

PLANT INVASION

Plant invasions on Great Plains Grasslands; status, successes, and moving forward

Authors: John F. Gaskin¹, Jack L. Butler², Erin Espeland¹, Casey D. Johnson³, Diane L. Larson⁴, Jane M. Mangold⁵, Rachel A. McGee⁶, Chuck Milner⁷, Dean E. Pearson⁸, Lora Perkins⁹, Chadley W. Prosser¹⁰, Justin B. Runyon¹¹, Zachary A. Sylvain¹, Amy Symstad¹², Daniel R. Tekiela¹³

¹USDA ARS, Northern Plains Agricultural Research Laboratory, Sidney, MT 59270 USA

²USFS Rocky Mountain Research Station, Rapid City, SD 57702 USA

³USFS, Lisbon, ND 58054 USA

⁴ U.S. Geological Survey, Northern Prairie Wildlife Research Center, St. Paul, MN 55108 USA

⁵Department of Land Resources and Environmental Sciences, Montana State University, Bozeman MT 59717 USA

⁶USFS Forest Service, Medicine Bow/Routt National Forests and Thunder Basin National Grassland, Douglas, WY 82633 USA

⁷USFS Cibola NF, Black Kettle National Grasslands, Cheyenne OK 73628 USA

⁸USFS Rocky Mountain Research Station, Missoula, MT 59807 USA

⁹Department of Natural Resource Management, South Dakota State University Brookings, SD 57007 USA

¹⁰USFS Dakota Prairie Grasslands, Bismarck ND 58501 USA

¹¹Rocky Mountain Research Station, USDA Forest Service, Bozeman, MT 59717 USA

¹²U.S. Geological Survey, Hot Springs, SD 57747 USA

¹³Department of Plant Sciences, University of Wyoming, Laramie WY USA

Abstract

Plant invasions in the North American Great Plains present unique problems for sustainable management. New and persisting noxious weeds and invasive native plant species are an ongoing threat to productivity and biodiversity of these valuable lands. Disturbance, multi-stakeholder conflicts, patchy patterns of ownership, and bureaucracy make implementation of invasion management plans difficult. In this paper we outline the status, special needs, successes and failures of plant invasion management in grasslands in terms of mission, prioritization, tools, implementation, monitoring and restoration. We describe new strategies and researched tools that have succeeded locally or are upcoming, and may be utilized across management units. We also discuss the status of managing invasions sustainably on National Grasslands, and strategies to improve interactions among stakeholders, land managers, public agencies and researchers that are required for the future of successful plant invasion management.