Scale & Sustain Working Group Report

Wildfire Science & Technology Commons
October 2025

Executive Summary

The Scale & Sustain Working Group is focused on demonstrating and deepening the Wildfire Commons' real-world value—showing that diverse users leverage the Commons for innovation, and ensuring that this use can endure and grow. The group's work centers on two intertwined challenges: sustaining the platform itself as use scales and supporting the sustainability of the communities and partners who rely on it. Convened monthly from February through October 2025, this interdisciplinary team of academic researchers, industry professionals, and community leaders worked to identify scalable collaboration opportunities with existing networks and communities in the wildfire management space. The working group assesses pathways for the Wildfire Commons expansion, impact, and community engagement, including metrics for use and impact. Key areas of focus include discussing strategic partnerships to broaden the Wildfire Commons' community base and examining the patterns and successes of partnerships within the evolving FireTech landscape.

Working Group Members:

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Working Group Analysis

<u>What gaps or unmet needs does the Wildfire Commons fill?</u>

The Wildfire Commons addresses critical gaps in wildfire research coordination and knowledge sharing. Key needs include better categorization of wildfire issues, improved direct access to subject matter experts, and enhanced capabilities for rapidly forming cross-sector collaborations with broader participant engagement.

The community currently has the opportunity to cross collaborate around the data and products from an interactive research perspective to extend existing solutions. The Wildfire Commons is a facilitator for the community to engage with data and products. Thus, building an opportunity for further community building and adoption. The Wildfire Commons offers a Community Catalog supported by well-defined

experimental and simulation datasets, along with standardized versions that facilitate adoption and provide readily available tutorials with examples. Within active use needs, having a service that enables simplified access to data, models, tools, and services.

The Wildfire Commons also facilitates translation of research to practice through community standards, and making available from the community analysis capabilities that can support future adoption of solutions that have been applied to prior prescribed burns and wildland fires. Ultimately, the Wildfire Commons can serve as a hub to identify existing resources, experts, and analytics in real time. Building on community network mapping examples like Scott Kaplan's work through the Expert Network to show connections and create a dynamic visualization of the expertise readily available in this space.

What do other similar efforts to the Wildfire Commons do well that we could learn from?

Existing efforts, such as the WUI Data Commons, demonstrate effective approaches to wildfire resilience through data transparency, targeted stakeholder engagement informing community needs, and a user-friendly interface. Planscape serves as a successful model for integrating state and federal data with scientific research in an accessible decision-support tool format designed for wildfire resilience planning.

While not directly in the wildfire space, NSF-funded NHERI centers, particularly SimCenter (headquartered at UC Berkeley) and DesignSafe-CI (headquartered at UT Austin), have provided simulation tools, databases, and computational resources to the natural hazards research communities.

Beyond specific examples, important lessons learned include the value of documenting critical events and identifying bottleneck points to make efforts more useful for ground application. Another key takeaway highlighted across these efforts is the importance of providing guidance on how to utilize the data and models stored within these platforms—offering tutorials and proof-of-concept examples that make the process much easier for wider shareability, collaboration, and utilization by the broader community.

What partnerships or collaborations could the Wildfire Commons pursue to launch the Marketplace?

The Wildfire Commons Marketplace could benefit from partnerships that leverage existing infrastructure for people connections, current project databases, and data libraries. A market survey would help identify the specific needs of the community, allowing for the design of further adoption of the Wildfire Commons' open access pathways and enabling the community to quickly learn about the services (open source, subscription, etc.) that product owners within the community offer in a seamless viewable way that enables future partnerships. Critical partnerships should include deep integration with federal agencies like USDA, DOI, BLM, and Tribal land departments, as well as the new US Wildland Fire Service (the merger of fire science between USDA and DOI). State agencies, fire consortia, and private industry should also be brought in as key collaborators.

Incentivization strategies could take the form of wider research reach through blogs, stories, demonstration events, or monthly lecture series. Research connections through community case studies, hackathons/challenges, and internship-style programs, could further strengthen engagement. Good opportunity as well for the working group to identify partners that could participate and the ways to scale this type of program.

What trends or changes could benefit the further development of the Wildfire Commons?

The growing emphasis on real-time research dissemination presents significant opportunities for the development of the Wildfire Commons. Increased access to early-stage research work and early-stage researchers could provide valuable content and engagement opportunities for the platform's continued growth. Integrated simulation and analysis platforms should be a big draw for the community, bringing together tools and resources that currently exist in silos.

From a Marketplace development perspective, trends in service validation could inform the platform's design. Most companies list clients on their websites, and the Marketplace could validate services by showing client lists. Considering models like Angi (formerly Angie's List), which display service offerings in a user-friendly manner, could be valuable. Provider submission should be simple and designed in a way that allows for the expression of academic offerings and cutting-edge solutions, bringing awareness to innovative work that might otherwise remain hidden within academic circles.

Priorities for Next Phase of Working Group

Priority #1: Establish Strategic Partnership Framework and Onboard Key Communities

Develop a comprehensive partnership strategic and curated strategy that identifies, prioritizes, and systematically onboards existing wildfire-related communities, networks, and organizations onto the Wildfire Commons. This includes creating partnership templates, outreach protocols, and integration pathways for academic institutions, government agencies, NGOs, and industry partners. With this patterned approach, more partnership development can take place and maximize the Wildfire Commons' reach and impact. Within the working group, identifying the partners and groupings of stakeholders with a visual towards readiness to participate in the Wildfire Commons vs. where additional community building might need to take place first. Partnering with efforts like Climate & Wildfire Institute (CWI) could help extend the community building further.

Priority #2: Create Sustainable Governance Model for R&D in the Wildfire Commons

Develop governance structures and pathways that support the lifecycle of wildfire innovations—from early-stage R&D collaboration within the Wildfire Commons through product maturation and eventual transition to independent sustainability. This includes establishing clear frameworks for when and how projects graduate from the Commons as they move toward commercialization or operational deployment.