

GENESIS OF AN OAK-FIRE SCIENCE CONSORTIUM

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Abstract.—With respect to fire management and practices, one of the most overlooked regions lies in the middle of the country. In this region there is a critical need for both recognition of fire’s importance and sharing of fire information and expertise. Recently we proposed and were awarded funding by the Joint Fire Science Program to initiate the planning phase for a regional fire consortium. The purpose of the consortium will be to promote the dissemination of fire information across the interior United States and to identify fire information needs of oak-dominated communities such as woodlands, forests, savannas, and barrens. Geographically, the consortium region will cover: 1) the Interior Lowland Plateau Ecoregion in Illinois, Indiana, central Kentucky and Tennessee; 2) the Missouri, Arkansas, and Oklahoma Ozarks; 3) the Ouachita Mountains of Arkansas and Oklahoma; and 4) the Cross Timbers Region in Texas, Oklahoma, and Kansas. This region coincides with the southwestern half of the Central Hardwoods Forest Region. The tasks of this consortium will be to disseminate fire information, connect fire professionals, and efficiently address fire issues within our region. If supported, the success and the future direction of the consortium will be driven by end-users, their input, and involvement.

INTRODUCTION

With respect to fire management and fire practices, one of the most overlooked regions lies in the middle of the country (Pyne 2009). In this region there is a critical need for both recognition of fire’s importance and sharing of fire information and expertise. Fire science delivery is severely limited with dissemination of research results relying primarily on scientific publications or presentations, if the research is disseminated at all. There is no formal fire science laboratory at any level (federal, state, or private) and fire information delivery is primarily through the Forest Service’s Northern Research Station. Smaller groups such as the Fire Learning Network (The Nature Conservancy) and Prescribed Fire Councils exist, however there is limited correspondence,

collaborative activities, or advertisement by these groups, particularly at a large scale and encompassing regional fire regimes. Many prescribed fire programs and demonstration plots exist in the region that would benefit fire discussions between practitioners and scientists. Long-term research programs that provide cutting-edge fire information exist in the region (e.g., OK-FIRE [Carlson and others 2010], pyric herbivory [Fuhlendorf and others 2009], fire history) that would benefit fire managers outside the region; however their exposure has been limited.

We are in the planning stages towards developing a fire information consortium that will promote the dissemination of fire information across the interior United States and that will focus on fire

information needs of oak-dominated communities such as woodlands, forests, savannas, and barrens. A consortium is defined as a group of individuals or organizations formed to undertake an activity that is beyond the capabilities of the individual members. This consortium will connect fire professionals and will address fire issues within the region. Consortium activities will be determined by a needs assessment of end users, but are likely to include

- developing an information clearinghouse (e.g., website) to serve the consortium region;
- highlighting regional fire management and research;
- development/access to online fire bibliography;
- presentations via webinars regarding regional management or research activities;
- organization of fire management and fire science symposia at national, regional, and state conferences; and
- supporting and initiating field visits for fire professionals to meet and discuss their respective needs.

FIRE CONSORTIUM REGION

The geographic region of this consortium consists primarily of the oak-hickory and western mesophytic forest regions (Braun 1950). The region is bordered by the tallgrass prairie of the Great Plains to the north, the Appalachian Mountains to the east, the Mississippi alluvial plain and the Upper West Gulf Coastal plain to the south, and the southern mixed and shortgrass prairie to the west (Fig. 1). The region covers nearly 1 million hectares and touches 11 states. The unifying features of this region include: 1) historically (last 1000+ yr) oaks were a dominant tree species and 2) fire was an important disturbance affecting vegetation development and the corresponding habitat. Oaks remain an important component of this region despite fire disturbance being largely lost due to fire suppression, land use changes, agriculture, and urbanization. Within this region, agricultural commodities (e.g., livestock, crops, and wood products) are economically important and have had important influences on fire regimes.

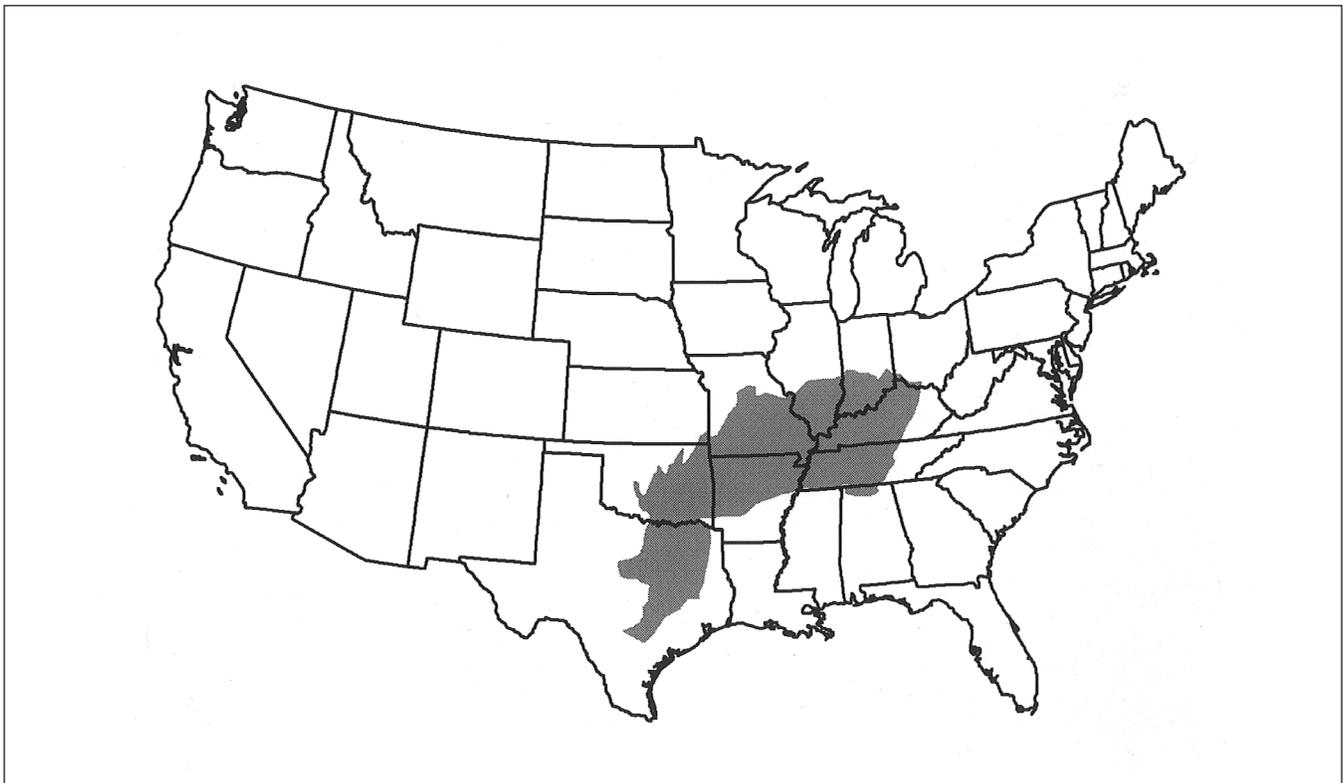


Figure 1.—The approximate region of the planned oak-fire consortium.

Largely due to historic repeated burning, many oak communities within this region were comprised of savannas and woodlands with open canopies capable of supporting diverse herbaceous plant assemblages. In addition to fire, grazing by native herbivores likely influenced this vegetation structure, however little is known to what extent and importance. Furthermore, prolonged drought, though potentially infrequent, was likely an important factor influencing vegetation and annual acres burned. Historically, fire frequency broadly varied along a latitudinal gradient that was a function of the region's continental climate (Guyette and others 2006). Fire frequencies likely averaged 10 years or less for these fire-maintained communities. Fire regime characteristics common to the region include: dominance of dormant season fire events, relatively low lightning ignition frequency, surface fires, low- to mixed-severity fires, and potential for broad extent fires in areas with low to moderate topographic relief.

Today, prescribed fire is commonly used in the region for ecosystem management, but its acceptance ranges widely (McCarty 2005). Roughly half a million acres or more currently burn annually from prescribed and wildland fires. Fire research has historically and is currently being conducted within the region by scientists at federal and state agencies and universities. Key fire organizations include the U.S. Forest Service, Northern Research Station Units (Delaware, OH, Columbia, MO, and the Eastern Area Modeling Consortium), Oklahoma State University, Texas A&M University, Texas Tech University, University of Arkansas, University of Illinois, University of Kentucky, and University of Missouri. Fire science is generally communicated to end users via federal agency proceedings, scientific journals, university extension, and professional societal meetings.

The region contains a diverse representation of federal public lands including: 5 national forests, 11 national park service units, 11 wildlife refuges, 1 Native American administered land, and numerous Department of Defense managed lands. Currently there is no formal group that organizes and disseminates fire

science for agencies or organizations within the region. Many challenges of fire managers are specific to the region proposed. Key regional challenges related to fire include: controlling tree expansion into woodlands (juniper, oak, and pine), restoration of historic vegetation communities, oak regeneration, ecosystem management, invasive and exotic species control, managing small remnant grasslands, and assessing and managing fire risk in grassland and woodland ecosystems.

FIRE CONSORTIUM ORGANIZATION

Ultimately much of the planning and activities of the consortium will be determined from surveys and needs assessments of the end users. Although the consortium proposal was led by the authors we envision the consortium to be a user-driven consortium in that its goals and activities come from input of end-users. During proposal development fire professionals from throughout the region expressed their interest in the consortium formation. Consortia already developed in other regions of the United States have provided examples and guidance for how this consortium may be organized. We intend to provide a fire science delivery system for information that targets a wide range of end users and utilizes existing Web resources where available. We intend to design the consortium to be an inclusive organization that will provide information for fire science professionals to fire novices.

Based on the guidance of the Joint Fire Science Program, we expect the consortium to have a coordinator, governing board, and advisory board. Activities of the consortium will be directed by a governing board comprised of fire managers, practitioners, and scientists. The governing board will provide a long-term vision, guidance, and review of consortium effectiveness. These individuals will be geographically distributed across the consortium region, and represent a collaborative and multi-institutional team.

The advisory board will guide the activities of the consortium. The role of the advisory board will be to ensure the consortium is addressing its overarching mission, meeting the goals of the Joint Fire Science Program's Fire Science Delivery Network, and effectively administering programs. The advisory board will evaluate the effectiveness of the consortium by interviewing end-users and evaluating the amount of participation in consortium supported conferences or workshops. The advisory board will consist of representatives from state and federal agencies, regional nongovernmental organizations (NGOs), private landowners, and private industry. Additionally the advisory board will include a mix of researchers, managers, and administrators. This mix will ensure that the consortium is addressing as wide range of fire issues pertinent to the region.

Intended Focus of the Consortium

The guiding principles of the consortium will mirror those of the Joint Fire Science Delivery Network:

1. Be inclusive; make sure all partners have the opportunity to be involved.
2. Serve as a neutral science partner.
3. Be customer driven, both in structure and function.
4. Operate collaboratively by fostering joint management and science communication.
5. Be innovative; pursue new and creative ways to disseminate knowledge.
6. Facilitate the flow of fire science information, dialogue of new science findings, and needs of resource managers and policymakers.

FUTURE WORK

The consortium will collate fire science information and develop a method for sharing this information in an interactive format. The primary focus of the consortium will be to assist in the dissemination of fire science information relevant to the needs of fire practitioners and researchers. The consortium will work to address the objectives of the Joint Fire Science Programs fire science delivery network.

Dissemination of information and building relationships. Information will be disseminated by the consortium through many outlets. A website will act as a portal for regional fire information, events, and regional fire professional contacts. Research highlights and publications will be made available through the website. The consortium will utilize traditional web-based information sharing tools but will remain receptive to emerging methods for information distribution (e.g., mobile messaging).

Listing and describing existing research and synthesis information/methods to assess the quality and applicability of research. One of the first goals of the consortium will be to identify fire science research that has occurred within the region and develop an online bibliography that will include peer reviewed literature, gray literature, and internal reports. While the bibliography is being developed, manuscripts will be reviewed and the information assessed for applicability across the region. In addition to developing a regional bibliography, a geodatabase of current fire research will be created, perhaps using existing resources (e.g., Conservation Registry).

Demonstrating research on the ground. The consortium will ensure that fire research and monitoring projects within the region are highlighted. Updates of ongoing fire research will be made available through the consortium using multiple methods. We will host field days where researchers and fire managers can meet and interact at fire research or management sites and receive tours of on-the-ground operations. Additionally, field projects will be highlighted through webinars. Webinars will permit information sharing with consortium members across the region without the time and expense of travel. Webinars will be archived and made available for future access.

Other methods for highlighting research occurring in the region will include consortium participation in regional natural resource conferences. Regional conferences include, but are not limited to, the Central Hardwoods Conference, the North American Prairie

Conference, the Midwest Savanna and Woodland Conference, and the Midwest Fish and Wildlife Conference. Although the consortium's focus will be regional, we will also be represented at national fire meetings.

Adaptive management. The consortium has the potential to act as a catalyst for the development of adaptive management projects across the region. By enabling communication between researchers and fire managers throughout the region, the consortium can promote cooperation and collaboration in the development of studies utilizing an adaptive management framework.

New partnerships. The consortium will promote establishing new relationships between fire researchers and practitioners. Consortium led meetings such as field days, regional conferences, and teleconferences will enable managers to provide input into fire research direction and needs.

Needs assessment for end-user communities. A needs assessment will be conducted to identify end-users and their fire information needs. Needs assessments will be conducted using an online survey, phone interviews, and face-to-face interactions. We envision end-users will include private landowners, private, state, federal, and Native American land managers, fire professionals, and scientists. In addition, we expect that over 50 colleges and universities and numerous NGOs within the region will become active in the consortium.

CONCLUSION

A final proposal for this planned consortium will be considered in October 2011. If funded, consortium operations should be underway quickly based on the planning-phase work. Existing consortia across the United States have been funded with 2-year budgets with possible continuation. Additional support for consortia is leveraged from partners who benefit from its existence.

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The content of this paper reflects the views of the author(s), who are responsible for the facts and accuracy of the information presented herein.