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April – June 2002



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- *Wildland fire and fire exclusion*
- *Land stewardship*
- *Watershed and riparian areas*
- *Threatened and endangered species*
- *Inventory and monitoring*

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**SUBJECT****ORDER #****TITLE****Wildland fire**

- 09 Development of coarse-scale spatial data for wildland fire and fuel management.** Schmidt, Kirsten M.; Menakis, James P.; Hardy, Colin C.; Hann, Wendall J.; Bunnell, David L. 2002. Gen. Tech. Rep. RMRS-GTR-87. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 41 p. + CD.

We produced seven coarse-scale, 1-km resolution, spatial data layers for the conterminous United States to support national-level fire planning and risk assessments. Four of these layers were developed to evaluate ecological conditions and risk to ecosystem components. The remaining three layers were developed to support assessments of potential hazards and risks to public health and safety. This paper documents the methodology we used to develop these spatial data layers. In a Geographic Information System (GIS), we integrated biophysical and remote sensing data with disturbance and succession information by assigning characteristics to combinations of biophysical, current vegetation, and historical fire regime spatial datasets. Managers can use these spatial data to describe regional trends in current conditions and to support fire and fuel management program development and resource allocation.

**Fire exclusion**

- 10 Cascading effects of fire exclusion in Rocky Mountain ecosystems: a literature review.** Keane, Robert E.; Ryan, Kevin C.; Veblen, Tom T.; Allen, Craig D.; Logan, Jesse; Hawkes, Brad. 2002. Gen. Tech. Rep. RMRS-GTR-91. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 24 p.

The health of many Rocky Mountain ecosystems is in decline because of the policy of excluding fire in the management of these ecosystems. Fire exclusion has actually made it more difficult to fight fires, and this poses greater risks to the people who fight fires and for those who live in and around Rocky Mountain forests and rangelands. This paper discusses the extent of fire exclusion in the Rocky Mountains, then details the diverse and cascading effects of suppressing fires in the Rocky Mountain landscape by spatial scale, ecosystem characteristic, and vegetation type. Also discussed are the varied effects of fire exclusion on some important, keystone ecosystems and human concerns.

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**Special order publication**

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**Land stewardship**

- Land stewardship through watershed management: perspectives for the 21st Century.** Ffolliott, Peter F.; Baker, Malchus B.; Edminster, Carleton B.; Dillon, Madelyn C.; Mora, Karen L., eds. 2001. Hingham, MA: Kluwer Academic/Plenum Publishers. 140 p.  
**Order from:** <http://www.wkap.nl/prod/b/0-306-46698-8>

This volume highlights the need for enhancing the effectiveness of land stewardship and management of the world's natural resources to meet the need of the growing global population for conservation, sustainable development, and the use of land, water, and other natural resources. The chapters focus on global watershed management perspectives, problems, and programs; a retrospective survey of watershed management, lessons learned, emerging tools and technologies, and locally-led initiatives; the issues confronted when implementing a watershed management approach to land stewardship; the anticipated future contributions of watershed management to land stewardship; and the protocols necessary to realize the contributions of watershed management to land stewardship in practices, projects, and programs.



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### **Atmosphere/climate**

**A modified force-restore approach to modeling snow-surface heat fluxes.** Luce, Charles H.; Tarboton, David G. 2001. In: Elder, Kelly, ed. Proceedings of the Western Snow Conference, sixty-ninth annual meeting; 2001 April 16–19; Sun Valley, ID. Madison, WI: Omnipress: 103–114.

### **Fire**

**Preface. Special issue: Wildfire and surficial processes.** Robichaud, P. R.; Elsenbeer, H. 2001. Hydrological Processes. 15(15): 2865–2866.

**Responses of amphibians to fire disturbance in Pacific Northwest forests: a review.** Bury, R. Bruce; Major, Donald J.; Pilliod, David. 2002. In: Ford, W. Mark; Russell, Kevin R.; Moorman, Christopher E., eds. The role of fire in nongame wildlife management and community restoration: traditional uses and new directions. Gen. Tech. Rep. GTR-NE-288. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station: 34–42.

**Spatial and temporal effects of wildfire on the hydrology of a steep rangeland watershed.** Pierson, Frederick B.; Robichaud, Peter R.; Spaeth, Kenneth E. 2001. Hydrological Processes. 15(15): 2905–2916.

### **Silviculture**

**Effects of competitor spacing in individual-tree indices of competition.** Ledermann, Thomas; Stage, Albert R. 2001. Canadian Journal of Forest Research. 31: 2143–2150.

### **Disturbance ecology**

**Sustainable mineral resource management in karst areas—report on NATO advanced research workshop, 26th September–1st October, 2000, Portoroz Slovenia.** Solar, Slavko V.; Shields, Deborah J. 2001. Geologija. 44(2): 363–368.

### **Range management**

**Environmental factors and community dynamics at the southernmost part of the North American Graminetum. II. Temporal plant assemblages determined by rainfall patterns.** Aguado-Santacruz, G. A.; García-Moya, E.; Creque, J. A.; Meyer, S.; Flores-Flores, J. L. 2002. Plant Ecology. 158: 49–63.

### **Watershed and riparian**

**Effects of log erosion barriers on post-fire hydrologic response and sediment yield in small forested watersheds, southern California.** Wohlgemuth, Peter M.; Hubbert, Ken R.; Robichaud, Peter R. 2001. Hydrological Processes. 15(15): 3053–3066.

**Local and landscape effects of introduced trout on amphibians in historically fishless watersheds.** Pilliod, David S.; Peterson, Charles R. 2001. Ecosystems. 4: 322–333.

**Predicting sediment TMDLs for forest conditions with the WEPP model.** Elliot, William J. 2002. In: Total maximum daily load (TMDL): environmental regulations; proceedings; 2002 March 11–13; Fort Worth, TX. St. Joseph, MI: The Society for Engineering and Agricultural, Food, and Biological Systems: 554–559.

**Spatial and temporal effects of wildfire on the hydrology of a steep rangeland watershed.** Pierson, Frederick B.; Robichaud, Peter R.; Spaeth, Kenneth E. 2001. Hydrological Processes. 15: 2905–2916.

**Streambank and vegetation response to simulated cattle grazing.** Clary, Warren P.; Kinney, John W. 2002. Wetlands. 22(1): 139–148.

### **Inventory and monitoring**

**Accuracy assessment for the U.S. Geological Survey regional land-cover mapping program: New York and New Jersey Region.** Zhu, Zhiliang; Yang, Limin; Stehman, Stephen V.; Czaplewski, Raymond L. 2000. Photogrammetric Engineering & Remote Sensing. 66(12): 1425–1435.



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**Assessing long-term stand changes in Arizona using historical inventory data.** Gottfried, Gerald J.; Ffolliott, Peter F.; Baker, Malchus B., Jr. In: Forestry at the Great Divide; proceedings, Society of American Foresters 2001 national convention; 2001 September 13–17; Denver, CO. Bethesda, MD: Society of American Foresters: 380–385.

**A boundary reconstruction method for circular fixed-area plots in environmental survey.** Williams, Michael S.; Williams, Murray Todd; Mowrer, H. Todd. 2001. *Journal of Agricultural, Biological, and Environmental Statistics*. 6(4): 479–494.

**Distribution and abundance of oaks in North America.** McWilliams, William H.; O'Brien, Renee A.; Reese, Gordon C.; Waddell, Karen L. 2002. In: McShea, William J.; Heally, William M., eds. *Oak forest ecosystems: ecology and management for wildlife*. Baltimore, MD: The Johns Hopkins University Press: 13–33.

**Nonuniform random sampling: an alternative method of variance reduction for forest surveys.** Williams, Michael S. 2001. *Canadian Journal of Forest Research*. 31: 2080–2088.

**Statistical sampling using very large-scale photography with subsampled ground plots for management variables.** Schreuder, Hans T.; Goebel, J. Jeffery. 2001. In: *Proceedings of the annual meeting of the American Statistical Association, Section on Statistics and the Environment*; 2001 August 5–9; Atlanta, GA. Alexandria, VA: American Statistical Association. 10 p. CD-ROM.

**Using forest health monitoring to assess aspen forest cover change in the southern Rockies ecoregion.** Rogers, Paul. 2002. *Forest Ecology and Management*. 155: 223–236.

### **Ecosystem management**

**Disentangling sampling and ecological explanations underlying species-area relationships.** Cam, Emmanuelle; Nichols, James D.; Hines, James E.; Sauer, John R.; Alpizar-Jara, Russell; Flather, Curtis H. 2002. *Ecology*. 83(4): 1118–1130.

**Effects of exotic plant invasions and introduced biological control agents on deer mouse ecology.** Pearson, Dean E.; McKelvey, Kevin S.; Ruggiero, Leonard F.; Ortega, Yvette K. 2001. *Peromyscus Newsletter*. 32: 19.

**Patchy reaction-diffusion and population abundance: the relative importance of habitat amount and arrangement.** Flather, Curtis H.; Bevers, Michael. 2002. *The American Naturalist*. 159(1): 40–56.

**Roads as edges: effects on birds in forested landscapes.** Ortega, Yvette K.; Capen, David E. 2002. *Forest Science*. 48(2): 1–10.

### **Fish and wildlife**

**Are American black bears (*Ursus americanus*) legitimate seed dispersers for fleshy-fruited shrubs?** Auger, Janene; Meyer, Susan E.; Black, Hal L. 2002. *American Midland Naturalist*. 147: 352–367.

**Conservation of native fishes: practical approaches, pipe dreams, and periodic renewal.** Rieman, Bruce. 2001. In: Shepard, Brad, ed. *Practical approaches for conserving native inland fishes of the West: a symposium*; 2001 June 6–8; Missoula, MT. American Fisheries Society, Montana Chapter. Available: <http://www.fisheries.org/AFSmontana>

**Consistency of mist netting and point counts in assessing landbird species richness and relative abundance during migration.** Wang, Yong; Finch, Deborah M. 2002. *The Condor*. 104: 59–72.

**Density-dependent mass gain by Wilson's Warblers during stopover.** Kelly, Jeffrey F.; DeLay, Linda S.; Finch, Deborah M. 2002. *The Auk*. 119(1): 210–213.

**DNA reveals high dispersal synchronizing the population dynamics of Canada lynx.** Schwartz, Michael K.; Mills, L. Scott; McKelvey, Kevin S.; Ruggiero, Leonard F.; Allendorf, Fred W. 2002. *Nature*. 415: 520–522.

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**Optimizing habitat location for black-tailed prairie dogs in southwestern South Dakota.** Hof, John; Bevers, Michael; Uresk, Daniel W.; Schenbeck, Gregory L. 2002. *Ecological Modelling*. 147: 11–21.

**Relationships among North American songbird trends, habitat fragmentation, and landscape occupancy.** Donovan, Therese M.; Flather, Curtis H. 2002. *Ecological Applications*. 12(2): 364–374.

### **Threatened and endangered species**

**Economics of a nest-box program for the conservation of an endangered species: a reappraisal.** Spring, Daniel A.; Bevers, Michael; Kennedy, John O. S.; Harley, Dan. 2001. *Canadian Journal of Forest Research*. 31: 1992–2003.

**Emerging issues in population viability analysis.** Reed, J. Michael; Mills, L. Scott; Dunning, John B., Jr.; Menges, Eric S.; McKelvey, Kevin S.; [and others]. 2002. *Conservation Biology*. 16(1): 7–19.

**Evaluating FIA forest inventory data for monitoring Mexican spotted owl habitat: Gila National Forest example.** Chojnacky, David C.; Dick, James L. 2000. *Western Journal of Applied Forestry*. 15(4): 195–199.

### **Technology and development**

**An improved model for spatially correlated binary responses.** Hoeting, Jennifer A.; Leecaster, Molly; Bowden, David. 2000. *Journal of Agricultural, Biological, and Environmental Statistics*. 5(1): 102–114.

**Measuring and modeling surface area of ponderosa pine needles.** Wykoff, William R. 2002. *Canadian Journal of Forest Research*. 32: 1–8.

### **Wood and wood products**

**Wood products investments in Mexico: availability of venture capital.** Betters, David R.; Aguirre-Bravo, Celedonio. 1999. *Forest Products Journal*. 49(5): 28–34.

### **Recreation/wilderness**

**Simulation of recreational use in backcountry settings: an aid to management planning.** Cole, David N. 2002. In: Arnberger, A.; Brandenburg, C.; Muhar, A., eds. *Monitoring and management of visitor flows in recreational and protected areas; proceedings*: 478–482.

**Where heart and home reside: changing constructions of place and identity.** Williams, Daniel R.; McIntyre, Norman. 2001. In: *Trends 2000: shaping the future; the 5th outdoor recreation & tourism trends symposium*; 2000 September 17–20; Lansing, MI. *Trends 2000*: 392–403. Available: <http://www.prr.msu.edu/trends2000>

### **Plant biology**

***Atriplex robusta* (Chenopodiaceae), a new perennial species from northwestern Utah.** Stutz, Howard C.; Stutz, Mildred R.; Sanderson, Stewart C. 2001. *Madrono*. 48(2): 112–115.

**Ecology and ecological genetics of seed dormancy in downy brome.** Allen, Phil S.; Meyer, Susan E. 2002. *Weed Science*. 50: 241–247.

**Lewis flax—native or exotic—cultivar or weed: implications for germplasm development.** Kitchen, Stanley G. 2002. *Certified Seed Gleanings*. 21(1): 5–6.

**Prechill temperature and duration are important in determining seed quality for 12 wildflowers.** Mogensen, Susana H. A. C.; Allen, Phil S.; Meyer, Susan E. 2001. *Seed Technology*. 23(2): 145–150.

**Trade-off between plant growth and defense? A comparison of sagebrush populations.** Messina, Frank J.; Durham, Susan L.; Richards, James H.; McArthur, E. Durant. 2001. *Oecologia*. 131: 43–51.

### **Pests/diseases**

**Notes on the biology and release of *Caloptilia* sp. nr. *schinella* (Walsingham) (Lepidoptera: Gracilariidae), a biological control moth for the control of the weed fire tree (*Myrica faya* Aiton) in Hawaii.** Markin, George P. 2001. *Proceedings of the Hawaiian Entomological Society*. 35: 67–76.



## **World Wide Web Publications**

These are a few of the publications available electronically on our Web site:  
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- Assessment and response to bark beetle outbreaks in the Rocky Mountain area. Report to Congress from Forest Health Protection, Washington Office, Forest Service, U.S. Department of Agriculture.** Samman, S.; Logan, J. 2000. Gen. Tech. Rep. RMRS-GTR-62.
- Benefit transfer of outdoor recreation use values: a technical document supporting the Forest Service Strategic Plan (2000 revision).** Rosenberger, R. S.; Loomis, J. B. 2001. Gen. Tech. Rep. RMRS-GTR-72.
- Data base for early postfire succession in Northern Rocky Mountain forests.** Stickney, P. F.; Campbell, R. B., Jr. 2000. Gen. Tech. Rep. RMRS-GTR-61CD.
- Ecology and conservation of lynx in the United States.** Ruggiero, L. F.; Aubry, K. B.; Buskirk, S. W.; [and others]. 1999. Gen. Tech. Rep. RMRS-GTR-30WWW.
- Fire behavior associated with the 1994 South Canyon Fire on Storm King Mountain, Colorado.** Butler, B. W.; Bartlette, R. A.; Bradshaw, L. S.; [and others]. 1998. Res. Pap. RMRS-RP-9.
- Projected use of grazed forages in the United States: 2000 to 2050: a technical document supporting the 2000 USDA Forest Service RPA Assessment.** Van Tassell, L. W.; Bartlett, E. T.; Mitchell, J. E. 2001. Gen. Tech. Rep. RMRS-GTR-82.
- Forest Health Monitoring in the Interior West: a baseline summary of forest issues, 1996–1999.** Rogers, P.; Atkins, D.; Frank, M.; Parker, D. 2001. Gen. Tech. Rep. RMRS-GTR-75.
- Linking Wilderness research and management volume 1 Wilderness fire restoration and management: an annotated reading list.** Hourdequin, Marion. 2001. Gen. Tech. Rep. RMRS-GTR-79-VOL 1.
- Livestock management in the American Southwest: ecology, society, and economics.** Jemison, R.; Raish, C., eds. 2000. Elsevier Science Ltd. 612 p.
- Models of vegetative change for landscape planning: a comparison of FETM, LANDSUM, SIMPPLE, and VDDT.** Barrett, T. M. 2001. Gen. Tech. Rep. RMRS-GTR-76WWW.
- Monitoring wilderness stream ecosystems.** Davis, J. G.; Minshall, G. W.; Robinson, C. T.; Landres, P. 2001. Gen. Tech. Rep. RMRS-GTR-70.
- Physiological attributes of 11 northwest conifer species.** Korol, Ronni L. 2001. Gen. Tech. Rep. RMRS-GTR-73.
- Rangeland resource trends in the United States: a technical document supporting the 2000 USDA Forest Service RPA Assessment.** Mitchell, J. E. 2000. Gen. Tech. Rep. RMRS-GTR-68.
- Sampling surface and subsurface particle-size distributions in wadable gravel- and cobble-bed streams for analyses in sediment transport, hydraulics, and streambed monitoring.** Bunte, K.; Abt, S. R. 2001. Gen. Tech. Rep. RMRS-GTR-74.
- Sustaining aspen in Western landscapes: symposium proceedings; 2000 June 13–15; Grand Junction, CO.** Shepperd, W. D.; Binkley, D.; Bartos, D. L.; Stohlgren, T. J. 2001. Proc. RMRS-P-18.
- Visitor use density and wilderness experience: proceedings; 2000 June 1–3; Missoula, MT.** Freimund, W. A.; Cole, D. N., comps. 2001. Proc. RMRS-P-20.
- White pine in the American West: a vanishing species—can we save it?** Neuenschwander, L. F.; Byler, J. W.; Harvey, A. E.; [and others]. 1999. Gen. Tech. Rep. RMRS-GTR-35.
- Wilderness recreation use estimation: a handbook of methods and systems.** Watson, A. E.; Cole, D. N.; Turner, D. L.; Reynolds, P. S. 2000. Gen. Tech. Rep. RMRS-GTR-56.
- Wildland fire in ecosystems: effects of fire on fauna.** Smith, J. K., ed. 2000. Gen. Tech. Rep. RMRS-GTR-42-VOL. 1.
- Wildland fire in ecosystems: effects of fire on flora.** Brown, J. K.; Smith, J. K., eds. 2001. Gen. Tech. Rep. RMRS-GTR-42-VOL. 2.





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