

# RMRS-GTR-42 Vol. 6: Wildland Fire in Ecosystems: Fire and Nonnative Invasive Plants

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Zouhar, Kristin; Smith, Jane Kapler; Sutherland, Steve; Brooks, Matthew L., eds. **Wildland Fire in Ecosystems: Fire and Nonnative Invasive Plants**. Gen. Tech. Rep. RMRS-GTR-42-volume 6. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

## Abstract

This state-of-knowledge review of information on relationships between wildland fire and nonnative invasive plants can assist fire managers and other land managers concerned with prevention, detection, and eradication or control of nonnative invasive plants. The 16 chapters in this volume synthesize ecological and botanical principles regarding relationships between wildland fire and nonnative invasive plants, identify the nonnative invasive species currently of greatest concern in major bioregions of the United States, and describe emerging fire-invasive issues in each bioregion and throughout the nation. This volume can help increase understanding of plant invasions and fire and can be used in fire management and ecosystem-based management planning. The volume's first section summarizes fundamental concepts regarding fire effects on invasions by nonnative plants, effects of plant invasions on fuels and fire regimes, and use of fire to control plant invasions. The second part identifies the nonnative invasive species of greatest concern and synthesizes information on the three topics covered in part one for nonnative invasives in seven major bioregions of the United States: Northeast, Southeast, Central, Interior West, Southwest Coastal, Northwest Coastal (including Alaska), and Hawaiian Islands. The third part analyzes knowledge gaps regarding fire and nonnative invasive plants, synthesizes information on management questions (nonfire fuel treatments, postfire rehabilitation, and postfire monitoring), summarizes key concepts described throughout the volume, and discusses urgent management issues and research questions.

**Keywords:** ecosystem, fire effects, fire management, fire regime, fire severity, fuels, grass/fire cycle, invasibility, invasiveness, monitoring, nonnative species, plant community, plant invasion, plant response, plants, prescribed fire, rehabilitation, succession, vegetation, wildfire

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### **Acknowledgments**

The Rainbow Series was completed under the sponsorship of the Joint Fire Science Program, a cooperative effort of the U.S. Department of Agriculture, Forest Service, and the U.S. Department of the Interior, Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, and National Park Service. We thank these sponsors.

The authors and editors would also like to thank the following people for technical reviews, editorial suggestions, sharing of data and insights, and technical assistance: James Åkerson, Michael Batchler, Ann Camp, Tony Caprio, Geneva W. Chong, Steve Cross, Lesley A. DeFalco, Julie S. Denslow, Joseph M. DiTomaso, Lane Eskew, Amy Ferriter, Norm Forder, Neil Frakes, Kelly Ann Gorman, Jim Grace, Mick Harrington, Jeff Heys, John Hom, Todd Hutchinson, Cynthia D. Huebner, Jon E. Keeley, Charles Keller, Rudy King, Rob Klinger, Diane L. Larson, Steven O. Link, Mary Martin, Nanka McMurray, Henry McNab, Guy R. McPherson, Kyle Merriam, Melanie Miller, Scott A. Mincemoyer, David Moore, David J. Moorhead, Ronald L. Myers, Cara R. Nelson, Paul Nelson, Kate O'Brien, Glenn Palmgren, Mike Pellant, Karen J. Phillips, Thomas Poole, Steven R. Radosevich, John M. Randall, Thomas Rawinski, Paul Reeberg, Barry Rice, Julie A. Richburg, Thomas C. Roberts, David Scamardella, Thomas Schuler, Heather Schussman, Dennis Simmerman, David H. Smith, Helen Y. Smith, Marie-Louise Smith, Suzy Stevens, Thomas J. Stohlgren, Neil G. Sugihara, Elaine Kennedy Sutherland, Robert

D. Sutter, Mandy Tu, Eric Ulaszek, Peter M. Vitousek, Dale Wade, Andrew Whitman, Troy A. Wirth, Autumn M. Yanzick, and Daniel Yaussy.