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Webinar Brief for Resource Managers

Great Basin Fire Science Delivery | 1664 N. Virginia St./MS 0186, Reno, NV 89557 | 775-784-1107 | emb@cabnr.unr.edu

Livestock grazing effects on fuel loads for wildland fire in sagebrush dominated ecosystems

To Be Presented on 29 April 2013 by Karen Launchbaugh and Eva Strand, Professors of Rangeland Ecology and Management, University of Idaho

Project Summary:

This project provides a literature review and scientific synthesis of interactions between livestock grazing, invasive species, and fire behavior in the sagebrush dominated ecosystems of the Great Basin. We discuss ways that contemporary livestock grazing practices affect the extent and severity of fires in sagebrush, including cumulative effects that occur on decadal time scales to alter plant community composition and those observed as yearly changes in fuel loads.

Abstract:

Herbivory and fire are natural interacting forces that contribute to the maintenance of rangeland ecosystems. Wildfires are becoming larger and more frequent in the sagebrush dominated ecosystems of the Great Basin compared to conditions a few decades ago, potentially altering plant communities and habitat. This overview describes what is currently known about the cumulative impacts of historic livestock grazing patterns and short-term effects of livestock grazing on fire and fuels in sagebrush steppe and semi-desert. Over years and decades grazing can alter fuel characteristics of ecosystems. On a yearly basis, grazing can reduce the amount and alter the continuity of fine fuels changing wildlife fire spread and intensity. However, these effects depend on weather conditions and plant community characteristics. As weather conditions become extreme, the influence of grazing on fire behavior is limited especially in communities dominated by woody plants. Cumulative ecosystem effects must be considered when designing grazing regimes for fuel treatments.

Management Implications

- Livestock grazing in the Great Basin can increase woody plant cover and reduce fine fuels, which alters wildland fire behavior.
- Livestock grazing can promote or suppress the abundance of invasive annual grasses affecting the extent and behavior of wildfires.
- Grazing affects fire behavior when fire weather conditions are moderate: relative humidity is high, temperatures and wind speed are low.

Most Relevant References:

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