

June 27-28, 2023

## Research Priorities: topics and voting results

One objective of the Wilderness Fire Science Workshop was to capture information about priority research needs from agency wilderness and fire managers. On the first day of the workshop an initial set of research themes were posted around the room in the morning, divided into six categories based on the results of a recent wilderness fire science review (Kreider et al. 2023): 1. *Barriers to wilderness fire management*; 2. *Role of prescribed fire in wilderness*; 3. *Role of Indigenous burning in wilderness*; 4. *Climate change and fire*; 5. *Fire effects beyond vegetation*; 6. *Other research needs*. Throughout the day, workshop participants were given time to generate specific research topics or questions under these themes, adding handwritten questions and research topics to the posters. At the end of the day everyone was given five stickers and time to vote by placing stickers next to their priority topics. Participants (Appendix A) were instructed to allocate their votes however they wanted (e.g., multiple votes for a single topic was allowed). RMRS and University scientists and staff on the workshop organizing committee did not vote.

The two topics that received the most votes, at 22 each, related to social science research into public support or opposition for wilderness fire, and studying when or where prescribed fire is needed in the wilderness to restore natural fire cycles. The research topic of fire messaging for social buy-in received the third most votes at 18. Two closely related topics under the theme of Indigenous Burning in wilderness, how to build a cultural burn program in modern wilderness and how to effectively and respectfully collaborate with tribes, received 16 and 9 votes respectively for a combined total of 25 votes. The following tables present the complete list of research topics proposed by workshop participants and the count of votes received.

### Theme: Barriers to wilderness fire management

Topic/Question	Votes
Social science research on public support/opposition for wilderness fire	22
Barriers to wilderness fire in small wilderness or those without established wilderness fire programs	8
Review of decision-making tools to help manage wilderness fire	4
Lack of fire experience with line officers	4
Are our fire behavior models suitable for fire prediction in wilderness?	2
Maintaining access to recreation infrastructure	0

### Theme: Role of prescribed fire in wilderness

<i>Topic/Question</i>	<i>Votes</i>
When and where is prescribed fire needed to restore natural fire cycles?	22
Where's the priority? In wilderness or closer to values at risk?	9
Review of case studies of prescribed fire in wilderness	0
Should we interfere or just let it happen naturally?	0
More social science on public agency support for prescribed fire in wilderness	0

### Theme: Role of Indigenous Burning in wilderness

<i>Topic/Question</i>	<i>Votes</i>
How to build a cultural burn program in modern wilderness?	16
How to effectively and respectfully collaborate with tribes	9
Research on frequency and timing of historical cultural burning	6
Clarify why prescribed burning was done, will indigenous peoples be involved in planning and do they want the same resources as outcomes as they did historically?	4
What this looks like with climate change, history of suppression and changing fire regimes	2

### Theme: Climate change and fire

<i>Topic/Question</i>	<i>Votes</i>
How will climate change impact fire regimes/effects in wilderness?	17
Does recent fire "buffer" severe fire effects under climate change?	4
Living in an environment of extremes which is not in our historical record, how do we move forward with this much uncertainty?	2

### Theme: Fire effects beyond vegetation

<i>Topic/Question</i>	<i>Votes</i>
Fire messaging for social buy-in	18
Possible ties of fire in wilderness to the wilderness experience	8
Fire effects of wildlife	3
Pyrodiversity-biodiversity hypothesis	2
Visitor perceptions of mechanized use to restore access to trails in high severity/large burned areas	1
Fire effects on aquatic systems	0
Fire effects on infrastructure (roads & trails)	0

## Literature Cited

Kreider, M.R., M.R. Jaffe, J.K. Berkey, S.A. Parks, and A.J. Larson. 2023. The scientific value of fire in wilderness. *Fire Ecology* 19(1):36. <https://doi.org/10.1186/s42408-023-00195-2>

## Appendix A. Workshop participants

Name	Unit	Position	Workshop role
Abbie Jossie	Bitterroot NF, Darby-Sula RD	District Ranger	Participant
Andrew Larson	University of Montana	Professor	Organizer
Antonio Torres	University of Montana	Videographer	Videographer
Brandon Knapton	Nez Perce Clearwater NF, Lochsa-Powell RD	District Ranger	Participant
Bret Lewis	Bitterroot NF, West Fork RD	District Fire Management Officer	Participant
Carson Ramsey	Bitterroot NF, West Fork RD	Fuels Intern	Participant
Chris J Waverek	Salmon-Challis, North Fork RD, R4	District Ranger	Participant
Christopher Noyes	Nez Perce Clearwater NF, Lochsa Powell RD	Deputy District Ranger	Participant
Chuck Mark	Salmon-Challis NF	Forest Supervisor	Participant
Clare Boerigter	Aldo Leopold Wilderness Research Institute	Wilderness Fire Research Fellow	Facilitator
Clayton Cornwell	Bitterroot NF, Darby-Sula RD	Deputy District Ranger	Participant
Cody Phillips	BLM, Darby Forest Service	Detailed Fire Management Officer	Participant
Cory Davis	NRFNS, University Montana	Science Communication Specialist	Organizer
Dan Pliley	Bitterroot NF, West Fork RD	District Ranger	Participant
David Fox	Bitterroot NF, West Fork RD	District Fuels Specialist	Presenter/participant
David Hogen	Payette National Forest, Krassel RD	District Ranger	Participant
Elena Thomas	Region 1	Wilderness and W+S Rivers Resource Assistant	Participant
Ella Hall	University of Montana, NRFNS	Assistant Coordinator	Organizer
Forrest Behm	Payette NF, Krassel RD	FMO - Fire Management Officer	Participant
Heath Perrine	Salmon-Challis NF	District Ranger	Participant

Heidi Blair	UM Wilderness Institute	Wilderness Communications Coordinator	Facilitator
Jacob Long	Bitterroot NF	Recreation Program Manager	Participant
Jai Lust	Bitterroot NF, West Fork RD	Wilderness Ranger	Participant
Jeffrey Chandler	RMRS and University of Montana	Master's Student	Participant
John D Wood	Bitterroot NF, Darby RD	FMO	Participant
Jon Dorman	Bitterroot NF, SO	Recreation Planner	Participant
Jonathan Coop	Western Colorado University	Professor	Presenter/Participant
Kearstin Edwards	Nez Perce-Clearwater NF, SO	Wilderness Specialist w/READ/REAF quals	Participant
Kelsey Dyer	Bitterroot NF, West Fork RD	Permit Administrator	Participant
Kevin Sakamoto	BLM, Idaho Falls District, Challis Field Office	Biological Science Student Trainee	Participant
Kim Davis	RMRS Missoula Fire Lab	Research Ecologist	Presenter/Participant
Lauren Myers	Rocky Mountain Research Station	Resource Assistant/ Affiliate	Participant
Lisa Eby	University of Montana	Professor of Aquatic Ecology	Presenter/Participant
Mark Kreider	University of Montana	PhD student	Presenter/Participant
Mark Smith	Bitterroot NF, West Fork RD	Forestry Tech, Trails	Participant
Marty Mitzkus	Nez Perce-Clearwater NF, SO	Deputy Forest Supervisor	Participant
Matt Anderson	Bitterroot NF	Forest Supervisor	Participant
Morgan Lawrence	USDA Northwest Climate Hub	ORISE Climate Change Communications Fellow	Participant
Olga Helmy	Aldo Leopold Wilderness Research Institute	Science Delivery Specialist	Facilitator
Reese Bennett	Colville NF, Newport/Sullivan Lake RD	Fuels AFMO	Participant
Riley Rhoades	Salmon-Challis NF	Fire Management Specialist (Fuels)	Participant
Samuel Hillman	RMRS Missoula Fire Lab	Post-doctoral researcher	Participant
Sean Parks	Aldo Leopold Wilderness Research Institute	Research Scientist	Organizer
Signe Leirfallom	RMRS Missoula Fire Lab	Science Delivery Specialist	Organizer
Spencer Vieira	University of Montana	Grad student	Participant
Tegan Brown	RMRS Missoula Fire Lab	Post-doctoral Researcher	Participant
Tom Schultz	Payette NF, SO	Deputy Fire Staff Officer	Participant
Zachary Lee	Bitterroot NF, Darby-Sula RD	AFMO	Participant