The Need for Grazing Fine Fuels after Wet Periods

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Introduction: Cheatgrass (*Bromus tectorum* L.) is a highly flammable invasive winter annual. At higher elevations, perennial grasses historically fueled rangeland fires along with shrubs and trees where they became dominant in the absence fire. Where management allows expanses of accumulated fine or woody fuel, mega fires create homogenous vegetation that fails to provide habitat for sage-grouse and other wildlife that require a patchy mosaic. Resistance and resilience of sagebrush rangelands depend on proactive fire and fuels management. The focus on fuels management was elevated by Interior Secretarial Order 3335 which mentions appropriate livestock grazing for management of fine fuels. Variation in production make sustaining forage for livestock difficult in dry years and create excess fine fuel in wet years. There is time and there are many tools to harvest the fine fuel with grazing before it burns.

Methods: The State and Federal agencies have mapped burned areas each year. The United States Geological Survey records surface water flow of the Humboldt River at various locations including near Imlay Nevada.

Results and Discussion: Figure 1 shows the area of the Humboldt River watershed and the area burned. Figure 2 shows the relationship between river flow and area burned in the Humboldt River Basin.

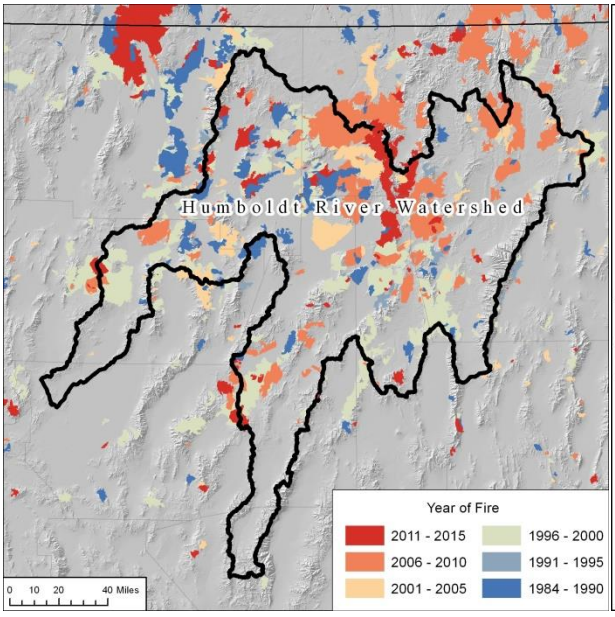

Figure 1 Fires in the Humboldt River Watershed

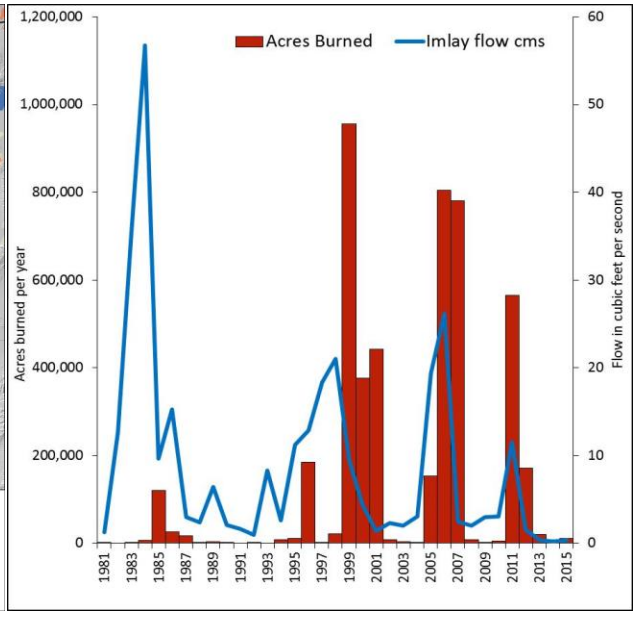

Figure 2 Humboldt River discharge and area burned

Big fire years come after one or more very wet years. This lag time provides a window of for fall grazing to consume residual fuels (Schmelzer et al. 2014). Grazing during summer-winter dormancy greatly reduces risks to perennial plants needed for rangeland resistance and resilience. The misperception that cheatgrass is only desired forage while it is green may stem from Aldo Leopold's "A Sand County

Almanac". Some literature linking grazing to increased cheatgrass (Reisner et al. 2013) and actions to reduce public land AUMs in Nevada by 16% between 1980 and 1999 ((Resource Concepts Inc. 2001) suffer from missing key concepts. Management of the timing, duration, and recovery from grazing are all critical determinants of vegetation responses in addition to the intensity of grazing. With strong management, grazing can be a tool for good rather than simply a land use to be restricted for less bad. Some tools and strategies could include:

Focused grazing in fuel breaks;
Stockmanship;
Herded sheep;
Protein supplements in a line;
Water hauled to troughs placed in a line;
Electric fences or permanent fencing;
Grazing some pastures more intensely so fires burn only other smaller areas;
Growing season grazing with care for perennials by following the green up the mountain;
Dormant season grazing when perennials are less vulnerable
Rotating off pastures in spring when cheatgrass becomes less palatable than green perennials.
Sources of AUMs/livestock
    Using existing AUMs in targeted grazing;
    Temporary nonrenewable (TNR) grazing AUMs preapproved with forage production criteria;
    Stewardship contracting;
    Retaining calves after weaning;
    Purchasing stockers and supplementing with protein to increase energy (dry grass) consumption;
    Retaining cull cows until spring when prices are higher;

Conclusions and Implications: Dependence on cheatgrass noted for variable forage production is not economically easy for ranchers. Management to concentrate grazing into linear fuel breaks in years of overabundant cheatgrass requires management that requires effort and expense. The expense of proactive management is warranted by loss of forage after fire and tremendous fire control costs, expense born by ranchers and agencies. The challenge for agencies, ranchers and other stakeholders is to find solutions to mega-fires after very wet years. An ecologically, economically and socially acceptable solution could provide for sagebrush habitats within resilient ecosystems using feasible livestock grazing for fine fuels management that is socially dependable and sufficiently flexible to be effective. Recent drought environmental assessments have missed this larger problem. It is time to plan for climate variability and include the fire problem that is even more consequential than drought. Finding durable solutions requires cooperation among diverse stakeholders. Collaboration will improve decisions, relationships, communities and habitats.

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