

# CONSERVATION

MARCH | APRIL 2004

30A

Map provided by CIA

EASTERN EUROPE: WHERE DOES CONSERVATION FIT IN?

This introduction to the next four articles describes how political changes have affected natural resources in four very different countries—Kazakhstan, Ukraine, Poland, and Romania.

By W.J. Busscher and J.B. Lipiec

34A

**KAZAKHSTAN** 

A summary of the terrain, soils, and policy changes in Kazakhstan. By T.D. Djalankkuzov, M.I. Rubinshtejn, B.U. Sulejmenov, Z.O. Oshakbaeva,

and W.J. Busscher

36A

**UKRAINE** 

Author's impression of soil protection and land use in the Ukraine.

By V. Medvedev

38A

POLAND

This article presents the author's synopsis of the state of soils and

agriculture in Poland.

By J.B. Lipiec, S. Krasowicz, and R.A. Debicki

37A

**ROMANIA** 

A summary of the soils and agriculture in Romania.

By A. Canarache



30A

ROMANIA

BULGARIA

FINLAND

BELARUS

**DEPARTMENTS** 

22A

**HOME FRONT** 

A Viewpoint from the Soil and Water Conservation Society

**Executive Director** 

24A VIEWPOINT

A perspective on the soil quality target by Dr. William Puckett

25A

RAISE YOUR VOICE

Letters to the Editor

26A

**NOTEBOOK** 

**Conservation News You Can Use** 

42A

**CONSERVOGRAM** 

The Soil and Water Conservation Society in Action



On the Cover Photo by Eyewire.



## RESEARCH

AN APPLICATION OF WATER SCARCITY PRICING WITH **VARYING THRESHOLD, ELASTICITY, AND DEFICIT** 

J.M. Duke and R. Ehemann

STREAM NITROGEN CHANGES IN AN EASTERN COASTAL 66 **PLAIN WATERSHED** 

> K.C. Stone, P.G. Hunt, J.M. Novak, M.H. Johnson, D.W. Watts, and F.J. Humenik

72 FATE OF NITROGEN FROM AGRICULTURE IN THE **SOUTHEASTERN COASTAL PLAIN** 

R.K. Hubbard, J.M. Sheidan, R. Lowrance, D.D. Bosch, and G. Vellidis

86 **CONCENTRATION-DISCHARGE REGRESSION PARAMETERS IN** WATERSHEDS OF VARYING LITHOLOGY SUBJECTED TO **SURFACE COAL MINING AND RECLAMATION** J.V. Bonta

# IOURNAL OF SOIL AND WATER CONSERVATION

PUBLISHER | Soil and Water Conservation Society
Craig Cox, Executive Director

**EDITOR** Deb Happe

RESEARCH EDITOR | Jorge Delgado, USDA-Agricultural Research Service

## **ASSOCIATE RESEARCH EDITORS**

Grant Cardon, Colorado State University
Michael Dosskey, USDA-National Agroforestry Center
Eric Harmsen, University of Puerto Rico
Madhu Khanna, University of Illinois
Bradley King, University of Illinois
Peter Kleinman, USDA-Agricultural Research Service
David Lobb, University of Manitoba
Birl Lowery, University of Misconsin
Loretta Lynch, University of Maryland
Maurice Mausbach, USDA-Natural Resources
Conservation Service

Guy Mehuys, McGill University
Jeffrey Novak, USDA-Agricultural Research Service
Kenneth Potter, USDA-Agricultural Research Service
Clint Truman, USDA-Agricultural Research Service
John White, University of Florida
John Williams, USDA-Agricultural Research Service

#### **ADVISORS**

Lynn Betts, USDA-Natural Resources Conservation Service Warren Busscher, USDA-Agricultural Research Service Mary Cressel, USDA-Natural Resources Conservation Service

ADMINISTRATIVE ASSISTANT | Suzi Case

### **A-PAGE CONTRIBUTING WRITERS**

W.J. Busscher, A. Canarache, R.A. Debicki, T.D. Djalankkuzov, S. Krasowicz, J.B. lipiec, V. Medvedev, Z.O. Oshakbaeva, M.I. Runbinshtejn, B.U. Sulejmenov

ADVERTISING REPRESENTATIVE | Tom Smull

## **BOARD OF DIRECTORS**

Deborah Cavanaugh-Grant, President & At-large
Jeffrey Vonk, Vice Pres & At-large
Ross Braun, Secretary & West North Central
Becky Fletcher, Treasurer & East North Central
Rod Goode, South Central
Dana Chapman, Northeastern
Myron Senechal, Northern Plains
Gary Sick, Southeastern
Steven Smarik, Western
Jean Steiner, At-large
Ray Tufgar, Canada
Larry Wright, Southwestern
Shaun Schmidt, Student representative

Journal of Soil and Water Conservation (ISSN 0022-4561) is published bimonthly by the Soil and Water Conservation Society. Editorial, executive, and membership offices: 945 SW Ankeny Road, Ankeny, Iowa 50021-9764; (515)289-2331. Advertising offices: 319 E. 5th Street, Suite 3, Des Moines, Iowa 50309, (800)577-4638 or tsmull@inanews.com. Periodicals postage paid at Ankeny, Iowa and additional mailing offices.

POSTMASTER: Send address changes to Journal of Soil and Water Conservation, 945 SW Ankeny Road, Ankeny, Iowa 50021-9764. Copyright 2004 by the Soil and Water Conservation Society. Subscription is by membership in the Soil and Water Conservation Society or by subscription. Membership dues are \$75 per year (additional \$15 outside the United States and Canada); subscriptions are \$75 per year (\$95 outside the United States). Page charges are assessed to authors in pages other than the A-section.

The Journal of Soil and Water Conservation assumes no responsibility for statements and opinions expressed by contributors.

MÍA 2004 VOLUME 59 NUMBER 2 2

## RAISE YOUR VOICE

YOUR FORUM TO REACT TO PUBLISHED ARTICLES, TO EXCHANGE IDEAS, AND DESCRIBE INNOVATIVE APPROACHES TO CONSERVATION INCLUDING LEGISLATION

## Soil quality disagreement is banner

We read with interest the research editorials in the July-August 2003 issue by Letey et al. (2003) and Karlan et al. (2003) discussing the strengths and weakness of the soil quality concept. Ultimately, the usefulness of any soil quality program is its ability to create positive change and better management of the world's soils. We acknowledge many of the points highlighted in the papers, and have found the term and concept useful to raise awareness about soils and soil management among "non-scientists" in New Zealand.

We recently completed a six-year survey of soil quality on over 500 sites in New Zealand, funded by the central government and Regional Councils (Sparling et al., 2004)). An important factor for the success was developing soil quality targets specific to each soil (up to 12 categories) and land use (up to 10 land uses). These targets also accommodated the sometimes-conflicting goals of maximizing production while protecting the environment (Lilburne et al., 2004). We have not found a single index of soil quality to be useful, although local and central governments have found it helpful to know what proportion of soils met the specified target criteria (Sparling and Schipper, 2004). Generally, the land managers were more interested in detailed site-specific information to help their management decisions.

The survey quantified a number of emerging land use issues at regional scales, including problems of widespread soil compaction, excess fertility, acidification, carbon storage for some soil, and land use combinations. The data are actively being used for land manager education and in policy development.

Despite the on-going disagreement among some scientists about the soil quality concept and terminology, in our

case we have found it a useful banner to elevate the status of soils and soil management practices, particularly with regional and national land administrators in New Zealand.

-Louis Schipper, Graham Sparling, and Craig Ross, Landcare Research, Hamilton, New Zealand

## References cited

Karlen, D.L., S.S. Andrews, B.J. Weinhold, and J.W. Doran. 2003. Soil quality: Humankind's foundation for survival. Journal of Soil and Water Conservation 58(4):171-179.

Letey J., R.E. Sojka, D.R. Upchurch, D.K. Cassel, K.R. Olson, W.A. Payne, S.E. Petrie, G.H. Price, R.J. Reginato, H.D. Scott, P.J. Smethurst, and G.B. Triplett 2003. Deficiencies in the soil quality concept and its application. Journal of Soil and Water Conservation 58(4):180-187.

Lilburne L., G.P. Sparling, and L.A. Schipper (in press) Development of an interpretative framework for soil quality assessment. Agriculture, Ecosystems and Environment.

Sparling G.P., L.A. Schipper, R. Hill, and W. Bettjeman (in press) Soil quality monitoring in New Zealand: Establishment of a national scheme and selecting a minimum data set. Agriculture, Ecosystems and Environment.

Sparling G.P. and L.A. Schipper (in press) Soil quality monitoring in New Zealand: Trends and issues arising from a broad-scale survey 1995-2001. Agriculture, Ecosystems, and Environment.

## The ultimate upland treatment

The November/December issue of the Journal of S oil and Water Conservation included a study by Baker et al. that attempted to measure the effect of a vegetative filter strip on atrazine and sediment runoff. Some of the conclusions are, at best, misleading and others are so obvious one wonders why the study was conducted.

The first conclusion, "Adding sediment to inflow had no significant effect on atrazine and BR retention" not only flew against everything I know about atrazine and erosion, but also forced me to read the entire article.

I found that sediment was added to the

"with sediment" treatment and the atrazine was added to the runoff and not sprayed on the land. Since the study stated the "with sediment" treatment simulated conventional tillage and the "without sediment" treatment simulated notill, the conclusion was that no-till does not reduce atrazine runoff. That's complete garbage! No-till not only greatly reduces total runoff, but also reduces sediment in that runoff, and since atrazine adheres to soil particles, less sediment means less atrazine.

Another major conclusion of the study was that a 30-foot strip was more effective than at 15-foot strip in reducing sediment and atrazine. Perhaps the most important sentence in this biased and flawed study was the last, "Therefore, future research on the effect of vegetative filter strips on water quality should be conducted under more realistic conditions." Even the researchers recognize the truth in the old axiom, "garbage in, garbage out."

I truly believe in filter strips, but they are only as good as the upland treatment. If it is tilled, the filter is rendered useless as a long-term solution. Without no-till (the ultimate upland treatment) filters are merely Band-aids!

-Jerry Crew, Webb, IA

## Readers are invited to express their views on land and water management.

Please make your letter less than 150 words. Letters may be edited for length and clarity.

## Send to Editor:

deb.happe@swcs.org

fax 515-289-1227

Journal of Soil and Water Conservation, 945 SW Ankeny Road, Ankeny, Iowa 50021-9764

- Deb Happe, Editor