



Jesse Kreye, Melissa Kreye, Arun Regmi



**Jesse Kreye, PhD**  
Assistant Research Professor  
Fire & Natural Resources Management  
[juk1097@psu.edu](mailto:juk1097@psu.edu)

# Evaluating Demand for Prescribed Fire on Private Lands

# Pennsylvania Prescribed Burn Practices Act

## 2009

- **Recognizes Benefits**
  - Improve & maintain wildlife habitat
  - Restore & maintain biodiversity
  - Reduce risk & severity of wildfires



# Pennsylvania Prescribed Burn Practices Act

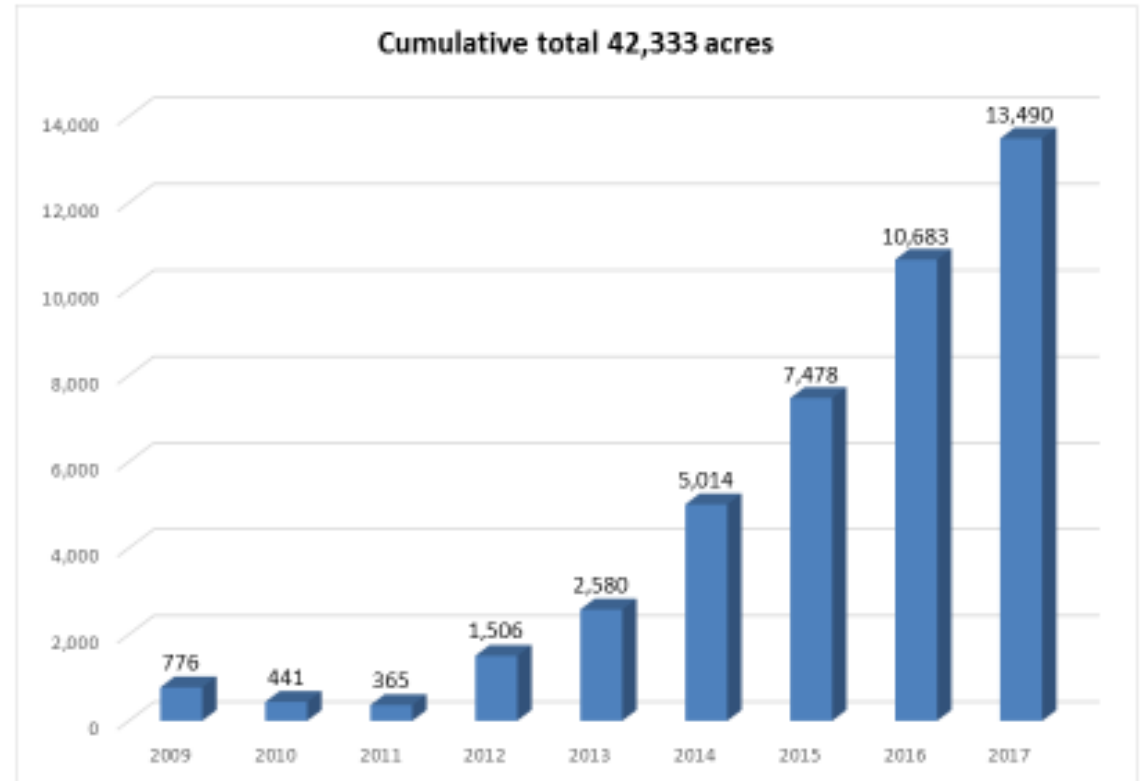
## 2009

- **Recognizes Benefits**
  - Improve & maintain wildlife habitat
  - Restore & maintain biodiversity
  - Reduce risk & severity of wildfires
- **Provides protection** (civil and criminal) for landowners and fire practitioners who burn under set standards
  - Standards
    - Position Qualifications
    - Burning Standards
      - Planning & Implementation

- Who's Burning?
  - State Agencies
  - TNC
  - Few Consultants



### PA Game Commission Prescribed Burning since 2009



The Arboretum at Penn State

- **What about Private landowners?**

- 70% of forested lands are privately owned (12 million ac)
- 730,000 landowners
- Virtually no burning
  - Standards are limiting
  - Few qualified consultants

- Demand?
- Knowledge?

- **PA statewide survey using Likert scale and choice experiment**
  - Landowner characteristics
  - Knowledge of prescribed fire
  - Trust in prescribed fire implementors
  - Perceptions of risk
  - Willingness to pay for 16 potential landowner programs (*choice experiment*)

#### Mail Survey (Dillman Method)

- **644 addresses**
- **253 useable responses (41% response rate)**

#### Web Survey

- **125 useable responses**



# Willingness to pay for 16 potential landowner programs (*choice experiment*)

## Ecological Outcomes

Oak Regeneration  
Wildlife Habitat  
Rare Vegetation  
Forest health/resilience

## Management Benefits

Reduce Management Costs  
Control Invasives  
Reduce Ticks  
Reduce Tree Pests/Diseases

## Resources for Landowners

Landowner Training  
Prescribed Fire Associations  
State Coordination/Assistance (crews)  
Cost Share

## Reduction in Barriers

Access to Consultants  
Access to Burn Bosses  
Relaxed Standards  
Reduced Liability

## Cost

\$20/acre  
\$50/acre  
\$125/acre  
\$200/acre

# Who Responded

- 86% landowners were male
- 72% have bachelor's degree and more
- 36% have graduate level education
- 62% have annual income over \$80,000
- 38% own  $\geq$  200 acres
- 61% own  $\geq$  100 acres
- 38% were not in any associations
- 13% have used burning
- 97% heard about prescribed fire/controlled burning
- Income from forests are somewhat important for about 70% respondents



# Management priorities and activities

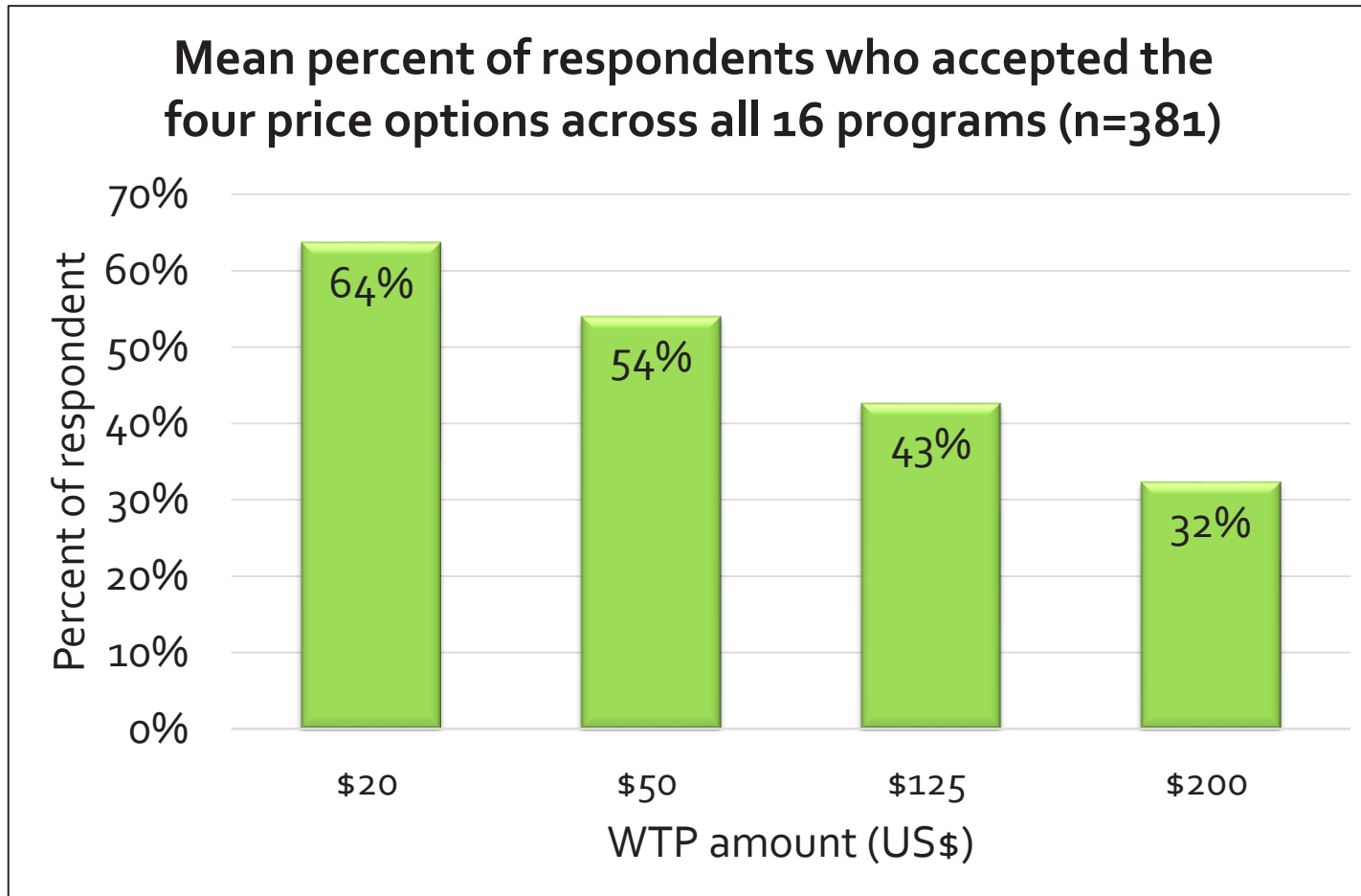
## Top management priorities

- Enhance wildlife populations
- Recreation (including hunting)
- Timber production
- Aesthetics and seclusion

## Top ranked forest management activities

- Control invasive plant species
- Thinning/stand improvement
- Habitat management
- Harvesting/timber sales
- Recreation management (e.g., trail)

# Willingness to Pay for Prescribed Burning



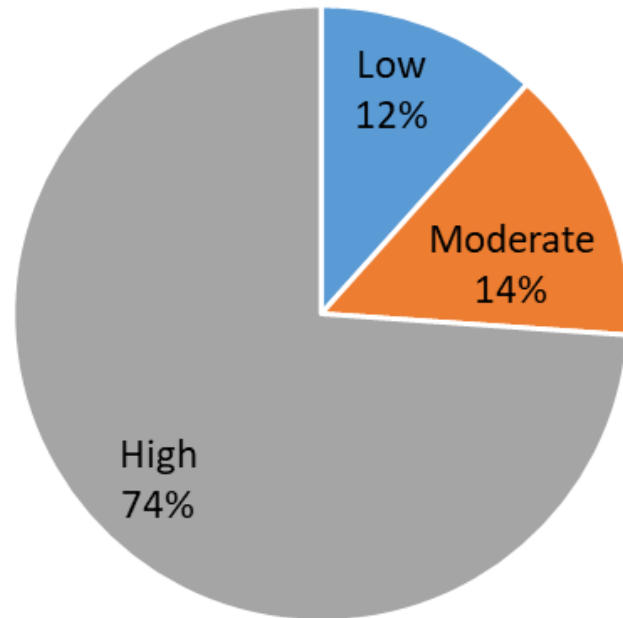
# Demographics and Value of Prescribed Fire

Willingness to pay values were higher for:

- Larger landholders
- Younger landowners
- Wealthier landowners
- Those already involved in landowner assistance programs

# Trust and Value of Prescribed Fire

Percent of landowners who trust that trained professionals and organizations in PA will use prescribed fire responsibly

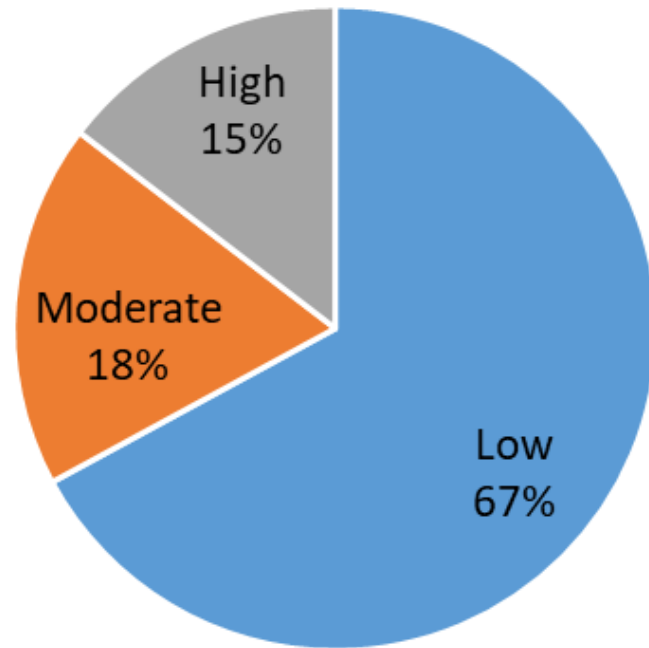


Enhanced trust could **increase** value of burning up to **\$15/acre**



# Risk Perceptions and Value of Rx Fire

Percent of landowners and level of perceived risk associated with prescribed fire

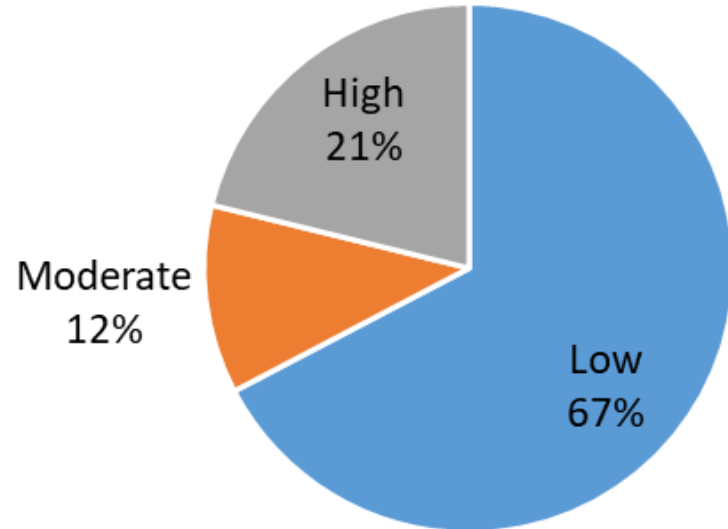


Perceived risk could **reduce** value of prescribed burning by up to **\$7/acre**



# Knowledge and Value of Prescribed Fire

Percent of landowners on their knowledge and experience using prescribed fire



## Sources of Knowledge

Magazines

Internet

Others who use Rx Fire

< 1/3 through science-based sources

Knowledge and experience not correlated with the value of prescribed fire

# Preferences for Prescribed Fire Programs

## Program attributes valued most (**increased WTP**)

- Opportunity to apply for financial Assistance
- Maintaining forest health, resilience and diversity.

## Program attributes valued least (**lowered WTP**)

- Being in a burn association
- Training for landowners



These factors all empower landowners to burn

**Confidence and Age both reduced value (WTP)**





**PennState**

College of Agricultural Sciences

**Jesse Kreye, PhD**

Assistant Research Professor

Fire & Natural Resources Management

[juk1097@psu.edu](mailto:juk1097@psu.edu)

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*Good fire prevent bad ones*



# Looking to the Future

- Deliver science-based information
  - Landowners & public
- Build capacity (i.e. consultants)
- Educate & involve landowners in burning
- Determine standards that can support safe use of fire

## Pennsylvania Prescribed Fire Qualifications Standards

Position	Required Training*	Required Taskbook	Minimum Prerequisite Operational Period Experience
<b>Pennsylvania Prescribed Fire Burn Boss 1 – PA-RXB1</b>	S-490 Advanced Fire Behavior Calculations RX-410 Smoke Management Techniques	Prescribed Fire Burn Boss 1 – PA-RXB1	10 as RXB1(T) 10 as RXB2
<b>Pennsylvania Prescribed Fire Burn Boss 2 – PA-RXB2</b>	S-390 Intro to Fire Behavior Calculations RX-301 Prescribed Fire Implementation RX-341 Prescribed Fire Plan Preparation RX-310 Introduction to Fire Effects S-200 Initial Attack Incident Commander	Prescribed Fire Burn Boss 2 – PA-RXB2	5 as RXB2(T) 5 as FIRB
<b>Pennsylvania Prescribed Fire Burn Boss 3 – PA-RXB3**</b>	N/A	PA-RXB3	5 as RXB3(T) 5 as FIRB
<b>Pennsylvania Firing Boss – PA-FIRB</b>	S-234 Ignition Operations S-230 Crew Boss S-290 Intermediate Fire Behavior I-200 Basic ICS	Firing Boss – PA-FIRB	5 as FIRB(T) 3 as FFT1
<b>Pennsylvania Squad Boss – PA-FFT1</b>	S-131 Squad Boss S-133 Look Up, Look Down, Look Around	Squad Boss – PA-FFT1	5 as FFT1(T) 3 as FFT2
<b>Pennsylvania Firefighter – PA-FFT2</b>	PA-130 Basic Firefighter (or S-130) IS-700 National Incident Management System (NIMS) I-100 Introduction to ICS S-190 Basic Fire Behavior	N/A	N/A