

## **JFSP Research Needs Worksheet Prescribed Fire on Private Lands**

**Topic:** Prescribed fire in many cases can be the best tool for maintaining and restoring ecosystems, reducing hazardous fuels, and managing agricultural lands (Hiers et al. 2020). Across the country and especially within the southeastern U.S. there are increasing efforts by public agencies, private entities and NGOs to expand the use of prescribed fire on private lands for the benefits listed above. Private landowners own about 86% of the forested area (Butler and Wear 2013) in the southeastern U.S. and fire management on these lands is important for maintaining imperiled species habitat and mitigating wildfire risk. In the southeastern U.S., private lands cost-share programs, landowner groups, education campaigns and incentive programs have been funded, developed, and implemented at various scales to promote use of prescribed fire on private non-industrial lands. Although these investments are extensive, little research exists on the efficacy of strategies for successful establishment of goal-oriented prescribed fire programs on private lands. Research is needed to identify and develop successful models and strategies for establishing prescribed fire management on private lands. Ultimate benefits of such research include increased landscape resilience to wildfire, improved wildlife habitat, hydrological processes, and other ecosystem services, and efficient leveraging of taxpayer dollars through public-private partnerships.

**Science Maturity:** Social science research in the area of prescribed fire has focused largely on understanding acceptance of practices, barriers to use (Kobziar et al. 2015), and strategies for communication. Some research has investigated the links between legal liability (Wonkka et al. 2015) and other community efforts and prescribed fire implementation on private lands (Weir et al. 2016). Social science methods are well developed for collecting and analyzing data on motives of individuals, whom could be accessed through cost-share programs, prescribed fire burn teams, prescribed burn associations, and other sources.

### **Research Needs/Questions:**

- Develop a review or synthesis of the relative success of existing strategies and models for increasing prescribed fire on private lands.
- Analyze efficacy and costs of previous efforts for establishing goal-oriented prescribed fire programs on private lands.
- Provide recommendations for successfully establishing prescribed fire practice on private lands with consideration of landowner types, landscape context, geographic location, and other potentially important factors.

### **Audiences and Products:**

- Agencies and policy makers with the goal of expanding prescribed fire on private lands where needed
- Best practices and conceptual models for increasing prescribed fire on private lands
- Economic models for investing in prescribed fire expansion efforts

### **References:**

Butler, B. J., & Wear, D. N. 2013. Forest ownership dynamics of southern forests. In: Wear, David N.; Greis, John G., eds. 2013. The Southern Forest Futures Project: technical report. Gen. Tech. Rep. SRS-GTR-178. Asheville, NC: USDA-Forest Service, Southern Research Station. 103-121., 178, 103-121. [https://www.srs.fs.fed.us/pubs/gtr/gtr\\_srs178/gtr\\_srs178\\_103.pdf](https://www.srs.fs.fed.us/pubs/gtr/gtr_srs178/gtr_srs178_103.pdf)

Hiers, J.K., O'Brien, J.J., Varner, J.M. et al. 2020. Prescribed fire science: the case for a refined research agenda. *Fire Ecol* 16, 11. <https://doi.org/10.1186/s42408-020-0070-8>

Kobziar, L.N.; Godwin, D.; Taylor, L.; Watts, A.C. 2015. Perspectives on Trends, Effectiveness, and Impediments to Prescribed Burning in the Southern U.S.. *Forests* 6, 561-580. <https://doi.org/10.3390/f6030561>

Weir, J.R., Twidwell, D., and Wonkka, C.L. 2016. From Grassroots to National Alliance: The Emerging Trajectory for Landowner Prescribed Burn Associations. *Rangelands*. 38, 3. <https://doi.org/10.1016/j.rala.2016.02.005>.

Wonkka, C.L, Rogers, W.E., and Kreuter U.P. 2015. Legal Barriers to Effective Ecosystem Management: exploring linkages between liability, regulations, and prescribed fire. *Ecological Applications*. 25, 8. <https://doi.org/10.1890/14-1791.1>

**Originator:** This topic was identified by the Southern Fire Exchange Leadership Team based on quantitative and qualitative feedback recorded in the 2017 and 2019 Southern Fire Exchange regional end-user surveys and evaluations. Qualitative feedback was also provided by members of the Southern Fire Exchange Advisory Board, collaborators and partnering organizations.