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Fuels Planning: Science Synthesis and Integration

Social Issues Fact Sheet: 16

Prescribed Fire and Visual Quality



Rocky Mountain
Research Station



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*Synthesizing
Scientific
Information
for Fire and Fuels
Project Managers*

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Varied Impacts

The impacts of prescribed forest burning on visual quality vary widely, depending on how and when the treatment is carried out, and when visual quality is assessed. Research shows that, while prescribed burning and other fuels treatments can lower visual quality in some situations, they can also improve it in others.

Prescribed fire can mimic natural disturbance, like wildland fire, but the public perceives the blackened and charred remnants negatively. Even low-intensity prescribed burning intended to clear understory vegetation can leave scorched earth and charred trunks. Long after the rest of the forest has greened-up, people perceive these long-term remnants of fire negatively. This is especially true when more severe fires kill significant numbers of overstory trees.



Low-intensity prescribed fire can help restore native ecosystems but may lower scenic beauty ratings until the burn area has greened-up. Photo: J. Szymoniak

Visual Aspects of Different Levels of Burning

Researchers have compared the fuels reduction, aesthetic perceptions, and revenue potential of different fuels reduction treatments, with the different treatments including various levels of prescribed forest burning. They have found that the minimal impact treatment (light thinning from below, with slash piled and burned) was the most aesthetically preferred in ponderosa pine forests. The revenue production treatment (moderate thinning of mature, commercial-grade trees, no burning), which reduced fire hazard and produced the most income, received moderately high aesthetics ratings. The forest restoration treatment (light

thinning and broadcast burning) was the most effective at reducing fire hazard but rated lowest aesthetically due to fire scars.

Interestingly, in the same study, people gave untreated forest stands only moderate aesthetic ratings, which supports the notion that fuels management can increase scenic beauty ratings. The study also found that not treating fuel loads can have aesthetic consequences—a control area that burned from wildland fire and then was salvage logged received the most negative aesthetic ratings.

In another study, low-severity fires actually increased scenic beauty ratings of a ponderosa pine ecosystem, especially a year or two after the fires. But high-severity crown fires decreased scenic beauty ratings. The researchers attributed this to the fact that low-severity prescribed fire cleared out some of the dense understory vegetation, opened up views into the forest, and increased herbaceous ground cover.

Time and Scenic Beauty

Short-term scenic benefits of prescribed fire were evident in a study that looked at the scenic impacts of burning slash after forest thinning. Initially, people perceived the forest treated with prescribed fire more negatively than they did an area in which the dead wood and slash remained. But after one growing season, the burned site was rated much more scenic than the control plot with its woody debris.

After a 5-year period, people rated the two sites virtually equal in appearance. The study shows that prescribed burning of slash can increase scenic beauty in the short term by

removing woody debris, which is considered unsightly by forest visitors, and by enhancing regeneration of the understory.

It is important to note that the prescribed fire must be thorough enough to remove dead woody debris. A study in Montana found that partly burned woody slash lowered scenic beauty ratings for up to 15 years after timber harvesting, because the larger woody debris had not yet decomposed. Areas where dead woody debris had been removed after timber harvesting received more positive scenic ratings.

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.

Additional Aesthetics Fact Sheets

Prescribed Fire and Visual Quality is one of a series of four fact sheets on the topic of aesthetics and fuels management. See also *Strategies for Managing Fuels and Visual Quality*, Social Issues Fact Sheet 13 (RMRS RN-21-13-WWW); *Landscape Preference in Forested Ecosystems*, Social Issues Fact Sheet 14 (RMRS RN-21-14-WWW); and *Landscape Change and Aesthetics*, Social Issues Fact Sheet 15 (RMRS RN-21-15-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