



Table of Contents

A SECTION

FEATURES

67A **Legacy sediment erosion hot spots: A cost-effective approach for targeting water quality improvements**
Patrick M. Fleming, Dorothy J. Merritts, and Robert C. Walter

74A **Toward understanding conservation behavior in agriculture as a dynamic and mutually responsive process between individuals and the social system**
Alejandra Engler, P. Marijn Poortvliet, and Laurens Klerkx

VIEWPOINT

81A **Rights-of-Soil**
Rattan Lal

A SECTION Call for Papers

Are you working on cutting edge research in soil and water conservation? Does your work involve new tools, technologies, or materials that others should be aware of? Have you observed or been a part of conservation practices that are worth sharing with the journal audience?

If you answered “Yes” to any of these questions, you are invited to submit your article ideas for the A Section of the *Journal of Soil and Water Conservation*.

Your work could be published in one of the A Section topic areas: Conservation in Practice, Viewpoint, Ideas & Innovations, Conservation in Action, In the News, Feature, etc.

To submit your article ideas or for more information, contact editor Annie Binder at annie.binder@swcs.org

JOURNAL OF SOIL AND WATER
CONSERVATION

o n l 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.jswnonline.org



On the Cover
Wide open range in Alamosa
County, Colorado.
Photo by Oscity.



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

RESEARCH SECTION

- 323** **Soil carbon and bulk density distribution within 10 Southern Piedmont grazing systems**
T. Hendricks, D. Franklin, S. Dahal, D. Hancock, L. Stewart, M. Cabrera, and G. Hawkins
- 334** **Updated climate database and impacts on WEPP model predictions**
A. Srivastava, D.C. Flanagan, J.R. Frankenberger, and B.A. Engel
- 350** **Unmanned aerial vehicle–based assessment of cover crop biomass and nitrogen uptake variability**
M. Yuan, J.C. Burjel, J. Isermann, N.J. Goeser, and C.M. Pittelkow
- 360** **Understanding the effects of grazing and prescribed fire on hydrology of Kentucky bluegrass–dominated rangelands in the northern Great Plains**
S.K. Nouwakpo, D. Toledo, M. Sanderson, and M. Weltz
- 372** **Tree species and soil substrate affect buffer capacity of anthroposols in afforested postmine sites in Poland**
A. Józefowska, J. Sokołowska, K. Woźnica, B. Woś, and M. Pietrzykowski
- 380** **Cutting diameter on early growth performance of purple willow (*Salix purpurea* L.)**
C. Weissteiner, N. Schenkenbach, W. Lammeranner, G. Kalny, and H.P. Rauch
- RESEARCH EDITORIAL**
- 389** **Service crop management to maximize crop water supply and improve agroecosystem resilience: A review**
C.M. Ogilvie, W. Deen, and R.C. Martin
- 405** **Climate change impacts on wind and water erosion on US rangelands**
B.L. Edwards, N.P. Webb, D.P. Brown, E. Elias, D.E. Peck, F.B. Pierson, C.J. Williams, and J.E. Herrick

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

EDITORIAL 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

Andrew Barnes
Land Economy Research Group
Scotland's Rural College
Edinburgh, United Kingdom

Kathryn J. Brasier
Department of Agricultural Economics & Rural Sociology
The Pennsylvania State University
University Park, Pennsylvania, USA

Chongfa Cai
College of Resources and Environment
Huazhong Agricultural University
Wuhan, Hubei Province, China

Zhibao Dong
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

Hamid J. Farahani
National Technology Support Center
USDA Natural Resources Conservation Service
Greensboro, North Carolina, 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

Juan M. Herrea
Institute of Agricultural and Environmental Biosciences
University of Buenos Aires
Buenos Aires, Argentina

Chunsheng Hu
Center for Agricultural Resources Research
Shijiazhuang, Hebei, China

Thomas Iserloh
Department of Physical Geography
Trier University
Trier, Germany

Gergely Jakob
Research Center for Astronomy and Earth Sciences
Hungarian Academy of Sciences
Budapest, Hungary

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

Mohammad Khakbazan
Brandon Research Center
Agriculture and Agri-Food Canada
Brandon, Manitoba, Canada

Peter J.A. Kleinman
Pasture Systems & Watershed Management Research Unit
USDA Agricultural Research Service
University Park, Pennsylvania, USA

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

Sheng Li
Fredericton Research and Development Center
Agriculture and Agri-Food Canada
Fredericton, New Brunswick, Canada

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

Loretta M. Lynch
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
El Reno, Oklahoma, USA

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

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

Mark A. Nearing
Southwest Watershed Research Center
USDA Agricultural Research Service
Tucson, Arizona, USA

Paulo Tarso Sanches de Oliveira
Federal University of Mato Grosso do Sul
Campo Grande, Mato Grosso do Sul, Brazil

Naresh Pai
Bayer
St. Louis, Missouri, USA

Zeyuan Qiu
Department of Chemistry and Environmental Science
New Jersey Institute of Technology
Newark, New Jersey, USA

Gretchen Sassenrath
Department of Agronomy
Kansas State University
Manhattan, Kansas, USA

Maria Lucia Silveira
Range Cattle Research and Education Center
University of Florida
Ona, Florida, USA

M.S. Srinivasan
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

John Westra
Department of Agricultural Economics and Agribusiness
Louisiana State University
Baton Rouge, Louisiana, USA

John D. Williams
Columbia Plateau Conservation Research Center
USDA Agricultural Research Service
Pendleton, Oregon, USA

BOARD OF DIRECTORS

Rex Martin, Chair & At-Large Director
Wendi Goldsmith, Vice-Chair & Northeastern Director
Dale Threatt-Taylor, Secretary & Southeastern Director
Don Wysocki, Treasurer & Northwestern Director
Steve Kadas, Southwestern Director
Bruce Knight, At-Large Director
William Kuckuck, At-Large Director
Rebecca Power, North Central 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. © 2019 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 MEMBER

The Fertilizer Institute
www.tfi.org

For information on becoming a corporate member, please contact
515-289-2331 ext. 114
corporate.info@swcs.org