology

Iowa State University Ames, Iowa, USA

Cecilia María Armas Herrera University of Zaragoza

Zaragoza, Spain

Francisco Arriaga Department of Soil Science and UW-Extension University of Wisconsin-Madison

Madison, Wisconsin, USA

Karl Auerswald Technische Universität München

Freising, Germany

Jamiu Oladipupo Azeez Department of Soil Science and Land Management Federal University of Agriculture Abeokuta

Abeokuta, Ogun, Nigeria

Claire Baffaut Cropping Systems and Water Quality Research Unit USDA Agricultural Research Service Columbia, Missouri, USA

Kathryn J. Brasier Department of Agricultural Economics & Rural Sociology

The Pennsylvania State University University Park, Pennsylvania, USA

Key Laboratory of Desert and Desertification

Chinese Academy of Sciences Lanzhou, Gansu Province, China

Moustafa A. Elrashidi

National Soil Survey Center USDA Natural Resources Conservation Service Lincoln, Nebraska, USA

Uriel Figueroa-Viramontes

National Institute of Forestry, Agricultural, and Livestock Research Matamoros, Coahuila, Mexico

Clark J. Gantzer Soil, Environmental, and Atmospheric Sciences

University of Missouri Columbia, Missouri, USA

Margaret W. Gitau Agricultural and Biological Engineering

Purdue University West Lafayette, Indiana, USA

Valentin Golosov

Lomonosov Moscow State University Moscow, Russia

LeRoy Hansen

USDÁ Economic Research Service

Washington, DC, USA

Institute of Agricultural and Environmental Biosciences University of Buenos Aires Buenos Aires, Argentina

Chunsheng Hu Center for Agricultural Resources Research

Shijiazhuang, Hebei, China

Kanika Sharma Inglett Soil and Water Science Department University of Florida Gainesville, Florida, USA

Thomas Iserloh Department of Physical Geography

Trier University Trier, Germany

Gergely Jakab

Research Center for Astronomy and Farth Sciences

Hungarian Academy of Sciences Budapest, Hungary

Jane M.F. Johnson North Central Soil Conservation Research Laboratory USDA Agricultural Research Service Morris, Minnesota, USA

Amy L. Kaleita Agricultural and Biosystems Engineering

Iowa State University

Ames, Iowa, USA

Peter J.A. Kleinman Pasture Systems & Watershed Management Research Unit

USDA Agricultural Research Service University Park, Pennsylvania, USA

Institute of Hydraulics and Rural Water Management BOKU-University of Natural Resources and Life Sciences Vienna, Austria

Lisa Lobry de Bruyn School of Environmental and Rural Science University of New England Armidale, New South Wales, Australia

Loretta M. Lvnch

Department of Agricultural and Resource Economics University of Maryland College Park, Maryland, USA

Machito Mihara

Faculty of Regional Environmental Science Tokyo University of Agriculture

Tokyo, Japan

Daniel Moriasi Great Plains Agroclimate and Natural Resources Research Unit USDA Agricultural Research Service

Rachid Mrabet Institut National de la Recherche Agronomique (INRA) Rabat, Morocco

The New Zealand Institute for Plant and Food Research Limited Hamilton, New Zealand

El Reno, Oklahoma, USA

Mark A. Nearing

Southwest Watershed Research Center USDA Agricultural Research Service Tucson, Arizona, USA

Department of Chemistry and Environmental Science New Jersey Institute of Technology

Newark, New Jersey, USA

Felix Kolawole Salako

Department of Soil Science and Land Management University of Agriculture

Abeokutá, Nigeria

Gretchen Sassenrath

Department of Agronomy Kansas State University

Manhattan, Kansas, UŚA

National Institute of Water and Atmospheric Research Ltd.

Christchurch, New Zealand

Peter Strauss

Institute for Land and Water Management Research Federal Agency for Water Management

Pöchlarn, Austria

R. Scott Van Pelt Wind Erosion and Water Conservation Research Unit USDA Agricultural Research Service

Big Spring, Texas, USA

Department of Agricultural Economics and Agribusiness

Louisiana State University Baton Rouge, Louisiana, USA

Columbia Plateau Conservation Research Center

USDA Agricultural Research Service Pendleton, Oregon, USA

Wanhong Yang Department of Geography

University of Guelph Guelph, Ontario, Canada

BOARD OF DIRECTORS

BOARD OF DIRECTORS
Rex Martin, Chair & At-Large Director
Wendi Goldsmith, Vice-Chair & Northeastern Director
Don Wysocki, Secretary & Northwestern Director
Susan Meadows, Treasurer & North Central Director
Steve Kadas, Southwestern Director
Bruce Knight, At-Large Director
William Kuckuck, At-Large Director
Dale Threatt-Taylor, Southeastern Director
Jason Weller, At-Large Director

The Journal of Soil and Water Conservation (print ISSN 0022-4561, online ISSN 1941-3300) is published bimonthly by the Soil and Water Conservation Society, © 2017 by the Soil and Water Conservation Society. All rights reserved.

For subscriptions or membership, please visit www.swcs.org or call 800-THE-SOIL. POSTMASTER: Send address changes to Journal of Soil and Water Conservation, 945 SW Ankeny Road, Ankeny, IA 50023 USA. 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. Articles in the Research Section have undergone peer review. The Soil and Water Conservation Society assumes no responsibility for statements and opinions expressed by contributors.

Soil and Water **Conservation Society** Corporate Membership

GOLD CORPORATE MEMBERS

Agri Drain Corporation www.agridrain.com

Hickenbottom Inc. www.hickenbottominc.com

SILVER CORPORATE MEMBERS

Agribusiness Association of Iowa agribiz.org

> Dairy Management Inc. www.dairy.org

The Fertilizer Institute www.tfi.org

BRONZE CORPORATE MEMBERS

Conservation Technology Information Center www.ctic.org

Ecosystem Services Exchange

www.ecoexch.com La Crosse Seed www.lacrosseseed.com

The Nature Conservancy www.nature.org

Watershed Materials www.maddogfoambridges.com

White River Irrigation District

For information on becoming a corporate member, please contact

> Jamie Nieman 515-289-2331 ext. 114

corporate.info@swcs.org