OSM NATIONAL LIBRARY

May 11, 2012

Current Journal Contents

U.S. Office of Surface Mining/DOI
1999 Broadway, Suite 3320
Denver, CO 80202-3050

This is the current compilation of the table-of-contents pages for journals received during the month of April in the Library. Individuals may have copies of specific articles by notifying the librarian either by phone, e-mail, or regular mail service. **(If you have more than one or two articles you want, please send a written or e-mail request.)**

Deborah K. McGinnis, Librarian **Tel: (303) 293-5073**
dmcginnis@osmre.gov **FAX (303) 293-5017**

Search the OSM Library Catalog HERE

NOTICE OF WARNING CONCERNING COPYRIGHT RESTRICTIONS

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

MARCH 2012 | VOL. 117 | NO. 3

Coal Age

FEATURE ARTICLES

22 Shovel Performance: AC vs. DC
A case study demonstrates the benefits of AC technology

30 Series Arcing and Sensitive Short Circuit Protection
An alternative method detects series arc and the short circuit before it becomes a problem

34 Evaporative Dewatering Solution Flows Smoothly—with the Right Pump Choice

38 While Canadian Terminals Expand Export Capacities, Many U.S. Producers are Still Going to be Short of Space
Despite large expansion projects, there's just no room for all

46 Poland's Bogdanka Mine Sets Production Record

COAL IN THE NEWS

4 Genwal pleads guilty ending Crandall Canyon investigation

4 CONSOL Energy idles longwall production

5 Alliance acquires Green River Collieries

6 Alpha cuts CAPP production

8 Rhino Resource executive resigns

12 NRP acquires infrastructure assets & royalty interest at Sugar Camp

16 Patriot miner sues parent company

16 Midwest to retire coal-fired power plant in Chicago

20 MSHA releases internal review report related to UBB

21 West Virginia mine boss charged with fraud in deadly blast

WORLD NEWS

5 Xstrata Coal and JX Nippon create Canadian met coal JV
Leighton lands Moorvale extension in Australia

6 Vlakvarkfontein to supply coal to South Africa's Eskom
Striking Port Kembla workers return

8 Mechel suspends production at New-Olzherassk
New terminal ships coal out of Mozambique

10 Chinese 2011 raw coal output continues to grow
Colombia exports jump in 2011
Indian group plans large coal complex for Australia

NEWS/4

ARC MITIGATION/30

DEWATERING/34

TERMINALS/38

THIS ISSUE

In addition to an extensive report on Canadian coal terminals, Coal Age also takes a look at AC shovel performance and arc mitigation. (On the cover: Westshore Terminals, Vancouver, BC.)

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

DEPARTMENTS

2 Editorial
4 Coal in the News
5 World News
12 People
14 Dateline Washington
16 Calendar
18 Awards
46 Operating Ideas
48 Suppliers News
50 Product News
53 Classified
56 Legally Speaking

EARTH

MAY 2012
vol. 57 ■ no. 5
www.earthmagazine.org

FEATURE

U.S. NAVY NAVIGATES A SEA CHANGE IN THE ARCTIC

An increasingly accessible and less icy Arctic is attracting greater resource exploration, scientific research, tourism and military presence, including the U.S. Navy, which has been working to develop a roadmap for expected future Arctic operations.

Kathryn Hansen

28

FEATURE

KILAUEA'S EXPLOSIVE PAST — AND FUTURE

Scientists know that Hawaii's most famous volcano is capable of explosive eruptions, but now researchers have learned that violent eruptions at Kilauea lasting centuries have alternated with periods of quiet flows.

Harvey Leifert

34

FEATURE

TRAVELS IN GEOLOGY: Santorini: Dangerous Volcano, Postcard-Perfect Jewel of the Aegean

Santorini is an idyllic Greek isle renowned for its sensational sunsets, colorful volcanic beaches, and blue-domed, whitewashed buildings clinging to sheer, ashy cliffs.

Terri Cook and Lon Abbott

42

TRENDS AND INNOVATIONS

MOBILE MAPPING WITH LIDAR HITS THE ROAD

A new generation of lidar technology calls for mounting the laser-based instruments atop SUVs, boats and cars. These mobile mapping systems are giving geoscientists a whole new way to map and study the world.

Mary Caperton Morton

24

ON THE COVER: The U.S. Navy is planning for the future in an Arctic with less sea ice. U.S. Navy photo is by Mass Communication Specialist 2nd Class Kevin S. O'Brien/Released.

EARTH MAGAZINE
Vol. 57, no. 5 (May 2012)
Page 2 of 2

NEWS

8 NASA EARTH SCIENCE BUDGET HOLDS ITS GROUND

9 EVIDENCE OF HIGHER LIFE FORMS FOUND BENEATH SEAFLOOR

10 EARLIEST INSTRUMENTAL TEMPERATURE RECORD RECOVERED

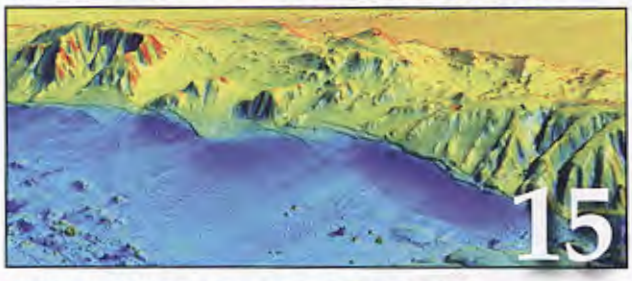
12 SATELLITE DATA PROVIDE FIRST ESTIMATE OF TOTAL ICE LOSS ON EARTH

13 OLDEST FOSSIL FOREST DISCOVERED — TWICE

13 A BITE WORSE THAN ANY BARK

14 IS M.Y. AN ABBREVIATION OR A UNIT OF TIME?

15 MAP REVEALS POST-QUAKE LAND CHANGES



16 QUOTH THE FEATHERED, IRIDESCENT *MICRORAPTOR*, NEVERMORE

17 SILICATE MINERALS POWER DIAMOND-BEARING ERUPTIONS

18 NORTH STAR LOSES MASS BUT STILL SHINES BRIGHT

19 EARTHSHINE SHEDS LIGHT ON LIFE-BEARING PLANETS

19 MAPPING AMASIA

20 PALEOZOIC PLANTS SHAPED RIVERS

21 VOLCANOES SPARKED — AND PROLONGED — THE LITTLE ICE AGE

22 AT EARTH ONLINE ...

22 GIANT JURASSIC BLOODSUCKERS

23 MINERAL RESOURCE OF THE MONTH: MANGANESE

VIEWS

69 A COMMENT
MAKING TOUGH DECISIONS IN A CHANGING CLIMATE
World leaders are beginning to realize that planning for and adapting to our changing climate must become a priority of national governments. But what does that mean in practical terms?
Kelly Levin and Polly Ghazi

71 A COMMENT
DEFENDING SCIENCE: THE LINK BETWEEN CREATIONISM AND CLIMATE CHANGE
What do creationists and climate change deniers have in common? A lot. And now they have an opponent in common as well: the National Center for Science Education.
Steven Newton

72 GEOLOGIC COLUMN
TWINKIES AND THE FIVE ROCKS
The link between geology and Twinkies goes a lot further than just Twinkies serving as a good food for fieldwork.
Lisa A. Rossbacher

DEPARTMENTS

4 FROM THE MANAGING EDITOR

6 LETTERS: PERSPECTIVES FROM READERS

52 GEOMEDIA
Web & TV: Modern Storytelling to Advance Climate and Energy Innovation

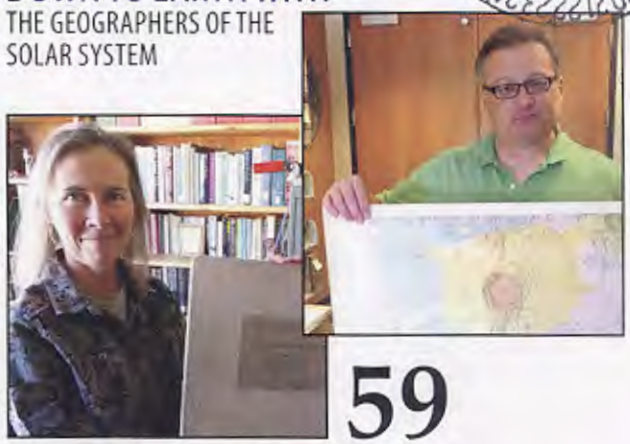
54 CROSS-SECTION: A PUZZLE

55 WHERE ON EARTH?

56 BENCHMARKS
May 15, 1909: The Northern Great Plains Earthquake

59 DOWN TO EARTH WITH THE GEOGRAPHERS OF THE SOLAR SYSTEM

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO



62 EARTH PRODUCT SPOTLIGHT

64 GEOMARKETPLACE

66 CLASSIFIEDS: CAREER OPPORTUNITIES

E&MJ
ENGINEERING AND MINING JOURNAL®

APRIL 2012 • VOL 213 • NUMBER 4

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

FEATURES

Time-critical Support
Logistics service for the mining industry is much more than just delivering consumables 32

Pump Powers Paste to Stillwater's Stopes
Some of platinum producer Stillwater Mining's more distant—and more difficult—stopes require expensive underhand cut-and-fill mining. A sturdy piston pump has kept the paste flowing dependably to these sites for more than a decade 40

Lock Down Your Data
New wireless network systems offer mines almost unlimited flexibility in voice and data communications. Have network security measures kept pace with expanding wireless capabilities? 44

Advancements in Technology Improve Workshop Component Handling and Safety
Purpose-built machines move large awkward components in confined spaces 48

Special Report: Mining in Alberta
The potential of the Wild Rose 57

LEADING DEVELOPMENTS

PwC Reports Near-record 2011 Mining M&A—Even More in 2012 6
Rio Tinto Expanding Mine of the Future Program 7
Molycorp Acquiring Neo Material Technologies 7
Nonferrous Exploration Doubles in Two Years 10
Freeport Provides Update on Grasberg 10

AROUND THE WORLD

U.S. & Canada: *Osisko Brings First Half of Secondary Crusher Online* 12
Latin America: *Escobal on Track for 2012 Mill Startup* 18
Australia/Oceania: *Ivanhoe Australia Starts Up at Osborne* 20
Africa: *Impala Platinum Agrees to Indigenization in Zimbabwe* 22
Asia: *Orus Reports Feasibility Study for its Karchiga Copper Project* 24
Exploration Roundup: *Newmont Increases its Gold Reserves* 26

This month a maintenance-related article describes how work could flow in a modern workshop. On the cover, a Variable Work Table XC-30 is being used to remove a wheel motor from a Komatsu 960E haul truck. (Photo courtesy of Hedweld)

DEPARTMENTS

Calendar 30
Classified Advertisements 86
Equipment Gallery 82
From the Editor 2
Markets 88
Operating Strategies 74
People 16
Processing Solutions 77
Suppliers Report 80
This Month in Coal 28

Logistics....32

Paste Backfill....40

Communications....44

ENR - ENGINEERING NEWS RECORD

April 9, 2012

Contents

Volume 268 • Number 10

COVER STORY

Rental Market on the Rise

20 Contractors are facing tough times. Many have scaled back and cut costs. As a result, equipment rentals are flourishing as a means of lowering overhead expenses, taxes, insurance and maintenance.

Cover photo and right by Michael Falco

Research offers alternative collapse theory. Page 8

NEWS

Buildings

8 **Technology:** Harnessing knowledge
15 **Buildings:** New green model code released

Transportation

10 **Legislation:** Transportation stopgap signed, but multiyear bill still elusive
11 **Traffic Control:** Regional managed network planned for South Florida

UPCOMING ISSUES

April 16	Award of Excellence
April 23	Top 500 Design Firms
April 30	Web News and Updates
May 7	Critical Infrastructure

Power & Industrial

9 **Energy Research:** U.S. fusion prospects hurt by test results and budget cuts
11 **Oil and Gas:** Booming U.S. energy market spurs pipeline network expansion

Safety

12 **Legal:** Prosecution rests in Lomma crane collapse

Education

12 **Engineering Study:** Academic studies how engineering students learn

Environment

13 **Water Resources:** Lack of coordination hinders water planning in California

Water & Dams

14 **Water:** Pipeline to quench Las Vegas thirst gets key approval

Obituaries

18 **Robert V. Whitman:** Pioneering earthquake engineer
18 **John Lowe III:** RCC innovator
19 **Lois Gray:** Design-build firm co-founder
19 **Neil H. Smull:** Idaho architect-engineer
19 **J. Fletcher Creamer Sr.:** New Jersey builder

DEPARTMENTS

4 Calendar
6 Construction Week
7 Washington Observer
17 Technology
18 People
35 Construction Economics
38 Products/Manufacturers' Information
39 Pulse
46 Official Proposals (cont. on p. 47)
48 Viewpoint

APR 2012 RECEIVED LIBRARY OSMRE-WFO

For subscriber services call:
(877) 876-8208 or (515) 237-3681

GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS.

Not getting ENR Insider and News Alerts? Please call (877) 876-8208

enr.com
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
SERVING THE INDUSTRY SINCE 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly 3 issues a month; 36 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. **Founder:** James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DHL Global Mail, 355 Admiral Blvd-Unit 4, Mississauga, ON L5T 2N1. Email: enrcustserv@odsfulfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2012 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Jack F. Callahan Jr., Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel. McGraw-Hill Construction: Keith Fox, President; John Murphy, Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $9.95 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

IMAGE BY ENA CHEUNG/THORNTON TOMASETTI

ENR - ENGINEERING NEWS RECORD

April 16, 2012

Contents

Volume 268 • Number 11

COVER STORIES

The Top 25 Newsmakers

48 ENR recognizes engineering and construction's 2011 pacesetters.

Award of Excellence

50 This year's winner, Theodore Zoli, has repeatedly combined innovation with practicality to address a vast array of bridge issues.

Cover photo by Eric Millette; photo right courtesy of HNTB

NEWS

Business Management

10 **Accident:** Crane fatality puts two agencies at odds

11 **Infrastructure:** System tool boosts usability

Power & Industrial

14 **Nuclear Power:** TVA resets Watts Bar project after cost, schedule overruns

25 **Alternative Energy:** Wind power for Great Lakes states

Transportation

21 **Tolling:** VDOT reworks tunnel pact

Officials probe New York City crane collapse. Page 10

26 **Locks and Dams:** Panama Canal expansion falls six months behind schedule

Buildings

17 **Sustainability:** Curved green roof captures, camouflages and complicates

22 **Energy Conservation:** Nation's biggest energy miser meets its energy-use goals

28 **Construction Starts:** Arena project hits wall

Technology

30 **BIM:** Autodesk launches cloud service

People

12 **Q&A:** Fluor Corp. CEO David Seaton

32 **Obituary:** James Endler, project manager

32 **Obituary:** John J. Chase, architect

UPCOMING ISSUES

April 23	Top 500 Design Firms
April 30	Web News and Updates
May 7	Critical Infrastructure
May 14	Top 400 Contractors

DEPARTMENTS

4 Update

6 Washington Observer

9 Construction Week

32 People

45 Construction Economics

79 Products/Manufacturers' Information

81 Pulse

83 Official Proposals (cont. on pp. 85-86)

88 Viewpoint

Please Recycle This Magazine
APR 2012
RECEIVED
LIBRARY
OEMRE-WFO

For subscriber services call: (877) 876-8208 or (515) 237-3681

GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS

Not getting ENR Insider and News Alerts? Please call (877) 876-8208

enr.com
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
Serving the industry since 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly 3 issues a month; 36 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. **Founder:** James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DHL Global Mail, 355 Admiral Blvd-Unit 4, Mississauga, ON L5T 2N1. Email: enrcustserv@cdsfulfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2012 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Jack F. Callahan Jr., Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel. McGraw-Hill Construction: Keith Fox, President; John Murphy, Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $9.95 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

PHOTO BY AP WIDEWORLD

ENR - ENGINEERING NEWS RECORD

April 23, 2012

Contents

Volume 268 • Number 12

SPECIAL REPORT

THE TOP 500 DESIGN FIRMS

49 The market for large design firms has stabilized, and for designers working for private-sector clients, business is improving. But public clients still are struggling with funding issues, leaving many designers worried.

Cover illustration by Infomen; image right courtesy of Cannon Design

WORKING ABROAD
Many Top 500 Firms thrive by going global. For example, Cannon Design planned Korea's CJ Corp. research and development hub.

NUMBER 53

HDR prevails in reservoir-crack case. Page 10

NEWS

Infrastructure

10 **Legal:** Tampa Bay dam verdict: $0 for cracks

14 **Transportation:** Alaska airport takes shape near T.V.'s 'Deadliest Catch'

16 **Public Utilities:** Oklahoma City to upgrade its water, wastewater networks

21 **Offshore Wind:** LEEDco, facing headwinds, looks for help from Feds

Buildings

12 **Failures:** OSHA probe points to errors in casino collapse

Business Management

12 **Companies:** Mounties raid SNC-Lavalin's corporate office in ethics probe

19 **Regional Planning:** GAO report claims N.J. governor fudged ARC numbers

25 **Tunnel Safety:** MassDOT sheds light on 'Big Dig' probe

29 **Global Construction:** CEOs, analysts share emerging market strategies

30 **Marketing:** SMPS conferees stress team-building and communication

Technology

32 **Workplace Safety:** Robo-Glove gives a stronger grip to workers

UPCOMING ISSUES

April 30	Web News and Updates
May 7	Critical Infrastructure
May 21	Business Management
May 28	Global Web News: Architecture

DEPARTMENTS

4 Online
6 Washington Observer
9 Construction Week
32 Technology
39 Construction Economics
43 Products
45 Pulse
87 Official Proposals (cont. on pp. 88-89)
92 Editorial

Please Recycle This Magazine
APR 2012
RECEIVED
LIBRARY
OSHA-WFO

For subscriber services call:
(877) 876-8208 or (515) 237-3681

GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS

Not getting ENR Insider and News Alerts? Please call (877) 876-8208

enr.com
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
SERVING THE INDUSTRY SINCE 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly 3 issues a month; 36 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. **Founder:** James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DHL Global Mail, 355 Admiral Blvd-Unit 4, Mississauga, ON L5T 2N1. Email: enrcustserv@cdsfulfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2012 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Jack F. Callahan Jr., Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel. McGraw-Hill Construction: Keith Fox, President; John Murphy, Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $9.95 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

PHOTO COURTESY TAMPA BAY WATER

ENVIRONMENTAL IMPACT ASSESSMENT REVIEW
Vol. 33, Issue 1 (February 2012)

REGULAR PAPERS

A method for evaluating transport energy consumption in suburban areas 1
Anne-Françoise Marique and Sigrid Reiter
Health impact assessment of Roma housing policies in Central and Eastern Europe: A comparative analysis 7
Ágnes Molnár, Balázs Ádám, Temenujka Antova, Lubos Bosak, Plamen Dimitrov, Hristina Mileva, Jarmila Pekarcikova, Ingrida Zurlyte, Gabriel Gulis, Róza Ádány and Karolina Kósa
Assessing health impacts in complex eco-epidemiological settings in the humid tropics: Modular baseline health surveys 15
Mirko S. Winkler, Mark J. Divall, Gary R. Krieger, Sandro Schmidlin, Mohamed L. Magassouba, Astrid M. Knoblauch, Burton H. Singer and Jürg Utzinger
Promoting system-level learning from project-level lessons: An analysis of donor-driven 'indirect' learning about EIA systems in Ghana and the Maldives 23
Amos A. de Jong, Hens A. C. Runhaar, Piety R. Runhaar, Arend J. Kolhoff and Peter P. J. Driessen
Mind the gap in SEA: An institutional perspective on why assessment of synergies amongst climate change mitigation, adaptation and other policy areas are missing 32
Sanne Vammen Larsen, Lone Kørnøv and Anja Wejs
Methodology of CO_2 emission evaluation in the life cycle of office building façades 41
Vanessa Montoro Taborianski and Racine T. A. Prado
Knowledge, data and interests: Challenges in participation of diverse stakeholders in HIA 48
Maya Negev
A Strategic Project Appraisal framework for ecologically sustainable urban infrastructure 55
John Morrissey, Usha Iyer-Raniga, Patricia McLaughlin and Anthony Mills
Health impact assessment research and practice: A place for paradigm positioning? 66
Fiona Haigh, Patrick Harris and Neil Haigh
EIA and green procurement: Opportunities for strengthening their coordination 73
An investigation of environmental and sustainability discourses associated with the substantive purposes of environmental assessment 80
Jaap G. Rozema, Alan J. Bond, Matthew Cashmore and Jason Chilvers
Purposes, paradigms and pressure groups: Accountability and sustainability in EU environmental assessment, 1985–2010 91
William R. Sheate

0195-9255(201202)33:1;1-K

Available online at www.sciencedirect.com
SciVerse ScienceDirect

ENVIRONMENTAL IMPACT ASSESSMENT REVIEW
Vol. 34 (April 2012)

UK and Italian EIA systems: A comparative study on management practice and performance in the construction industry 1
Andrea Bassi, Robert Howard, Davide Geneletti and Simone Ferrari
Advancing strategic environmental assessment in the offshore oil and gas sector: Lessons from Norway, Canada, and the United Kingdom 12
Courtney Fidler and Bram Noble
Benefits of and barriers to SEA follow-up — Theory and practice 22
M. Gachechiladze-Bozhesku and T.B. Fischer
Beyond the *buildingcentric* approach: A vision for an integrated evaluation of sustainable buildings 31
Emilia Conte and Valeria Monno
A combined ANP-delphi approach to evaluate sustainable tourism 41
Mónica García-Melón, Tomás Gómez-Navarro and Silvia Acuña-Dutra
Quality of Cultural Heritage in EIA; twenty years of experience in Norway 51
Inge Lindblom
A watershed-based method for environmental vulnerability assessment with a case study of the Mid-Atlantic region 58
Liem T. Tran, Robert V. O'Neill and Elizabeth R. Smith
Strategy making and power in environmental assessments. Lessons from the establishment of an out-of-town shopping centre in Västerås, Sweden 65
Karolina Isaksson and Sofie Storbjörk
Health impact assessment: A comparison of 45 local, national, and international guidelines 74
Katherine A. Hebert, Arthur M. Wendel, Sarah K. Kennedy and Andrew L. Dannenberg
An equity tool for health impact assessments: Reflections from Mongolia 83
Jeremy Snyder, Meghan Wagler, Oyun Lkhagvasuren, Lory Laing, Colleen Davison and Craig Janes

0195-9255(201204)34;1-B

Available online at www.sciencedirect.com

SciVerse ScienceDirect

VOL. 25, NO. 7

GOVERNING

04.2012

FEATURES

26 LONG WAY HOME
Whatever happened to ending homelessness?
By Jonathan Walters

34 UNDER CONSTRUCTION
The five biggest projects in the country right now—and the five biggest ones in jeopardy.
By Ryan Holeywell and Daniel Lippman

42 BRIDGING THE BROADBAND GAP
States are still struggling to address the digital divide.
By Mike Maciag

46 OFF THE CLOCK
In some places, the hourly timesheet is being replaced by a focus on results.
By Heather Kerrigan

50 THE GREAT INVERSION
The cities of the future may look surprisingly like those of the distant past.
By Alan Ehrenhalt

A sleeping homeless man in Providence, R.I.

Cover image: Extending the Washington, D.C., Metro to Dulles International Airport
Photo by David Kidd

GOVERNING MAGAZINE
Vol. 25, no. 7 (April 2012)
Page 2 of 2

DEPARTMENTS

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

4 Publisher's Desk

6 Letters

OBSERVER

9 All Eyes on Wisconsin
The recall of Gov. Scott Walker is drawing national attention.

11 Tuition on Layaway
College students toy with a new way to pay for school.

14 Collaborate or Perish
Why can't cities work together?

POLITICS + POLICY

16 Dispatch
Are we ready to govern a more optimistic America?

18 Potomac Chronicle
Insourcing can only happen with heavy lifting by states.

19 FedWatch
Can war savings really fund infrastructure needs at home?

20 Health
Why are states cutting anti-smoking programs?

22 Green Government
Cities are stepping up efforts to tout tap water.

24 Economic Engines
Encouraging walking is hard in our spread-out landscapes.

25 Urban Notebook
Birmingham, Ala., designs a unique park for rail enthusiasts.

PROBLEM SOLVER

56 Cleaning Up After Meth
With use on the rise again—and a lack of federal funding—states are struggling to attack the mess.

58 Smart Management
New management and technology tools can save state and local fleets millions.

59 Idea Center
Maryland wants to boost health services using a common economic development incentive.

60 Tech Talk
Colorado is analyzing patterns and data to improve public policy.

62 Public Money
It's time for a reality check on funding retiree medical costs.

64 Player
Salt Lake City's top cop is known for his ability to defuse tense situations.

JOHN CURTIS, YALE SCHOOL OF MEDICINE

59

DAVID KIDD

24

22

Government Executive

APR 2012 RECEIVED

Contents 04/2012

28
Game Theory

Constance Steinkuehler, White House gaming guru

CHRIS FLYNN

FEATURES

20 **Fixing the IRS**
Doug Shulman is reaping the returns on his campaign to turn around one of government's biggest modernization efforts.
By James R. Thompson

28 **Game Theory**
Using high-tech puzzles that reward ingenuity and play, federal agencies are tapping crowds for answers to problems they can't solve on their own. By Dawn Lim

4 **Editor's Notebook**
The genuine issues behind telework's slow adoption in government.

BRIEFING

9 **Around Government**
The military's battle of the bulge, a vision for contract closeouts and tips for scoring top jobs.

12 **Spotlight on USPS**
What's to blame for the Postal Service's fiscal crisis?

15 **Too Tough to Count**
None of the calculations on the size of the federal workforce are just right.

17 **Top Secret Telework**
WikiLeaks and other data breaches prompt a closer look at policies for the remote workforce.

NEXTGOV

35 **Tech Roundup**
Solyndra's silver lining, DHS' exit plan and pulling the plug on the iPad.

36 **Managing Technology**
Army commanders rely on soldiers to evaluate battlefield network gear.

ADVICE AND COMMENT

39 **Management Matters**
Managers can make or break health programs.

40 **Intelligence File**
Before drones take off, we might want to think about our future.

42 **Thinking Ahead**
Gray Brooks weeds out the clutter on FCC.gov.

International Journal of
COAL GEOLOGY

ELSEVIER

Volume 92 1 March 2012

CONTENTS

(Abstracted/Indexed in: Chemical Abstracts; Current Contents Physical, Chemical and Earth Sciences; Geo Abstracts; PASCAL/CNRS; PROMIS; and the Science Citation Index. Also covered in the abstract and citation database SciVerse Scopus®. Full text available on SciVerse ScienceDirect®)

Review Article

Modelling permeability for coal reservoirs: A review of analytical models and testing data
Z. Pan and L.D. Connell 1

Research Papers

Experimental organic matter maturation at 2 kbar: Heat-up effect to low temperatures on vitrinite reflectance
R. Le Bayon, S. Buhre, B.C. Schmidt and R. Ferreiro Mählmann 45

Modeling transient flow behavior of a horizontal well in a coal seam
R.-S. Nie, Y.-F. Meng, J.-C. Guo and Y.-L. Jia 54

Experimentally determined pressure effect on vitrinite reflectance at 450 °C
R. Le Bayon, C. Adam and R. Ferreiro Mählmann 69

Petrographic characteristics and palaeoenvironmental setting of Upper Triassic Olang coal deposits in northeastern Iran
Z. Solaymani and N. Taghipour 82

Teaching-Aid

Petrographic examination of coal-combustion fly ash
J.C. Hower 90

0166-5162(20120301)92;1-8

http://www.elsevier.com/locate/ijcoalgeo

JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION

Vol. 48, No. 2 AMERICAN WATER RESOURCES ASSOCIATION April 2012

Table of Contents

Technical Papers

Impacts of Climate Change on Hydrology and Water Resources in the Boise and Spokane River Basins
– *Xin Jin and Venkataramana Sridhar* 197

Validation of Satellite Precipitation Adjustment Methodology From Seven Basins in the Continental United States
– *Kenneth J. Tobin and Marvin E. Bennett* 221

Macro, Meso, and Micro-Efficiencies in Water Resources Management: A New Framework Using Water Balance
– *Naim Haie and Andrew A. Keller* 235

The U.S. Flood Control Program at 75: Environmental Issues
– *Peter E. Black* 244

Survey-Based Approach for Hydrological Vulnerability Indicators Due to Climate Change: Case Study of Small-Scale Rivers
– *Yong Jung and Minha Choi* 256

Effects of Eastern Hemlock Decline on Large Wood Loads in Streams of the Appalachian Mountains
– *Daniel M. Evans, C. Andrew Dolloff, W. Michael Aust, and Amy M. Villamagna* 266

Stakeholder Analysis of a Collaborative Watershed Management Process: A Florida Case Study
– *Tatiana Borisova, Laila Racevskis, and Jennison Kipp* 277

Error Autocorrelation and Linear Regression for Temperature-Based Evapotranspiration Estimates Improvement
– *Patrick Valverde Medeiros, Francisco Fernando Noronha Marcuzzo, Cristián Youlton, and Edson Wendland* 297

Increased Frequency of Low-Magnitude Floods in New England
– *William H. Armstrong, Mathias J. Collins, and Noah P. Snyder* 306

Sources and Sinks of Phosphorus for a Perturbed Stream and the Effects of Mineral Deposits
– *Steven W. Effler, Anthony R. Prestigiacomo, David A. Matthews, and Feng Peng* 321

Changes in Shallow Groundwater Quality Beneath Recently Urbanized Areas in the Memphis, Tennessee Area
– *Jeannie R. B. Barlow, James A. Kingsbury, and Richard H. Coupe* 336

Climate Change Impacts on Irrigation Water Needs in the jaguaribe River Basin
– *Rubens S. Gondim, Marco A. H. de Castro, Aline de H. N. Maia, Sílvio R. M. Evangelista, and Sérgio C. de F. Fuck, Jr.* 355

A Sampler for Measuring Deposited Fine Sediments in Streams
– *Andy W. Turner, Jeff J. Hillis, and Charles F. Rabeni* 366

The 2007-2009 Drought in Athens, Georgia, United States: A Climatological Analysis and an Assessment of Future Water Availability
– *Pete Campana, John Knox, Andrew Grundstein, and John Dowd* 379

Bankfull Regional Curves for the Inner and Outer Bluegrass Regions of Kentucky
– *Ruth R. Brockman, Carmen T. Agouridis, Stephen R. Workman, Lindell E. Ormsbee, and Alex W. Fogle* 391

Book Reviews 407

JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION
Vol. 48, no. 2 (April 2012)
Page 2 of 2

AWRA

The Issues We're Facing Are Huge

Keep Informed through IMPACT

Hydraulic Fracturing

Global Market for Water Trading

Water, Energy, and New Developments

Subscribe Today!

$80.00 ($95.00 for international subscribers) for six issues of practical information on timely topics important to water resources professionals everywhere.

Or become a member of AWRA and receive IMPACT & JAWRA as two of the benefits.

Subscribe online at http://www.awra.org/impact/rates.html or Phone 540.687.8390
AWRA | 4 West Federal St., P.O. Box 1626 | Middleburg, VA 20118
Email: info@awra.org

Please Submit All Manuscripts Through http://www.awra.org/jawra/instructionsforauthors.html.
All inquiries should be made to: Phone (540) 687-8390, Fax (540) 687-8395, or Email jawra@awra.org
For AWRA membership information . . . info@awra.org

Cover photo: Grand Canal, Dublin. Photo by Ken Lanfear.

THE JOURNAL OF
WILDLIFE MANAGEMENT

Vol. 76, Issue 3, April 2012

Table of Contents

EDITOR'S MESSAGE

437 Are We Ready to Move Forward?
Bill Block

INVITED PAPER

438 The Habitat Sampling and Analysis Paradigm Has Limited Value in Animal Conservation: A Prequel
Michael L. Morrison

COMMENTARIES

451 Research Priorities for Wind Energy and Migratory Wildlife
Martin D. Piorkowski, Andrew J. Farnsworth, Michael Fry, Ronald W. Rohrbaugh, John W. Fitzpatrick, and Kenneth V. Rosenberg

457 Additional Considerations for Gray Wolf Management After Their Removal From Endangered Species Act Protections
Jonathan G. Way and Jeremy T. Bruskotter

RESEARCH ARTICLES

HUMAN DIMENSIONS

462 The Economic Value of Publicly Accessible Deer Hunting Land
Scott Knoche and Frank Lupi

471 Deer and Elk Hunter Recruitment, Retention, and Participation Trends in Montana
Justin A. Gude, Julie A. Cunningham, Jeffrey T. Herbert, and Thomas Baumeister

480 Mourning Dove Reporting Probabilities for Web-Address Versus Toll-Free Bands
Todd A. Sanders and David L. Otis

POPULATION ECOLOGY

489 Marten and Fisher Responses to Fluctuations in Prey Populations and Mast Crops in the Northern Hardwood Forest
Paul G. Jensen, Charlotte L. Demers, Stacy A. McNulty, Walter J. Jakubas, and Murray M. Humphries

503 Evaluating Spatially Explicit Viability of a Declining Ruffed Grouse Population
Erik J. Blomberg, Brian C. Tefft, J. Michael Reed, and Scott R. McWilliams

514 Variation in Spring Harvest Rates of Male Wild Turkeys in New York, Ohio, and Pennsylvania
Duane R. Diefenbach, Mary Jo Casalena, Michael V. Schiavone, Michael Reynolds, Robert Eriksen, Wendy C. Vreeland, Bryan Swift, and Robert C. Boyd

HABITAT RELATIONS

523 Longevity and Reuse of Black Bear Dens in Managed Forests of Coastal British Columbia
Helen Davis, Anthony N. Hamilton, Alton S. Harestad, and Richard D. Weir

528 Effects of Crop Field Characteristics on Nocturnal Winter Use by American Woodcock
Emily B. Blackman, Christopher S. Deperno, Ron W. Heiniger, Matthew J. Krachey, Christopher E. Moorman, and M. Nils Peterson

534 Habitat Modeling Used to Predict Relative Abundance of Bobcats in Iowa
Stephanie A. Linde, Steven D. Roberts, Todd E. Gosselink, and William R. Clark

544 Linking Alternative Food Sources to Winter Habitat Selection of Herbivores in Overbrowsed Landscapes
Ariane Massé and Steeve D. Côté

557 Experimental Test of Nest-Site Limitation in Mature Mixed Forests of Central British Columbia, Canada
Kathryn E. H. Aitken and Kathy Martin

MANAGEMENT AND CONSERVATION

566 Influence of Conservation Reserve Program Mid-Contract Management and Landscape Composition on Northern Bobwhite in Tall Fescue Monocultures
Douglas C. Osborne, Donald W. Sparling, and Robert L. Hopkins II

575 Lead Exposure in Large Carnivores in The Greater Yellowstone Ecosystem
Thomas A. Rogers, Bryan Bedrosian, Jon Graham, and Kerry R. Foresman

583 Spinning-Wing Decoy Use and Reported Duck Harvest in Illinois: Implications for Adaptive Harvest Management
Craig A. Miller

588 Using Gas Chromatography to Determine Winter Diets of Greater Sage-Grouse in Utah
Eric T. Thacker, Dale R. Gardner, Terry A. Messmer, Michael R. Guttery, and Dave K. Dahlgren

593 Trends in Volume Migration Chronology in Spring Staging Pacific Black Brant
Barry D. Smith, Katherine R. Hagmeier, W. Sean Boyd, Neil K. Dawe, Terri D. Martin, and Guy L. Monty

600 Foraging Preferences of Canada Geese Among Turfgrasses: Implications for Reducing Human–Goose Conflicts
Brian E. Washburn and Thomas W. Seamans

608 Impacts of Introduced Grasses on Breeding Season Habitat Use by Northern Bobwhite in the South Texas Plains
Joseph P. Sands, Leonard A. Brennan, Fidel Hernández, William P. Kuvlesky, Jr., James F. Gallagher, and Donald C. Ruthven, III

619 Using Echolocation Monitoring to Model Bat Occupancy and Inform Mitigations at Wind Energy Facilities
Theodore J. Weller and James A. Baldwin

632 Spatial Ecology of White-Tailed Deer Fawns in the Northern Great Plains: Implications of Loss of Conservation Reserve Program Grasslands
Troy W. Grovenburg, Robert W. Klaver, and Jonathan A. Jenks

645 Territory Occupancy by Common Loons in Response to Disturbance, Habitat, and Intraspecific Relationships
Christopher A. M. Hammond, Michael S. Mitchell, and Gael N. Bissell

REVIEWERS

652 Reviewers for 2011
Bill Block, Allison Cox, and Anna Knipps

656 Errata

JOURNAL OF WILDLIFE MANAGEMENT
Vol. 76, no. 3 (April 2012)
Page 2 of 2

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

FSC
MIX
Paper from responsible sources
FSC® C012947

CONTENTS

Land and Water

THE MAGAZINE OF NATURAL RESOURCE MANAGEMENT AND RESTORATION

Volume 56, Number 2 March/April 2012

You can now read Land and Water Magazine online, visit www.landandwater.com

ABOUT THE COVER

Orange County, California's Soka University boasts a scenic 103-acre campus. The 4,000 acre Aliso and Wood Canyons Wilderness Park (shown in photo) surrounds the University on 85% of its border. A recent stormwater challenge was adding new construction to the University without creating additional stormwater runoff. See story page 16.

DEPARTMENTS

6 Tell It Like It Is
52 School of Hard Knocks
53 Equip-Board
54 Advertiser's Index

APR 2012 RECEIVED LIBRARY OSMRE-WFO

FEATURES

STREAM RESTORATION

8 **An Urban Stream Restoration Case Study: Northern Virginia Stream Restoration Bank**
Stream channels in Northern Virginia have been severely degraded over time, transporting thousands of tons of sediment downstream annually.
by Michael S. Rolband, Frank R. Graziano & Kelly L. McCutcheon

GREEN WALLS & ROOFS

16 **Green Roof Provides the Solution for Soka University**
More than 96,000 square feet of new construction and there was no increase in stormwater runoff after green roof installation at Soka University, Orange County, California.
by Kimberly Kilgour

STORMWATER SEDIMENT REMOVAL

21 **Sediment Control High Priority in Moving a Lake for Exit Road**
Dewatering an entire lake in order to build a new by-pass road extension known as exit 213 off of Cattleman Road in Sarasota, Florida.
by Mitchell Stack

PONDS & LAKES

26 **Making the Most of Drought**
If drought has struck your area, now may be the time to update your pond.
by Bob Lusk

POROUS PAVEMENT

29 **Church Achieves Environmental Goals with Low Impact Vegetated Porous Pavement**
The Cedar Springs Presbyterian Church in Knoxville, Tennessee added 169 parking spaces and provided a new entrance to improve access and traffic circulation within the Church campus.
by Brad Salisbury & Bryan Wade

STORMWATER MAINTENANCE

32 **The Rehabilitation of New Forest West**
A stormwater quality solution during the restoration of a channel located on the eastern side of Houston, Texas.
by Robert Kail

SLOPE STABILIZATION

36 **Emergency Roadside Repair and Slope Stabilization**
Landslides and rock slope failures along California's roadways are common in mountainous areas throughout the state. Here are highlights of newer tools and technologies being used to repair the areas.
by James Chinchiolo, B.S., Colby Barrett, J.D., E.I.T. and Nate Beard, P.E.

WATER QUALITY

42 **Stormwater Retrofit of Existing Detention Basins**
A watershed plan in northwest Connecticut for Northfield Brook.
by Steve Tonkous, P.E., CPESC, CPSWQ & Sean Hayden, CPESC

REFORESTATION

48 **Reforestation of Public Lands Using Private Mitigation**
The benefits of an urban forest are well documented and tree protection ordinances all over are being implemented to preserve these urban tree canopies.
by Jerry Renick

SHORELINE PROTECTION

50 **Marsh Planting Adds Property Value, Natural Defense to East Bay Properties**
Lush marsh grass now grows where waves once eroded bare beachfront properties at the mouth of Watson Bayou, Florida.
by Frank Entse

STAFF

Kenneth M. Rasch
President

Jane Rasch
Vice President

Amy Dencklau
Publisher
landandwater@frontiernet.net

Shanna Egli
Assistant Editor/Sales
lweditor@frontiernet.net

Martha Steinkamp
Circulation Manager
lwsub@frontiernet.net

Emily Jones
News & Marketing Manager
lwmarketing@frontiernet.net

Angela Dougall
Accounting
lwacct@frontiernet.net

SALES

Gail Henry
Account Executive
gail@landandwater.com
phone: 515-227-5042 or 515-576-3191

Shanna Egli
Assistant Editor/Sales
lweditor@frontiernet.net
515-576-3191

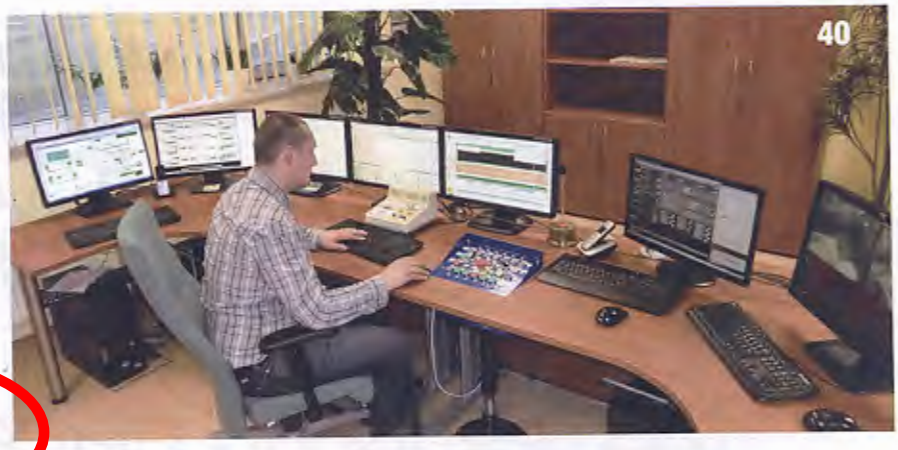
Land and Water (ISSN 0192-9453) is published bimonthly by Land and Water, Inc., 320 A Street, Fort Dodge, IA 50501-5925. Telephone (515)576-3191, Fax (515)576-2606. Land and Water is edited for contractors, engineers, architects, government officials and those working in the field of natural resource management and restoration from idea stage through project completion and maintenance. Subscription rates for printed copies: One year - $20.00; Two years - $35.00; Three years - $50.00; Foreign – add $12.00 per year. All non-paid subscriptions are mailed on a rotating basis to receive occasional copies at Fort Dodge, Iowa and at additional mailing offices. No charge for digital version of the magazine.

No part of this publication may be reproduced without the written consent of the publisher. **Land and Water** assumes no responsibility for statements expressed by contributors. Jeremiah 29:11

Mining engineering

OFFICIAL PUBLICATION OF SME
www.miningengineeringmagazine.com

APRIL 2012
VOL. 64 NO. 4



Coal mining

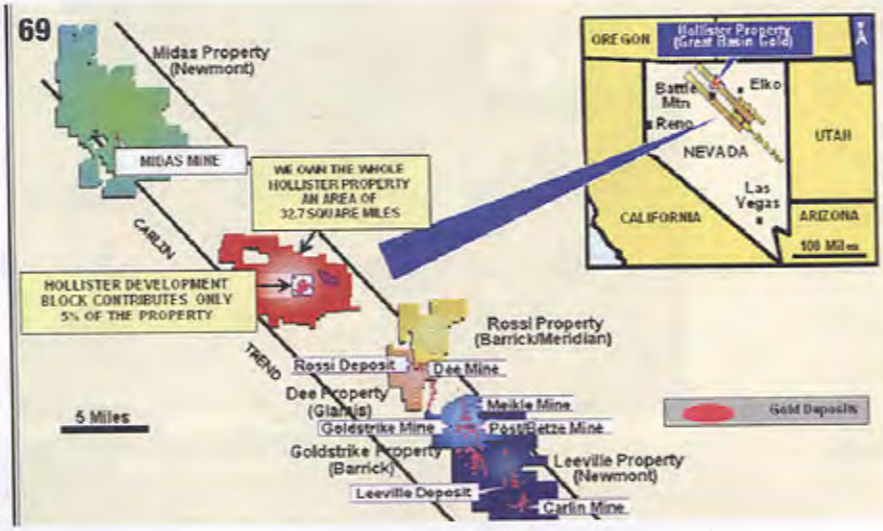
40 World record set in Poland: Cat plow systems sets mark from single face

48 Energy plan for mining operations
Fabio Mielli and Scott Wallace

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

Feature Articles

69 Cut-and-fill narrow vein mining at Great Basin's Hollister Mine
S. Chen and R. McKinnon



Technical Papers (peer-reviewed and approved)

74 Supply-and-demand geoeconomic analysis of mineral resources of rare earth elements in the United States
A. Nieto and M. Iannuzzi

Copyright 2012 by the Society for Mining, Metallurgy and Exploration, Inc. All rights reserved.

MINING ENGINEERING (ISSN 0026-5187) is published monthly by the Society for Mining, Metallurgy, and Exploration, Inc., at 12999 E. Adam Aircraft Circle, Englewood, CO, 80112 USA. Phone +1-800-763-3132 or +1-303-973-9550. Fax: +1-303-973-3845 or e-mail: sme@smenet.org. Website: www.smenet.org.
Periodicals postage paid at Englewood, CO USA and additional mailing offices. Canadian post: publications mail agreement number 0689688.
POSTMASTER: Send changes of address to MINING ENGINEERING, 12999 E. Adam Aircraft Circle, Englewood, CO, 80112 USA. Printed by Cummings Printing Co.

CONTENTS

NATIVE PLANTS JOURNAL

vol. 13 | no. 1 | spring 2012

REFEREED RESEARCH
Viability of blackbrush seed (*Coleogyne ramosissima* Torr. [Rosaceae]) following long-term storage 5
Rosemary L Pendleton, Burton K Pendleton, Susan E Meyer, Stephanie Carlson, and Elizabeth Morrison

Propagation protocol for mountain huckleberry (*Vaccinium membranaceum*) 14
Donald J Regan, Kea J Woodruff, and Anthony S Davis

REFEREED RESEARCH
Particle size and composition of polymer root gels affect loblolly pine seedling survival 19
Tom E Starkey, Scott A Enebak, David B South, and Robert E Cross

Using native plants in traditional design contexts: *Smilax smallii* provides an example 27
Brad E Davis, Matthew R Chappell, and Joanna Dunholter Schwevens

Propagation methods for native woody *Smilax* species (Smilacaceae) 35
Tara Luna

Seed weights for northern Rocky Mountain native plants with an emphasis on Glacier National Park 39
Jessica L Wiese, James F Meadow, and Joyce A Lapp

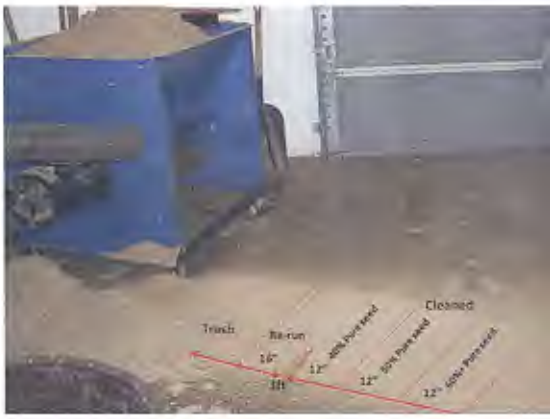
REFEREED RESEARCH
No-till drill planting of Texas bluegrass on the southern plains 51
Jason J Goldman

In vitro propagation of *Trillium* species with notes on root formation, cleaning protocols, and media formulations 56
Ronald Gagliardo, Merrily Labarthe, Michael Zaic, Jennifer Cruse-Sanders, and Ronald O Determann

GERMPLASM RELEASE
'Windbreaker' cultivar big sacaton: a foundation class of certified seed 64
Danny G Goodson, Gregory A Fenchel, and David R Dreesen

BOOK REVIEWS
Restoring Disturbed Landscapes: Putting Principles into Practice 72

The Itty Bitty Guide to Trees: A Children's Identification Guide to Trees of the Inland Northwest 74



APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

NATURAL RESOURCES & ENVIRONMENT

ABA SECTION OF ENVIRONMENT, ENERGY, AND RESOURCES

VOLUME 26, NUMBER 3, WINTER 2012

FEATURES

3 **Systems Thinking Applied to U.S. Federal Fisheries Management**
Chad J. McGuire and Bradley P. Harris

7 **The Global Food System, Environmental Protection, and Human Rights**
Carmen G. Gonzalez

13 **Wind Energy in the West: Transmission, Operations, and Market Reforms**
Jennifer E. Gardner and Ronald L. Lehr

20 **Renewable Agriculture: Transgenic Contamination and Patent Enforcement Threats**
Christina L. Nargolwala

24 **Flood Control on the Red River as a Complex Environmental Decision System**
Jonathan P. Scoll

29 **Adaptive Resource Management in Complex Systems**
Itzchak E. Kornfeld

36 **Integrated Permitting in the United Kingdom and the United States**
Lisa E. Comer

40 **Numeric Nutrient Water Quality Criteria: Lessons from Florida**
Wayne E. Flowers and James E. Charles

44 **Fugitive Emissions: The Marcellus Shale and the Clean Air Act**
Joseph Minott and Jonathan Skinner

DEPARTMENTS

VANTAGE POINT — Inside Front Cover

INSIGHTS

Resolving Ownership of Pore Space — 49
Jean Feriancek

Nanotechnology and the Environment: What's Next? — 51
Jean Macchiaroli Eggen

Waste and the Waste Hierarchy in Europe — 53
Andrew Waite

ASTM Standard for CERCLA Continuing Obligations — 54
James H. Andreasen

Gregory Mountain: A Sacred Site Protection Failure — 56
Ted Griswold and Jonathan P. Scoll

Diversity in Environmental Practice: How Are We Doing? — 58
Paula J. Schauwecker

LITERARY RESOURCES — 60

THE BACK PAGE — 64

Issue Editor:
David R. Hodas

Assistant Issue Editors:
John Barkett, Craig Donovan, Patrick Paul, and Dean Suagee

Cover design
Sonya Taylor

Department art
Mike Callaway

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

The views expressed in *Natural Resources & Environment* are those of the authors and do not necessarily represent the policies of the American Bar Association; the Section of Environment, Energy, and Resources; or the employers of the authors. For more information about *NR&E*, visit online at www.ababooks.org. Send comments to nrecomments@americanbar.org.

Rangelands

Volume 34 No. 2
April 2012

Published bimonthly:
February, April, June, August, October, December

Copyright 2012 by the Society for Range Management

EDITOR-IN-CHIEF
Lori Hidinger
Managing Director
Consortium for Science, Policy and Outcomes
Arizona State University
PO Box 875603
Tempe, AZ 85287-5603, USA

MANAGING EDITOR
Joel T. Luber
Allen Press, Inc.
810 E. 10th St.
Lawrence, KS 66044, USA
jluber@allenpress.com

YOUTH EDITOR
Kim McReynolds
University of Arizona Cooperative Extension
450 S Haskell Avenue
Willcox, AZ 85643, USA
kimm@cals.arizona.edu

RANGELANDS STEERING COMMITTEE
Joel Brown – *Chair*
Mark Brunson
Dave Engle
Mel George
Chan Glidewell
Ann Hild
Jamin Johanson
John Tanaka
Jim Thorpe

RANGELANDS EDITORIAL BOARD
Jerry Barker, *Boulder, Colorado – Chair*
Matt Barnes, *Cimarron, Colorado*
Jay Davison, *Fallon, Nevada*
Michael Frisina, *Butte, Montana*
Kimberly Haile, *Bryan, Texas*
Kim McReynolds, *Willcox, Arizona*
John Mitchell, *Fort Collins, Colorado*
Tom Monaco, *Logan, Utah*
Ed Rhodes, *College Station, Texas*

RANGELANDS (ISSN 0190-0528) is an official publication of the Society for Range Management (SRM, 10030 W 27th Ave, Wheat Ridge, CO 80215-6501) and is published bimonthly in February, April, June, August, October, and December. Publishing services are provided by Allen Press Publishing Services, 810 East 10th Street, Lawrence, Kansas 66044. Calendar-year subscription prices are $56–103 for individuals and $148–218 for institutions. Additional surface charges may apply to subscribers located outside of the USA. The online version of *Rangelands* can be found online at www.srmjournals.org. Subscriptions, changes of address, and requests for missing issues should be sent to Allen Press Association Management, P.O. Box 7065, Lawrence, Kansas 66044. Claims for copies lost in the mail must be received within 90 days (180 days foreign) of the issue date to insure replacement at no charge.

Editorial correspondence should be addressed to Lori Hidinger, Consortium for Science, Policy and Outcomes, Arizona State University, PO Box 875603, Tempe, AZ 85287-5603. Page proofs should be returned to the Managing Editor, Joel T. Luber, jluber@allenpress.com.

PERIODICALS POSTAGE paid at Denver, Colorado, and additional offices.

POSTMASTER: Address service requested to *Rangelands*, PO Box 7065, Lawrence, Kansas 66044.

PRINTED IN USA

Research Articles

2 **Poisonous Plants and Plant Toxins That Are Likely to Contaminate Hay and Other Prepared Feeds in the Western United States**
B. L. Stegelmeier and K. E. Panter

12 **Using Homestead Records and Aerial Photos to Investigate Historical Cultivation in the United States**
Lesley R. Morris

18 **To Burn or Not to Burn: Ecological Restoration, Liability Concerns, and the Role of Prescribed Burning Associations**
David Toledo, Urs P. Kreuter, Michael G. Sorice, and Charles A. Taylor, Jr.

24 **Forage Value of Invasive Species to the Diet of Rocky Mountain Elk**
Michel T. Kohl, Mark Hebblewhite, Shawn M. Cleveland, and Ragan M. Callaway

29 **Ecological Site Development: Accelerating the Effort**
Jamin Johanson and Joel Brown

32 **Hindrances and Successes: Mapping the 2006 East Amarillo Complex Wildfires in Gray County, Texas**
Renaldo J. Arroyo and Tina Delahunty

37 **Building Capacity to Manage Noxious and Invasive Weeds in the Southwestern United States**
Anna Masayesva, Larry D. Howery, and Patricia Orr

Departments

42 **Listening to the Land**

44 **Highlights, *Rangeland Ecology & Management*, March 2012**

47 **Browsing the Literature**

50 **Book Review**

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

Front Cover: Two bull elk spar for dominance at sunset near the South Unit of Theodore Roosevelt National Park, North Dakota. Photo courtesy of Kelly Krabbenhoft, Hazen, ND, USA.

reclamation matters

Published by:
DEL Communications Inc.
Suite 300, 6 Roslyn Road
Winnipeg, Manitoba
Canada R3L 0G5

PRESIDENT
David Langstaff

ASSOCIATE PUBLISHER
Jason Stefanik

MANAGING EDITOR
Lyndon McLean

SALES MANAGER
Dayna Oulion

SALES REPRESENTATIVES
Cheryl Ezinicki
Ross James
Colin James Trakalo

PRODUCTION SERVICES
S.G. Bennett Marketing Services
www.sgbennett.com

ART DIRECTOR / DESIGN
Kathy Cable

ADVERTISING ART
Dana Jensen, Julie Weaver

© 2012 DEL Communications Inc.
All rights reserved. Contents may not be reproduced by any means, in whole or in part, without the prior written permission of the publisher.

While every effort has been made to ensure the accuracy of the information contained herein and the reliability of the source, the publisher in no way guarantees nor warrants the information and is not responsible for errors, omissions or statements made by advertisers. Opinions and recommendations made by contributors or advertisers are not necessarily those of the publisher, its directors, officers or employees.

Publications Mail Agreement #40934510
Return undeliverable Canadian addresses to:
DEL Communications Inc.
Suite 300, 6 Roslyn Road
Winnipeg, Manitoba R3L 0G5
Email: david@delcommunications.com

DEL

PRINTED IN U.S.A. | 03/2012

Spring 2012

contents

ASMR President's Message – *Eddie Bearden* 4

Early Career Message – *Abbey Wick* 5

29th Annual Meeting – SUSTAINABLE RECLAMATION 6

ASMR Convention Preliminary Agenda 11

Physical, Chemical and Biotic Aspects of Radium Transport and Fixation in Soil 19

Indiana Soils – Prime Farmland Team
Winner of the 2010 Department of the Interior Partners in Conservation Award 24

Reclamation of Marcellus Shale Drilling Sites in West Virginia 26

ASMR Convention Preliminary Agenda 11

Appalachian Regional Reforestation Initiative 31

Forest Reclamation Advisory 33

Index to Advertisers 38

APR 2012
RECEIVED
LIBRARY
OSMRE-WFO

SOIL SCIENCE

An Interdisciplinary Approach to Soils Research

APRIL 2012 | CONTENTS | Vol. 177 No. 4

Estimation of −1500 kPa Water Retention in Soil Survey 229
Cathy A. Seybold and Deborah S. Harms

Effect of Carbonates and Organic Matter in Retention and Release of Nickel by a Central Italy Soil 236
Daniela Businelli

Long-term Phosphorus Application Impacts on Aggregate-Associated Carbon and Nitrogen Sequestration in a Vertisol in the Mediterranean Turkey 241
Ibrahim Ortas and Rattan Lal

Phosphorus Availability and Release Characteristics for Irrigated Cropland in Afghanistan 251
Moustafa A. Elrashidi, Larry T. West, and Christopher Smith

Physical and Chemical Properties of *Pinus ponderosa* Charcoal: Implications for Soil Modification 263
Christopher Briggs, Joan M. Breiner, and Robert C. Graham

Impacts of Land-Use Change, Slope, and Erosion on Soil Organic Carbon Retention and Storage 269
Kenneth R. Olson, Alexander N. Gennadiyev, Andrey P. Zhidkin, and Maxim V. Markelov

Soil Texture and Forest Species Condition the Effect of Afforestation on Soil Quality Parameters 279
Diego Riestra, Elke Noellemeyer, and Alberto Quiroga

A Taxonomically Based Ordinal Estimate of Soil Productivity for Landscape-Scale Analyses 288
Randall J. Schaetzl, Frank J. Krist, Jr, and Bradley A. Miller

APR 2012 RECEIVED LIBRARY OSMRE-WFO

SSSAJ

Soil Science Society of America Journal

March–April 2012 • Vol. 76 • No. 2

Review & Analysis

313–330 Theoretical Basis for Modeling Porous Geomaterials under Frost Actions: A Review
Zhen Liu, Ye Sun, and Xiong (Bill) Yu

Soil Physics

331–341 Quantification of Drain-Connected Macroporous Flow Pathways by Smoke Injection
Carsten T. Petersen, Marie H. Nielsen, and Søren Hansen

342–349 Moisture-Dependent Wettability of Artificial Hydrophobic Soils and Its Relevance for Soil Water Desorption Curves
Hui Liu, Zhaoqiang Ju, Jorg Bachmann, Robert Horton, and Tusheng Ren

350–360 Spatial and Temporal Influences on Hydraulic Properties in Macroporous Tile-Drained Soil
Steven K. Frey, David L. Rudolph, and Gary W. Parkin

361–369 Predicting Penetrometer Resistance from the Compression Characteristic of Soil
W. Gao, T. Ren, A. G. Bengough, L. Auneau, C. W. Watts, and W. R. Whalley

Soil Physics Note

370–374 Probe Body and Thermal Contact Conductivity Affect Error of Heat Pulse Method Based on Infinite Line Source Approximation
Gang Liu, Bing C. Si, Ai X. Jiang, Bao G. Li, Tu S. Ren, and Ke L. Hu

Soil Chemistry

375–388 Facilitated Transport of Copper with Hydroxyapatite Nanoparticles in Saturated Sand
Dengjun Wang, Scott A. Bradford, Marcos Paradelo, Willie J.G.M. Peijnenburg, and Dongmei Zhou

389–398 Microstructure, Interaction Mechanisms, and Stability of Binary Systems Containing Goethite and Kaolinite
ShiYong Wei, WenFeng Tan, Wei Zhao, YaTing Yu, Fan Liu, and Luuk K. Koopal

399–407 Manganese Toxicity in Barley is Controlled by Solution Manganese and Soil Manganese Speciation
Maria C. Hernandez-Soriano, Fien Degryse, Enzo Lombi, and Erik Smolders

408–419 Effects of Profile Depth and Management on the Composition of Labile and Total Soil Organic Matter
M.S. Erich, A.F. Plante, J.M. Fernández, E.B. Mallory, and T. Ohno

420–431 Investigating Ethofumesate–Clay Interactions for Pesticide Controlled Release
Anne Chevillard, Hélène Angellier-Coussy, Stéphane Peyron, Nathalie Gontard, and Emmanuelle Gastaldi

432–440 Soil Clay Modification with Spermine and Its Effect on the Behavior of the Herbicide Fluometuron
B. Gámiz, R. Celis, M. C. Hermosín, and J. Cornejo

441–448 Path Analysis of Phosphorus Retention Capacity in Allophanic and Non-allophanic Andisols
Yohey Hashimoto, Jihoon Kang, Nobuhiko Matsuyama, and Masahiko Saigusa

449–462 Arsenic, Copper, and Zinc Leaching through Preferential Flow in Mining-Impacted Soils
Martin Helmhart, Peggy A. O'Day, Javier Garcia-Guinea, Susana Serrano, and Fernando Garrido

Soil Biology & Biochemistry

463–474 Soil Diffusion System Enriches the Growth of Diverse and Previously Uncultivated Bacterial Taxa
Madhavi L. Kakumanu and Mark A. Williams

475–484 Carbohydrate Composition and Water-Stable Aggregation of an Oxisol as Affected by Crop Sequence under No-Till
Márcio dos Reis Martins, Denis A. Angers, and José Eduardo Corá

485–493 Impacts of Wet–Dry Cycles and a Range of Constant Water Contents on Carbon Mineralization in Soils under Three Cropping Treatments
Xiaobin Guo, Craig F. Drury, Xueming Yang, W. Daniel Reynolds, and Renduo Zhang

494–504 Permanganate Oxidizable Carbon Reflects a Processed Soil Fraction that is Sensitive to Management
Steven W. Culman, Sieglinde S. Snapp, Mark A. Freeman, Meagan E. Schipanski, Josh Beniston, Rattan Lal, Laurie E. Drinkwater, Alan J. Franzluebbers, Jerry D. Glover, A. Stuart Grandy, Juhwan Lee, Johan Six, Jude E. Maul, Steven B. Mirsky, John T. Spargo, and Michelle M. Wander

Soil Fertility & Plant Nutrition

505–514 Loss and Recovery of Soil Organic Carbon and Nitrogen in a Semiarid Agroecosystem
Jay B. Norton, Eusebius J. Mukhwana, and Urszula Norton

515–521 Influence of Recent Acidification on Available Phosphorus Indices and Sorption in Washington State Soils
Kyle E. Bair and Joan R. Davenport

Pedology

522–531 Enhanced Pedon Horizonation Using Portable X-ray Fluorescence Spectrometry
David C. Weindorf, Yuanda Zhu, Beatrix Haggard, Josh Lofton, Somsubhra Chakraborty, Nouna Bakr, Wentai Zhang, Walker C. Weindorf, and Mary Legoria

532–547 Linking Subsurface Lateral Flowpath Activity with Streamflow Characteristics in a Semiarid Headwater Catchment
A. Swarowsky, R. A. Dahlgren, and A. T. O'Geen

548–557 Surface Cracking of a Vertisol Related to the History of Available Water
Andrea Sz. Kühné, Yufeng Ge, Cristine L. S. Morgan, and Wesley L. Miller

558–568 Agronomic and Taxonomic Consequences of Agricultural Use of Marginal Soils in Argentina
Nilda M. Amiotti, Maria B. Villamil, and Robert G. Darmody

SOIL SCIENCE SOCIETY OF AMERICA JOURNAL
Vol. 76, no. 2 (March-April 2012)
Page 2 of 2

Pedology Note

569–574 Estimating the Particle Density of Clay-rich Soils with Diverse Mineralogy
R. A. McBride, R. L. Slessor, and P. J. Joosse

Soil & Water Management & Conservation

575–585 Nitrogen and Phosphorus Leaching as Affected by Gypsum Amendment and Exchangeable Calcium and Magnesium
N. Favaretto, L. D. Norton, C. T. Johnston, J. Bigham, and M. Sperrin

586–596 Determination of Soil Organic Matter and Carbon Fractions in Forest Top Soils using Spectral Data Acquired from Visible–Near Infrared Hyperspectral Images
S. M. O'Rourke and N. M. Holden

597–606 Reflectance Spectroscopy Detects Management and Landscape Differences in Soil Carbon and Nitrogen
V. P. Chaudhary, Kenneth A. Sudduth, Newell R. Kitchen, and Robert J. Kremer

607–616 Lower Limits of Crop Water Use in Three Soil T extural Classes
Judy A. Tolk and Steven R. Evett

617–627 Conservation Tillage Impacts on Soil Aggregation and Carbon Pools in a Sandy Clay Loam Soil of the Indian Himalayas
Ranjan Bhattacharyya, M. D. Tuti, S. Kundu, J. K. Bisht, and J. C. Bhatt

628–637 Differences in Soluble Organic Matter After 23 Years of Contrasting Soil Management
Ehsan R. Toosi, Michael J. Castellano, Jeremy W. Singer, and David C. Mitchell

638–647 Incorporation of Soil Bulk Density in Simulating Root Distribution of Winter Wheat and Maize in Two Contrasting Soils
Xiying Zhang, Liwei Shao, Hongyong Sun, Suying Chen, and Yanzhe Wang

648–662 Numerical Modeling of Wheat Irrigation using Coupled HYDRUS and WOFOST Models
Jian Zhou, Guodong Cheng, Xin Li, Bill X. Hu, and Genxu Wang

663–673 Evaluating E. coli Transport Risk in Soil using Dye and Bromide Tracers
Fiona P. Brennan, Gaelene Kramers, Jim Grant, Vincent O'Flaherty, Nicholas M. Holden, and Karl Richards

Forest, Range, & Wildland Soils

674–683 Foliar Nutrient Concentrations Related to Soil Sources across a Range of Sites in the Northeastern United States
Melissa S. Lucash, Ruth D. Yanai, Joel D. Blum, and B. B. Park

684–693 Soil Organic Matter Quality in Chronosequences of Secondary Northern Hardwood Forests in Western New England
J.D. Clark, A.F. Plante, and A.H. Johnson

Nutrient Management & Soil & Plant Analysis

694–699 Rapid Measurement of Soil pH Buffering Capacity
D. E. Kissel, L. S. Sonon, and M. L. Cabrera

700–709 Influence of Dissolved Carbon and Nitrogen on Mineralization of Dilute Liquid Dairy Manure
Aaron L. Heinrich and G. Stuart Pettygrove

710–717 Phosphorus Lateral Movement through Subsoil to Subsurface Tile Drains
Brett L. Allen, Antonio P. Mallarino, John F. Lore, James L. Baker, and Mazhar U. Haq

718–732 Double-Buffer Methods Revisited with Focus on Ionic Strength and Soil/Solution Ratio
F. J. Sikora

Soil Mineralogy

733–747 Mineralogy, Chemical Composition, and Dissolution of Fresh Ash Eruption: New Potential Source of Nutrients
Markus Anda and Muhrizal Sarwani

Book Reviews

748 Dealing with Contaminated Sites: From Theory towards Practical Application
Reviewed by Steven Sciliano

MAR 2012 LIBRARY

Western
North American Naturalist

Volume 72 No. 1 April 2012 ISSN 1527-0904

CONTENTS

Articles

Intra-annual variation in fish communities and habitat associations in a Chihuahua Desert reach of the Rio Grand/Rio Bravo del Norte . . . . . Thomas C. Heard, Joshuah S. Perkin, and Timothy H. Bonner 1

Breeding biologies, pollinators, and seed beetles of two prairie-clovers, *Dalea ornata* and *Dalea searlsiae* (Fabaceae: Amorpheae), from the Intermountain West, USA . . . . . James H. Cane, Melissa Weber, and Stephanie Miller 16

A new species of springsnail (*Pyrgulopsis*) from the Owyhee River Basin, Nevada . . . . . Robert Hershler and Hsiu-Ping Liu 21

Foliar ozone injury on cutleaf coneflower at Rocky Mountain National Park, Colorado . . . . . Robert Kohut, Colleen Flanagan, James Cheatham, and Ellen Porter 32

Do populations of an invasive weed differ greatly in their per-gram competitive effects? . . . . James E. Sowerwine, Matthew J. Rinella, and Matthew L. Carlson 43

Response of an intermountain groundwater-dependent ecosystem to water table drawdown . . . . . Daniel Pritchett and Sara J. Manning 48

Shifting prehistoric abundances of leporids at Five Finger Ridge, a central Utah archaeological site . . . . . Jacob L. Fisher 60

Age and growth of spawning longnose gar (*Lepisosteus osseus*) in a north central Texas reservoir . . . . . Samuel W. Kelley 69

Vegetation responses to supplemental winter feeding of elk in western Wyoming . . . . . Matthew J. Rinella, Ron Dean, Marty Vavra, and Catherine G. Parks 78

Possible effects of moss on distribution and performance of a threatened endemic primrose . . . . . Andrew P. Rayburn, Jacob B. Davidson, and Hillary M. White 84

Notes

New records of the Mexican hairy porcupine (*Coendou mexicanus*) and tamandua (*Tamandua mexicana*) in Puebla, central Mexico . . . . . O. Eric Ramírez-Bravo 93

Gopher snake searching Cliff Swallow nests in east central Utah . . . . . Nicholas J. Czaplewski, Kent S. Smith, John Johnson, Crystal Dockery, Brandon Mason, and Ian D. Browne 96

First record of the cicada *Tibicen pruinosus* in Colorado, with a key to Colorado species of *Tibicen* (Hemiptera: Cicadidae) . . . . . Brian Stucky 100

Antibody seroprevalence to hantaviruses in rodents from Reserva de la Biosfera Sierra de Huautla, Morelos . . . . . Elizabeth Arellano, Iván Castro-Arellano, Gerardo Suzán, Francisco X. González-Cózatl, and Ricardo Morales-Jiménez 105

The plateau giant tiger beetle, *Amblycheila picolominii* Reiche, 1839, in Utah: new state record (Coleoptera: Carabidae: Cicindelinae) . . . . . Frank-Thorsten Krell and Jack G. Brookhart 110

(Continued on page 128)

APR 2012 RECEIVED LIBRARY

cataloging wetland species was confined to a relatively small area in south central Texas (Gonzales Co.). We expected a much broader geographic coverage but were quite surprised at the representation and diversity of plants found in such a small locale. *Plants of Central Texas Wetlands* fills a void in literature on wetland-associated plants with an easy-to-reference field guide. This book will be useful to a wide range of naturalists—both trained and novice—at an affordable price.

Stephen L. Webb, Ph.D.
Biostatistics Specialist
The Samuel Roberts Noble Foundation
Ardmore, OK 73401
E-mail: slwebb@noble.org

Krisan M. Webb, M.S.
Ardmore, OK 73401
E-mail: krisanmwebb@hotmail.com

WESTERN NORTH AMERICAN NATURALIST
Vol. 72, no. 1 (April 2012)
Page 2 of 2

CONTENTS

(Continued from back cover)

Obituaries

Obituary: Kimball Taylor Harper, 1931–2011 112
Obituary: Wilmer Webster Tanner, 1909–2011 118

Book Review

Captured: Lessons from Behind the Lens of a Legendary Wildlife Photographer *by Moose Peterson* ..... Howard O. Clark Jr. 125
Plants of Central Texas Wetlands *by Scott B. Fleenor and Stephen W. Taber* ..... Stephen L. Webb and Krisan M. Webb 127