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Table of Contents

Agronomic Application of Genetic Resources

- Genotypic Differences in Water Use Efficiency of Common Bean under Drought Stress
V. H. Ramirez Builes, T. G. Porch, and E. W. Harmsen 1206

Biofuels

- Sowing Date and Tillage Effects on Fall-Seeded Camelina in the Northern Corn Belt
R. W. Gesch and S. C. Cermak 980

- Corn Cob Residuum Carbon and Nutrient Dynamics during Decomposition
Brian J. Wienhold, Gary E. Varvel, and Virginia L. Jin 1192

Biometry, Modeling & Statistics

- Crop Model Calibration: A Statistical Perspective
Daniel Wallach 1144

Climatology & Water Management

- Evaluation of Satellite-Based, Modeled-Derived Daily Solar Radiation Data for the Continental United States
Jeffrey W. White, Gerrit Hoogenboom, Paul W. Wilkens,
Paul W. Stackhouse Jr., and James M. Hoel 1242

Crop Ecology & Physiology

- Using Normalized Difference Vegetation Index to Estimate Carbon Fluxes from Small Rotationally Grazed Pastures
R. H. Skinner, B. K. Wylie, and T. G. Gilmanov 972

- Temperature and Photoperiod Effects on *Vicia faba* Phenology Simulated by CROPGRO-Fababean
Adriana Confalone, Kenneth J. Boote, Jon I. Lịcaso,
and Federico Sau 1036

- Divergent Alfalfa Root System Architecture is Maintained across Environment and Nutrient Supply
Michael P. Russelle and JoAnn F. S. Lamb 1115

- Nodal Leaf Area Distribution in Soybean Plants Grown in High Yield Environments
T. D. Setiyono, A. M. Bastidas, K. G. Cassman, A. Weiss,
A. Dobermann, and J. E. Specht 1198

- Drought Effects on Gas Exchange, Chlorophyll, and Plant Growth of 1-Methylcyclopropene Treated Cotton
Vladimir A. da Costa and J. Tom Cochren 1230

- Anatomical and Physiological Characteristics Associated with Corn Endosperm Texture
Haiyan Zhang, Rongqi Gao, and Shuring Dong 1258

Crop Economics, Production & Management

- 'TifEagle' Bermudagrass Response to Plant Growth Regulators and Mowing Height
Lambert B. McCarty, Thomas G. Willis, Joc E. Tolter,
and Ted Whitwell 988

- Yield and Composition of Sweet Pearl Millet as Affected by Row Spacing and Seeding Rate
Audrey Bouchard, Anne Vanasse, Philippe Seguin,
and Gilles Bélanger 995

- Forage, Nitrogen, and Phosphorus Yield Dynamics of Cool-Season Annual Forages Overseeded onto Tifton 85 Bermudagrass
James Muir and John Bow 1019

- Lack of Hybrid by Seeding Rate Interactions for Corn Growth, Silage Yield, and Quality
William J. Cox and Jerome H. Cherney 1051

- Maize–Bean Intercrop Weed Suppression and Profitability in Southern Ethiopia
T. Workayehu and C. S. Wortmann 1058

- Variation in the Fatty Acid Composition of Alpine Grassland during Spring and Summer
A. Revollo-Chion, E. Tabacco, P. G. Peiretti, and G. Borreani 1072

- Yield and Quality of Wheat and Soybean in Sole- and Double-Cropping
Octavio P. Caviglia, Victor O. Sadras,
and Fernando H. Andrade 1081

- Barley Productivity Response to Polymer-Coated Urea in a No-Till Production System
R. E. Blackshaw, X. Hao, K. N. Harker, J. T. O'Donovan,
E. N. Johnson, and C. L. Vera 1100

- Orchardgrass Ley for Improved Manure Management in Wisconsin: II. Nutritive Value and Voluntary Intake by Dairy Heifers
Janet Hedecke, Joshua Posner, Wayne Coblenz, John Hall,
Richard Walgenbach, and Jill Davidson 1106

- Winter Cereal Canopy Effect on Cereal and Interseeded Legume Productivity
Brock C. Blaser, Jeremy W. Singer, and Lance R. Gibson 1180

- Soybean Response to Drainage and Subirrigation on a Claypan Soil in Northeast Missouri
K. A. Nelson, R. L. Smoot, and C. G. Meinhardt 1216

- Camelina Yield Response to Different Plant Populations under Dryland Conditions
K. A. McVay and Q. A. Khan 1265

(cont.)

Organic Agriculture & Agroecology

- Organically Managed No-Tillage Rye–Soybean Systems: Agronomic, Economic, and Environmental Assessment
Emily R. Bernstein, Joshua L. Posner, David E. Stoltenberg, and Janet L. Hedicke 1169
- Soybean Cultivar Response to Planting Date and Seeding Rate under Organic Management
Jeffrey A. Coulter, Craig C. Sheaffer, Milton J. Haar, Donald L. Wyse, and James H. Orf 1223
- Nitrogen Availability from Poultry Litter and Pelletized Organic Amendments for Organic Rice Production
Paula L. Wild, Chris van Kessel, Jessica Lundberg, and Bruce A. Linquist 1284

Soil Fertility & Crop Nutrition

- In-Season Prediction of Sugarbeet Yield, Quality, and Nitrogen Status Using an Active Sensor
Ronald J. Gehl and Timothy J. Boring 1012
- Economically Optimal Nitrogen Rates of Corn: Management Zones Delineated from Soil and Terrain Attributes
Dan B. Jaynes, Thomas C. Kaspar, and Tom S. Colvin 1026
- Remote Sensing Leaf Chlorophyll Content Using a Visible Band Index
E. Raymond Hunt Jr., C. S. T. Daughtry, Jan U. H. Eitel, and Dan S. Long 1090
- Seed, Oil, and Protein Yields of Canola under Combinations of Irrigation and Nitrogen Application
Javad Hamzel 1152
- Modeling Apparent Nitrogen Mineralization under Field Conditions Using Regressions and Artificial Neural Networks
Roberto Alvarez and Haydee S. Steinbach 1159
- Spatial Modeling of Critical Planting Date for Winter Rye Cover Crop to Enhance Nutrient Recovery
Ali Farsad, Timothy O. Randhir, Stephen J. Herbert, and Masoud Hashemi 1252
- Maize-N: A Decision Tool for Nitrogen Management in Maize
T. D. Setiyono, H. Yang, D. T. Walters, A. Dobermann, R. B. Ferguson, D. F. Roberts, D. J. Lyon, D. F. Clay, and K. G. Cassman 1276

Soil Tillage, Conservation & Management

- Tillage and Crop Establishment Affects Sustainability of South Asian Rice–Wheat System
Mahesh K. Gathala, J. K. Ladha, Vivak Kumar, Yashpal S. Saharawat, Virender Kumar, Pardeep Kumar Sharma, Sheetal Sharma, and Himanshu Pathak 961
- Permanent Beds vs. Conventional Tillage in Irrigated Arid Central Asia
Nazar Ibragimov, Steven Evert, Yusupbek Esenbekov, Feryuzha Khasanova, Ikramjan Karabaev, Lutfulla Mirzaev, and John Lamers 1002
- Western Oregon Grass Seed Crop Rotation and Straw Residue Effects on Soil Quality
S. M. Griffith, G. M. Banowetz, R. P. Dick, G. W. Mueller-Warrant, and G. W. Whittaker 1124

- Root Growth of Barley as Affected by Tillage Systems and Nitrogen Fertilization in a Semiarid Mediterranean Agroecosystem
F. J. Morell, C. Cantero-Martinez, J. Alvaro-Fuentes, and J. Lampurlanés 1270

- Long-Term Lentil Green-Manure Replacement for Fallow in the Semiarid Northern Great Plains
Brett L. Allen, Joseph L. Pikul Jr., Jed T. Waddell, and Verlan L. Cochran 1292

Soils, Agronomy & Environmental Quality

- Soil Microbial Response to Nitrogen Rate and Placement and Barley Seeding Rate under No Till
Newton Z. Lupwayi, George W. Clayton, John T. O'Donovan, and Cynthia A. Grant 1064
- Estimating Net Carbon Emissions and Agricultural Response to Potential Carbon Offset Policies
Michael Popp, Lanier Nalley, Corey Fortin, Aaron Smith, and Kristofor Bryce 1132
- Minimizing Interspecific Competition in Soybean by Optimizing Cover Crop Self-Seeding
Jeremy W. Singer, Keith A. Kohler, and David W. Meek 1186

Other Items

- ASA Statement of Ethics iv
Erratum 1299

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FEATURE ARTICLES

- 22 Arbitration in Coal Transportation Disputes
- 24 River View—The Most Productive Continuous Miner Mine
A group of veteran Illinois Basin coal miners open a new mine and train the next generation
- 30 MSHA Provides Update on UBB Explosion
Providing widows with an update on its investigation one year later, Strickland paints a picture of reckless disregard for mine safety
- 36 Coal Age Buyers Guide 2011
- 46 Novel Fine Particle Dewatering
Centrifaric technology combines centrifugation and pressure filtration within a single process to substantially reduce moisture compared to conventional dewatering systems
- 50 The Selection Pool Deepens for Submersibles
New models span the spectrum of power, size and capacity requirements for dewatering mines
- 54 Eickhoff Capitalizes on Strength with SL 900s

COAL IN THE NEWS

- 6 CN sells IC RailMarine Terminal to Foresight Energy
- 6 The EPA finalizes expensive new regulation
- 6 Oxbow battling with railroads over competition, pricing
- 8 Absaloka mine reaches new four-year labor agreement
- 10 CONSOL Energy closes Mine 84
- 10 AEP seeks more time to comply with EPA coal plant emissions rules
- 12 Nally & Hamilton Enterprises denies it violated CWA
- 18 Peabody files objections to UMWA victory at Willow Lake
- 18 MSHA's newly formed coal district 12 begins operations
- 20 Coal Age recognizes top performers at Longwall USA

WORLD NEWS

- 7 Three to develop Mongolia's Tavan Tolgoi
Itochu acquires 20% stake in Drummond's Colombian mines
- 8 Donkin coal project in Nova Scotia receives favorable report
ArcelorMittal & Peabody submit proposal to acquire Macarthur Coal in Australia
- 10 Teck updates coal guidance
Mechel meets with Posco
- 12 CIL goes for mine specific supply policy
South Africa government clarifies BEE coal export quotas

NEWS/8



RIVER VIEW MINING/24



FINE COAL RECOVERY/46



PIT DEWATERING/50

**THIS ISSUE**

This month, Coal Age profiles Alliance Resource's River View mine. Commissioned in 2009, this super section mine quickly established itself as one of the most productive Illinois Basin room-and-pillar mines.

DEPARTMENTS

- | |
|------------------------|
| 4 Editorial |
| 6 Coal in the News |
| 7 World News |
| 14 People |
| 16 Dateline Washington |
| 18 Calendar |
| 20 Awards |
| 54 Operating Ideas |
| 56 Suppliers News |
| 58 Product News |
| 61 Classified |
| 64 Legally Speaking |

EARTH

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FEATURE

A DAY WITHOUT GLORY

Glory, a satellite developed over the past 10 years, was to be a game changer in the debate over climate change science. But the launch failed, and Glory crashed into the ocean just minutes after takeoff. Scientists now must decide whether to rebuild and try again.

Adam Voiland

D. lof 2

32



FEATURE

THINKING OUTSIDE THE ROCKS IN THE SEARCH FOR ANCIENT EARTHQUAKES

Scientists often have to get creative in the search for past earthquakes — turning to old diaries, newspaper articles and photographs, folklore, petroglyphs, crumpled buildings and toppled monuments.

Mary Caperton Morton



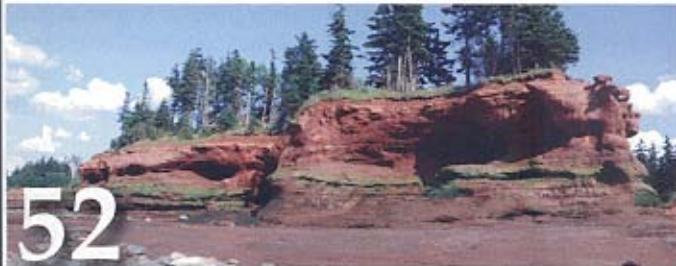
42

FEATURE

TRAVELS IN GEOLOGY: NOVA SCOTIA: A DRIVING TOUR OF PANGAEA

Driving through the southeastern Canadian province of Nova Scotia provides a glimpse of African and Scottish landscapes of yore, along with remnants of the power of glacial and tidal forces.

Sam Lemonick



52

TRENDS AND INNOVATIONS

WHEN THE DUST SETTLES

For the past 10 years, geoscientists have been helping to characterize the dust that blanketed lower Manhattan following the 9/11 attacks on the World Trade Center, hoping to determine if and how that dust may be causing long-term health problems.

Meg Marquardt

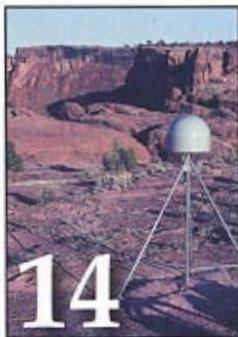


28

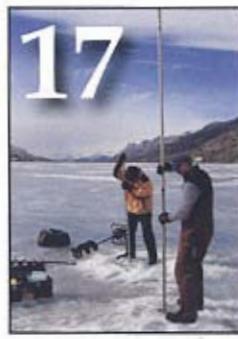
ON THE COVER: A firefighter pauses amid the rubble in the aftermath of the September 11 attacks. Read more on how geoscientists are tracking first responders' health issues on p. 28. ©AP Photo/Shawn Baldwin.

NEWS**VIEWS**

- 10 CURRENT RATE OF CO₂ EMISSIONS UNPRECEDENTED IN EARTH'S PAST
- 11 CAT SCANS DIAGNOSE ROCK PERMEABILITY
- 12 ASH FROM VESUVIUS STILL REVEALING SECRETS
- 13 FOR SOIL CARBON RELEASE, IT'S NOT THE HEAT, IT'S THE VARIABILITY
- 14 BREAKING UP IS HARD TO DO
- 15 EARLY MEN HOMEBODIES, WHILE WOMEN WANDERED
- 16 "ROCK SNOT" MYSTERY REVEALED



- 17 MELTING SNOWPACK DEPLETES WEST'S MAIN WATER SOURCE
- 17 GREENLAND HAS LONG BEEN SAYING "GOODBYE" TO SETTLERS
- 18 MOUNT RAINIER'S SHRINKING GLACIERS
- 19 SUNSPOTS MAY BE FADING AWAY
- 20 WATERLOGGED MOON
- 21 MOROCCAN ORDOVICIAN GIANTS FOUND



- 22 ALGAE: THE MIRACLE PLANT?
- 23 TRACK FLOODS IN YOUR NEIGHBORHOOD
- 24 MINERAL RESOURCE OF THE MONTH: RARE EARTH ELEMENTS

78 A COMMENT

CAPE WIND: IT'S TIME

After years of wrangling, the Cape Wind project off the coast of Massachusetts is about to become the first offshore wind farm in the U.S. It's a crucial step in the country's pursuit of energy independence.

Jeffrey D. Gardner

80 GEOLOGIC COLUMN

ECONOMICS VERSUS ECOLOGY:

DO THEY HAVE TO BE ADVERSARIAL?

The financial problems of the last few years show that the dominant idea in economics — that the economy must continue to grow — makes no sense on a finite planet. Instead, we must work *with* our resources.

Ward Chesworth

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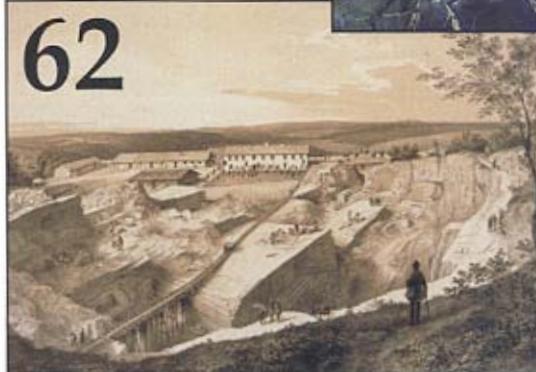
DEPARTMENTS**4 FROM THE EDITOR****6 LETTERS: PERSPECTIVES FROM READERS****57 GEOMEDIA**

DVDs: Native Son Brings Solar Power to Rural Africa in "Burning in the Sun"

Books: Charting a Course Correction: A Review of "Earth: The Operators' Manual"

60 CROSS-SECTION: A PUZZLE**61 WHERE ON EARTH?****62 BENCHMARKS**

September 30, 1861:
Archaeopteryx Is Discovered and Described

**66 DOWN TO EARTH WITH ASTRONOMER AND DISCOVERER OF DARK ENERGY ADAM RIESS****69 EARTH PRODUCT SPOTLIGHT****70 GEOMARKETPLACE****72 CLASSIFIEDS: CAREER OPPORTUNITIES**

RECEIVED

2011 AUG 16 PM 3:13

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FEATURES**Paste: A Maturing Technology**

Mining companies worldwide are gaining the benefits from optimizing their tailings-disposal systems 30

OTR Tire Supply Comes Under Pressure

Another haul-truck tire shortage may lie just around the corner, but this time both miners and mobile equipment manufacturers should be better prepared to cope 40

CRU Conference Consensus: Copper Trends Mostly Positive

Industry observers have been pleasantly surprised by the metal's prospects, and presenters at the recent event see only a few threatening clouds on the horizon 44

Flotation Technologies Focus on Higher Efficiency, Faster Analysis

Like the process itself, new flotation-cell designs and process-control tools keep bubbling to the surface 48

Mining Industry in British Columbia and Yukon

The reemergence of a mining giant 51

Australian Expertise Comes with Raw Materials

135

LEADING DEVELOPMENTS

World Gold Council Launches Initiative to Combat Conflict Gold 4

BHP Billiton Receives Approval for Jansen Potash Project EIS 4

M&A Activity Steps Up at Mid-year 5

Eramet, Mineral Deposits Ltd. Plan Mineral Sands Venture 6

National Mining Hall of Fame 2011 Inductees and Prazen Award Winner 8

AROUND THE WORLD

U.S. & Canada: Osisko Attains Commercial Production at Canadian Malartic 10

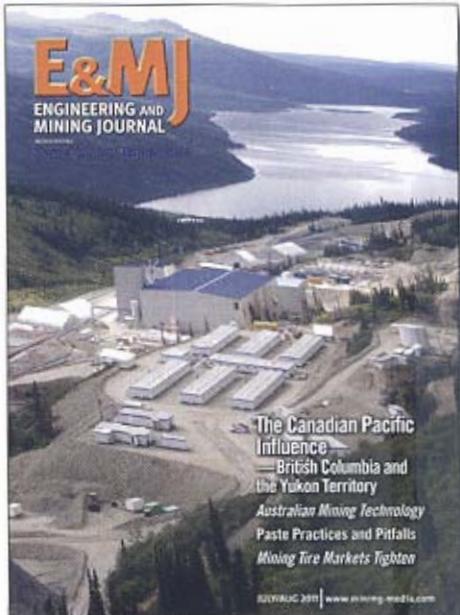
Latin America: Xstrata Studying Expansions at Collahuasi and Lomas Bayas 16

Australia/Oceania: Rio Tinto Accelerates Pilbara Iron Ore Expansion 18

Africa: KCM Bottoms Out New Shaft for Konkola Deep 20

Asia: Eldorado Starts Up at Efemçukuru 22

Exploration Roundup: Chinalco and Rio Tinto Formalize Exploration JV 24



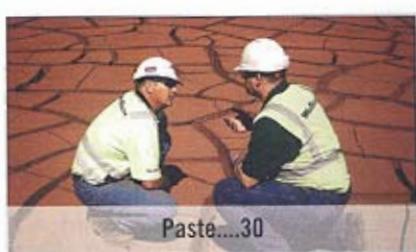
The Canadian Pacific Influence
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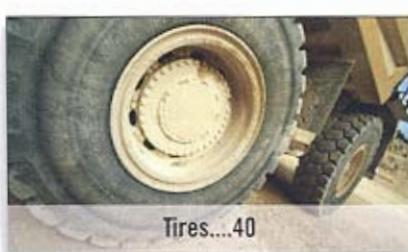
This month's issue includes a special report on the mineral sector in British Columbia and Yukon, with a special focus on Vancouver's role as an international center of exploration excellence. Shown here is an aerial view of Yukon Zinc's Wolverine zinc-silver-copper-lead-gold mine in eastern Yukon. (Photo courtesy of Yukon Zinc Corp.)

DEPARTMENTS

Calendar	28
Classified Advertisements	158
Equipment Gallery	154
From the Editor	2
Markets	160
Operating Strategies	146
People	14
Processing Solutions	152
Suppliers Report	148
This Month in Coal	26



Paste...30



Tires...40



Australian Technology...135

2011 AUG -2 PM 5:09

July 25, 2011

Contents

Volume 267 • Number 3

COVER STORY
PAPUA NEW GUINEA, COLORADO

Australia's Cardno Goes Global

18 The Brisbane-based design firm is reaching into new markets, such as road construction in Papua New Guinea (right), and boosting its profile as an international player.

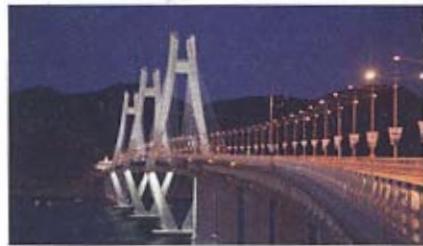
Cover photo and right courtesy of Cardno Ltd.



SPECIAL REPORT

Top International Design Firms

35 Projects in emerging economies and resource-rich countries make up for sluggish markets in the U.S. and Europe



Asian projects lure Western designers. Page 35

NEWS

Transportation

- 8** Highways: Design-build team earns bonus for L.A. bridge demolition
- 9** Initiatives: P3s, design-build could be key to California projects

UPCOMING ISSUES

- | | |
|---------|-----------------------------|
| Aug. 1 | Top 200 Environmental Firms |
| Aug. 8 | Web News and Updates |
| Aug. 15 | World Trade Center Coverage |
| Aug. 22 | Web News and Updates |

PHOTO COURTESY OF COWI, ASI (LOWER LEFT) LA METRO (LOWER RIGHT)



A smooth demolition. Page 8

- 11** Bridges: Humpback crossing upgrade keeps old lines in place
- 12** Personnel: MassDOT chief to step down amid "Big Dig" problems

Technology

- 11** BIM: Data exchange standard coming

Business & Economics

- 10** Power: NRC's Japan task force calls for sweeping changes
- 14** Lawsuits: Dueling engineering reports cloud future of Vegas hotel
- 12** Iraq Construction: Ex-Corps staffers and subcontractor managers indicted

Environment

- 14** Flood Control: Corps slows Missouri River releases

DEPARTMENTS

- 2** Construction Week
- 4** Dialogue
- 7** Washington Observer
- 16** Technology
- 31** Construction Economics
- 53** Products
- 54** Pulse
- 59** Official Proposals
- 60** Viewpoint



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COVER STORY

ENERGY, COAL & GAS

Coal-Ash Dilemma

44 As utilities await possible coal-ash regulations, TVA is making strides toward cleaning up what has been called the worst environmental disaster of its kind.

Cover photo by TVA; photo right courtesy of Pam Radtke-Russell/ENR.

**FEATURE****Top 200 Environmental Firms**

51 Service needs and consolidation push a revenue rebound, despite the economy. See which firms are leading the charge.



Scotland water plant offered work. Page 51

NEWS**Government**

10 **Federal Spending:** Construction awaits debt deal

Transportation

11 **Airports:** Fight over FAA stopgap cuts off airport contracts

13 **Bridges:** Despite lawsuit, North Carolina pushes forward with planned crossing

16 **Research:** Report ties deteriorating infrastructure to job loss

Power & Industrial

12 **Manufacturing:** Auto sector expands on hybrid, electric cars

Water & Power

14 **Flood Control:** Corps throttles back Missouri dams' release rate

Equipment

18 **Materials:** A hard job for geopolymers: replacing portland cement

Environment

18 **Remediation:** Yellowstone River oil-spill cleanup

19 **Environment:** New York City stops spill at treatment plant

Business & Economics

16 **Companies:** Big oil-gas awards boost CB&I returns

19 **Legal:** Contractors face new trials on safety-related charges

DEPARTMENTS

4 Construction Week

6 Calendar

9 Washington Observer

20 People

24 Technology

41 Construction Economics

72 Products

74 Pulse

79 Official Proposals

80 Editorials



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COVER STORY

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Declaration of Interdependence

DENVER, COLORADO

- 34** Esprit de corps buoys World Trade Center teams during coordination challenges inside Ground Zero's 16-acre shared 'bathtub'
- 36** The WTC Over Time
- 38** The National September 11th Memorial
- 40** One World Trade Center
- 46** The WTC Transportation Hub
- 50** Lower Manhattan Transit

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**NEWS****Transportation**

- 8** Aviation: FAA contractors resume work

Business & Economics

- 9** Contracts: GAO upholds Corps-bid protest for New Orleans flood job

Environment

- 11** Wastewater: St. Louis agreement sets plan for \$4.7 billion in upgrades

Equipment

- 10** Equipment: Caterpillar, EPA clear the air over diesel-engine recall
- 10** Materials: Ozinga Bros. plans to build cement plant near Chicago
- 11** Materials: High-strength steel cheaper overall than conventional rebar

Power & Industrial

- 12** Renewable Power: Contractor selected to build supertall solar tower

Water & Dams

- 15** Levees: New flood protection system beats schedule, lowers costs

DEPARTMENTS

- 4** Update
6 Letters
7 Construction Week

UPCOMING ISSUES

- Aug. 22 Web News and Updates
Aug. 29 The Top International Contractors
Sept. 5 Web News and Updates
Sept. 12 Technology

17 Technology

- 33** People
54 Construction Economics
56 Products
58 Pulse
61 Official Proposals (cont. on p. 62)
64 Editorials

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Scaling Up

10 Untapped stores of natural resources around the world and greater demand from growing economies are fueling bigger construction programs to extract them, such as Mongolia's big Oyu Tolgoi copper and gold mine. But 'gigaprojects' carry new risks.

On the cover: \$6-billion Oyu Tolgoi Mine in Mongolia. Cover photo and photo right courtesy of Ivanhoe Mines.



FEATURE

Top International Contractors

45 As the U.S. and Europe experience downturns, markets for big contractors in emerging economies in Asia, Africa and Latin America are growing.



Vinci PLC's Lusail light rail project in Qatar.

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ADDITIONAL CONTENT ONLINE

UPCOMING ISSUES

Sept. 5 Web News and Updates

Sept. 12 Technology

Sept. 19 Top Green Contractors Firms

Sept. 26 Third Quarterly Cost Report



Kauffman Center graces Kansas City. Page 23

NEWS

Construction Methods

13 Research: Tests show premature failure of shear-stud reinforcement

Buildings

16 Sustainability: Energy code 'rollback' in N.M. sparks debate

21 Sustainability: Legal victory for USGBC

23 Sustainability: Kauffman Center Pulls Strings For Kansas City Music-Goers

People

36 Obituary: Quality guru James Poirot Dies

36 Obituary: Fire analysis expert Bud Nelson is dead at 82

DEPARTMENTS

4 Letters

6 Washington Observer

9 Construction Week

24 Technology

43 Construction Economics

79 Products in Practice

80 Pulse

86 Official Proposals (cont. on p. 87)

88 Viewpoint



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GOVERNING

08.2011

FEATURES

24 CRUDE AWAKENING

North Dakota's oil boom is bringing unmatched growth to the state—and unanticipated problems.

By Ryan Holeywell

32 PAYING FOR PARKS

Their budgets decimated, state park officials are seeking new ways to keep the gates open.

By Linda Baker

36 FIGHTING TO SAVE THE MPA

Budget cuts threaten the future of public administration programs, but schools are pushing back.

By Heather Kerrigan

40 THEY'RE BAAACK

Every summer, the nation's largest concert descends on Manchester, Tenn. Hosting it is a big job for a small town.

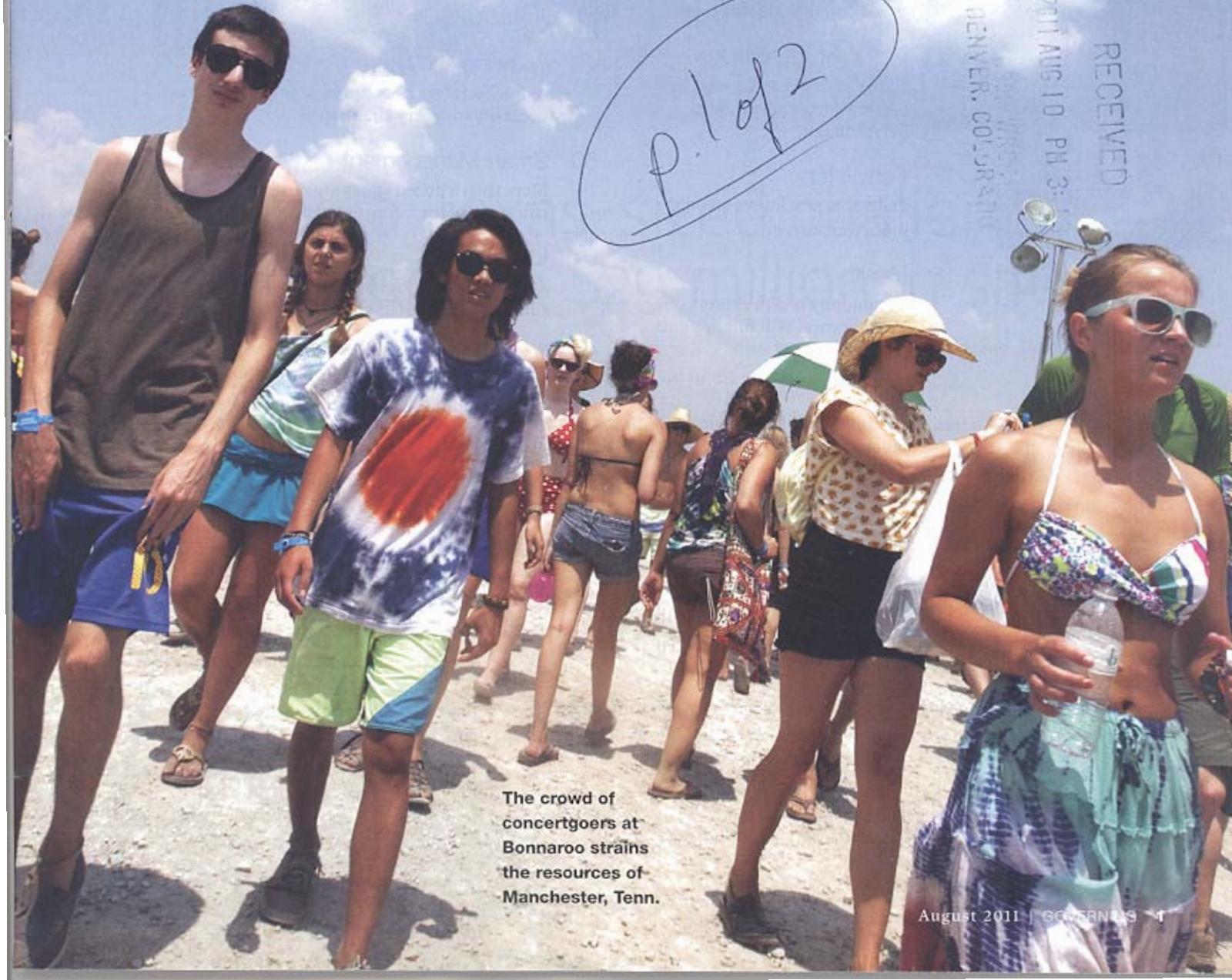
By Zach Patton

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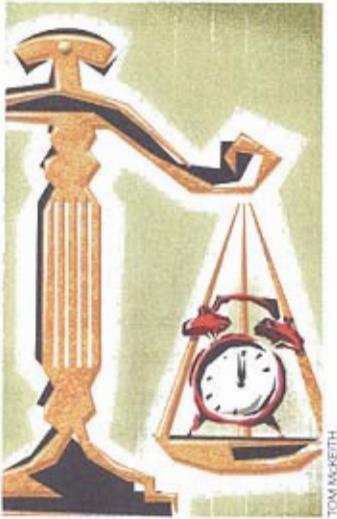
DENVER, COLORADO

p.1 of 2



The crowd of concertgoers at Bonnaroo strains the resources of Manchester, Tenn.

6.2012



50

TOMMCHEITH

- 4 Publisher's Desk
- 6 Letters
- 8 Dispatch
New York City demonstrates that even the sun needs an advocate.

POLITICS + POLICY- 11 Observer
San Diego is hoping reforms will help it shake the nickname "Enron by the Sea."
- 14 At Issue
Workweeks of four 10-hour days aren't popular with everyone.
- 16 Potomac Chronicle
China looks West for ways to better manage government performance.
- 17 FedWatch
Federal expenditures could get more transparent.
- 18 Health
Community health centers offer cheaper care. Will funding cuts get in their way?
- 20 Green Government
Posting energy data could spur buildings to clean up their acts.
- 22 Economic Engines
Intercity passenger bus service has come roaring back.
- 23 Urban Notebook
Unemployment in cities remains high, yet crime keeps dropping.



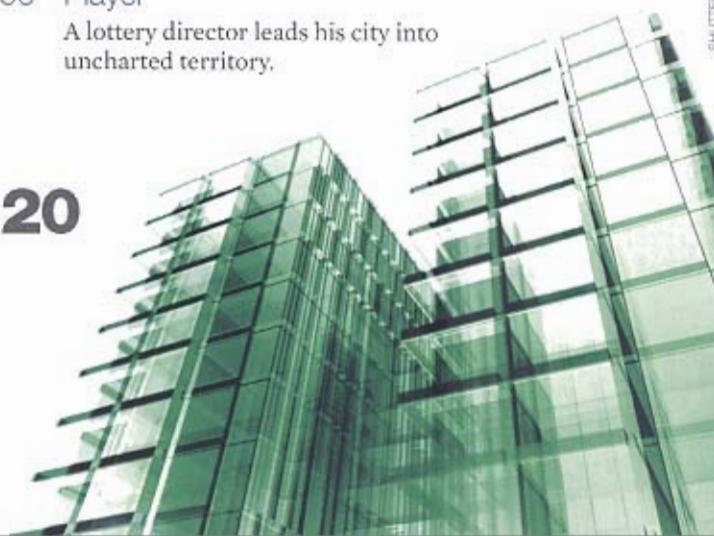
48

MCDOUGALL COUNTY DEPARTMENT OF SOCIAL SERVICES

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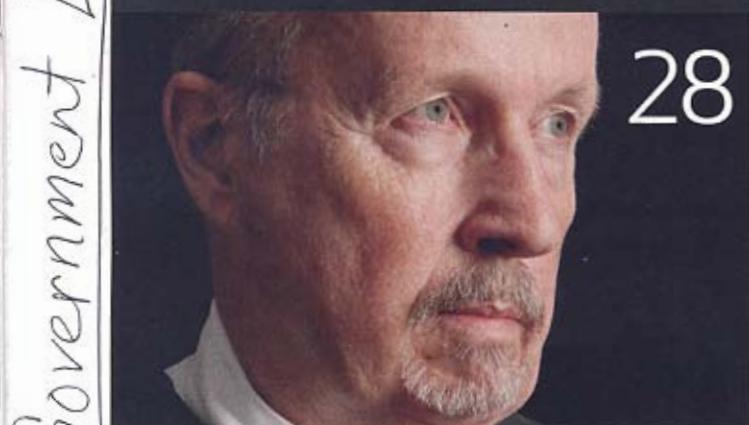
- 48 Growing Strong
A new social services program provides a basic necessity for every client: food.
- 50 Smart Management
More than a dozen states are now measuring the efficiency of their court system.
- 51 Idea Center
A few municipalities have discovered a new, simpler way to patch potholes.
- 52 Tech Talk
State CIOs fear that the loss of federal CIO Vivek Kundra could slow collaboration efforts.
- 54 Public Money
Bond issuers need to share more pension data with investors.
- 56 Player
A lottery director leads his city into uncharted territory.

20



Contents

AUGUST 2011 VOL. 43 NO. 9



28



14



35



38

IN EVERY ISSUE

Editor's Notebook 4

Success and dysfunction in a time of political crisis.
By Tom Shoop

The Briefing 7

Tracking gunrunners, dotting all the i's at GPO, and lighthouses for sale.

Perspectives 42

Two early champions for better government, once more into the fray. By Timothy B. Clark

FEATURES

Bureaucratic Oath 20

Amid an ongoing political battle, HHS officials are managing to implement the massive health care law.

By Charles S. Clark

Justice Delayed 28

How a battle over the independence of administrative law judges is tying HUD in knots.

By Dawn Lim

TRENDS

Boomerang Effect 11

The push to bring jobs in-house is shifting in political winds.
By Charles S. Clark

Measuring Up 14

Performance starts with employee engagement.
By Emily Long

Breaking Through 16

Women have come a long way in the top ranks, but the SES still is mostly male. By Kellie Lunney

ANALYSIS

Chief Changes 35

Managing Technology Vivek Kundra led bold tech reforms, but his legacy is more about management than machines.
By Joseph Marks

Summer Slowdown 38

Management Matters Vacation time and understaffed offices can make August a tricky month. By Elizabeth Newell

Making It Plain 39

Viewpoint Agencies could take their cue from the IRS' project to clean up legalese in taxpayer letters. By Gadi Dechter

Eyes on the Prize 41

Viewpoint Offering rewards for government innovation is vital to national security. By Chan Harjivan

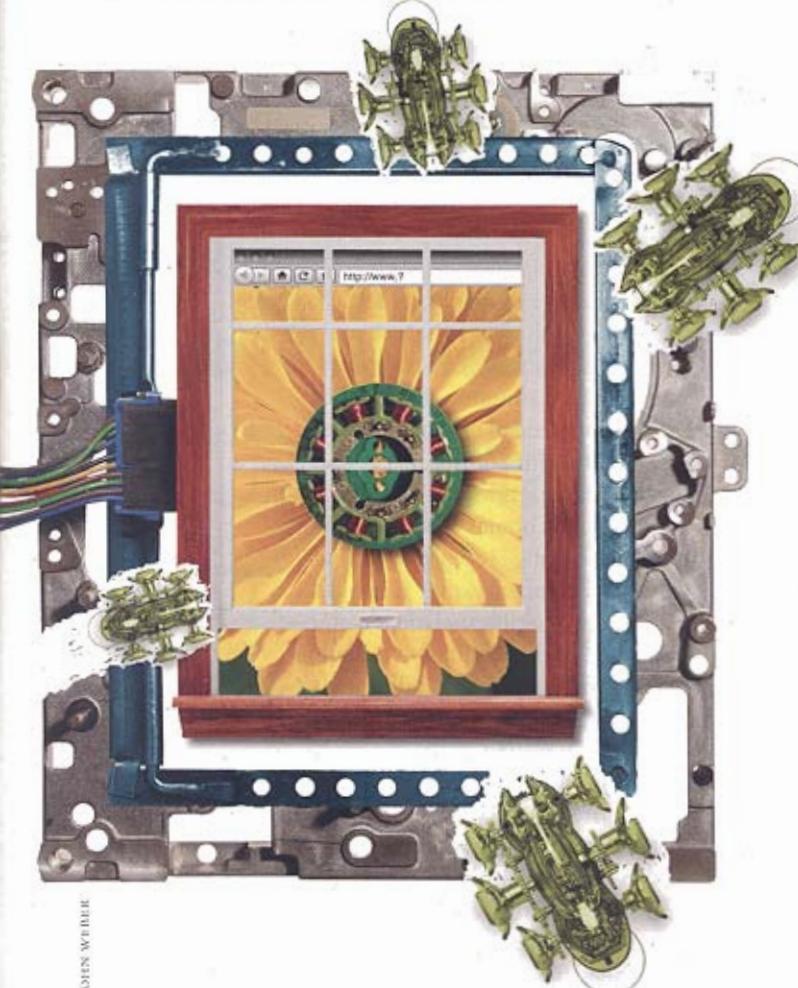
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Contents

AUGUST 15, 2011 VOL. 43 NO. 10

[SPECIAL CYBERSECURITY ISSUE]



JOHN WEBER

Government Executive

Editor's Notebook 4

Agencies face enormous obstacles in securing vital networks, but failure isn't an option. *By Katherine McIntire Peters*



FEATURES

Dangerous Liaisons 8

High-profile data breaches are tipping the balance between connecting and protecting people. *By Aliya Sternstein*

The Threat 16

Political paralysis may pose the biggest hurdle to securing U.S. networks. *By James Andrew Lewis*

The Challenge 22

Government isn't well-organized to combat cyber threats. *By Daniel Gallington*

The Wrong War 30

The insistence on applying Cold War metaphors to cybersecurity is misplaced and counterproductive. *By P. W. Singer and Noah Shachtman*



Building Cyber Warriors 38

With IT security experts in short supply, agencies are shaping the next generation from the ground up. *By Brittany Ballenstedt*

Leading the Way 44

Estonian President Toomas Hendrik Ilves knows firsthand the challenges of governing in a wired world.



Cover illustration by Stephen Webster



Volume 87 – issue 2

CONTENTS

1 August 2011

(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 SCOPUS®. Full text available on ScienceDirect®)

Review Article

- CBM and CO₂-ECBM related sorption processes in coal: A review
A. Busch and Y. Gensterblum 49

Research Papers

- A new mechanistic model for prediction of instantaneous coal outbursts — Dedicated to the memory of Prof. Daniel D. Joseph
K.P. Chen 72
- Selection of coals of different maturities for CO₂ Storage by modelling of CH₄ and CO₂ adsorption isotherms
Ch. Garnier, G. Finqueneisel, T. Zimny, Z. Pokryszka, S. Lafourche, P.D.C. Défossez and E.C. Gaucher 80
- Determination of in-situ stress direction from cleat orientation mapping for coal bed methane exploration in south-eastern part of Jharia coalfield, India
S. Paul and R. Chatterjee 87
- Chemometric analysis of functional groups in fossil remains of the *Dicroidium* flora (Cacheuta, Mendoza, Argentina): Implications for kerogen formation
J.A. D'Angelo, L.B. Escudero, W. Volkheimer and E.L. Zodrow 97
- A comparative evaluation of minerals and trace elements in the ashes from lignite, coal refuse, and biomass fired power plants
S. Singh, L.C. Ram, R.E. Masto and S.K. Verma 112
- Evaluation of the reservoir permeability of anthracite coals by geophysical logging data
J. Li, D. Liu, Y. Yao, Y. Cai and Y. Qiu 121
- History matching of enhanced coal bed methane laboratory core flood tests
L.D. Connell, R. Sander, Z. Pan, M. Camilleri and D. Heryanto 128
- An experimental and numerical investigation on the deformation of overlying coal seams above double-seam extraction for controlling coal mine methane emissions
L. Ying-ke, Z. Fu-bao, L. Lang, L. Chun and H. Shen-yong 139
- Old Smokey coal fire, Floyd County, Kentucky: Estimates of gaseous emission rates
J.M.K. O'Keefe, E.R. Neace, E.W. Lemley, J.C. Hower, K.R. Henke, G. Copley, R.S. Hatch, A.B. Satterwhite and D.R. Blake 150
- Abundances and modes of occurrence of trace elements in the Çan coals (Miocene), Çanakkale-Turkey
G. Gürdal 157

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TABLE OF CONTENTS

P.1 of 2

TECHNICAL PAPERS

Hydropower Relicensing and Climate Change - <i>Joshua H. Viers</i>	655
Comparison of Indexes for Prioritizing Placement of Water Quality Buffers in Agricultural Watersheds - <i>Michael G. Dosskey and Zeyuan Qiu</i>	662
Impacts of Land-Cover Change on Suspended Sediment Transport in Two Agricultural Watersheds - <i>Keith E. Schilling, Thomas M. Isenhart, Jason A. Palmer, Calvin F. Wolter, and Jean Spooner</i>	672
The Impacts of Water Conservation Strategies on Water Use: Four Case Studies - <i>Yushiou Tsai, Sara Cohen, and Richard M. Vogel</i>	687
Millennial-Length Records of Streamflow From Three Major Upper Colorado River Tributaries - <i>Stephen T. Gray, Jeffrey J. Lukas, and Connie A. Woodhouse</i>	702
Residential Demand for Water in the Chicago Metropolitan Area - <i>Taro Mieno and John B. Braden</i>	713
Streamflow Response to Climate as Influenced by Geology and Elevation - <i>Timothy D. Mayer and Seth W. Naman</i>	724
Estimation of Suspended-Sediment Concentration From Total Suspended Solids and Turbidity Data for Kentucky, 1978-1995 - <i>Tanja N. Williamson and Charles G. Crawford</i>	739
Twenty Years of New Zealand's National Rivers Water Quality Network: Benefits of Careful Design and Consistent Operation - <i>Robert J. Davies-Colley, David G. Smith, Robert C. Ward, Graham G. Bryers, Graham B. McBride, John M. Quinn, and Mike R. Scarsbrook</i>	750
Soil and Water Characteristics in Restored Canebrake and Forest Riparian Zones - <i>Danielle M. Andrews, Christopher D. Barton, Randall K. Kolka, Charles C. Rhoades, and Adam J. Dattilo</i>	772
Climate Change and Floodplain Delineation in Two Southern Quebec River Basins - <i>Serge Laforce, Marie-Claude Simard, Robert Leconte, and François Brissette</i>	785
Field Application of a Renewable Constructed Wetland Substrate for Phosphorus Removal - <i>Shawn E. Rosenquist, W. Cully Hession, Matthew J. Eick, and David H. Vaughan</i>	800
Multicriteria Evaluation of Water Resources Sustainability in the Context of Watershed Management - <i>Min-Goo Kang and Gwang-Man Lee</i>	813
A Method to Assess and Define Environmental Flow Rules for Large Jurisdictional Regions - <i>Ton Snelder, Doug Booker, and Nicolas Lamouroux</i>	828
Planning Agricultural Water Resources System Associated With Fuzzy and Random Features - <i>Y. P. Li and G. H. Huang</i>	841

Vol. 47, no. 4 (Aug. 2011)

p. 2 of 2

Using Instream Water Temperature Forecasts for Fisheries Management: An Application in the Pacific Northwest

– Biao Huang, Christian Langpap, and Richard M. Adams.....861

The Effect of Rain and Runoff When Assessing Timing of Manure Application and Dissolved Phosphorus Loss in Runoff

– Peter A. Vadas, William E. Jokela, Dory H. Franklin, and Dinku M. Endale.....877

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Cover photo: Lightning strikes near the Potomac River during a storm in Alexandria, VA on June 9, 2011. Photo by Mike Lanfear.

WILDLIFE MANAGEMENT

Vol. 75, Issue 6, August 2011

P. 1 of 2

TABLE OF CONTENTS

COMMENTARY

- 1243 Trends in Intensive Management of Alaska's Grizzly Bears, 1980–2010
Sterling D. Miller, John W. Schoen, Jim Faro, and David R. Klein

RESEARCH ARTICLES

AMPHIBIANS AND REPTILES

- 1253 Recovery of Saltwater Crocodiles Following Unregulated Hunting in Tidal Rivers of the Northern Territory, Australia
Yusuke Fukuda, Grahame Webb, Charlie Manolis, Robyn Delaney, Mike Letnic, Garry Lindner, and Peter Whitehead

- 1267 Energetics of Surface-Active Terrestrial Salamanders in Experimentally Harvested Forest
Jessica A. Homyack, Carola A. Haas, and William A. Hopkins

BIRDS

- 1279 Reproduction of Northern Spotted Owls: The Role of Local Weather and Regional Climate
Elizabeth M. Glenn, Robert G. Anthony, Eric D. Forsman, and Gail S. Olson

- 1295 Long-Term Population Dynamics of a Managed Burrowing Owl Colony
John H. Barclay, Nicole M. Korfanta, and Matthew J. Kauffman

- 1307 Correlates of Survival in Swainson's Hawks Breeding in Northern California
Christopher W. Briggs, Brian Woodbridge, and Michael W. Collopy

- 1315 Factors Influencing Survival of Native and Translocated Mountain Quail in Idaho and Washington
John A. Stephenson, Kerry P. Reese, Peter Zager, Patricia E. Heekin, Pamela J. Nelle, and Ashley Martens

- 1324 Potential Use of Weather Radar to Study Movements of Wintering Waterfowl
Lori A. Randall, Robert H. Diehl, Barry C. Wilson, Wylie C. Barrow, Jr., and Clinton W. Jeske

- 1330 The Role of Predator Removal, Density-Dependence, and Environmental Factors on Mallard Duckling Survival in North Dakota
Courtney L. Amundson and Todd W. Arnold

- 1340 Impact of Management Treatments on Waterfowl Use of Dense Nesting Cover in the Canadian Parklands
James H. Devries and Llwellyn M. Armstrong

- 1350 Shifting Threats Faced by the San Clemente Sage Sparrow
Brian Hudgens, Frederic Beaudry, T. Luke George, Sara Kaiser, and Nicole M. Munkwitz

MAMMALS

- 1361 Effects of Predator Treatments, Individual Traits, and Environment on Moose Survival in Alaska
Mark A. Keech, Mark S. Lindberg, Rodney D. Boertje, Patrick Valkenburg, Brian D. Taras, Toby A. Boudreau, and Kimberlee B. Beckmen

- 1381 Cougar Survival and Source-Sink Structure on Greater Yellowstone's Northern Range
Toni K. Ruth, Mark A. Haroldson, Kerry M. Murphy, Polly C. Buotte, Maurice G. Hornocker, and Howard B. Quigley

- 1399 Factors Affecting Harvests of Fishers and American Martens in Northern Michigan
Tim L. Hiller, Dwayne R. Etter, Jerrold L. Belant, and Andrew J. Tyre

- 1406 Targeted Surveillance of Raccoon Rabies in Québec, Canada
Erin E. Rees, Denise Bélanger, Frédéric Lelièvre, Nathalie Coté, and Louise Lambert

- 1417 Does Small-Perimeter Fencing Inhibit Mule Deer or Pronghorn Use of Water Developments?
Randy T. Larsen, John A. Bissonette, Jerran T. Flinders, and Aaron C. Robinson

- 1426 Fecal Hormones as a Non-Invasive Population Monitoring Method for Reindeer
C-Jae C. Morden, Robert B. Weladji, Erik Ropstad, Ellen Dahl, Øystein Holand, Gabriela Mastromonaco, and Mauri Nieminen

- 1436 Movements of White-Tailed Deer in Riparian Habitat: Implications for Infectious Diseases
Gregory M. Clements, Scott E. Hygnstrom, Jason M. Gilsdorf, David M. Baasch, Myndi J. Clements, and Kurt C. Vercauteren

- 1443 Biological and Socio-Economic Effects of Statewide Limitation of Deer Licenses in Colorado
Eric J. Bergman, Bruce E. Watkins, Chad J. Bishop, Paul M. Lukacs, and Paul M. Lukacs

- 1453 Interaction Among Deer in a Chronic Wasting Disease Endemic Zone
Erin R. Silbernagel, Nicole K. Skelton, Cheryl L. Waldner, and Trent K. Bollinger

- | | | |
|------|---|--|
| 1462 | The Extent of Lead Fragmentation Observed in Deer Culled by Sharpshooting
<i>Chad M. Stewart and Norman B. Veerka</i> | NOTES |
| 1467 | Forage Availability for White-Tailed Deer Following Silvicultural Treatments in Hardwood Forests
<i>Marcus A. Lashley, Craig A. Harper, Gary E. Bates, and Patrick D. Keyser</i> | 1508 Uncertainty in Determination of Sex From Harvested Bobcats
<i>Bronwyn W. Williams, Dwayne R. Etter, Philip D. DeWitt, Kim T. Scribner, and Paul D. Friedrich</i> |
| 1477 | Factors Associated With Use of Wildlife Underpasses and Importance of Long-Term Monitoring
<i>Jeffrey W. Gagnon, Norris L. Dodd, Kari S. Ogren, and Raymond E. Schweinsburg</i> | 1513 Mark-Recapture Using Tetracycline and Genetics Reveal Record-High Bear Density
<i>Elizabeth Peacock, Kimberly Titus, David L. Garshelis, Mary M. Peacock, and Miroslaw Kuc</i> |
| 1488 | Diets of Non-Native Deer in Australia Estimated by Macroscopic Versus Microhistological Rumen Analysis
<i>David M. Forsyth and Naomi E. Davis</i> | 1521 Spatial and Temporal Factors Influencing Sightability of Elk
<i>Eric Vander Wal, Philip D. McLoughlin, and Ryan K. Brook</i> |
| 1498 | Salt Marsh Harvest Mouse Demography and Habitat Use in the Suisun Marsh, California
<i>Diego Sustaita, Patty Finfrock Quickert, Laura Patterson, Laureen Barthman-Thompson, and Sarah Estrella</i> | 1527 Estimating Mountain Goat Abundance Using DNA From Fecal Pellets
<i>Kim G. Poole, Darryl M. Reynolds, Garth Mowat, and David Paetkau</i> |
| | | 1535 Information Access: Books and Literature
<i>Carla G. Heister</i> |

Journal of Wildlife Management

Vol. 75, no. 6 (Aug. 2011)

P. 20f²

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THE JOURNAL OF

WILDLIFE MANAGEMENT

Vol. 75, Issue 7, September 2011

TABLE OF CONTENTS

COMMENTARY

- 1539 The Role of State Wildlife Professionals Under the Public Trust Doctrine
Christian A. Smith

RESEARCH ARTICLES

REPTILES AND AMPHIBIANS

- 1544 Suburbs: Dangers or Drought Refugia for Freshwater Turtle Populations?
John H. Roe, Martha Rees, and Arthur Georges

BIRDS

- 1553 Effects of Implanted Satellite Transmitters on Behavior and Survival of Female Common Eiders
Peter L. F. Fast, Marie Fast, Anders Mosbech, Christian Sonne, H. Grant Gilchrist, and Sébastien Descamps
- 1558 Factors Affecting Detection Probability of Burrowing Owls in Southwest Agroecosystem Environments
Jeffrey A. Manning

- 1568 Using Adult Groups of Red-Cockaded Woodpeckers for Translocations and Population Augmentation
Erin M. Herbez, Michael J. Chamberlain, and Douglas R. Wood

- 1574 Importance of Juniper to Birds Nesting in Piñon-Juniper Woodlands in Northwest New Mexico
Clinton D. Francis, Catherine P. Ortega, and John Hansen

- 1581 Vulture Flight Behavior and Implications for Aircraft Safety
Michael L. Avery, John S. Humphrey, Trey S. Daugherty, Justin W. Fischer, Michael P. Miles, Eric A. Tillman, William E. Bruce, and W. David Walter

- 1588 Variation in Life History and Demography of the American Black Bear
Julie A. Beston

- 1597 Grizzly Bear Selection of Avalanche Chutes: Testing the Effectiveness of Forest Buffer Retention
Robert Serroya, Bruce N. McLellan, Gary D. Pavan, and Clayton D. Apps

- 1609 Partitioning of Anthropogenic Watering Sites by Desert Carnivores
Todd C. Atwood, Tricia L. Fry, and Bruce R. Leland

- 1616 Evaluation of Fecal DNA Preservation Techniques and Effects of Sample Age and Diet on Genotyping Success
Michael Panasci, Warren B. Ballard, Stewart Breck, David Rodriguez, Llewellyn D. Densmore III, David B. Wester, and Robert J. Baker

- 1625 River Otter Population Size Estimation Using Noninvasive Latrine Surveys
Rebecca A. Mowry, Matthew E. Gompper, Jeff Beringer, and Lori S. Eggert

- 1637 Habitat Occupancy by Riparian Muskrats Reveals Tolerance to Urbanization and Invasive Vegetation
Lisa A. Cotner and Robert L. Schooley

- 1646 Site Occupancy and Cavity Use by the Northern Flying Squirrel in the Boreal Forest
Caroline Trudeau, Louis Imbeau, Pierre Drapeau, and Marc J. Mazerolle

NOTES

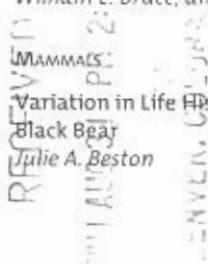
- 1657 A Model for Integrating Wildlife Science and Agri-Environmental Policy in the Conservation of Declining Species
Noah G. Perlut, Allan M. Strong, and Toby J. Alexander

- 1664 Marking Ruby-Throated Hummingbirds With Radio Frequency Identification Tags
Larry W. Brewer, Christine A. Redmond, Jennifer M. Stafford, and Gary E. Hatch

- 1668 Importance of Scale in Nest-Site Selection by Arizona Gray Squirrels
Nichole L. Cudworth and John L. Koprowski

BOOK REVIEW

- 1675 *Wildlife, Forests and Forestry: Principles of Managing Forests for Biological Diversity, Second Edition.*
M. L. Hunter, Jr., and F. K. A. Schmiegelow



Land and Water

THE MAGAZINE OF NATURAL RESOURCE MANAGEMENT AND RESTORATION

Volume 55, Number 4

July/August 2011

DEPARTMENTS

- 6 Tell It Like It Is
- 53 Industry Brief
- 54 Equip-Board
- 55 Advertiser's Index

DENVER, COLORADO

FEATURES

SUSTAINABLE ROADSIDE MANAGEMENT

7 Sustainable Erosion Control Design

Caltrans has developed programs that allow them to identify an integrated suite of erosion control techniques and products best suited to control erosion on a specific site, while minimizing life cycle costs.

by Greg Bolter, CPESC and Keith Robinson, ASLA - Caltrans

SEDIMENT CONTROL

14 SRFR Installation on Slopes

Proper installation of sediment retention fiber rolls (SRFR's) is critical to their success. The ECTC has designed an installation guide with CADD details available for download.

by Laurie Homingford, ECTC

CONSTRUCTED WETLANDS

19 A "Texas-Sized" Constructed Wetland Helps Provide Water to North Texas

Design, construction and operation of the largest constructed wetland in the country, used to expand a potable water supply.

by Tim Nook

AQUATIC WEED CONTROL

24 NPDES and Aquatic Weed Control

The executive director from the Aquatic Ecosystem Restoration Foundation (AERF) provides up-dates on NPDES permitting and what the legislation means for aquatic weed control.

by Carlton R. Lyne

LAKES & PONDS

26 Dealing With a Leaky Pond

When a leaky lake becomes unmanageable... what do you do?

by Bob Lusk

URBAN STREAM REHABILITATION

29 Urban Stream Restoration Protects Access Road

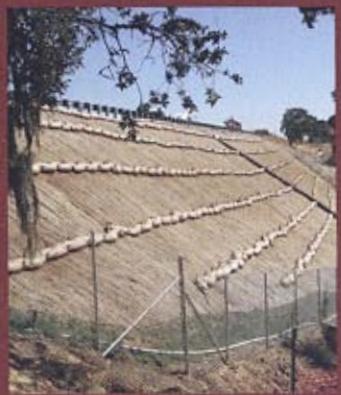
A gabion wall and natural stream channel structures provided road rehabilitation with habitat restoration along a severely eroded bank of Intrenchment Creek.

by Paxton Billingsley

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ABOUT THE COVER

Successfully stabilized slope featuring native grass sod developed by Caltrans Landscape Architecture Program, together with temporary irrigation, blown straw, hydroseed and fiber rolls. See story on page 7.



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GEOSYNTHETICS

34 Under Cover Operations

The installation of a camouflage geomembrane floating cover over the ~9.2-surface-acre Santa Ynez Reservoir in California helped the project team meet unique aesthetic goals without increasing costs.

by Steve Roeder

37 Benefits and Cost Advantages of Fabricated Geomembranes

Geomembranes that can be factory fabricated and folded reduce field seaming, installation time, cost, field testing and patching, thus improve overall quality.

by Timothy D. Stuk, Gay Kubasik, Stanford Silver, Duff Simbeck and Jeremiah Boosma

MINE RECLAMATION

42 Reclaiming a Stream Channel at the Climax Mine

The river at Climax Mine had been diverted in 1980 through a 7-ft diameter concrete pipe constructed in the valley bottom, requiring restoration of a new stream channel.

by Kathryn McIers, R. Spotts, K.E. Carlson, B.E. Romig

SCHOOL OF HARD KNOCKS

48 Words of Wisdom from the School of Hard Knocks

As part of a new and ongoing column in Land and Water's eNewsletter "The Dirt", Bill Young shares a few of his life experiences.

by William Young

LAND IMPROVEMENT

50 Ohio Farmer to LICA President

Steve Gerten took his own advice when he stepped up his involvement in LICA all the way to the office of National President.

by Emily Jones

Mining engineering

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VOL. 63 NO. 8



Feature Articles

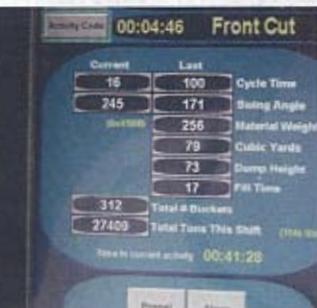
Iron Ore

- 26 Innovation on the Iron Range:
Report on the SME Minnesota Section meeting**
Emily Wortman-Wunder

- 29 Four mining greats to be inducted into the
National Mining Hall of Fame**

- 33 Energy critical elements:
Securing materials for emerging technologies**
Jonathan G. Price

- 35 Cost-effective air separation plants for the
mining and minerals industry**
Goutam H. Shahani and Tony Palermo



Technical Papers (peer-reviewed and approved)

- 39 Life-of-mine schedule from multiple pits:
Case study for the Tenke Fungurume mining district**
R. Benito, G. Sanner and W. Cai

- 48 Impact of bucket fill factor on dragline production rate
and energy consumption**
D. Bogunovic and V. Kecojevic

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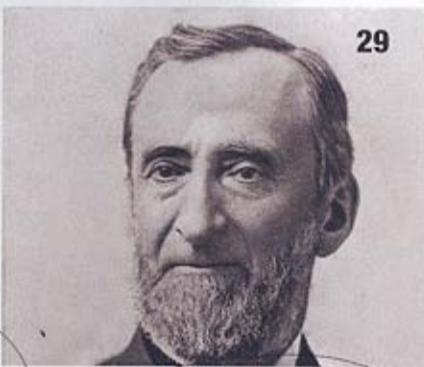
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29



AUGUST 2011
VOL. 63 NO. 8



p. 2 of 2

SME News

- 55 SME Foundation**
- 56 Local Section News**
- 56 Membership**
- 57 Local Section Hero**
- 57 Personal News**
- 60 Environmental Division News**
- 61 Division Scholarships**
- 63 Young Leaders**
- 68 Obituaries**

Departments

- 6 President's Page**
- 8 Politics of Mining**
- 10 Industry Newswatch**
- 69 Coming Events**
- 70 New Products**
- 72 New Media**
- 74 Web Directory**
- 75 Classifieds**
- 77 Professional Services**
- 83 Index of Advertising**
- 84 Drift of Things**

Cover Story

Two years of solid growth have allowed iron ore producers on Minnesota's Iron Range to recover from the beating they took during 2008 and 2009. At the Minnesota Section conference in April, producers were beginning to talk about long-term growth and stability. ME's Emily Wortman-Wunder reports on page 26. A report on energy critical materials identifies five areas of potential action the United States could take to ensure their availability. Jonathan Price examines them on page 33.

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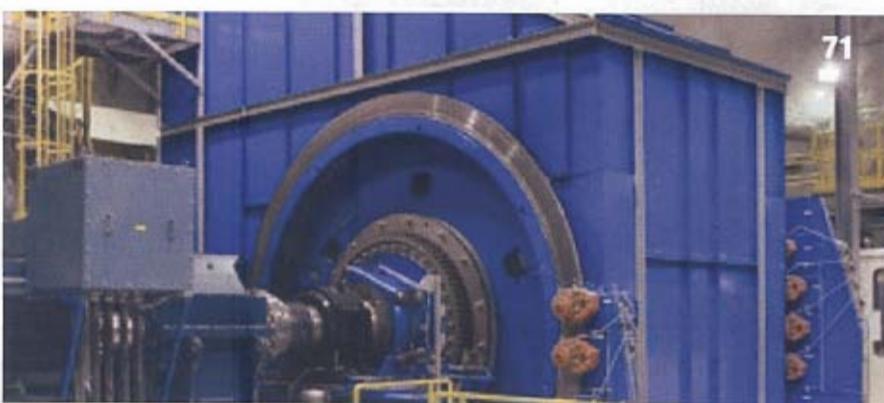
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Native Plants Journal

REFEREED RESEARCH

- Subirrigation for production of native plants in nurseries—concepts, current knowledge, and implementation 81

Justin L Schmal, R Kasten Dumroese, Anthony S Davis, Jeremiah R Pinto, and Douglass F Jacobs

- Early field performance of *Acacia koa* seedlings grown under subirrigation and overhead irrigation 94

Anthony S Davis, Jeremiah R Pinto, and Douglass F Jacobs

REFEREED RESEARCH

- Agronomic performance of eastern gamagrass cultivars and experimental germplasm grown on the southern plains 100

Jason J Goldman and Tim L Springer

- Using historic bushel weights to estimate seed quality 107

Derek J Tilley and Dan Ogle

REFEREED RESEARCH

- Field establishment of little bluestem and prairie dropseed under managed conditions 111

Chad A Fedewa and J Ryan Stewart

REFEREED RESEARCH

- Germination of the federally endangered Michaux's sumac (*Rhus michauxii*) 119

Jay F Bolin, Marcus E Jones, and Lytton J Musselman

- The Jet Harvester: a shop-built tool for harvesting forb and shrub seeds 123

Derek J Tilley and Charles Bair

GERMPLASM RELEASE

- Notice of release of Vintage Germplasm common elderberry: a selected class of natural germplasm 129

John W Leif, John C Durling, and David W Burgdorf

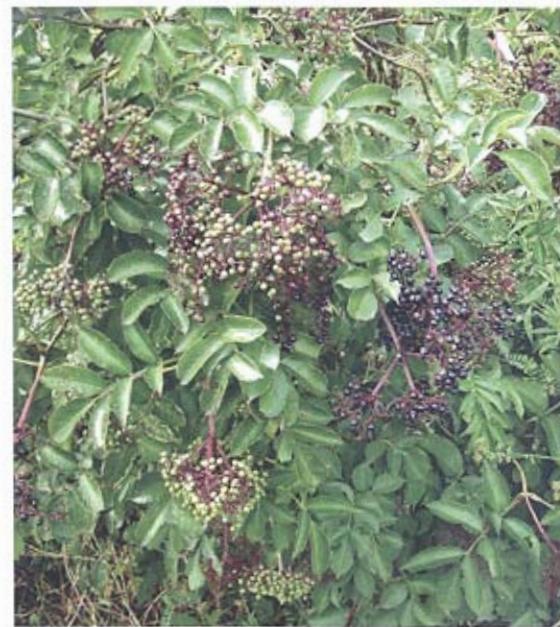
- Comparison of seed germination techniques for common elderberry (*Sambucus nigra* L. ssp. *canadensis*) 132

John W Leif, John C Durling, and David W Burgdorf

NATIVE PLANT MATERIALS DIRECTORY

- Alphabetical listings 136

- Location index 205



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Energy

13

Peabody highlights global safety record • U.S. could spend \$130 million on DOE projects • Arch acquisition makes it a major metallurgical-coal miner

Around the World

15

Tenke mine gets needed decree from DRC • Norilsk seen as example of what not to do • No disruptions at Essakane gold mine

The Business of Mining

15

Barrick reports 20% return on equity with \$1 billion in earnings • Barrick jumps into copper with acquisition of Equinox Minerals • Newmont reports record cash flow, plans for continued growth • Newmont sees growth to 7 million annual gold ounces by 2017 • Long-term, upward trajectory of gold price sustained through 1Q

Commentary, 2; Ad Index, 8; Directory, 22; Low Grade, 24

On the Cover

Quaterra Resources Inc., through its Singatse Peak Services LLC subsidiary, has acquired the Yerington assets of Arimetco Inc. in Lyon County, Nevada. This formerly active mine helps consolidate the company's resources in the district. The acquisition also comes with rights to water. Overall, the deposits around the district contain some 20 billion pounds of copper, though more exploration is under way.

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Monitoring on Rangelands

Guest Editors: Jeffrey E. Herrick and Jason W. Karl

- 2 Special Issue Acknowledgments
- 3 Turning Information Into Knowledge for Rangeland Management
Jason W. Karl
- 6 A Simple Graphical Approach to Quantitative Monitoring of Rangelands
Corinna Riginos, Jeffrey E. Herrick, Siva R. Sundaresan, Cary Farley, and Jayne Belnap
- 14 Consistent Indicators and Methods and a Scalable Sample Design to Meet Assessment, Inventory, and Monitoring Information Needs Across Scales
Gordon R. Toevs, Jason W. Karl, Jason J. Taylor, Carol S. Spurrier, Michael "Sherm" Karl, Matthew R. Bobo, and Jeffrey E. Herrick
- 21 The Database for Inventory, Monitoring, and Assessment (DIMA)
Ericha M. Courtright and Justin W. Van Zee
- 27 Art to Science: Tools for Greater Objectivity in Resource Monitoring
D. Terrance Booth and Samuel E. Cox
- 35 Image Interpreter Tool: An ArcGIS Tool for Estimating Vegetation Cover From High-Resolution Imagery
T. Scott Schrader and Michael C. Duniway
- 41 AGWA: The Automated Geospatial Watershed Assessment Tool to Inform Rangeland Management
David C. Goodrich, D. Phillip Guertin, I. Shea Burns, Mark A. Nearing, Jeffry J. Stone, Haiyan Wei, Philip Heilman, Mariano Hernandez, Ken Spaeth, Fred Pierson, Ginger B. Paige, Scott N. Miller, William G. Kepner, George Ruyle, Mitchel P. McClaran, Mark Weltz, and Leonard Jolley
- 48 Rangeland Assessment and Monitoring Methods Guide
Jason W. Karl, Karen Colson, and Heather Swartz
- 55 Rangelands West/Global Rangelands, eXtension Rangelands, and the Range Science Information System: A Suite of New Web Resources
Barbara Hutchinson, Jeanne Pfander, John Tanaka, and Jason Clark

Feature Articles

- 64 ICARDA's Rangeland Ecology and Management Research Strategy for Nontropical Dry Areas
Mounir Louhaichi
- 71 Idaho Rangeland Resource Commission: Commitment to Rangeland Education
Gretchen Hyde and Kelly Crane

Departments

- 73 Listening to the Land
- 75 Land Lines
- 78 Highlights, *Rangeland Ecology & Management*, July 2011
- 81 Browsing the Literature
- 84 Letter to the Editor

Front Cover: Collage created by the authors of the rangeland monitoring articles in this special issue. The world composite image is from ESRI Data & Maps 2004. Points are locations of studies published in *Rangeland Ecology & Management* from 2005 to 2011. For a complete list of photo credits, see the inside back cover.

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SOIL SCIENCE

An Interdisciplinary Approach to Soils Research

AUGUST 2011

CONTENTS

Vol. 176 No. 8

COUPLED LIQUID WATER, WATER VAPOR, AND HEAT TRANSPORT SIMULATIONS IN AN UNSATURATED ZONE OF A SANDY LOAM FIELD	387
<i>Sanjit K. Deb, Manoj K. Shukla, Parmodhi Sharma, and John G. Mexal</i>	
COLLOID AND PHOSPHORUS LEACHING FROM UNDISTURBED SOIL CORES SAMPLED ALONG A NATURAL CLAY GRADIENT	399
<i>Anders Lindblad Vendelboe, Per Moldrup, Goswin Heckrath, Yan Jin, and Lis Wollesen de Jonge</i>	
SORPTION OF TYLOSIN ON AGRICULTURAL SOILS	407
<i>Qian Zhang, Chen Yang, Zhi Dang, and Weilin Huang</i>	
THE EFFECTS OF SLASH PILE BURNING ON SOIL AND WATER MACRONUTRIENTS	413
<i>Brittany G. Johnson, Dale W. Johnson, Watkins W. Miller, Erin M. Carroll-Moore, and David I. Board</i>	
NUTRIENT AVAILABILITY TO CORN FROM DAIRY MANURES AND FERTILIZER IN A CALCAREOUS SOIL	426
<i>April B. Leytem, Robert S. Dungan, and Amber Moore</i>	
PERFORMANCE OF GROUND-PENETRATING RADAR ON GRANITIC REGOLITHS WITH DIFFERENT MINERAL COMPOSITION	435
<i>Joan M. Breiner, James A. Doolittle, Robert Horton, and Robert C. Graham</i>	
DELINTEATING SALINITY AND SODICITY DISTRIBUTION IN MAJOR SOIL MAP UNITS OF EL PASO, TEXAS, USING ELECTROMAGNETIC INDUCTION TECHNIQUE	441
<i>Girisha K. Ganjegunte and Robert J. Braun</i>	

(P.1 of 2)

SSSAJ

Soil Science Society of America Journal

July–August 2011 • Vol. 75 • No. 4

SSSA 75th Anniversary Papers

- 1201–1213 Digital Soil Mapping and Modeling at Continental Scales: Finding Solutions for Global Issues
S. Grunwald, J. A. Thompson, and J. L. Boettinger

Review & Analysis

- 1214–1225 Solute Transfer from the Soil Surface to Overland Flow: A Review
Xiaonan Shu, Laibing Wu, Weiping Chen, and Quanjun Wang

Soil Physics

- 1226–1235 Ground-Penetrating Radar Detection and Three-Dimensional Mapping of Lateral Macropores: I. Calibration
Kevin H. Gormally, Marla S. McIntosh, and Anthony N. Mucciardi
- 1236–1243 Ground-Penetrating Radar Detection and Three-Dimensional Mapping of Lateral Macropores: II. Riparian Application
Kevin H. Gormally, Marla S. McIntosh, Anthony N. Mucciardi, and Gregory W. McCarty
- 1244–1252 WET Sensor Performance in Organic and Inorganic Media with Heterogeneous Moisture Distribution
G. Kargas, P. Kerkides, M. Seyfried, and A. Sgoumopoulos
- 1253–1264 Multiscale Characterization of Vadose Zone Macroporosity in Relation to Hydraulic Conductivity and Subsurface Drainage
Steven K. Frey and David L. Rudolph
- 1265–1275 Recycled Materials as Substitutes for Virgin Aggregates in Road Construction: I. Hydraulic and Mechanical Characteristics
Dong-Hee Kang, Satis C. Gupta, Andry Z. Ranaivoson, John Siekmeyer, and Ruth Roberson

- 1276–1284 Recycled Materials as Substitutes for Virgin Aggregates in Road Construction: II. Inorganic Contaminant Leaching
Dong-Hee Kang, Satis C. Gupta, P. R. Bloom, Andry Z. Ranaivoson, Ruth Roberson, and John Siekmeyer
- 1285–1294 Evaluation of Wind Erosion Emissions Factors for Air Quality Modeling
David A. Sullivan and Husein A. Ajwa

- 1295–1306 Revealing the Controls of Soil Water Storage at Different Scales in a Hummocky Landscape
Aimin Biswas and Bing Cheng Si
- 1307–1314 Soil Structure and Physical Properties under Rye-Corn Silage Double-Cropping Systems
Amanda M. Liesch, Erik S. Krueger, and Tyson E. Ochsner
- 1315–1329 Generalized Density-Corrected Model for Gas Diffusivity in Variably Saturated Soils
T.K.K. Chamindu Deepagoda, Per Moldrup, Per Schjønning, Ken Kawamoto, Toshiro Komatsu, and Lis Wöhrel de Jonge

- 1330–1342 Two-Dimensional Porosity of Crusted Silty Soils: Indicators of Soil Quality in Semiarid Rangelands?
J. Miralles-Mellado, Y. Cantón, and A. Solé-Benet

Soil Physics Note

- 1343–1346 Soil Water Diffusivity Determination using a New Two-Point Outflow Method
P. A. Jandura and J. D. Valsarzas

Soil Chemistry

- 1347–1353 Distinguishing Boron Desorption from Mineral Dissolution in Arid-Zone Soils
Sabine Goldberg and Donald L. Suarez
- 1354–1364 Selenium Partitioning and Stable Isotope Ratios in Urban Topsoils
Kathrin Schilling, Thomas M. Johnson and Wolfgang Wilcke
- 1365–1373 Sorption, Volatilization, and Efficacy of the Fumigant 1,3-Dichloropropene in a Biochar-Amended Soil
E. R. Graber, L. Tiechancky, J. Khanukov and V. Oka
- 1374–1384 Solid-State NMR Analysis of Soil Organic Matter Fractions from Integrated Physical-Chemical Extraction
Xiaoyan Cao, Daniel C. Olk, Mark Chappell, Cynthia A. Canharello, Leyde F. Miller, and Jingdong Mao
- 1385–1393 Fluorescence Spectroscopic Properties of Dissolved Fulvic Acids from Salined Flavo-aquic Soils around Wuliangsuhai in Hetao Irrigation District, China
Huabin Yu, Beidou Xi, Wenbiao Ma, Dinglong Li, and Xiansong He
- 1394–1401 Adsorption Characteristics and Influencing Factors of Chlorimuron-Ethyl in Two Typical Chinese Soils
Wenjie Ren, Meiqi Wang, and Qixing Zhou

Soil Biology & Biochemistry

- 1402–1413 Influence of Contrasting Biochar Types on Five Soils at Increasing Rates of Application
J. D. Streubel, H. P. Collins, M. García-Pérez, J. Tarant, D. Grünstein, and C.E. Kruger
- 1414–1422 Can Soil Carbonate Dissolution Lead to Overestimation of Soil Respiration?
Guy Lämmer, Maite Shenker, Hadar Heller, Paul R. Bloom, Pinhas Fine, and Asher Bar-Tal
- 1423–1430 Controls on the Extractability of Soil Organic Matter in Water over the 20 to 80°C Temperature Range
Denis Carter, Michael H. Beare, Martin H. Chantigny, and Laurie G. Greenfield
- 1431–1439 Long-Term Field Fertilization Significantly Alters Community Structure of Ammonia-Oxidizing Bacteria rather than Archaea in a Paddy Soil
Yuebing Wu, Lili Lu, Baozhan Wang, Xiangui Lin, Jutuqiao Zhai, Zucang Cai, Xiaoyuan Yan, and Zhongjun Jia
- 1440–1448 Soil Habitat and Horizon Properties Impact Bacterial Diversity and Composition
Himaya M. Michel and Mark A. Williams

Pedology

- 1449-1461 Distribution and Properties of Vesicular Horizons in the Western United States
Judith K. Turk and Robert C. Graham
- 1462-1470 Episodic Soil Succession on Basaltic Lava Fields in a Cool, Dry Environment
Karen L. Vaughan, Paul A. McDaniel, and William M. Phillips

Soil & Water Management & Conservation

- 1471-1482 Addition of Cover Crops Enhances No-Till Potential for Improving Soil Physical Properties
Humberto Blaeny-Canqui, Maysoon M. Mikha, DeAnn R. Presley, and Mark M. Claassen
- 1483-1492 Soil and Crop Response to Varying Levels of Compaction, Nitrogen Fertilization, and Clay Content
E. G. Gregorich, D. R. Lapen, B. L. Ma, N. B. McLaughlin, and A. J. VandenBygaart
- 1493-1502 Carbon, Nitrogen, and Greenhouse Gas Balances in an 18-Year Cropping System Study on the Northern Great Plains
E. Bremer, H. H. Janzen, B. H. Ellert, and R. H. McKenzie
- 1503-1512 No-Till Impact on Soil and Soil Organic Carbon Erosion under Crop Residue Scarcity in Africa
Charmaine N. Mbonyu, Simon Lorentz, Graham Jewitt, Alan Manson, and Vincens Chaplot
- 1513-1519 Evaporation from High Residue No-Till versus Tilled Fallow in a Dry Summer Climate
Stewart B. Wuest and William F. Schillinger

- 1530-1542 Carbon and Nitrogen Accumulation in Post-Agricultural Forest Soils of Western New England
J. D. Clark and A.H. Johnson

- 1543-1553 Soil Water Repellency within a Burned Piñon-Juniper Woodland: Spatial Distribution, Severity, and Ecohydrologic Implications
M. D. Madien, D. I. Zvirzdzin, S. L. Petersen, B. G. Hopkins, B. A. Roundy, and D. G. Chandler

- 1554-1561 Spatial Variations in Soil Chemistry and Organic Matter Content across a *Vochysia divergens* Invasion Front in the Brazilian Pantanal
George L. Vassilidis, Francisco de Almeida Lobo, Marcelo Sacandi Biudes, Carmen Eugenia Rodriguez Ortiz, and Jose de Souza Nogueira

Nutrient Management & Soil & Plant Analysis

- 1562-1573 Long-Term Evaluation of Manure Application on Maize Yield and Nitrogen Use Efficiency in China
Yinghua Duan, Minggang Xu, Bairan Wang, Xueyun Yang, Shaomin Huang, and Suduan Gao
- 1574-1577 Separating Nitrogen Polymers from Urea in Ureaform Fertilizer to Study Soil Nitrogen Transformations
S. H. Chien, U. Singh, E. R. Austin, and J. S. Kruse
- 1578-1583 A Comparison of Soil Sulfur Extraction Methods
Quirine Ketterings, Chie Miyamoto, Renuka Ran Mathur, Kevin Dietzel, and Sanjay Cami

Wetland Soils Note

- 1584-1587 Estuarine Subaqueous Soil Temperature
Alexander Salisbury and Mark H. Stolt

Forest, Range & Wildland Soils

- 1520-1529 Phosphorus Sorption Dynamics of Anion Exchange Resin Membranes in Tropical Rain Forest Soils
Karen L. Vandecar, Deborah Lawrence, and Deborah Clark

P. 2 of 2

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Opinions

W06301 Thorsen Wagener and Alberto Montanari

Convergence of approaches toward reducing uncertainty in predictions in ungauged basins
(doi 10.1029/2010WR009469)

Regular Articles

W06501 Jason B. Fellman, Shawan Dogramaci, Grzegorz Skrzypek, Wade Dodson, and Pauline F. Grierson

Hydrologic control of dissolved organic matter biogeochemistry in pools of a subtropical dryland river
(doi 10.1029/2010WR010275)

W06502 Joakim Rinald and Anders Wörman

Response functions for in-stream solute transport in river networks (doi 10.1029/2010WR009412)

W06503 L. Christiansen, P. J. Binning, D. Rosbjerg, O. B. Andersen, and P. Bauer-Gottwein

Using time-lapse gravity for groundwater model calibration: An application to alluvial aquifer storage
(doi 10.1029/2010WR009859)

W06504 M. G. Sarså, A. J. F. Hoitink, B. Vermeulen, and Hidirayat

Discharge estimation from H-ADCP measurements in a tidal river subject to sidewall effects and a mobile bed
(doi 10.1029/2010WR009972)

W06505 M. J. Hendry, S. L. Barbour, J. Zettl, V. Chostner, and L. I. Wassenaar

Controls on the long-term downward transport of $\delta^2\text{H}$ of water in a regionally extensive, two-layered aquitard system
(doi 10.1029/2010WR010044)

W06506 Jonathan Chenoweth, Panax Hadjinicolaou, Adriana Bruggeman, Jos Lefeveld, Zev Levin, Manfred A. Lange, Elena Xoplaki, and Michalis Hadjikakou

Impact of climate change on the water resources of the eastern Mediterranean and Middle East region: Modeled 21st century changes and implications (doi 10.1029/2010WR010269)

W06507 C. T. Dhanya and D. Nagesh Kumar

Predictive uncertainty of chaotic daily streamflow using ensemble wavelet networks approach
(doi 10.1029/2010WR010173)

W06508 David P. Ahlfeld and Mikaela M. Laverty

Analytical solutions for minimization of energy use for groundwater pumping (doi 10.1029/2010WR009752)

W06509 S. W. Andrews, D. M. Nover, K. E. Reardon, J. E. Reuter, and S. G. Schladow

The influence of ambient light intensity on in situ laser diffractometers (doi 10.1029/2010WR009841)

W06510 Henrique Monteiro and Catarina Roseta-Palma

Pricing for scarcity? An efficiency analysis of increasing block tariffs (doi 10.1029/2010WR009260)

W06511 Andrea R. Pearce, Donna M. Rizzo, and Paula J. Mouser

Subsurface characterization of groundwater contaminated by landfill leachate using microbial community profile data and a nonparametric decision-making process (doi 10.1029/2010WR009992)

W06512 Marty D. Frisbee, Fred M. Phillips, Andrew R. Campbell, Fengling Liu, and Steve A. Sanchez

Streamflow generation in a large, alpine watershed in the southern Rocky Mountains of Colorado: Is streamflow generation simply the aggregation of hillslope runoff responses? (doi 10.1029/2010WR009391)

W06513 David L. Katz and Michael R. Moore

Dividing the waters: An empirical analysis of interstate compact allocation of transboundary rivers
(doi 10.1029/2010WR009736)

W06514 Maik Heistermann and David Kreis

Benchmarking quantitative precipitation estimation by conceptual rainfall-runoff modeling
(doi 10.1029/2010WR009153)

W06515 Olaf A. Cirkva, Felipe P. J. de Barros, Gabriele Chiogna, Massimo Rolle, and Wolfgang Nowak

Stochastic flux-related analysis of transverse mixing in two-dimensional heterogeneous porous media
(doi 10.1029/2010WR010279)

W06516 Andrew C. Kurtz, Festo Lugolobi, and Guido Salvucci

Germanium-silicon as a flow path tracer: Application to the Rio Icaos watershed (doi 10.1029/2010WR009853)

W06517 Eric W. Bhark, Behnam Jafarpour, and Akhil Datta-Gupta

A generalized grid connectivity-based parameterization for subsurface flow model calibration
(doi 10.1029/2010WR009982)

W06518 Mark I. Porter, Francisco J. Valdés-Parada, and Brian D. Wood

Multiscale modeling of chemotaxis in homogeneous porous media (doi 10.1029/2010WR009646)

W06519 William R. Herb and Heinz G. Stefan

Modified equilibrium temperature models for cold-water streams (doi 10.1029/2010WR009586)

W06520 G. Dagan and S. C. Lessoff

Flow to partially penetrating wells in unconfined heterogeneous aquifers: Mean head and interpretation of pumping tests (doi 10.1029/2010WR010370)

W06521 Huaxia Yao, Christopher McConnell, Keith M. Somers, Norman D. Yan, Shaun Watmough, and Wolfgang Scheider

Nearshore human interventions reverse patterns of decline in lake calcium budgets in central Ontario as demonstrated by mass-balance analyses (doi 10.1029/2010WR010159)

W06522 Augustus C. Resurrección, Per Moldrup, Markus Teller, T. P. A. Ferré, Ken Kawamoto, Toshiko Komatsu, and Lis Wollesen de Jonge

Relationship between specific surface area and the dry end of the water retention curve for soils with varying clay and organic carbon contents (doi 10.1029/2010WR010229)

W06523 W. Payton Gardner, Glenn A. Harrington, D. Kip Solomon, and Peter G. Cook

Using terrigenic ${}^4\text{He}$ to identify and quantify regional groundwater discharge to streams
(doi 10.1029/2010WR010276)

W06524 Rehnaz Khakbaz, Bisher Imam, Soroosh Sorooshian, Victor J. Koren, Zhengtao Cui, Michael B. Smith, and Pedro Restrepo

Modification of the National Weather Service Distributed Hydrologic Model for subsurface water exchanges between grids (doi 10.1029/2010WR009626)

W06525 W. Bertoldi, A. M. Gurnell, and N. A. Drake

The topographic signature of vegetation development along a braided river: Results of a combined analysis of airborne lidar, color air photographs, and ground measurements (doi 10.1029/2010WR010319)

W06526 Menberu M. Bitew and Mekonnen Gebremichael

Evaluation of satellite rainfall products through hydrologic simulation in a fully distributed hydrologic model
(doi 10.1029/2010WR009917)

W06527 Rocío B. Urrutia, Antonio Lara, Ricardo Villalba, Duncan A. Christie, Carlos Le Quesne, and Augusto Cuq

Multicentury tree ring reconstruction of annual streamflow for the Maule River watershed in south central Chile
(doi 10.1029/2010WR009562)

W06528 Wei-Chen Cheng, Mario Putti, Donald R. Kendall, and William W.-G. Yeh

A real-time groundwater management model using data assimilation (doi 10.1029/2010WR009770)

Special Section in Progress

The Author Index is at the end of the issue.

WATER RESOURCES RESEARCH

Volume 47 Number 7 July 2011
WRERAQ (7) W07501 - W07551, W07601; W07701-W07702 (2011)
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Regular Articles

- P. 1 of 2
- W07501** Michael S. Riley, John H. Teller, Richard B. Greswell, Véronique Durand, and Maria F. Aller
Convergent tracer tests in multilayered aquifers: The importance of vertical flow in the injection borehole
(doi 10.1029/2010WR009838)
- W07502** Monica Riva, Marco Panzeri, Alberto Guadagnini, and Shlomo P. Neuman
Role of model selection criteria in geostatistical inverse estimation of statistical data- and model-parameters
(doi 10.1029/2011WR010480)
- W07503** W. Z. Wan Jaafar, J. Liu, and D. Han
Input variable selection for median flood regionalization (doi 10.1029/2011WR010436)
- W07504** Mekonnen Gebremichael, Gong-Yi Liao, and Jun Yan
Nonparametric error model for a high resolution satellite rainfall product (doi 10.1029/2010WR009667)
- W07505** Efrat Morin
To know what we cannot know: Global mapping of minimal detectable absolute trends in annual precipitation
(doi 10.1029/2010WR009798)
- W07506** S. Assouline, K. Narkis, and D. Or
Evaporation suppression from water reservoirs: Efficiency considerations of partial covers
(doi 10.1029/2010WR009889)
- W07507** Gabrielle C. L. David, Ellen Wohl, Steven E. Yochum, and Brian P. Riedel
Comparative analysis of bed resistance partitioning in high-gradient streams (doi 10.1029/2010WR009540)
- W07508** Chandana Gangodagamage, Patrick Belmont, and Efi Foufoula-Georgiou
Revisiting scaling laws in river basins: New considerations across hillslope and fluvial regimes
(doi 10.1029/2010WR009252)
- W07509** Getnet Y. Midaye
Deriving meteorological variables from numerical weather prediction model output: A nearest neighbor approach
(doi 10.1029/2010WR009750)
- W07510** Zijie Lian and Olaf A. Cirpka
Shape-free inference of hyporheic traveltimes distributions from synthetic conservative and "smurk" tracer tests in streams
(doi 10.1029/2010WR009927)
- W07511** Matthias Huss
Present and future contribution of glacier storage change to runoff from macroscale drainage basins in Europe
(doi 10.1029/2010WR010299)
- W07512** F. Rejiba, F. Sagnard, and C. Schamper
Full-wave modeling of the time domain reflectometry signal in wetted sandy soils using a random microstructure discretization: Comparison with experiments (doi 10.1029/2010WR009688)
- W07513** Molly S. Costanza-Robinson, Benjamin D. Estabrook, and David F. Fouhey
Representative elementary volume estimation for porosity, moisture saturation, and air-water interfacial areas in unsaturated porous media: Data quality implications (doi 10.1029/2010WR009655)
- W07514** Andrew C. Wilcox, Ellen E. Wohl, Francesco Comiti, and Luca Mao
Hydraulics, morphology, and energy dissipation in an alpine step-pool channel (doi 10.1029/2010WR010192)
- W07515** James B. Shanley, William H. McDowell, and Robert F. Stallard
Long-term patterns and short-term dynamics of stream solutes and suspended sediment in a rapidly weathering tropical watershed (doi 10.1029/2010WR009788)
- W07516** Étienne Boucher, Taha B. M. J. Ouarda, Yves Bégin, and Antoine Nicault
Spring flood reconstruction from continuous and discrete tree ring series (doi 10.1029/2010WR010131)
- W07517** L. P. H. van Beek, Yoshihide Wada, and Marc F. P. Bierkens
Global monthly water stress: 1. Water balance and water availability (doi 10.1029/2010WR009791)
- W07518** Yoshihide Wada, L. P. H. van Beek, Daniel Viviroli, Hans H. Dürr, Rolf Weingartner, and Marc F. P. Bierkens
Global monthly water stress: 2. Water demand and severity of water stress (doi 10.1029/2010WR009792)
- W07519** David Finger, Francesca Pellicciotti, Markus Kornz, Stefan Rinkus, and Paolo Burando
The value of glacier mass balance, satellite snow cover images, and hourly discharge for improving the performance of a physically based distributed hydrological model (doi 10.1029/2010WR009824)
- W07520** Timothy S. C. Rowan, Holger R. Maier, Jeff Connor, and Graeme C. Dandy
An integrated dynamic modeling framework for investigating the impact of climate change and variability on irrigated agriculture (doi 10.1029/2010WR010195)
- W07521** Juana Paul Moho, Yonghui Yang, Fulu Tao, Wensi Lu, and Shumin Han
Water storage change in the Himalayas from the Gravity Recovery and Climate Experiment (GRACE) and an empirical climate model (doi 10.1029/2010WR010157)
- W07522** Qiming Zhou, Peter Pileggi, and Yunrun Chen
Estimating surface flow paths on a digital elevation model using a triangular facet network (doi 10.1029/2010WR009961)
- W07523** Valentijn R. N. Pauwels and Gabrielle J. M. De Lannoy
Multivariate calibration of a water and energy balance model in the spectral domain (doi 10.1029/2010WR010292)
- W07524** K. Bogner and F. Pappenberger
Multiscale error analysis, correction, and predictive uncertainty estimation in a flood forecasting system
(doi 10.1029/2010WR009137)
- W07525** Roy M. Frings, Holger Schüttstrumpf, and Stefan Vollmer
Verification of porosity predictors for fluvial sand-gravel deposits (doi 10.1029/2010WR009690)
- W07526** Hanbo Yang and Dawen Yang
Derivation of climate elasticity of runoff to assess the effects of climate change on annual runoff
(doi 10.1029/2010WR009287)
- W07527** Grégoire Mariethoz and Bryce F. J. Kelly
Modeling complex geological structures with elementary training images and transform-invariant distances
(doi 10.1029/2011WR010412)
- W07528** Glenn A. Hodgkins and Robert W. Dudley
Historical summer base flow and stormflow trends for New England rivers (doi 10.1029/2010WR009109)
- W07529** S. Vandenberghe, N. E. C. Verhoest, C. Onof, and B. De Baets
A comparative copula-based bivariate frequency analysis of observed and simulated storm events: A case study on Bartlett-Lewis modeled rainfall (doi 10.1029/2009WR008388)
- W07530** Ken'ichiro Kosugi, Masamitsu Fujimoto, Shiryu Katsura, Hiroyuki Kato, Yoshiki Sando, and Takahisa Mizuyama
Localized bedrock aquifer distribution explains discharge from a headwater catchment (doi 10.1029/2010WR009844)
- W07531** Trenton E. Franz, Elizabeth G. King, Kelly K. Caylor, and David A. Robinson
Coupling vegetation organization patterns to soil resource heterogeneity in a central Kenyan dryland using geophysical imagery (doi 10.1029/2010WR010127)
- W07532** Paolo Trinchero, Roger Beckie, Xavier Sanchez-Vila, and Craig Nicol
Assessing preferential flow through an unsaturated waste rock pile using spectral analysis
(doi 10.1029/2010WR010163)
- W07533** Wei Zhang
A 2-D numerical simulation study on longitudinal solute transport and longitudinal dispersion coefficient
(doi 10.1029/2010WR010206)

W07534 *Pei Xin, Li-Rong Yuan, Ling Li, and D. A. Barry*

Tidally driven multiscale pore water flow in a creek-marsh system (doi 10.1029/2010WR010110)

W07535 *Yehoah Gyasi-Agyei*

Copula-based daily rainfall disaggregation model (doi 10.1029/2011WR010519)

W07536 *David J. Hoekema and Venkataramana Sridhar*

Relating climatic attributes and water resources allocation: A study using surface water supply and soil moisture indices in the Snake River basin, Idaho (doi 10.1029/2010WR009697)

W07537 *A. Rinaldo, K. J. Beven, E. Bertuzzo, L. Nicotina, J. Davies, A. Fiori, D. Russo, and G. Botter*

Catchment travel time distributions and water flow in soils (doi 10.1029/2011WR010478)

W07538 *Dieter Rickenmann and Main Recking*

Evaluation of flow resistance in gravel-bed rivers through a large field data set (doi 10.1029/2010WR009793)

W07539 *Marilyn P. Clark, Jordy Hendrikx, Andrew G. Slater, Dmitri Kavetski, Brian Anderson, Nicolas J. Cullen, Tim Kerr, Einar Óra Hreinsson, and Ross A. Woods*

Representing spatial variability of snow water equivalent in hydrologic and land-surface models: A review (doi 10.1029/2011WR010745)

W07540 *Gabriele Chiogna, Olaf A. Círpká, Peter Grathwohl, and Massimo Rolle*

Relevance of local compound-specific transverse dispersion for conservative and reactive mixing in heterogeneous porous media (doi 10.1029/2010WR010270)

W07542 *K. R. Hultine and S. E. Bush*

Ecohydrological consequences of non-native riparian vegetation in the southwestern United States: A review from an ecophysiological perspective (doi 10.1029/2010WR010317)

W07543 *B. Abrenholz, J. Niessner, R. Helmig, and M. Krafzyk*

Pore-scale determination of parameters for macroscale modeling of evaporation processes in porous media (doi 10.1029/2010WR009519)

W07544 *E. C. Jamieson, C. D. Rennie, R. B. Jacobson, and R. D. Townsend*

3-D flow and scour near a submerged wing dike: ADCP measurements on the Missouri River (doi 10.1029/2010WR010043)

W07545 *Mohamed Hayek, Georg Kosakowski, and Sergey Churakov*

Exact analytical solutions for a diffusion problem coupled with a precipitation-dissolution reaction and feedback of porosity change (doi 10.1029/2010WR010321)

W07546 *Miroux He, Terri S. Hogue, Kristie J. Franc, Steven A. Margulis, and Jasper A. Vrugt*

Corruption of parameter behavior and regionalization by model and forcing data errors: A Bayesian example using the SNOW17 model (doi 10.1029/2010WR009753)

W07547 *Erwin Jeremiah, Scott Sisson, Lucy Marshall, Rajeshwar Mehrotra, and Ashish Sharma*

Bayesian calibration and uncertainty analysis of hydrological models: A comparison of adaptive Metropolis and sequential Monte Carlo samplers (doi 10.1029/2010WR010217)

W07549 *Whitney DeFoor, Mark Person, Hans Christian Larsen, Daniel Lizarralde, Denis Cohen, and Brandon Dugan*

Ice sheet-derived submarine groundwater discharge on Greenland's continental shelf (doi 10.1029/2011WR010536)

W07550 *D. E. Reusser and E. Zehe*

Inferring model structural deficits by analyzing temporal dynamics of model performance and parameter sensitivity (doi 10.1029/2010WR009946)

W07551 *D. E. Reusser, W. Buytaert, and E. Zehe*

Temporal dynamics of model parameter sensitivity for computationally expensive models with the Fourier amplitude sensitivity test (doi 10.1029/2010WR009947)

Data and Analysis Notes

W07701 *Brice Boudevillain, Guy Delrieu, Bruno Galabertier, Laurent Ronnifait, Ludovic Bouilloud, Pierre-Emmanuel Kirstetter, and Marie-Laure Mosini*

The Cévennes-Vivarais Mediterranean Hydrometeorological Observatory database (doi 10.1029/2010WR010353)

W07702 *Michele L. Reba, Danny Marks, Mark Seyfried, Adam Winstral, Mukesh Kumar, and Gerald Flerchinger*

A long-term data set for hydrologic modeling in a snow-dominated mountain catchment (doi 10.1029/2010WR010030)

There is no W07541, W07458, and W07602 in this issue.

Special Sections in Progress

The Author Index appears at the end of the issue.

Water Resources Research
Vol. 47, no. 7 (July 2011)
p. 2 of 2

Technical Notes

W07601 *A. C. Petrides, J. Huff, A. Arik, N. van de Giesen, A. M. Kennedy, C. K. Thomas, and J. S. Selker*

Shade estimation over streams using distributed temperature sensing (doi 10.1029/2010WR009482)