



New Publications

April to June 2010

Integrated Science Working For You

Air, Water,
and Aquatic
Environments



Fire, Fuel,
and Smoke



Forests and
Woodlands
Ecosystems



Grasslands,
Shrublands,
and Desert
Ecosystems



Human
Dimensions



Inventory,
Monitoring,
and Analysis



Wildlife
and Terrestrial
Habitats



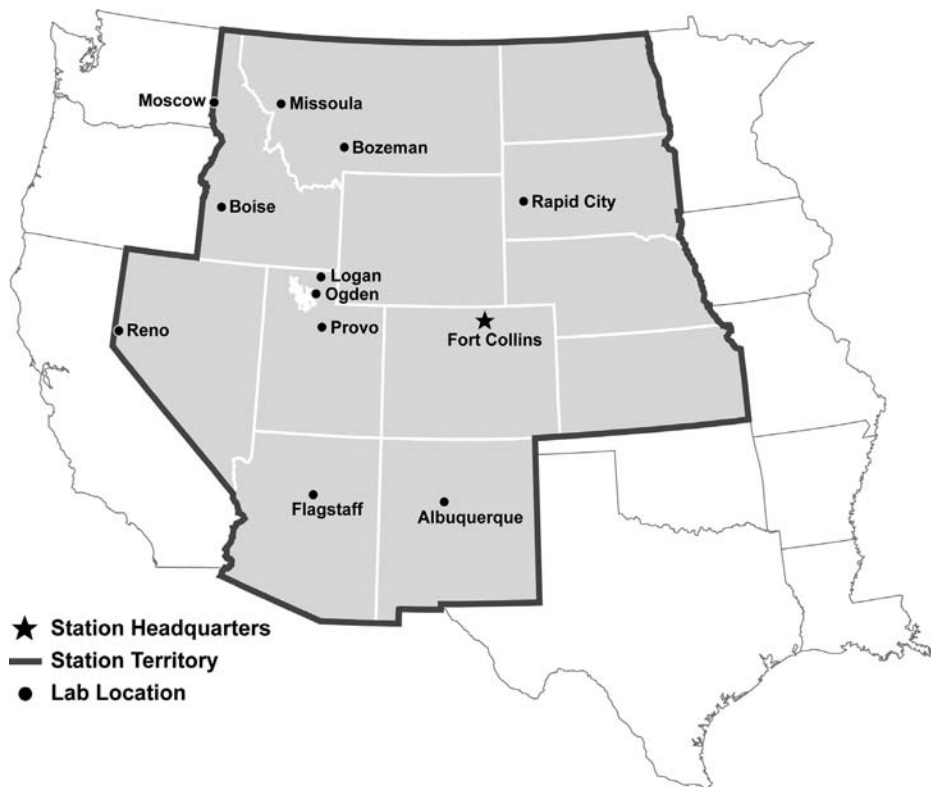
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The Rocky Mountain Research Station



The Rocky Mountain Research Station is one of five regional units that make up the USDA Forest Service Research and Development organization—the most extensive natural resources research organization in the world. We maintain 14 research locations throughout a 12-state territory encompassing the Great Basin, Southwest, Rocky Mountains, and parts of the Great Plains. The Station employs over 400 permanent full-time employees, including more than 100 research scientists

Scientists conduct research that spans an area containing 52% of the nation's National Forest System lands (54 National Forests and Grasslands). In the lower 48 states, our territory also includes 55% of the nation's BLM lands; 48% of the designated wildernesses; 37% of National Park Service lands; numerous other public and tribal lands; and 41% of the non-urban/rural private lands.

We administer and conduct research on 14 experimental forests, ranges and watersheds while maintaining long-term databases for these areas. We also oversee activities on more than 260 Research Natural Areas and lead ecosystem management and research partnership projects in Arizona, Montana, New Mexico, and Nevada.

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New RMRS Series Publications

Retrospective fire modeling

Online Only

Retrospective fire modeling: Quantifying the impacts of fire suppression. Davis, Brett H.; Miller, Carol; Parks, Sean A. 2010. Gen. Tech. Rep. RMRS-GTR-236WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 40 p.

We developed a framework for retrospective fire behavior modeling and impact assessment to determine where ignitions would have spread had they not been suppressed and to assess the cumulative effects that would have resulted. This document is a general guidebook for applying this methodology and is for land managers interested in quantifying the impacts of fire suppression.

Online: http://www.fs.fed.us/rm/pubs/rmrs_gtr236.html.

Sagebrush and fire

Order 4

The Sagebrush Steppe Treatment Evaluation Project (SageSTEP): A test of state-and-transition theory. McIver, James D.; Brunson, Mark; Bunting, Steve C.; Chambers, Jeanne; Devoe, Nora; Doescher, Paul; Grace, James; Johnson, Dale; Knick, Steve; Miller, Richard; Pellant, Mike; Pierson, Fred; Pyke, David; Rollins, Kim; Roundy, Bruce; Schupp, Eugene; Tausch, Robin; Turner, David. 2010. Gen. Tech. Rep. RMRS-GTR-237. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 16 p.

The Sagebrush Steppe Treatment Evaluation Project (SageSTEP) is a comprehensive, integrated, long-term study that evaluates the ecological effects of fire and fire surrogate treatments designed to reduce fuel and to restore sagebrush (*Artemisia* spp.) communities of the Great Basin and surrounding areas.

Online: http://www.fs.fed.us/rm/pubs/rmrs_gtr237.html.

Mitigating old tree mortality

Order 5

Mitigating old tree mortality in long-unburned, fire-dependent forests: A synthesis. Hood, Sharon M. 2010. Gen. Tech. Rep. RMRS-GTR-238. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 71 p.

This report synthesizes the literature and current state of knowledge pertaining to reintroducing fire in stands where it has been excluded for long periods and the impact of these introductory fires on overstory tree injury and mortality. Pertinent background information on tree physiology, properties of duff, and historical versus current disturbance regimes are also discussed.

Online: http://www.fs.fed.us/rm/pubs/rmrs_gtr238.html.

Soil monitoring on National Forests and Rangelands

Order 6

Scientific background for soil monitoring on National Forests and Rangelands: workshop proceedings; April 29-30, 2008; Denver, CO. Page-Dumroese, Deborah; Neary, Daniel; Trettin, Carl, tech. eds. 2010. Proc. RMRS-P-59. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 127 p.

This workshop was developed to determine the state-of-the science for soil monitoring on National Forests and Rangelands. Participants were international experts in the field of soil monitoring, soil monitoring indicators, and basic forest soil properties. This workshop and the resulting proceedings are particularly important as National Forests wrestle with determining how (or if) to modify their existing soil quality standards and guidelines.

Online: http://www.fs.fed.us/rm/pubs/rmrs_p059.html.

Aspen mortality summit proceedings

Online Only

The aspen mortality summit; December 18 and 19, 2006; Salt Lake City, UT. Bartos, Dale L.; Shepperd, Wayne D., comps. 2010. Proc. RMRS-P-60WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 21 p.

The USDA FS Rocky Mountain Research Station sponsored an aspen summit meeting in Salt Lake City, Utah, on December 18 and 19, 2006, to discuss the rapidly increasing mortality of aspen (*Populus tremuloides*) throughout the western United States. This report will serve as a platform for Resource Managers to address the Sudden Aspen Decline issue.

Online: http://www.fs.fed.us/rm/pubs/rmrs_p060.html.

Douglas-fir seedling biomass patterns

Order 7

Dynamic phenotypic plasticity in photosynthesis and biomass patterns in Douglas-fir seedling. Koehn, A.C.; McDonald, G.I.; Turner, D.L.; Adams, D.L. 2010. Res. Pap. RMRS-RP-79. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 14 p.

This study focuses on the dynamic plasticity of Douglas-fir (*Pseudotsuga menziesii* var. *glauca* [Beissn.] Franco) seedlings grown in contrasting light environments. Plasticity in Douglas-fir seedlings was primarily achieved by a combination of the physiological processes: maximum photosynthesis, quantum yield, Fv/Fm, Km (the light constant), light compensation point and the ratio of needle area to needle weight (specific leaf area). Specific leaf area was the most plastic of the biomass parameters measured.

Online: http://www.fs.fed.us/rm/pubs/rmrs_rp079.html.

Coarse woody debris assay

Online Only

Coarse woody debris assay in northern Arizona mixed-conifer and ponderosa pine forests. Ganey, Joseph L.; Vojta, Scott C. 2010. Res. Pap. RMRS-RP-80WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 19 p.

Coarse woody debris (CWD) provides important ecosystem services in forests and affects fire behavior, yet information on amounts and types of CWD typically is limited. To provide such information, we sampled logs and stumps in mixed-conifer and ponderosa pine (*Pinus ponderosa*) forests in north-central Arizona. The results of our study provides empirical data on amounts and types of CWD in this area and establishes a baseline for monitoring CWD.

Online: http://www.fs.fed.us/rm/pubs/rmrs_rp080.html.

New Forest Service Agriculture Handbook

Container tree nursery manual

Order 8

The container tree nursery manual: Volume 7, Seedling processing, storage, and outplanting. Landis, Thomas D.; Dumroese, R. Kasten; Haase, Diane L. 2010. Agric. Handb. No. 674. Washington, DC: U.S. Department of Agriculture, Forest Service. 199 p.

This manual is based on the best current knowledge of container nursery management and should be used as a general reference. Because of the wide variation in individual species responses, container nursery managers will need to adapt these principles and procedures to their own crop requirements. There is no substitute for individual experience, and recommended cultural practices should be tested before being implemented on an operational scale.

Online: <http://www.treesearch.fs.fed.us/pubs/35195>.

Journals and Other Publications

Obtain the following publications through university libraries, the publisher, or other outlets. Forest Service employees may request these items from the National Forest Service Library at FSLibrary-DocsFC@fs.fed.us or telephone: (970) 498-1205. We have also provided links to electronic copies when available.

Air, water, and aquatic environments

A comparison of the performance and compatibility of protocols used by seven monitoring groups to measure stream habitat in the Pacific Northwest. Roper, Brett B.; Buffington, John M.; Bennett, Stephen; Lanigan, Steven H.; Archer, Eric; and others. 2010. *North American Journal of Fisheries Management*. 30: 565-5887. Online: <http://www.treesearch.fs.fed.us/pubs/35127>.

Does tree harvesting in streamside management zones adversely affect stream turbidity?—Preliminary observations from an Australian case study. Neary, Daniel G.; Smethurst, Philip J.; Baillie, Brenda R.; Petrone, Kevin C.; Cotching, William E.; Baillie, Craig C. 2010. *Journal of Soils Sediments*. doi:10.1007/s11368-010-0234-2. Online: <http://www.treesearch.fs.fed.us/pubs/35212>.

Effects of climate change and wildfire on stream temperature and salmonid thermal habitat in a mountain river network. Isaak, Daniel J.; Luce, Charles H.; Rieman, Bruce E.; Nagel, David E.; Peterson, Erin E.; Horan, Dona L.; Parkes, Sharon; Chandler, Gwynne L. 2010. *Ecological Applications*: doi: 10.1890/09-0822.

Evaluation of alternative formulae for calculation of surface temperature in snowmelt models using frequency analysis of temperature observations. Luce, C.H.; Tarboton, D.G. 2010. *Hydrology and Earth System Sciences*. 14: 535-543. Online: <http://www.treesearch.fs.fed.us/pubs/34961>.

Growth, activity, and survivorship from three sympatric parthenogenic whiptails (family Teiidae). Bateman, Heather L.; Snell, Howard L.; Chung-MacCoubrey, Alice; Finch, Deborah M. 2010. *Journal of Herpetology*. 44(2): 301-306. Online: <http://www.treesearch.fs.fed.us/pubs/35130>.

Grubbing by wild boars (*Sus scrofa* L.) and its impact on hardwood forest soil carbon dioxide emissions in Switzerland. Risch, Anita C.; Wirthner, Sven; Busse, Matt D.; Page-Dumroese, Deborah S.; Schütz, Martin. 2010. *Oecologia*. doi:10.1007/s00442-010-1665-6. Online: <http://www.treesearch.fs.fed.us/pubs/35145>.

Introduction to the featured collection on riparian ecosystems & buffers. Mayer, Paul M.; Todd, Albert H.; Okay, Judith A.; Dwire, Kathleen A. 2010. *Journal of the American Water Resources Association*. 46(2): 207-210. Online: <http://www.treesearch.fs.fed.us/pubs/35213>.

Large in-stream wood studies: A call for common metrics. Wohl, Ellen; Cenderelli, Daniel A.; Dwire, Kathleen A.; Ryan-Burkett, Sandra E.; Young, Michael K.; Fausch, Kurt D. 2010.

Earth Surface Processes and Landforms. 36: 618-625. Online: <http://www.treesearch.fs.fed.us/pubs/35208>.

Microbial enzyme activity, nutrient uptake and nutrient limitation in forested streams. Hill, Brian H.; McCormick, Frank H.; Harvey, Bret C.; Johnson, Sherri L.; Warren, Melvin L.; Elonen, Colleen M. 2010. *Freshwater Biology*. 55: 1005-1019. Online: <http://www.treesearch.fs.fed.us/pubs/34962>.

Modeled and actual impacts of fire management on carbon sequestration and greenhouse gas emissions in Yosemite National Park. Tarnay Lee W.; Davis, Brett H.; van Wagtenonk, Jan. 2010. In: Weber, Samantha, ed. *Rethinking protected areas in a changing world: proceedings of the 2009 GWS biennial conference on parks, protected areas, and cultural sites; 2009 March 1-6; Portland, OR*. Hancock, MI: The George Wright Society: 93-100.

Modeling predicts that redd trampling by cattle may contribute to population declines of native trout. Peterson, Douglas P.; Rieman, Bruce E.; Young, Michael K.; Brammer, James A. 2010. *Ecological Applications*. 20(4): 954-566. Online: <http://www.treesearch.fs.fed.us/pubs/35143>.

Responding to climate change: A toolbox of management strategies. Cole, David N.; Millar, Constance I.; Stephenson, Nathan L. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 179-196.

Snowpack dynamics in an opening and a thinned stand in a ponderosa pine forest. Gottfried, Gerald J.; Ffolliott, Peter F. 2009. *Hydrology and Water Resources in Arizona and the Southwest*. 39: 9-16.

A synthesis of the science on forests and carbon for U.S. Forests. Ryan, M.G.; Harmon, M.E.; Birdsey, R.A.; and others. 2010. *Issues In Ecology*. 13: 1-16. Online: <http://www.treesearch.fs.fed.us/pubs/35006>.

Temperature and tree growth [editorial]. Ryan, Michael G. 2010. *Tree Physiology*. 30: 667-668. Online: <http://www.treesearch.fs.fed.us/pubs/35142>.

Terrestrial-style slow-moving earthflow kinematics in a submarine landslide complex. Mountjoy, Joshu J.; McKean, Jim; Barnes, Philip M.; Pettinga, Jarg R. *Marine Geology*. 267: 114-127. Online: <http://www.treesearch.fs.fed.us/pubs/34787>.

Wildfire and management of forests and native fishes: Conflict or opportunity for convergent solutions? Rieman, Bruce E.; Hessburg, Paul F.; Luce, Charles; Dare, Matthew R. 2010. *BioScience*. 60(6): 460-468. Online: <http://www.treesearch.fs.fed.us/pubs/35196>.

Fire, fuel, and smoke

Advancing investigation and physical modeling of first-order fire effects on soils. Massman, William J.; Frank, John M.;

- Mooney, Sacha J. 2010. Fire Ecology. 6(1): 36-54. Online: <http://www.treesearch.fs.fed.us/pubs/35013>.
- Effects of fuel treatments on carbon-disturbance relationships in forests of the northern Rocky Mountains.** Reinhardt, Elizabeth; Holsinger, Lisa. 2010. Forest Ecology and Management. 259: 1427-1435. Online: <http://www.treesearch.fs.fed.us/pubs/34995>.
- An examination of flame shape related to convection heat transfer in deep-fuel beds.** Yedinak, Kara M.; Cohen, Jack D.; Forthofer, Jason M.; Finney, Mark A. 2010. International Journal of Wildland Fire. 19: 171-178. Online: <http://www.treesearch.fs.fed.us/pubs/35207>.
- First-order fire effects models for land management: Overview and issues.** Reinhardt, Elizabeth D.; Dickinson, Matthew B. 2010. Fire Ecology. 6(1): 131-150. Online: <http://www.treesearch.fs.fed.us/pubs/35017>.
- Forest treatment residues for thermal energy compared with disposal by onsite burning: Emissions and energy return.** Jones, Greg; Loeffler, Dan; Calkin, David; Chung, Woodam. 2010. Biomass and Bioenergy. 34(5): 737-746. Online: <http://www.treesearch.fs.fed.us/pubs/35180>.
- Historic fire regimes of eastern Great Basin (USA) mountains reconstructed from tree rings.** Kitchen, Stanley G. 2010. Provo, UT: Brigham Young University. 166 p. Dissertation. Online: <http://www.treesearch.fs.fed.us/pubs/35215>.
- Introduction: Strengthening the foundation of wildland fire effects prediction for research and management.** Dickinson, Matthew B.; Ryan, Kevin C. 2010. Fire Ecology. 6(1): 1-12. Online: <http://www.treesearch.fs.fed.us/pubs/35011>.
- Lessons from the Hayman Fire: Forest understory responses to the scarify-and-seed postfire rehabilitation treatment.** Fornwalt, Paula J. 2009. Fire Management Today. 69(3): 38-43.
- A numerical study of slope and fuel structure effects on coupled wildfire behaviour.** Linn, Rodman R.; Winterkamp, Judith L.; Weise, David R.; Edminster, Carleton. 2010. International Journal of Wildland Fire. 19: 179-201. Online: <http://www.treesearch.fs.fed.us/pubs/35148>.
- Revisiting spatial patterns of lightning strikes and fires in Yosemite National Park.** van Wagtenonk, Kent; Davis, Brett H. 2010. In: Weber, Samantha, ed. Rethinking protected areas in a changing world: proceedings of the 2009 GWS biennial conference on parks, protected areas, and cultural sites; 2009 March 1-6; Portland, OR. Hancock, MI: The George Wright Society: 125-130.
- Tree injury and mortality in fires: Developing process-based models.** Butler, Bret W.; Dickinson, Matthew B. 2010. Fire Ecology. 6(1): 55-79. Online: <http://www.treesearch.fs.fed.us/pubs/35014>.
- What if we didn't suppress fire?** Davis, Brett H.; Miller, Carol. 2010. In: Weber, Samantha, ed. Rethinking protected areas in a changing world: proceedings of the 2009 GWS biennial conference on parks, protected areas, and cultural sites; 2009 March 1-6; Portland, OR. Hancock, MI: The George Wright Society: 131-134.
- Water repellent soils following prescribed burning treatments and a wildfire in the oak savannas of the Malpai Borderlands region.** Stropki, Cody L.; Ffolliott, Peter F.; Gottfried, Gerald J. 2009. Hydrology and Water Resources in Arizona and the Southwest. 39: 5-8.
- Forests and woodlands ecosystems**
- Above- and belowground responses to tree thinning depend on the treatment of tree debris.** Owen, Suzanne M.; Sieg, Carolyn Hull; Gehring, Catherine A.; Bowker, Matthew A. 2009. Forest Ecology and Management. 259: 71-80. Online: <http://www.treesearch.fs.fed.us/pubs/35151>.
- Ecological impacts and management strategies for western larch in the face of climate-change.** Rehfeldt, Gerald E.; Jaquish, Barry C. 2010. Mitigation and Adaption Strategies for Global Change. 15(3): 283-306. Online: <http://www.treesearch.fs.fed.us/pubs/35211>.
- Effects of forest management practices and environment on occurrence of *Armillaria* species.** Kim, Mee-Sook; Klopfenstein, Ned B.; McDonald, GERALD I. 2010. Journal of Korean Forest Society. 99(2): 251-257.
- Fire and mice: Seed predation moderates fire's influence on conifer recruitment.** Zwolak, Rafal; Pearson, Dean E.; Ortega, Yvette K.; Crone, Elizabeth E. 2010. Ecology. 91(4): 1124-1131. Online: <http://www.treesearch.fs.fed.us/pubs/35206>.
- First report of *Armillaria* root disease caused by *Armillaria tabescens* on *Araucaria araucana* in Veracruz, Mexico.** Kim, M.-S.; Klopfenstein, N.B.; Hanna, J.W.; Cannon, P.; Medel, R.; López, A. 2010. Plant Disease. 94(6): 784.
- A geographically-referenced multiple-resource data management system for the oak savannas of the Malpai Borderland region.** Chen, Hui; Stropki, Cody L.; Ffolliott, Peter F.; Gottfried, Gerald J. 2009. Hydrology and Water Resources in Arizona and the Southwest. 39: 59-64.
- Height is more important than light in determining leaf morphology in a tropical forest.** Cavaleri, Molly A.; Oberbauer, Steven F.; Clark, David B.; Clark, Deborah A.; Ryan, Michael G. 2010. Ecology. 91(6): 1730-1739. Online: <http://www.treesearch.fs.fed.us/pubs/35146>.
- Impacts of mixed severity wildfire on exotic plants in a Colorado ponderosa pine-Douglas-fir forest.** Fornwalt, Paula J.; Kaufmann, Merrill R.; Stohlgren, Thomas J. 2010. Biological Invasions. doi.10.1007/s10530-009-9674-2.
- Private forest habitat for at-risk species: Where is it and where might it be changing?** Stein, Susan M.; McRoberts, Ronald E.; Nelson, Mark D.; Mahal, Lisa; Flather, Curtis H.; Alig, Ralph J.; Comas, Sara. 2010. Journal of Forestry. 108(2): 61-70. Online: <http://www.treesearch.fs.fed.us/pubs/34771>.
- Restoring whitebark pine forests of the northern Rocky Mountains, USA.** Keane, Robert E.; Parsons, Russell A. 2010. Ecological Restoration. 28(1): 56-70. Online: <http://www.treesearch.fs.fed.us/pubs/34993>.

A retrospective assessment of partial cutting to reduce spruce beetle-caused mortality in the southern Rocky Mountains. Hansen, E. Matthew; Negrón, José F.; Munson, A. Steven; Anhold, John A. 2010. *Western Journal of Applied Forestry*. 25(2): 81-87. Online: <http://www.treesearch.fs.fed.us/pubs/35129>.

Semiochemical-mediated flight strategies of two invasive elm bark beetles: A potential factor in competitive displacement. Lee, Jana C.; Hamud, Shakeeb M.; Negrón, José F.; Witcosky, Jeffrey J.; Seybold, Steven J. 2010. *Environmental Entomology*. 3(2): 642-652. Online: <http://www.treesearch.fs.fed.us/pubs/35128>.

Vegetative characteristics of oak savannas in the southwestern borderlands region. Ffolliott, Peter F.; Gottfried, Gerald J. 2010. In: Halvorson, W.; Schwalbe, C.; Van Ripper, C., III, eds. *Southwestern desert resources*. Tucson, AZ: University of Arizona Press: 71-79.

Grasslands, shrublands, and desert ecosystems

Cheatgrass—Native plant community interactions in an invaded southwestern forest. McGlone, Christopher M. 2010. Flagstaff, AZ: Northern Arizona University. 133 p. Dissertation. Online: <http://www.treesearch.fs.fed.us/pubs/35147>.

Diversity of *Frankia* populations in root nodules of geographically isolated Arizona alder trees in central Arizona (United States). Welsh, Allana K.; Dawson, Jeffrey O.; Gottfried, Gerald J.; Hahn, Diddmar. 2010. *Applied and Environmental Microbiology*. 75(21): 6913-6918. Online: <http://www.treesearch.fs.fed.us/pubs/35181>.

Environmental regulation of dormancy loss in seeds of *Lomatium dissectum* (Apiaceae). Scholten, Melissa; Donahue, Jacklyn; Shaw, Nancy L.; Serpe, Marcelo D. 2009. *Annals of Botany*. 103: 1091-1101. Online: <http://www.treesearch.fs.fed.us/pubs/32868>.

Evidence-based review of seeding in post-fire rehabilitation and native plant market feasibility. Peppin, Donna L. 2009. Flagstaff, AZ: Northern Arizona University. 180 p. Thesis. Online: <http://www.treesearch.fs.fed.us/pubs/35149>.

Funding needed for assessments of weed biological control. Maron, John L.; Pearson, Dean E.; Hovick, Stephen M.; Carson, Walter P. 2010. *Frontiers in Ecology and the Environment*. 8(3): 122-1213. Online: <http://www.treesearch.fs.fed.us/pubs/35214>.

Green strips or vegetative fuel breaks. St. John, Loren; Ogle, Dan. 2009. Tech. Note TN Plant Materials No. 16. Boise, ID; Salt Lake City, UT: U.S. Department of Agriculture, Natural Resources Conservation Service. 16 p. Online: <http://www.treesearch.fs.fed.us/pubs/35280>.

Hotrock penstemon: *Penstemon deustus* Douglas ex Lindl. St. John, Loren; Ogle, Dan; Shaw, Nancy L. [n.d.] U.S. Department of Agriculture, Natural Resources Conservation Service. Aberdeen Plant Materials Center. 3 p. Online: <http://www.treesearch.fs.fed.us/pubs/33642>.

***Hurleyella*, a new genus of Nearctic Dolichopodidae (Diptera).** Runyon, Justin B.; Robinson, Harold. 2010. *Zootaxa*. 2400: 57-65. Online: <http://www.treesearch.fs.fed.us/pubs/35210>.

New species of *Braggia* (Hemiptera: Aphididae) on buckwheat in western North America. Pike, K.S.; Graf, G.; Footitt, R.G.; Maw, H.E.L.; Stary, P.; Hammon, R.; Miller, D.G. 2009. *Canadian Entomologist*. 141: 561-581. Online: <http://www.treesearch.fs.fed.us/pubs/35282>.

Reproductive ecology of *Astragalus filipes*, a Great Basin restoration legume. Watrous, Kristal M. 2010. Logan, UT: Utah State University. 57 p. Thesis. Online: <http://www.treesearch.fs.fed.us/pubs/34996>.

Royal penstemon: *Penstemon speciosus* Douglas ex Lindl. Tilley, Derek; Ogle, Dan; St. John, Loren; Shaw, Nancy L. [n.d.]. U.S. Department of Agriculture, Natural Resources Conservation Service. Aberdeen Plant Materials Center. 3 p. Online: <http://www.treesearch.fs.fed.us/pubs/33641>.

Seed germination of roundleaf buffaloberry (*Shepherdia rotundifolia*) and silver buffaloberry (*Shepherdia argentea*) in three substrates. Beddes, Taun; Kratsch, Heidi A. 2009. *Journal of Environmental Horticulture*. 27(3): 129-133.

Sharpleaf penstemon: *Penstemon acuminatus* Douglas ex Lindl. St. John, Loren; Ogle, Dan; Shaw, Nancy L. [n.d.] U.S. Department of Agriculture, Natural Resources Conservation Service. Aberdeen Plant Materials Center. 3 p. Online: <http://www.treesearch.fs.fed.us/pubs/32623>.

Inventory, monitoring, and analysis

A cross-comparison of field, spectral, and lidar estimates of forest canopy cover. Smith, Alistair M.S.; Falkowski, Michael J.; Hudak, Andrew T.; Evans, Jeffrey S.; Robinson, Andrew P.; Steele, Caiti M. 2009. *Canadian Journal of Remote Sensing*. 35(5): 447-459. Online: <http://www.treesearch.fs.fed.us/pubs/35182>.

Wilderness research

Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change. Cole, David N.; Yung, Laurie. 2010. Washington, DC: Island Press. 287 p.

Capacity reconsidered: Finding consensus and clarifying differences. Whittaker, Doug; Shelby, Bo; Manning, Robert; Cole, David; Haas, Glenn. 2010. Marienville, PA: National Association of Recreation Resource Planners. 18 p. Online: <http://www.treesearch.fs.fed.us/pubs/35209>.

Changing policies and practices: The challenge of managing for naturalness. Yung, Laurie; Cole, David N.; Graber, David M.; Parsons, David J.; Tonnessen, Kathy A. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 67-83.

Conservation at large scales: Systems of protected areas and protected areas in the matrix. White, Peter S.; Yung, Laurie;

Cole, David N.; Hobbs, Richard J. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 197-215.

Evolving ecological understandings: The implications of ecosystem dynamics. Hobbs, Richard J.; Zavaleta, Erika S.; Cole, David N.; White, Peter S. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 34-49.

Historical fidelity: Maintaining legacy and connection to heritage. Cole, David N.; Higgs, Eric S.; White, Peter S. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 125-141.

Let it be: A hands-off approach to preserving wildness in protected areas. Landres, P. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 88-105.

Park and wilderness stewardship: The dilemma of management intervention. Cole, David N.; Yung, Laurie. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 1-11.

A path forward: Conserving protected areas in the context of global environmental change. Yung, Laurie; Cole, David N.; Hobbs, Richard J. 2010. In: Cole, David N.; Yung, Laurie, eds. *Beyond naturalness: Rethinking park and wilderness stewardship in an era of rapid change*. Washington, DC: Island Press: 252-269.

Shifting environmental foundations: The unprecedented and unpredictable future. Stephenson, Nathan L.; Millar, Constance I.; Cole, David N. 2010. In: Cole, David N.; Yung,

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