



United States  
Department  
of Agriculture  
Forest Service

Rocky Mountain  
Research Station

Research Note  
RMRS-RN-21-13-WWW

September 2006

## *Fuels Planning: Science Synthesis and Integration*

Social Issues Fact Sheet: 13

# Strategies for Managing Fuels and Visual Quality



Rocky Mountain  
Research Station



Pacific Northwest  
Research Station



North Central  
Research Station

*Pacific Southwest  
Research Station*

### *Synthesizing Scientific Information for Fire and Fuels Project Managers*

Social Science Team Lead:  
Pamela Jakes  
USDA Forest Service  
North Central Research Station  
1992 Folwell Avenue  
St. Paul, MN 55108  
pjakes@fs.fed.us

## Considering Aesthetics

Fuels management, like many other aspects of forest management on public land, can be highly controversial. The public's concern that forest management projects will significantly impact the scenic beauty of forested areas where people live and recreate often spurs this controversy.

Given that the public's acceptance of forest management practices, including fuels reduction, is heavily based on how forests look, fuels managers can improve their chances of success by considering aesthetics when making management decisions.

An extensive body of research into how management outcomes impact people's sense of forest aesthetics can guide how to plan and manage wildland fire and fuels reduction in ways that are more responsive to visual quality concerns.

Prime among the research findings is the importance of involving the public in management decisions, since managers' opinions about aesthetic beauty often differ from those of the general public. Also, members of the general public who lack trust in managers' decisions may want to be more involved in forest planning.

Studies suggest a three-part general strategy for managing fuels and visual quality: planning, implementation, and monitoring.

## Planning

- Involve the public in the planning process.
- Use a multidisciplinary team for fuels management, including landscape architects, to help evaluate the visual impacts of management proposals.
- Use visual assessment tools to determine how sensitive an area is to visual change and assess management proposals.
- Plan locations of fuels treatments to avoid impacting visually sensitive areas, such as near existing homes, or along scenic roads and ridgelines.
- Establish natural boundaries for management areas.

## Implementation

- Protect and retain large trees by removing only enough of them to open the canopy and reduce the potential for crown fire to spread.
- Use tree thinning to improve visibility through the understory and reduce ladder fuels by removing between 25 percent and 50 percent of the smaller diameter trees, depending on location and forest type.
- Mitigate the visual impacts of prescribed fire in sensitive areas by clearing around the bases of large trees prior to a burn and timing burns for fastest revegetation.

- Use “cues to care” to show that the forest is actively being managed, such as cleaning the edges of a prescribed burn adjacent to roads or making other improvements.
- Whenever possible, involve volunteers in planning and implementing fuels management projects.

- Provide information about fuels management through interpretive signs and brochures that show the target landscape and give a timeframe for its regeneration after treatment.
- Practice adaptive management; after fuels treatments, assess the impacts of management decisions on visual quality, and incorporate this information into your next fuels management project.

## Maintenance

- Minimize woody debris and slash from tree thinning by mulching, and removing or burning debris.
- Enhance revegetation of disturbed areas, such as along access roads and staging areas, by seeding and fertilizing responsibly.



Piling and burning material from forest thinning can lessen the visual impacts of fuels hazard reduction in more heavily used parts of the forest. Photo: L. Kruger

## Source

Ryan, Robert L. 2005. Social science to improve fuels management: a synthesis of research on aesthetics and fuels management. Gen. Tech. Rep. NC-261. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 58 p. Available online at <http://ncrs.fs.fed.us/pubs/viewpub.asp?key=3514> [2006, August 25]. For a hard copy, contact Pamela Jakes at [pjakes@fs.fed.us](mailto:pjakes@fs.fed.us).

## Additional Aesthetics Fact Sheets

*Strategies for Managing Fuels and Visual Quality* is one of a series of four fact sheets on the topic of aesthetics and fuels management. See also *Landscape Preference in Forested Ecosystems*, Social Issues Fact Sheet 14 (RMRS RN-21-14-WWW); *Landscape Change and Aesthetics*, Social Issues Fact Sheet 15 (RMRS RN-21-15-WWW); and *Prescribed Fire and Visual Quality*, Social Issues Fact Sheet 16 (RMRS RN-21-16-WWW).

## Social Science Team Fact Sheets

Look for fact sheet topics from the Social Science Team including information on developing personal responsibility for fuels reduction, communicating fire hazard, topics for community fire plans, guidelines for community education, collaboration, and the “golden rule” for communicating fire hazard to people.

Fuels Planning: Science Synthesis and Integration is an inter-agency research/management partnership to support the Ten-Year Fire Plan, led by Russell T. Graham, RMRS, and Sarah M. McCaffrey, NCRS.

## Fuels Planning: Synthesis and Integration

This fact sheet is one in a series being produced as part of a larger project supported by the USDA Forest Service to synthesize new knowledge and information relevant to fire and fuels management. Fact sheets address topics related to stand structure, environmental impacts, economics, and human responses to these factors. Information in the fact sheets is targeted for the dry forests of the Inland West, but is often applicable across broad regions of the country. For more information, please visit our Web site at: [www.fs.fed.us/fire/tech\\_transfer/synthesis/synthesis\\_index](http://www.fs.fed.us/fire/tech_transfer/synthesis/synthesis_index)