

OSM NATIONAL LIBRARY

September 10, 2013

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 August** 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
dmcginnis@osmre.gov

Tel: (303) 293-5073
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.

Coal Age

FEATURE ARTICLES

- 22 Railroad Problems Bessetting New Coal Development in Washington
- 24 Alpha Natural Resources Dedicates Running Right Leadership Academy
Making good on a commitment, a leading U.S. coal operator establishes a world class training facility for miners in West Virginia
- 38 Coal Age Buyers Guide 2013
- 46 Adaro Plays a Major Role in Indonesian Growth
- 50 Innovative Design of Fine Coal Cleaning Circuits for Improved Sulfur Rejection

COAL IN THE NEWS

- 4 Bowie Resource Partners acquires Canyon Fuels mines
- 4 Drummond lays off miners in Alabama; Union negotiations continue in Colombia
- 5 D.C. Circuit Court upholds determination involving MSHA's emergency lifeline standard
- 6 Trinity Coal talks to prospective buyers
- 8 DOI approves lease and exploration agreements between Cloud Peak Energy and the Crow Tribe
- 10 President unveils his climate action plan
- 12 New Century to reopen Whetstone
- 14 Rhino begins Pennyrile development
- 16 Tenaska pulls the plug on Taylorville Energy Center
- 18 CONSOL Energy deploys new broadband network for Pittsburgh waterways
- 20 SunCoke Energy to acquire Lakeshore Coal Handling

WORLD NEWS

- 5 Judge orders Pike River to compensate widows, company claims it has no money
Glencore Xstrata, Peabody Energy cut nearly 1,000 jobs in Australia
- 6 Daunia begins mining from Central Queensland's Bowen Basin
India takes action on coal storages
- 8 Japanese utilities import more coal from U.S. & South America
Ukrainian court rules import quotas on coking coal and coke are illegal
Exports from Richards Bay decrease in May

NEWS/4



ALPHA ACADEMY/24



BUYERS GUIDE 2013/38

Cover of the 2013 Coal Age Buyers Guide. The cover features the year '2013' in large green numbers and the title 'COAL AGE BUYERS GUIDE'. Below the title is a list of companies and their contact information.

INDONESIAN COAL/46

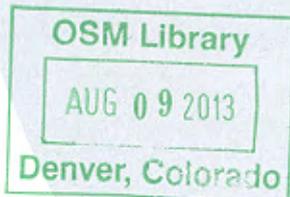


THIS ISSUE

This month Coal Age reports on Alpha Natural Resources Running Right Leadership Academy. The new facility incorporates the newest technologies with an enhanced curriculum to train coal miners. On the cover is Paul Vining, president, Alpha Natural Resources (left), and Kevin Crutchfield, CEO and chairman, Alpha Natural Resources. Photo credit: Tim C. Cox, a photographer based in Wise, Va. (276-328-3202 or www.timccox.com)

DEPARTMENTS

- 2 Editorial
- 4 Coal in the News
- 5 World News
- 14 People
- 16 Dateline Washington
- 18 Calendar
- 20 Awards
- 22 Transport Tips
- 50 Operating Ideas
- 56 Suppliers News
- 58 Product News
- 61 Classified
- 64 Legally Speaking



BUILDING RESOURCE CORRIDORS IN AFGHANISTAN

24 A SOLUTION TO AN INTERMINABLE WAR?

Afghanistan has been ravaged by decades-long conflicts that have left it economically depressed, but the country also holds a potentially huge natural resource base. Recently, support for resource extraction in Afghanistan seems to have reached a critical mass and the country may be poised to leap forward with a new development approach based on the concept of resource corridors.

John F. (Jack) Shroder Jr.



NEWS

- 12 "TRANS-NIÑO" YEARS COULD FOSTER TORNADO OUTBREAKS



13

- 13 CARNIVOROUS SNAILS THREATENED BY QUARRYING
- 13 AVIATION'S CLIMATE IMPACTS QUANTIFIED
- 13 BUSHVELD'S MAGNETIC RECORD REINTERPRETED
- 14 CENTRAL APPALACHIA FACES COAL PRODUCTION DECLINES
- 15 SUBDUCTION ZONE GEMS
- 16 CORE STUDIES REVEAL EARTH'S INNERMOST SECRETS
- 17 ASTRONOMERS ID PROMISING EXOPLANETS
- 18 THE SECRET LIVES OF PASSIVE MARGINS INCLUDE MORE THAN SEA-LEVEL CHANGE

- 19 ORIGINS OF HUMAN CULTURE LINKED TO RAPID CLIMATE CHANGES



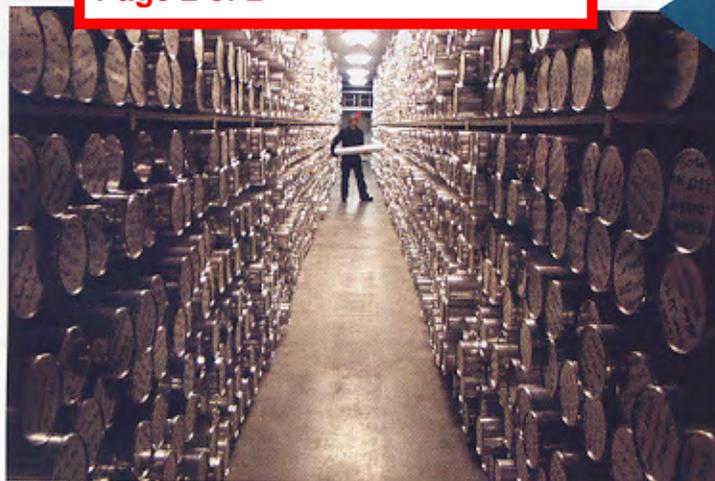
20

- 20 HIGH-DEFINITION SOURCING PINPOINTS ANCIENT OBSIDIAN QUARRIES
- 21 WEST COAST ACCRETION MODEL IN QUESTION



22

- 22 WIND-BLOWN SNOW LOSS OFFSETS ANTARCTICA'S ICE GROWTH
- 23 MADAGASCAR DINO RAISES QUESTIONS
- 23 MARS MONTHLY



DIGITIZING EARTH

DEVELOPING A CYBERINFRASTRUCTURE FOR THE GEOSCIENCES 32

Geoscientists are awash in data — from the massive streams of digital data collected by satellites to the “dark data” stored away in filing cabinets. The challenge now is to integrate all those data into a usable and useful form and share them online — in other words, to create a cyberinfrastructure that will usher the geosciences into the era of Big Data.

Sara E. Pratt

TRAVELS IN GEOLOGY

EXOTIC DUNES AND ATOMIC BOMBS IN NEW MEXICO'S WHITE SANDS 40

The Desert Southwest is famous for out-of-this-world landscapes — some places look like the moon, others like Mars — but New Mexico's White Sands National Monument offers an otherworldly backdrop like no other. Plus, where else can visitors see African antelope, enormous gypsum sand dunes, old U.S. missiles and an atomic bomb site all in one day?

Mary Caperton Morton



OSM Library
AUG 09 2013
Denver, Colorado

IEWS

- 8 A COMMENT**
ENERGY 360: LEAVING OUR CORNERS FOR THE RADICAL MIDDLE: NEW ZEALAND SETS AN EXAMPLE
Considering the political ramifications of energy policies is both inevitable and important. The challenge with energy policy discussions is to manage bias and potential conflicts of interest and conscience.

Scott Tinker

- 64 GEOLOGIC COLUMN**
GET KIDS — AND PARENTS — OUTSIDE!
Despite their many advantages, being constantly “linked” via computers, tablets and smartphones eliminates quiet time and disconnects us from our surroundings and each other. Let's turn off the devices and take our kids outside.

Fred Schwab

DEPARTMENTS

- 4 FROM THE EDITOR**
- 6 LETTERS: PERSPECTIVES FROM READERS**
- 10 EARTH EXPOSURES**
SINBAD, UTAH
Michael Collier
- 50 GEOMEDIA**
ON THE WEB: MOUNT ST. HELENS GOES ONLINE TO REACH THE MASSES
- 51 CROSS-SECTION: A PUZZLE**
- 52 WHERE ON EARTH?**
- 53 MINERAL RESOURCE OF THE MONTH: LITHIUM**
- 54 BENCHMARKS**
SEPT. 26, 1912: BIRTH OF PRESTON CLOUD, GEOLOGIST WHO DECIPHERED BANDED IRON FORMATIONS
- 56 DOWN TO EARTH WITH**
MARINE GEOLOGIST AND MULTIMEDIA VISIONARY TANYA ATWATER
- 60 GEOMARKETPLACE**
- 61 CLASSIFIEDS: CAREER OPPORTUNITIES**

FEATURES

Facing New Challenges

Is Alberta ready for the next phase of oil sands development? E&MJ looks at the opportunities and challenges facing Canada's energy export leader.28

Selecting a Reliable Dewatering Pump for Mining Applications

It's important for pump buyers to understand their requirements for casing materials, port sizes, power options, features, maintenance needs and total cost of ownership prior to making a purchasing decision......36

Pump Technology Produces New Models, New Designs

Pump suppliers shoot for higher dewatering efficiency and lower consumption38

Going Small on Pump Size Yields Big Dewatering Results

.....40

New Technology and Applications for Flotation through Systematic Product Development

Key elements for success are close partnerships with customers, and an effective product-development management system that minimizes cost and technical risks44

OEMs Make Improvements to Hydraulic Shovels

During the last year, modifications for several mining class excavators were announced and more announcements are expected48

Diagnostics of Production Blasts in a Deep Underground Mine

Study reveals significant discrepancy between the vibration energy released and what was measured in highly stressed stopes52

Brazil Considers New Mining Laws

Although no decision has been made yet, the effort to improve efficiency and transparency will likely increase production costs for miners58

Special Report: Mining in Central America and the Caribbean

A rising region63

Hiding in Plain Sight

The value of mining to America76

Improve Equipment Reliability and Reduce Costs with Clean Oil

.....82

Adaro Plays a Major Role in Indonesian Growth

.....90

LEADING DEVELOPMENTS

BHP and Rio Tinto Producing Iron Ore at Record Pace4

Barrick Extends Pascua-Lama Development Schedule4

Newmont and Goldcorp Report Impairment Charges5

Freeport Indonesia Returns to Production5

Ontario Securities Commission Review Finds Deficiencies in NI 43-101 Reporting6

WGC Publishes Cost Reporting Guidance6

AROUND THE WORLD

U.S. & Canada: Canada Lithium Starts Production in Quebec8

Latin America: Sea-water Desalination Project Approved for Escondida14

Australia/Oceania: Fortescue Sees Solomon Hub at Capacity by Year-end16

Africa: Implats Commissions New Shaft in South Africa18

Asia: Ouy Tolgoi Begins Concentrate Shipments, Hits Snag in Underground Development Funding20

Exploration Roundup: Teck and Copper Fox Form Schaft Creek Joint Venture22



This month E&MJ takes an in-depth look at the Canadian oil sands sector. Cover photo: Haul trucks at a Syncrude operation near Fort McMurray, Alberta. (Photographer: Todd Korol)

DEPARTMENTS

Calendar26

Classified Advertisements110

Equipment Gallery106

From the Editor2

Markets112

Operating Strategies96

People12

Processing Solutions104

Suppliers Report100

This Month in Coal24

VOL. 26, NO. 11

GOVERNING

08.2013

FEATURES

- 26** **A FITTER PHILLY**
Getting America's most obese city to eat healthier won't be easy. But there are signs the effort is working.
By Dylan Scott
- 34** **WHERE ARE THE INSPECTORS?**
Critics say that state and federal workplace safety systems are inefficient and dysfunctional. They may be right.
By Jonathan Walters
- 40** **DISASTER RECOVERY**
Some cities use nature's devastation to revitalize their future.
By Liz Farmer
- 46** **FIGHTING TRAFFIC**
Inside the quest to fix the most congested city in the country.
By Ryan Holeywell
- 52** **WORK HAPPY**
Despite recent hardships, workers have a lot of reasons to be optimistic.
By Mike Maciag

Carrots grown in Oley Township, Pa., for sale at a Philadelphia farmers market.

DEPARTMENTS

- 4 Publisher's Desk
- 6 Letters

OBSERVER

- 9 Mo' Money, Mo' Problems
What does a surplus mean, and does it even matter?
- 10 Risky Rescues
A few states may bill citizens for reckless actions.
- 12 An Rx for Parks
Doctors in South Carolina are prescribing parks for patients.



POLITICS + POLICY

- 14 Assessments
A streetcar route has left one county board mired in conflict.
- 16 Dispatch
Media and the dangers of deception.
- 18 Potomac Chronicle
Finding new revenue sources takes a lot of imagination.
- 19 FedWatch
One lawmaker's solution to the nation's infrastructure struggles.
- 20 Health
New research suggests gay marriage bans may make people sick.
- 22 Green Government
A free gadget can assess the value of trees in hard cash.
- 24 Economic Engines
Why bike sharing is such a game-changer for cities.
- 25 Urban Notebook
Forget about Detroit's economy. Crime is the city's biggest enemy.

PROBLEM SOLVER

- 56 Behind the Numbers
Disparities exist between the condition of locally and state-owned bridges.
- 58 Smart Management
With revenues rebounding, governments need to start focusing on more than pay.
- 59 Better Government
When bureaucracy is pushed too far, bad things can happen.
- 60 Tech Talk
Technology often isn't the problem when IT projects don't deliver.
- 62 Public Money
There are benefits in city consolidations, but the payback may not be financial.
- 64 Last Look
Seattle's so-called "ramps to nowhere" will be torn down in 2014.



59



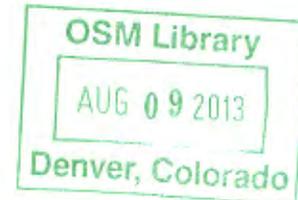
18



Information Security Journal: A Global Perspective

Volume 22 ■ Issues 1–3 ■ 2013

Contents



Volume 22, Issue 1, 2013

- An Improved Framework for Incident Handling 1
Kaleem Usmani, A. K. Mohapatra, and Nupur Prakash
- On the Implementation of Robust Copyright Protection Scheme Using Visual Attention Model 10
Abhishek Basu and Subir Kumar Sarkar
- Secure Group Communication with Hidden Group Key 21
Manjot Bhatia, Sunil Kumar Muttoo, and M. P. S. Bhatia
- Incorporation of Application Specific Information for Recovery in Database from Malicious Transactions 35
Udai Pratap Rao and Dhiren R. Patel
- An Improved Identity-Based Ring Signcryption Scheme 46
Lunzhi Deng, Chenglian Liu, and Xiangbin Wang

Volume 22, Issue 2, 2013

- An Analytical Study of Web Application Session Management Mechanisms and HTTP Session Hijacking Attacks 55
Shellie Wedman, Annette Tetmeyer, and Hossein Saiedian
- Hyper-Encryption: Eternal Secrecy Using the Bounded Storage and Limited Access Models 68
Vik Pant and William P. Wagner
- Innocipher: A Novel Innocent-Cipher-Based Cryptography Paradigm—High Level of Security for Fooling the Enemy 83
Abdelrahman Desoky
- Mobile Agent-Based Memory Tracer Using Host-Based Intrusion Detection System for Safeguarding Critical Memory 98
Arun Vijayaragavan, P. Mohan Kumar, and K. L. Shunmuganathan

Volume 22, Issue 3, 2013

- A Novel Watermarking Scheme for Secure Relational Databases 105
Rajesh Kumar Tiwari and G. Sahoo
- Remote User Authentication Using a Voice Authentication System 117
Shilpa Kaman, K. Swetha, Syed Akram, and G. Varaprasad
- A Distributed Approach of a Threshold Certificate-Based Encryption Scheme with No Trusted Entities 126
Apostolos P. Fournaris
- Hidden Markov Models for Software Piracy Detection 140
Shabana Kazi and Mark Stamp



ELSEVIER

Contents lists available at SciVerse ScienceDirect

International Journal of Coal Geology

journal homepage: www.elsevier.com/locate/ijcoalgeo
Vol. 115 (1 August 2013)

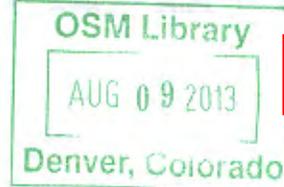
CONTENTS

Research Papers

- A comparative study on structural differences of xylite and matrix lignite lithotypes by means of FT-IR, XRD, SEM and TGA analyses: An example from the Neogene Greek lignite deposits
I.K. Oikonomopoulos, M. Perraki, N. Tougiannidis, T. Perraki, M.J. Frey, P. Antoniadis and W. Ricken 1
- Molecular characterization of fossil palynomorphs by transmission micro-FTIR spectroscopy: Implications for hydrocarbon source evaluation
S. Dutta, C. Hartkopf-Fröder, K. Witte, R. Brocke and U. Mann 13
- Notes on the origin of altered macerals in the Ragged Edge of the Pennsylvanian (Asturian) Herrin coalbed, Western Kentucky
B. Valentim, J.C. Hower, J.M.K. O'Keefe, S. Rodrigues, J. Ribeiro and A. Guedes 24
- Organic geochemistry and elements distribution in Dahuangshan oil shale, southern Junggar Basin: Origin of organic matter and depositional environment
S. Tao, D. Tang, H. Xu, J. Liang and X. Shi. 41
- Secondary Biogenic Coal Bed Natural Gas International Conference Section*
- Preface 53
- The effect of coal bed dewatering and partial oxidation on biogenic methane potential
E.J.P. Jones, S.H. Harris, E.P. Barnhart, W.H. Orem, A.C. Clark, M.D. Corum, J.D. Kirshtein, M.S. Varonka and M.A. Voytek 54
- Investigation of coal-associated bacterial and archaeal populations from a diffusive microbial sampler (DMS)
E.P. Barnhart, K.B. De León, B.D. Ramsay, A.B. Cunningham and M.W. Fields 64
- The effect of coal oxidation on methane production and microbial community structure in Powder River Basin coal
L.K. Gallagher, A.W. Glossner, L.L. Landkamer, L.A. Figueroa, K.W. Mandernack and J. Munakata-Marr 71
- Feasibility of microbial production of new natural gas from non-gas-producing lignite
P.H. Fallgren, C. Zeng, Z. Ren, A. Lu, S. Ren and S. Jin 79
- Ethanol conversion to methane by a coal microbial community
Y. Liu, M.A. Urynowicz and D.M. Bagley 85
- Comparison of coal rank for enhanced biogenic natural gas production
P.H. Fallgren, S. Jin, C. Zeng, Z. Ren, A. Lu and P.J.S. Colberg 92
- Bioassay of chemically treated subbituminous coal derivatives using *Pseudomonas putida* F1
Z. Huang, M.A. Urynowicz and P.J.S. Colberg 97



TABLE OF CONTENTS



TECHNICAL PAPERS

- Assessment of Surface Water Quality at Large Watershed Scale: Land-Use, Anthropogenic, and Administrative Impacts
 – *Ranhao Sun, Zhaoming Wang, Liding Chen, and Wei Wang* 741
- Assessment of Residential Rain Barrel Water Quality and Use in Cincinnati, Ohio
 – *William D. Shuster, Dennis Lye, Armah De La Cruz, Lee K. Rhea, Katharine O'Connell, and Amanda Kelty* 753
- Escherichia coli* Concentrations in Urban Watersheds Exhibit Diurnal Sag: Implications for Water-Quality Monitoring and Assessment
 – *Anuradha M. Desai and Hanadi S. Rifai* 766
- Reach-Scale Geomorphic and Biological Effects of Localized Streambank Armoring
 – *Eric D. Stein, Matthew R. Cover, A. Elizabeth Fetscher, Clare O'Reilly, Roxana Guardado, and Christopher W. Solek* 780
- Modeling Nutrient Export From Coastal California Watersheds
 – *Timothy H. Robinson and John M. Melack* 793
- Water Supply and Stormwater Management Benefits of Residential Rainwater Harvesting in U.S. Cities
 – *Jennifer Steffen, Mark Jensen, Christine A. Pomeroy, and Steven J. Burian* 810
- Flooding in Texas: Examination of Temporal Changes and Impacts of Tropical Cyclones
 – *Gabriele Villarini and James A. Smith* 825
- TMDL Balance: A Model for Coastal Water Pollutant Loadings
 – *Stephanie L. Johnson, David R. Maidment, and Mary J. Kirisits* 838
- Examining Modeling Approaches for the Rainfall-Runoff Process in Wildfire-Affected Watersheds: Using San Dimas Experimental Forest
 – *Li Chen, Markus Berli, and Karletta Chief* 851
- Comparing the Extent and Permanence of Headwater Streams from Two Field Surveys to Values from Hydrographic Databases and Maps
 – *Ken M. Fritz, Elisabeth Hagenbuch, Ellen D'Amico, Molly Reif, Parker J. Wigington, Jr., Scott G. Leibowitz, Randy L. Comeleo, Joseph L. Ebersole, and Tracie-Lynn Nadeau* 867
- Locating Existing Best Management Practices within a Watershed: The Value of Multiple Methods
 – *Caitlin A. Grady, Adam P. Reimer, Jane Frankenberger, and Linda Stalker Prokopy* 883
- Air-Water Temperature Relationships in the Trout Streams of Southeastern Minnesota's Carbonate-Sandstone Landscape
 – *Lori A. Krider, Joseph A. Magner, Jim Perry, Bruce Vondracek, and Leonard C. Ferrington, Jr.* 896
- Spatial Considerations in Wet and Dry Periods for Phosphorus in Streams of the Fort Cobb Watershed, United States
 – *Dorcas H. Franklin, Jean L. Steiner, Sara E. Duke, Daniel N. Moriasi, and Patrick J. Starks* 908

Evaluation of Overtopping Riprap Design Relationships – <i>Steven R. Abt, Christopher I. Thornton, Bryan A. Scholl, and Theodore R. Bender</i>	923
Water Stress Projections for the Northeastern and Midwestern United States in 2060: Anthropogenic and Ecological Consequences – <i>Brian G. Tavernia, Mark D. Nelson, Peter Caldwell, and Ge Sun</i>	938
Managing Forests for Increased Regional Water Yield in the Southeastern U.S. Coastal Plain – <i>Daniel L. McLaughlin, David A. Kaplan, and Matthew J. Cohen</i>	953
TECHNICAL NOTE	
A Semianalytical Solution for Residual Drawdown at a Finite Diameter Well in a Confined Aquifer – <i>Hund-Der Yeh and Chih-Tse Wang</i>	966
DISCUSSION AND REPLY	
Discussion - “America’s Rivers and the American Experiment” by Martin W. Doyle – <i>Daniel A. Auerbach</i>	973
Reply to Discussion - “America’s Rivers and the American Experiment” by Daniel A. Auerbach – <i>Martin W. Doyle</i>	975
BOOK REVIEWS	977

JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION
Vol. 49, no. 4 (August 2013)
Page 2 of 2



WWW.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: Florida pine flatwoods at dawn. Study by McLaughlin *et al.* (*JAWRA*, August 2013) suggests alternative forest management strategies in the southeastern U.S. may increase regional water availability. Photo by Larry Korhnaak.

TABLE OF CONTENTS

DEMOGRAPHICS OF REINTRODUCTION SPECIAL SECTION

- 1081 Demographics of Reintroduced Populations: Estimation, Modeling, and Decision Analysis
Sarah J. Converse, Clinton T. Moore, and Doug P. Armstrong
- 1094 Demographic Variation, Reintroduction, and Persistence of an Island Duck (*Anas laysanensis*)
Michelle H. Reynolds, Emily Weiser, Ian Jamieson, and Jeff S. Hatfield
- 1104 Viability Model Choice Affects Projection Accuracy and Reintroduction Decisions
Timothy J. Bell, Kristin I. Powell, and Marlin L. Bowles
- 1114 Using Prior Data to Improve Models for Reintroduced Populations: A Case Study With North Island Saddlebacks
Jay V. Gedir, Joanne M. Thorne, Kelly Brider, and Doug P. Armstrong
- 1124 Optimal Allocation of Captive-Reared Puerto Rican Parrots: Decisions When Divergent Dynamics Characterize Managed Populations
Jaime A. Collazo, Paul L. Fackler, Krishna Pacifici, Thomas H. White Jr., Ivan Llerandi-Roman, and Stephen J. Dinsmore
- 1135 Active Adaptive Management for Reintroduction of an Animal Population
Michael C. Runge
- 1145 A Matter of Tradeoffs: Reintroduction as a Multiple Objective Decision
Sarah J. Converse, Clinton T. Moore, Martin J. Folk, and Michael C. Runge
- #### RESEARCH ARTICLES
- ##### HABITAT RELATIONS
- 1157 Stand Structure and Breeding Birds: Implications for Restoring Ponderosa Pine Forests
Elizabeth L. Kalies and Steven S. Rosenstock
- 1166 Differential Sorting of Individuals in Territorial Species Affects Apparent Habitat Quality
Craig Loehle
- 1170 Movements and Settlement Site Selection of Pygmy Rabbits After Experimental Translocation
Timothy J. Lawes, Robert G. Anthony, W. Douglas Robinson, James T. Forbes, and Glenn A. Lorton
- 1182 Geographic Variation in Migration Chronology and Winter Distribution of Midcontinent Greater White-Fronted Geese
Craig R. Ely, Daniel J. Nieman, Ray T. Alisauskas, Joel A. Schmutz, and James E. Hines
- 1192 Selection of Landscapes by Male Ruffed Grouse During Peak Abundance
Meadow J. Kouffeld, Michael A. Larson, and R. J. Gutiérrez
- 1202 Greater Prairie-Chicken Nest Success and Habitat Selection in Southeastern Nebraska
Ty W. Matthews, Andrew J. Tyre, J. Scott Taylor, Jeffrey J. Lusk, and Larkin A. Powell
- ##### MANAGEMENT AND CONSERVATION
- 1213 Disturbance and Landscape Effects on Avian Nests in Agricultural Conservation Buffers
Heidi L. Adams, L. Wes Burger Jr., and Sam Riffell
- 1221 Influence of Translocations on Eastern Wild Turkey Population Genetics in Texas
Sabrina A. Seidel, Christopher E. Comer, Warren C. Conway, Randy W. Deyoung, Jason B. Hardin, and Gary E. Calkins
- 1232 Monitoring the Health Status of Free-Ranging Tammar Wallabies Using Hematology, Serum Biochemistry, and Parasite Loads
Kylie A. Robert and Lisa E. Schwanz
- 1244 Do Mountain Goats Habituate to Helicopter Disturbance?
Steeve D. Côté, Sandra Hamel, Antoine St-Louis, and Julien Mainguy
- ##### POPULATION ECOLOGY
- 1249 Survival and Causes of Mortality in a Northern Population of Western Gray Squirrels
W. Matthew Vander Haegen, Gene R. Orth, and Mary J. Linders
- 1258 Evaluation of Fixed- and Random-Effects Models and Multistage Estimation Procedures in Statistical Population Reconstruction
Christopher Gast, John R. Skalski, and Dean E. Beyer
- 1271 Pregnancy Rates in Central Yellowstone Bison
Peter J. P. Gogan, Robin E. Russell, Edward M. Olexa, and Kevin M. Podrutzny
- 1280 Estimating Occupancy and Predicting Numbers of Gray Wolf Packs in Montana Using Hunter Surveys
Lindsey N. Rich, Robin E. Russell, Elizabeth M. Glenn, Michael S. Mitchell, Justin A. Gude, Kevin M. Podrutzny, Carolyn A. Sime, Kent Laudon, David E. Ausband, and James D. Nichols
- ##### INFORMATION ACCESS
- 1290 Books and Literature
Carla G. Heister

OSM Library

AUG 09 2013

Denver, Colorado

Land and Water

Volume 57, Number 4

July/August 2013

DEPARTMENTS

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

FEATURES

SLOPE STABILIZATION

7 Slope Stabilization Protects a Disappearing Shoreline

A unique integrated armoring solution, which included a rock-filled mattress system with geotextile underlayment, a permanent turf reinforcement mat, and lightweight erosion control blankets, is used to re-establish vegetation and protect a beach slope on a small island.

by *All Pack*

STORMWATER BMPs

12 Life-Cycle Costs of Stormwater BMPs: A Game of Hot Potato

The installation cost is just the beginning of the total cost of owning a stormwater BMP. It is imperative that the owner of the BMP plan for life-cycle cost.

by *Louise Hannigford*

STORMWATER MAINTENANCE

16 Legacy In-Stream Pond Repairs

In order to return an aging stormwater facility to compliance, and avoid a catastrophic failure of the facility, a re-engineering and retrofitting plan was developed that would provide the HOA with a permanent, long-term solution to their existing problem.

by *Jennifer Roubaker, PE & Theodore Scott, PE, CPESC, LEED AP*

STREAM RESTORATION

21 Restoring Water Quality to the Incline and Third Creeks

Reducing streambank erosion, improving water quality, and restoring fish habitat in an urban alpine setting was crucial due to the creek's vital importance.

by *Charley Miller, PE*

GEOSYNTHETICS

27 An Update on Geosynthetic Barrier Trends

Geosynthetic barrier system trends, including: geosynthetic clay liners, coatings, capping, EVOH barriers, and construction quality assurance.

by *Chris Kelsey*

WATER QUALITY

35 Clearing Muddy Water...Maybe

Today, more effort is centered on diagnosing turbid water and prescribing a plan of action, rather than rolling the dice on a solution, as was done in the past. This more scientific approach now leads to a multi-pronged attack because the "problem" has several layers.

by *Bob Lusk*

WASTEWATER TREATMENT

39 Decentralized Wastewater Treatment Options for Sensitive Lakefront and Remote Sites

New onsite wastewater strategies and alternative treatment methods are often the only solution for those located in remote or environmentally sensitive areas.

by *Dennis F. Hollahan, PE*

EROSION & SEDIMENT CONTROL

42 Wilmes Lake Ravine Restoration Project

The Wilmes Lake Ravine has its own unique characteristics: completely unstable channel, confined channel area, nearly vertical slopes, heavy tree canopy, access, and differing flow conditions. Wilmes Lake needed to be redesigned to handle the runoff and pedestrian traffic generated from a nearby urban area, while still maintaining aesthetic character.

by *Erick Francis*

STORMWATER

49 Creating a Stormwater Park in the City Meadow of Norfolk, Connecticut

A small community decides to take a different approach to stormwater management by making it a public amenity and including it in the center of the town, known as the City Meadow.

by *Steve Trinkaus, PE, CPESC, CPSWQ*

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

ABOUT THE COVER

The Incline and Third Creeks are neighboring creeks in the heart of Incline Village, Nevada. The creeks hold great importance for the surrounding community, providing a vital water source and natural habitat for native species. The influx of commercial development and human activity has caused the creeks to decline in water clarity and habitat since the 1960's. To read about the stream restoration project, turn to page 22. Photo credit: Bryan Madsen Photography



STAFF

Kenneth M. Rasch
President

Jane Rasch
Vice President

Amy Dencklau
Publishing Editor
landandwater@frontiernet.net

Martha Steinkamp
Circulation Manager
lwsb@frontiernet.net

Emily Jones
Assistant Editor
lwmktg@frontiernet.net

Angela Dougall
Accounting
lwacct@frontiernet.net

SALES

Shanna Egli
Account Executive
shanna@landandwater.com
515.576.3191





Feature Articles

- 20 Latin Resources focuses on Peru: Company is bullish on the country**
- 28 Drivers of impact assessments; Human health, safety and the environment**
Gary MacDonald and Janis Shandro
- 33 Understanding the link between personality and safety**
Greg Ford
- 36 Five mining greats to be inducted into the National Mining Hall of Fame**
- 44 Mine your own business: Politics of mining are hot topic at Colorado MPD**
William Gleason
- 46 North American partners: SME and CIM join together at Minnesota meeting**
Emily Wortman-Wunder

OSM Library
AUG 09 2013
Denver, Colorado



Technical Papers (peer-reviewed and approved)

- 45 Factors influencing metal price selection in mining feasibility studies**
J.A. Espí and L. De La Torre
- 52 Role of gas pressure in underground coal mine bursts and bumps**
W.G. Pariseau

Copyright 2013 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 1-303-948-4200. Fax: 1-303-973-3845 or email: sme@smenet.org. Website: www.smenet.org.
Periodicals postage paid at Englewood, CO USA and additional mailing offices. Canadian post: publications mail agreement number 0669688.
POSTMASTER: Send changes of address to MINING ENGINEERING, 12999 E. Adam Aircraft Circle, Englewood, CO, 80112 USA.
Printed by Cummings Printing Co.

NATIVE PLANTS JOURNAL
Vol. 14, no. 2 (Summer 2013)



REFEREED RESEARCH

Vegetative propagation of *Juniperus osteosperma* (Utah Juniper) by cuttings 76
 Kevin R Cope and Larry A Rupp

Propagation protocol for Rocky Mountain juniper (*Juniperus scopulorum* Sarg.) 85
 Donald J Regan, Kea J Woodruff, and Anthony S Davis

Hydroseeding improves field establishment of Nebraska sedge regardless of seed treatment 89
 Derek J Tilley and Loren St John

Constructing a low-cost seed moisture tester and seed dryer 95
 Robert P Karrfalt

REFEREED RESEARCH

Restoration and plant species diversity of an Eastern prairie 101
 Robert D Tompkins and William C Bridges Jr

BOOK REVIEWS

Colorado Flora Eastern Slope: A Field Guide to the Vascular Plants, 4th edition 115

Colorado Flora Western Slope: A Field Guide to the Vascular Plants, 4th edition 115

Bumble Bees of the Western United States 116

Tidal Marsh Restoration: A Synthesis of Science and Management 118

NATIVE PLANT MATERIALS DIRECTORY

Alphabetical listings 120

Location index 181



**Volume 35 No. 4
August 2013**

Published bimonthly:
February, April, June, August, October, December
Copyright 2013 by the Society for Range Management

EDITOR-IN-CHIEF

Lori Hiding
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

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
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 80215-6601) 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 \$105–131 for individuals and \$168–247 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 two months (four months foreign) of the issue date to insure replacement at no charge.

Editorial correspondence should be addressed to Lori Hiding, 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.

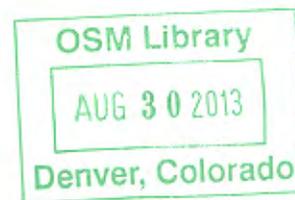
PRINTED IN USA

Research Articles

- 2 Early Season Grazing by Cattle of Waxy Larkspur (*Delphinium glaucescens*) in Central Idaho
James A. Pfister, Daniel Cook, Dale R. Gardner, and Sarah D. Baker
- 6 Can Cattle Be Used to Control *Sericea Lespedeza*?
Gregory K. Mantz, Juan J. Villalba, and Frederick D. Provenza
- 13 Grazing for Fuels Management and Sage Grouse Habitat Maintenance and Recovery: A Case Study From Squaw Valley Ranch
Erica Freese, Tamzen Stringham, Gregg Simonds, and Eric Sant
- 18 Forb Nutrient Density for Sage Grouse Broods in Mountain Big Sagebrush Communities, Montana
William Whitehurst and Clayton Marlow
- 26 New National Academy of Sciences Report: *Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward*
Kara Laney

Departments

- 28 Listening to the Land
- 30 Browsing the Literature
- 33 Highlights, *Rangeland Ecology & Management*, July 2013



Front Cover: Hillside of wild lily flowers on north facing aspect in Mercer County, ND, USA. Photo by Kelly Krabbenhoft, Hazen, ND, USA.

SOIL SCIENCE

An Interdisciplinary Approach to Soils Research

MAY 2013

CONTENTS

Vol. 178 No. 5

- RETENTION OF NICKEL IN SOILS: SORPTION-DESORPTION AND EXTENDED X-RAY ABSORPTION FINE
STRUCTURE EXPERIMENTS 215
Lixia Liao, Amitava Roy, Kirk G. Scheckel, Gregory Merchan, and H. Magdi Selim
- DOC AND DON RELEASE AND REACTIVE SOIL POOLS IN URBAN AND REMNANT SOILS 222
Jacqueline A. Aitkenhead-Peterson and Danielle M. Cioce
- INORGANIC AND ENZYMATICALLY HYDROLYZABLE ORGANIC PHOSPHORUS OF ALABAMA DECATUR
SILT LOAM SOILS CROPPED WITH UPLAND COTTON 231
Irenus A. Tazisong, Zhongqi He, and Zachary N. Senwo
- USING GIS AND GEOSTATISTICS TO OPTIMIZE SOIL PHOSPHORUS AND MAGNESIUM SAMPLING
IN TEMPERATE GRASSLAND 240
WeiJun Fu, Keli Zhao, Hubert Tunney, and Chaosheng Zhang
- CASSAVA NITROGEN REQUIREMENTS IN THAILAND AND CROP SIMULATION MODEL PREDICTIONS 248
*Jakchaiwat Kawee Wong, Saowanuch Tawompruek, Sukunya Yampracha, Russell Yost,
Sahaschai Kongton, and Thanuchai Kongkeaw*
- MODELING GRAZING EFFECTS ON SOIL-WATER BUDGET UNDER *LEYMUS CHINENSIS*
AND *STIPA GRANDIS* VEGETATION IN INNER MONGOLIA, CHINA 256
Lei Gan, Xinhua Peng, Stephan Peth, and Rainer Horn

