Seminar Series

Date	Speaker - *Affiliation*	Seminar Title	Host	Video Recording
Oct 24	Travis Belote- *The Wilderness Society*	Ecology and Restoration in Mixed Severity Fire Regimes: Climate thresholds, Beta diversity, and Collaboration in Montana forests	Heyerdahl	View Recording
Oct 31	Alan Watson - *RMRS, Leopold Institute;* Brooke McBride - *University of Montana;* Roian Matt - *Confederated Salish & Kootenai Tribes*	Mountain Sitter sent Coyote: A search for wisdom in addressing vulnerability in changing fire-adapted cultural landscapes	Heyerdahl	View Recording
Nov 7	Bob Keane - *RMRS*	Evaluating the performance and mapping of three fuel classification systems using Forest Inventory and Analysis surface fuel measurements	Heyerdahl/ Loehman	View Recording
Nov 14	Dave McWethy - *Montana State University*	Transforming landscapes with fire: rapid deforestation following Polynesian arrival in New Zealand	Heyerdahl	View Recording
Nov 21	Dave Campbell - *Bitterroot National Forest*	Lessons learned from Wilderness fire - looking forward to the next 50 years of Wilderness stewardship	Sutherland	View Recording
Dec 5	Joseph O'Brien - *Southern Research Station*	The ecology of fuels: Connecting fire behavior and community dynamics at multiple scales	Heyerdahl	

FireLab

Seminar Series

Travis Belote,
The Wilderness Society

Date: October 24, 2013
Time: 11:00 AM-12:00 PM
Where: The Fire Science Lab
5775 West U.S. HWY 10,
Missoula, MT 59808.

For more information, please contact **missoula_firelab_seminars@fs.fed.us** **or visit www.firelab.org**

Ecology and Restoration in Mixed Severity Fire Regimes: Climate thresholds, Beta diversity, and Collaboration in Montana forests

Mixed severity fire regimes historically maintained landscape heterogeneity in fuels and ecological conditions, which limited fire spread and supported diverse species assemblages. Setting goals for ecosystem management and restoration targets in in these forests, where the frequency, severity, and effects of fires historically varied in time and space has proven difficult. I will discuss several ongoing research projects related to the ecology of forests historically characterized by mixed severity fire including: (1) a conceptual and empirical overview of mixed severity fire, (2) research that tests hypotheses on tree mortality in western larch forests in the Bob Marshall Wilderness, (3) climate-driven fire thresholds across ecoregions of Montana and Idaho; and (4) describe new research on the influence of fire severity on beta diversity of plant and pollinator communities across Montana. My interest in mixed severity fire arose from my work with the Southwestern Crown of the Continent Collaborative, formed in response to the Collaborative Forest Landscape Restoration Program (CFLRP). We are attempting to use a collaborative adaptive management process to design and monitoring forest restoration projects –mostly in forests characterized by mixed severity fire regimes- across three districts of three national forests.

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Mountain Sitter sent Coyote: A search for wisdom in addressing vulnerability in changing fire-adapted cultural landscapes

Overview of work being done to understand the role of traditional phenological knowledge and local meanings attached to landscapes to protect cultural values in fire and fuels management planning with indigenous North American people

Alan Watson, ALWRI
Brooke McBride, U of Montana,
Roian Matt, Confederated Salish & Kootenai Tribes

Date: October 31, 2013
Time: 11:00 AM-12:00 PM
Where: The Fire Science Lab
5775 West U.S. HWY 10,
Missoula, MT 59808.

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Seminar Series

Bob Keane,
Missoula Fire Lab

Date: November 7, 2013
Time: 11:00 AM-12:00 PM
Where: The Fire Science Lab
5775 West U.S. HWY 10,
Missoula, MT 59808.

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Evaluating the performance and mapping of three fuel classification systems using Forest Inventory and Analysis surface fuel measurements

Fuel Loading Models (FLMs) and Fuel Characteristic Classification System (FCCSs) fuelbeds are used throughout wildland fire science and management to simplify fuel inputs into fire behavior and effects models, but they have yet to be thoroughly evaluated with field data. In this study, we used a large dataset of Forest Inventory and Analysis (FIA) surface fuel estimates (n=13,138) to create a new fuel classification called Fuel Type Groups (FTGs) from FIA forest type groups, and then keyed an FLM, FCCS, and FTG class to each FIA plot based on fuel loadings and stand conditions. We then compared FIA sampled loadings to the keyed class loading values for four surface fuel components (duff, litter, fine woody debris, coarse woody debris) and to mapped FLM, FCCS, and FTG class loading values from spatial fuel products. We found poor performances (R2<0.30) for most fuel component loadings in all three classifications that, in turn, contributed to poor mapping accuracies. The main reason for the poor performances is the high variability of the four fuel component loadings within classification categories and the inherent scale of this variability does not seem to match the FIA measurement scale or LANDFIRE mapping scale.

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Dave McWethy, Montana State University

Date: November 14, 2013
Time: 11:00 AM-12:00 PM
Where: The Fire Science Lab
5775 West U.S. HWY 10,
Missoula, MT 59808.

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Transforming landscapes with fire: rapid deforestation following Polynesian arrival in New Zealand

Increased incidence of large fires around much of the world in recent decades raises questions about human and non-human drivers of fire and the likelihood of increased fire activity in the future. We set out to examine where human-set fires and feedbacks are likely to be most pronounced in temperate forests worldwide. Paleofire records suggest that the most dynamic and persistent ecosystem transitions occur where human activities increase landscape flammability through fire-vegetation feedbacks. Rapid deforestation following Polynesian arrival ca. 700 years ago provides a dramatic example of these human mediated feedbacks and the ecological consequences. Here, the conversion of nearly half of native forests to open vegetation is documented in pollen and charcoal records and occurred within years to decades following human arrival. The rapid rate of deforestation at the hands of small transient populations resulted from the intrinsic vulnerability of the native flora to fire and from positive feedbacks in post-fire vegetation recovery that increased landscape flammability. Spatially targeting burning in highly-flammable early-seral vegetation in forests rarely experiencing fire was sufficient to create an alternate fire-prone stable state. The New Zealand example illustrates how seemingly stable forest ecosystems can experience rapid and permanent conversions. Forest loss in New Zealand is among the fastest ecological transitions documented in the Holocene; yet equally rapid transitions can be expected in present-day regions wherever positive feedbacks support alternate fire-inhibiting, fire-prone stable states.

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Seminar Series

Dave Campbell, Bitterroot National Forest

Date: November 21, 2013
Time: 11:00 AM-12:00 PM
Where: The Fire Science Lab
5775 West U.S. HWY 10,
Missoula, MT 59808.

For more information, please contact **missoula_firelab_seminars@fs.fed.us** **or visit www.firelab.org**

Lessons learned from Wilderness fire - looking forward to the next 50 years of Wilderness stewardship

The presentation will show examples and fire history from the 40+ years of Wilderness fire management in the Selway-Bitterroot Wilderness as well as the Frank Church – River of no Return Wilderness focusing on what has been learned and challenges that lay ahead. Climate change as well as public engagement and education are challenges to be faced in managing fire in Wilderness. Wilderness fire offers an opportunity for research as well as a need to better tell the ecological story to a wider audience. The 50th anniversary of the Wilderness act in 2014 is an opportunity to engage people in these challenges.