



Prescribed Fire in the Southern Great Plains: Factors influencing county commissioners' decisions about burn bans

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INTRODUCTION

Burn bans are used to restrict prescribed burning during periods when it is deemed unsafe due to weather conditions, particularly hot dry conditions and high winds. County Commissioners, in conjunction with county judges, use burn bans to protect public safety in Texas and Oklahoma during periods of extreme fire danger. In Texas, burn bans can extend for 90 days and be renewed if necessary, or terminated early if conditions improve.

However, agriculture-related burns are possible during a burn ban. In both Texas and Oklahoma, both the state and the counties can issue burn bans. County burn bans can extend for 14 days and be renewed if necessary. A state of extreme fire danger must be declared first by Commissioners, with specific weather or fire behavior factors to be considered.

Despite their ability to implement burn bans, little is understood about factors affecting Commissioners' decisions to enact or grant exceptions to burn bans. To address these knowledge gaps, Commissioners' understanding of laws and regulations relating to prescribed burning were explored, and how a regulatory shift from simple to gross negligence statutes pertaining to prescribed fire might affect how they enact burn bans.

METHODS

A mail survey was used to query 300 Texas and 100 Oklahoma County Commissioners located in the Southern Great Plains. Of the 400 County Commissions included in the study, 123 returned completed questionnaires, representing an overall response rate of 30.5.

The non-response bias analysis indicated that respondents were more likely than non-respondents to have a high self-reported familiarity with prescribed fire, more time spent on fire related issues, greater comfort with prescribed fire, and have participated or been invited to participate in a prescribed fire. This indicated that respondents represent a subset of Commissioners with more direct exposure to and experience with prescribed fire.

RESULTS

About half (52%) of the respondents had been invited to participate or had participated in a prescribed fire and 47% of those respondents did so as a volunteer, and 70% of them did so with independent private landowners rather than a government agency or a Prescribed Burn Association member.

The most commonly used prescribed fire information sources used by respondents were the local fire department, fire chief, or emergency services (67%) followed by State Forest Services (40%) (Figure 1). Of the responding Commissioners, 97% reported some familiarity with prescribed fire, and no statistically significant difference was found between Texas and Oklahoma respondents (Table 1).

The large majority of Commissioners reported being comfortable with prescribed fire; 84% selected a positive score for "level of comfort" and 83% selecting a negative score for "level of discomfort". This an unanticipated result given the inclination of some Commissioners to enact and retain burn bans at times when the application of prescribed fire is most likely to result in

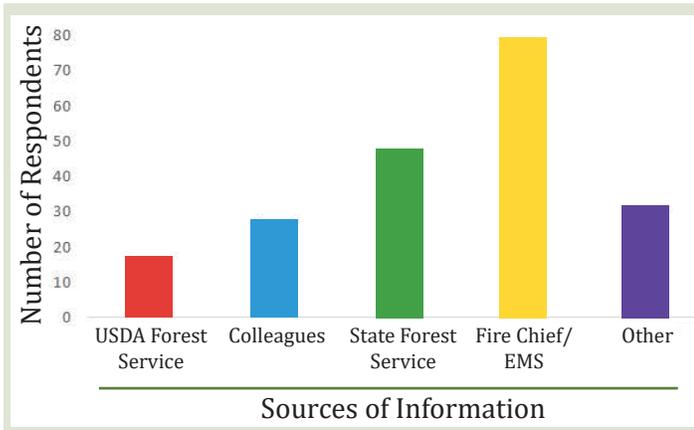


Figure 1. Sources that respondents used to obtain information about prescribed fire (N=118); Total count >118 because respondents could pick more than one response option.

woody plant mortality. Also somewhat counter intuitively, no statistically significant difference was found in Commissioners' *level of comfort* between counties with and without Prescribed Burn Association, nor between Texas and Oklahoma.

Table 1. Distribution of commissioners' self-reported familiarity with prescribed fire (N=123).

| State | Not at all familiar | Slightly familiar | Moderately familiar | Very familiar | Total |
|----------|---------------------|-------------------|---------------------|---------------|-------|
| Texas | 0 (0.0%) | 15 (34.1%) | 15 (34.1%) | 14 (32.8%) | 44 |
| Oklahoma | 4 (5.0%) | 21 (26.6%) | 33 (41.8%) | 21 (26.6%) | 79 |
| Total | 4 (3.2%) | 36 (29.3%) | 48 (39.0%) | 35 (29.5%) | 123 |

IMPLICATIONS

Use of prescribed fire during periods when fires maximize invasive woody plant mortality and restoration success has often been limited by burn bans, which are enacted by County Commissioners.

Engaging Commissioners in the application of prescribed fire can expand their support for prescribed fire and increase approval for burn ban exemptions.

Given that Commissioners frequently obtained prescribed fire information from local fire department/emergency services, providing information to those organizations and engaging them with prescribed fire could be beneficial for influencing Commissioners' decisions.

Commissioners' *level of comfort* with prescribed fire was positively associated with self-reported familiarity (knowledge) with prescribed fire, but negatively correlated with respondent age. By contrast, *level of discomfort* was negatively associated with prescribed fire knowledge and use of this brush management tool on one's land, but positively associated with awareness of local fire rules and being part of an ethnic minority.

Self-reported familiarity with prescribed fire confirmed the positive correlation with participation in the application of prescribed fire, awareness of laws related to prescribed fire, awareness of the amount of prescribed fire used in the jurisdiction and using brush control on one's land. By contrast, *self-reported familiarity with prescribed fire* was negatively correlated with being female.

Landowners who are neighbors of Commissioners and emergency service personnel, and those who are members of prescribed burn associations, could enhance Commissioners' appreciation of the need for and efficacy of prescribed fire by inviting them to participate in the applications of prescribed fires, thereby increasing support for this important rangeland restoration and wildfire mitigation tool, especially during periods when burn bans might be enacted.

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