



Scientists taking measurements during an event at Tall Timbers Research Station in Florida. The Prescribed Fire Science Consortium focuses on integrated fuels, fire behavior, and fire effects measurements and prioritizes coproduction of actionable science working closely with land managers.

# The Prescribed **Fire** Science Consortium

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**P**rescribed fire is used on more than 12 million acres (4.9 million hectares) in the United States annually. It is a critical strategic management tool for hazardous fuels reduction and the resilience of fire-adapted landscapes. In recognition of its value, the President's Budget for fiscal year 2020 called for \$450 million in funding for hazardous fuels reduction for USDA alone.

## **RATIONALE**

Because managers intentionally choose to introduce fire onto a land management unit for a specific objective or set of objectives, science-based decision making is essential. However, the lion's share of national research investment in fire science has focused on wildfires and suppression needs, neglecting the field of prescribed fire science and leading to a relative paucity of tools for modeling prescribed fire behavior and effects in ways that managers need to safely increase the pace and scale of treatments.

In response, the Prescribed Fire Science Consortium (PFSC) was formed in 2016 by a group of multidisciplinary fire scientists and managers with a focus on the modernization of science, with specific applicability to safe and effective application of prescribed fire.

**The consortium's coproduction events are increasing the pace and scale of prescribed fire across the United States.**

The PFSC takes a coproduction approach to prescribed fire science, with science discovery and delivery as closely aligned with operational needs as possible. The consortium comprises an ensemble of scientists from across

the Nation, including representatives from each Forest Service research station, the Tall Timbers Research Station, the Los Alamos National Laboratory, and numerous academic institutions. In addition, the PFSC is guided and assisted by land managers from the Forest Service and State agencies like the New Jersey Forest Fire Service and the Florida Division of Forestry as well as by private land managers and landowners.

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**The PFSC is one of several models for developing scientist/manager coproduction of actionable science.**

### **ACTIVITIES**

The PFSC has sponsored coproduction events in Florida and Montana that spanned several days and included both experimental and operational prescribed burning. These events served to deepen scientist/manager relationships, conduct fireline experimentation for a variety of objectives, and set the stage for future work. The next coproduction event is planned in the New Jersey Pinelands for September 2020.

The PFSC has aggregated successful prescribed fire research from across the country, building on previous investments in projects at Eglin Air Force Base, in the New Jersey Pinelands, and at other locations to create new soft-funding opportunities. Over the past several years, consortium teams have made 10 successful research proposals to the U.S. Department of Defense Strategic Environmental

Research and Development Program. Broadly, their work advances prescribed fire research by:

1. Supporting the next generation of fire dynamics modeling,
2. Improving scientific understanding and modeling of the fluid dynamics of surface fire regimes,
3. Improving scientific understanding of how fire/atmospheric feedbacks determine smoke and emissions production and transport, and
4. Developing advanced understanding of fire effects and responses.

Managers have been involved at every step of the process and will continue to play a critical role in operational applications of the science. The collaboration of researchers and managers through the PFSC has gained international interest and likely represents the largest combined investment in fire science currently underway.

### **SCIENCE/MANAGEMENT COLLABORATION**

The PFSC is one of several models for developing scientist/manager coproduction of actionable science. The consortium's events featuring "elbow-to-elbow" interactions between fire scientists and fire managers are doing much to increase the pace and scale of prescribed fire across the United States. An often-overlooked benefit from the PFSC is building rapport and breaking down barriers between fire practitioners and fire scientists. Fire science and management share a responsibility for encouraging and collectively supporting the consortium and similar activities.

**The consortium takes a coproduction approach, with science discovery and delivery as closely aligned with operational needs as possible.**