

PUTTING FIRE SCIENCE ON THE GROUND – SURVEY RESULTS

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INTRODUCTION AND PROBLEM STATEMENT

Across the southern U.S., an average of 68,000 wildfires burn approximately 940,000 acres each year. In addition, prescribed fire for managing wildland fuels is applied more frequently in the South than in any other region – more than 2 million acres were treated in 2003 (Andreu and Hermansen-Báez 2008). With 89% of the South's forest land in private ownership (Wear and Greis 2002), applying fire science in the region must consider both private and public lands.

Currently, fire professionals can potentially access new fire science information through a variety of outreach delivery systems, such as the Encyclopedia for Southern Fire Science, Tall Timbers Research Station Fire Ecology Database and Fire Ecology Conferences and Proceedings, FRAMES Southern Fire Portal, InterfaceSouth, prescribed fire council meetings, and a number of different journals. Despite the many existing science delivery systems in the region, little is known about whether fire managers and practitioners actually use these resources, and whether they are informed about and engaged in applying recent advances in fire science to fire management. Understanding the current needs for and shortcomings in access to fire science information is the critical first step to improving the delivery of such information to fire professionals and policy makers.

RESEARCH FOCUS, METHODS AND SAMPLE

A regional consortium, called the Southern Fire Exchange (SFE), was created through funding by the U.S. federal Joint Fire Sciences Program for an initial two years to share fire science widely throughout the southeastern U.S. The SFE is a team of fire managers, scientists, program administrators, outreach specialists, and educators from the University of Florida, North Carolina State University, the US Forest Service Southern Research Station, Tall Timbers Research Station, Southeast Fire Ecology Partnership, The Nature Conservancy, The National Interagency Prescribed Fire Training Center, the Southern Regional Extension Forestry office, The Association of Fire Ecology, Joseph W. Jones Ecological Research Center, The American Forest Foundation, Southern Group of State Foresters, and US Environmental Protection Agency. We sought to evaluate what fire science delivery systems were accessed by the southern fire community and how these delivery systems could be refined and improved.

We conducted an electronic, web based survey of fire information users throughout the 13 southern states in October and November 2009. Following Dillman's Tailored Design Method (2000), the survey was sent to nearly 4,000 individuals. It was impossible for us to know the entire population that could have been surveyed. Consequently, this was a purposive sample that leveraged existing contacts throughout the wildfire user community. Initial contacts included University of Florida and North Carolina State University project team contacts with fire chiefs, state foresters, US Forest Service fire managers, National Park Service fire managers, prescribed fire councils, US Bureau of Indian Affairs, American Forest Foundation, National Woodland Owners Association, registered foresters/consulting foresters, Society of American Foresters, Firewise coordinators, Quail Unlimited, and county foresters

from some of the highest fire incidence counties. We gave all respondents the opportunity to provide suggestions for additional potential participants in the survey. We then followed up to see if those individuals had already received the survey. If they had not, we sent them the survey.

The survey was sent to a total of 3,971 recipients; 499 of these were non-deliverable, 63 opted out because they no longer worked in fire or had moved from the region, and 54 requested removal from our list. This meant we had 3,355 effective recipients, with 976 total respondents or an effective response rate of 29%.

Out of these respondents, 86% made or helped make decisions related to prescribed fire and 60% made or helped make decisions related to wildfire, whether activities were on public or private lands. The respondent breakdown included 55% public agencies, 30% private entities, 5% academic, 5% non-profit and 5% other. State representation included 39% from NC, 20% FL, 8% SC, 6% GA, 5% MS, 4% each VA and AL, 3% each TX and LA, 2% each TN and AR, and 1% each KY, OK and other. Without knowing the to what degree the target population represented our actual respondents, it was hard to know whether or not we oversampled or undersampled. However, we likely oversampled those with an interest in prescribed fire versus wildfire, oversampled individuals from NC and FL, and oversampled public agency and private entity respondents.

FINDINGS

Respondents were asked 26 questions about current fire information they use, new fire information they would like, sources and formats of information they use, barriers to the use of information, and their preferences for the types of information our consortium could provide them. A variety of possible answers for each question was derived from focus groups in six states in September and October 2009.

Current Fire Information

In response to the question, “what type of information do you currently use,” respondents most commonly used information about *weather (78%), permitting requirements (58%), resource availability (57%), landscape (57%), and GIS maps/datasets (54%)*. The “most useful” information was *weather, GIS maps/datasets, landscape, fire behavior and permitting requirements*. Respondents most commonly use this information to *meet resource management objectives (62%), ensure firefighter or personnel safety (57%), minimize risk to human communities and health (57%), meet legal requirements (54%) and plan and set priorities (54%)*.

Information that was “not very useful” or “not used” by respondents included *fire surrogate studies, cost comparisons for various fire management prescriptions, and governmental reports on wildfire trends*.

New Fire Information

When responding to the question, “what new or additional info would be helpful,” respondents indicated that developments that would “most” improve fire science information were *improved access to information (65%), information on growing season burns (64%), fire information specific to Southeastern ecosystems (60%), best practices for prescribed fire (60%), and better smoke modeling and prediction (54%)*. Respondents indicated they would use this new information to *meet resource management objectives (60%), ensure firefighter and personnel safety (54%), minimize risk to human communities and health (51%) and improve decision-making and provide decision support (51%)*.

Sources of Information—Current and Future

When asked, “who currently provides information to you,” respondents indicated that they currently get information from *state agencies (63%), experts or experienced fire managers (51%) and federal agencies (45%)*. *Federal research programs* and *prescribed fire councils* were mentioned by only 29% of respondents. Respondents indicated that their first choices for receiving information in the future would be *experts or experienced fire managers* and *state agencies*. Their second choices included *federal agencies* and *federal research programs*.

Formats of Information

Respondent indicated that the formats they found “very useful” included *in-person courses (68%), the internet (57%) and meetings and networking (49%)*. No single format received a majority response for being “very easy” for finding what users needed. *Meetings and networking (56%), printed materials (55%), in-person courses (52%) and internet (49%)* were identified as being “somewhat easy” for finding what users needed. Preferred formats for future use included *demonstration based/experiential coursework, a one-stop website, and field meetings with colleagues and experts*.

Barriers

When asked what prevents respondents from obtaining or using information, barriers identified as “very significant” included *competing priorities (55%), lack of time to peruse literature (46%), and budget, personnel and travel limitations (40%)*.

Advice for the Consortium

Respondents offered advice about what the consortium could do to get information to them. “Very helpful” actions included *be credible/trustworthy (74%), create a one-stop, searchable website (73%), focus on fire science and information specific to the Southeast (70%), actively distribute information to fire managers (60%), and be visible (53%)*. Respondents were asked to rank actions that would be most helpful in facilitating networking and knowledge exchange. The top rated actions included *host/facilitate hands-on workshops and connect researchers and fire managers/users*.

CONCLUSIONS/IMPLICATIONS

With the benefit of this information, the Southern Fire Exchange will focus its efforts during its initial two years on enhancing and addressing the identified needs and shortcomings of current fire science delivery mechanisms. Our primary objectives are *to coordinate, improve, and increase access to existing fire science dissemination mechanisms, while developing syntheses, workshop/demonstrations, and a web-based platform to fill gaps in available resources*. We will create and publish audience-targeted research syntheses and a one-stop open-source portal with fire science information specific to southern fire practitioner objectives and priorities, and coordinate and improve existing demonstration and workshop activities. We aim to integrate and coordinate our one-stop approach with existing web-based delivery systems. *Our long-term objective is to pave a two-way path by which the fire research community and fire use practitioners aid each other’s efforts toward meeting management objectives and expanding relevant knowledge*.

Literature Cited

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