UFRI Report

Forestry and wildfire research needs in Utah: Insights from a statewide survey

Catrin Edgeley, Larissa Yocom, Lucy Nelson
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Background

The Utah Forest Restoration Institute (UFRI) at Utah State University was recently established to collaboratively develop and deliver objective science to managers, policymakers, and communities to inform the management of healthy, fire-resilient, and climate-adapted forests and woodlands. Existing documentation of practitioner-driven research needs in Utah is not comprehensive or contemporary. We conducted a survey to understand current research needs related to forest and fire management in Utah and the surrounding region to help inform UFRI's work and document topics that could benefit from improved best available scientific information.

Approach

We conducted an online survey during May and June of 2026. We identified potential participants through systematic searches of agency and organization web pages for individuals with responsibilities or insights tied to Utah forests and fire management, generating a list of 180 valid email addresses. Respondents were asked to rank forestry topics by research need, provide input on subtopics to prioritize in Utah, and share their science communication preferences. We received 66 valid responses for a 36.7% response rate.

Respondents represented state agencies (43.2%), federal agencies (33%), universities and other academic entities (7.8%), local government (5.9%), private businesses and consultants (5.9%), and private landowner or community representatives (3.9%). Respondents held positions that varied in scale and rank across relevant domains, including forestry (e.g., forester, silviculturist, district ranger), fuels management (e.g., fuels planner, fuels technician), fire (e.g., crew boss, fire warden, fire management officer, hotshot), and built environments (e.g., urban forester, wildland urban interface specialist, communications specialist).

Current Research Priorities

Participants were asked to categorize 12 scientific topic areas as high, medium, or low priority based on how urgent they thought more Utah-specific research on that topic was. Table 1 shows the ranking of “high priority” responses. Respondents could list as many ‘high priority” topics as they liked; the average respondent placed five topics in this category.

Respondents were asked to provide further detail on their research needs within any topic area they had categorized as “high priority.” Each topic area had between four and 11 sub-topics to review, developed through a review of current literature and input from an expert panel. The top three sub-topics with the most significant need are nested under each topic header in Table 1.

Several themes emerged across in-demand subtopics. There was widespread interest in science that could improve planning in both wildland and urban environments. Practitioners also sought science that could advance understanding of fire and fuels behavior under changing environmental conditions, paired with insights into more efficient fuels management. Navigating policy both to create opportunities and remove barriers was

also a common theme, particularly across broader topics focused on fire and fire use. Improved communication with the public about various elements of forest and fire risk and management was also in demand.

Table 1. *Number and percentage of respondents (n = 66) who ranked each of 12 forestry and fire-related topics as "high priority" for more state-specific research. If a respondent indicated a topic was high priority, they were then asked to assign a level of need for several subtopics; the top three subtopics for each area are also presented below.*

#	Topic	N	%	Top three sub-topics with the most significant research need
1	Fuels planning, management, and treatment	44	66.7	• The effectiveness of different fuel treatment techniques during fires (70.3%) • Optimizing the placement of fuel treatments (64.9%) • Fuel treatment effectiveness in different Utah vegetation types (62.2%)
2	Forest health	40	60.6	• Invasive species management 72.7% • The effect of invasive species on fire behavior (51.5%) • The effect of invasive species on fire return intervals (48.5%)
3	Prescribed fire	36	54.5	• Planning for prescribed fires (64.7%) • Prescribed fire effects (60.0%) • Federal barriers to prescribed fire (57.1%)
4	Post-fire vegetation and hydrology	34	51.5	• Post-fire landscape management (66.7%) • Flooding, debris flows, mud flows, and other secondary hazards (59.3%) • Vegetation type conversions (55.6%)
5	Forest and fire policy	32	48.5	• Funding for forest health, restoration, and hazardous fuels reduction (84.6%) • Managed wildfire (84.6%) • Barriers and opportunities for policy change (80.8%)
6	Wildland-urban interface environments	29	43.9	• Successful planning and zoning or development policy (66.7%) • Hazard mitigation in the WUI (58.3%) • Firefighting strategies in the WUI (52.2%)
7	Fire and climate	26	39.4	• Fire-climate interactions (75%) • Climate change impacts on vegetation (75%) • Managing fire regime changes (73.7%)
8	Fire behavior	22	33.3	• Changes in fire behavior over time (82.4%) • Fuel treatment impacts on fire behavior (70.6%) • Climate influence on fire behavior (64.7%)
9	Outreach and education	18	27.3	• Public education on fire (84.6%) • Public communication about fire risk and impacts (76.9%) • Fire science outreach to private landowners (69.2%)
10	Traditional Ecological Knowledge	15	22.7	• Facilitating support for Indigenous fire use and management (85.7%) • Effectively supporting cultural fire use via policy (71.4%) • Impact of Indigenous fire use on fire regimes (71.4%)
11	Forestry-related social science	11	16.7	• Support or opposition for wildfire risk reduction strategies (77.8%) • Public perceptions of fire management (77.8%) • Risk communication about wildfire (66/7%)
12	Smoke management and impacts	7	10.6	• Smoke mitigation during prescribed burns (83.3%) • Smoke impacts to firefighters (66.7%) • Smoke impacts to the public (50.0%)

Science Communication Preferences

Approximately 89% of respondents reported using scientific research findings to inform their work at least once a month. Nearly half of respondents used scientific research at least once a week (46%). About one in five (21%) used scientific research daily. Federal and state agency employees used scientific information more frequently than respondents from other entities.

Figure 1 presents responses to several questions about respondents' experiences accessing forest science in Utah. Demand for Utah-specific research was high. Respondents largely agreed that place-specific science had the greatest management value (70.6% expressed some level of agreement). However, only 25.5% of respondents agreed that enough local research existed to inform their Utah-based work. Respondents who were federal, state, and local government employees were most likely to seek place-specific research.

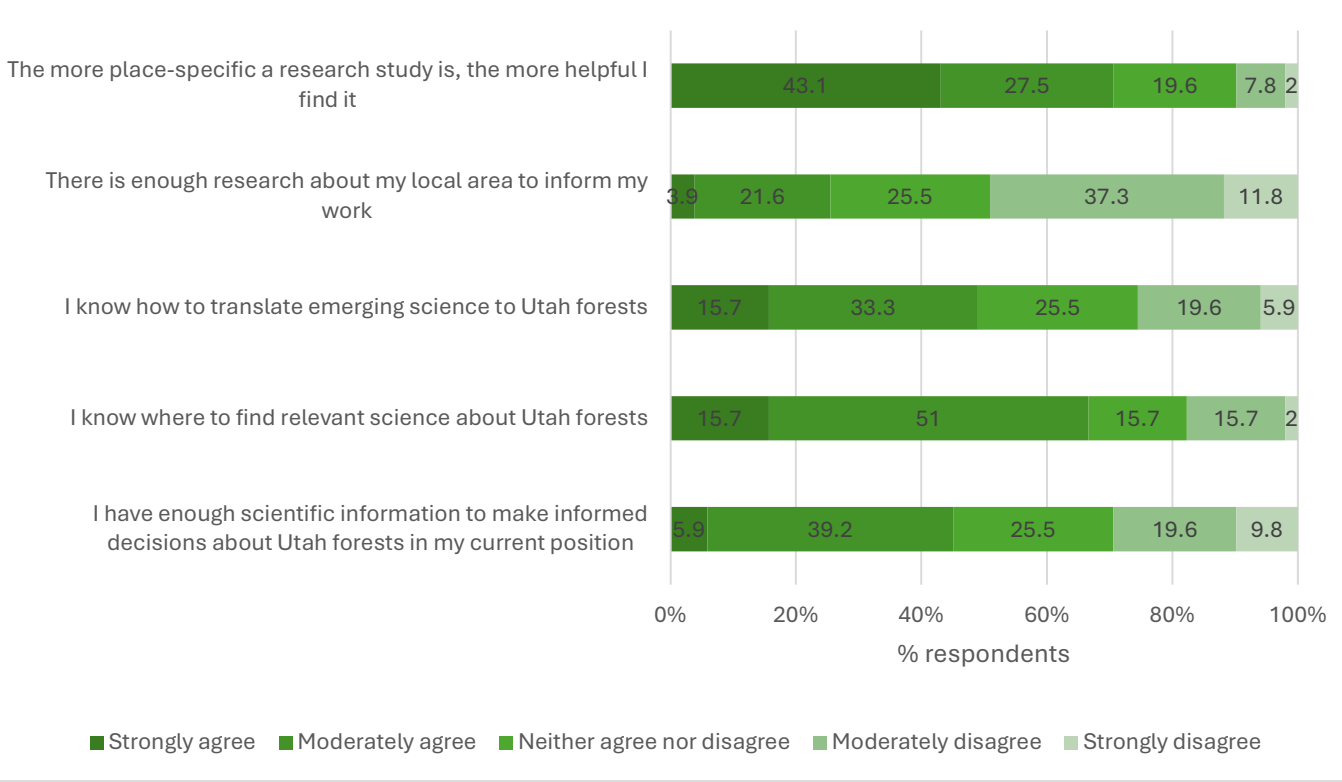

Figure 1. *Respondent experiences accessing and applying scientific information.*

Less than half of respondents (45.1%) agreed they had enough scientific information to make informed decisions about Utah forests. Similarly, about half (49%) of respondents felt confident translating emerging science to Utah forests, suggesting that support for science implementation may be valuable.

> ***"I would love to see the paradigm shift from focusing on what we stand to lose due to wildfire and climate change to what we have to gain and where our opportunities lie within land stewardship."***
> **--Survey Respondent**

Respondents were also asked to indicate how useful different communication formats were when it came to sharing scientific information about Utah forests and wildfire (Figure 2). The most useful sources were field trips (52.1% found them extremely useful), fact sheets (50%), and demonstration areas or sites (50%). Respondents were most likely to report that they did not use topical synthesis papers (28.4%), social media (18.4%) and YouTube videos (8%).

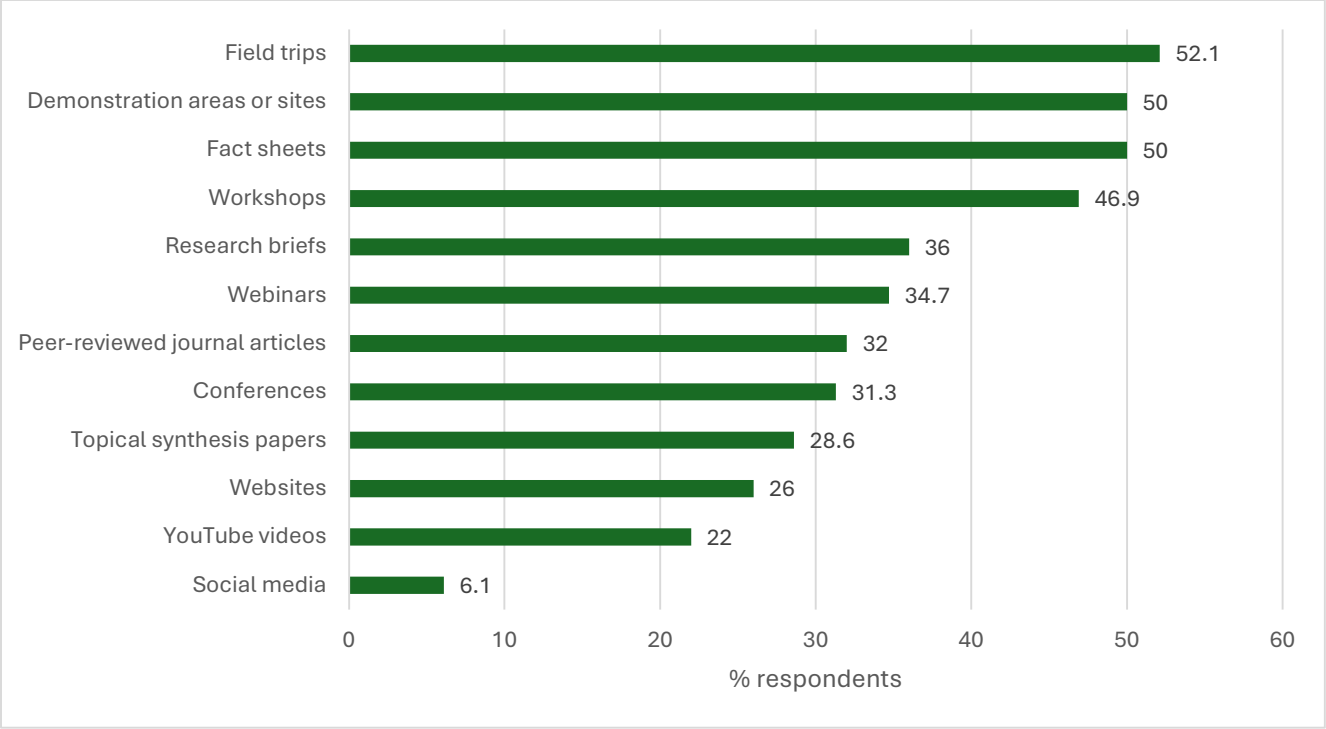

Figure 2. *Respondent science communication preferences.*

Respondents were invited to provide additional comments throughout the survey. Many of these comments emphasized an urgent need for more scientific information amid rapidly changing environmental conditions and indicated a strong desire to learn more about the forests they manage through place-based science-management partnerships. Others expressed concern for workforce wellbeing, economic dimensions of forest management, plant and animal species diversity, and the efficacy of restoration efforts more broadly.

> **"*Connecting truly place-based, quality research with policy relevance is what I perceive to be the top priority in Utah*."**
> **--Survey Respondent**

Summary

This survey underscores the time-sensitive nature of investment in forest and fire science in Utah to protect the public and improve landscape functioning. Practitioners statewide seek improved availability of place-specific science across a wide range of topics that can inform forest management decisions.

Contact

Catrin Edgeley, catrin.edgeley@usu.edu

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The Utah Forest Restoration Institute collaboratively develops and delivers objective science to managers, policymakers, and communities to inform the management of healthy, fire-resilient, and climate-adapted forests and woodlands.

Utah Forest Restoration Institute, 5230 Old Main Hill, Logan, UT 84322-5230
Office: 435-797-2730 | Lab: 435-797-2788 | Email: ufri@usu.edu