

# The fire problem is a cultural problem—where do we go from here?

Lenya Quinn-Davidson

Area Fire Advisor, University of California Cooperative Extension

Director, Northern California Prescribed Fire Council









## Impediments to prescribed fire across agency, landscape and manager: an example from northern California

Lenya N. Quinn-Davidson<sup>A,B,C</sup> and J. Morgan Varner<sup>B</sup>

<sup>A</sup>Environment and Community Graduate Program, Humboldt State University,  
1 Harpst Street, Arcata, CA 95521, USA.

<sup>B</sup>Wildland Fire Laboratory, Department of Forestry and Wildland Resources,  
Humboldt State University, 1 Harpst Street, Arcata, CA 95521, USA.

<sup>C</sup>Corresponding author. Email. [lenyaqd@gmail.com](mailto:lenyaqd@gmail.com)

**Abstract.** Though the need for prescribed fire is widely recognised, its use remains subject to a range of operational and social constraints. Research has focussed on identifying these constraints, yet past efforts have focussed disproportionately on single agencies and geographic regions. We examined constraints on prescribed fire by surveying a wide variety of organisations (including six state and federal agencies and several tribes, non-governmental organisations and timber companies) in northern California, a fire-prone region of the western United States. Across the region, prescribed burning

**Table 1.** Size of areas under management and areas treated

USFS, USDA Forest Service; BLM, Bureau of Land Management; CAL FIRE, California Department of Forestry and Fire Protection; CDPR, California Department of Pesticide Regulation

	Area under management (ha)	Average annual area burned, 2006 to 2008 (ha)
USFS	3 435 847	7848
BLM	1 532 967	722
NPS	178 693	2155
USFWS	59 967	8293
Cal Fire	—	1721
CDPR	102 497	43
TC	602 375	112
Tribes	16 997	0
NGOs	—	20
Total all	5 929 343	20 915

**Table 5.** Mean ratings of impediments to prescribed fire by public and private lands managers in northern California, 2009

Impediment	Public lands ( <i>n</i> = 40)	Private lands ( <i>n</i> = 19)
Narrow burn window	8.0	8.7
Regulations	6.7	8.3
Lack of adequate personnel	6.1	6.4
Environmental laws	5.6	7.3
Residential areas near burn	5.7	6.6
Lack of adequate funding	4.9	7.2
Liability	4.5	7.5
Fuel loading	5.3	5.7
Planning costs	4.7	5.6
Public opinion	3.9	6.1
Preference for alternative strategies	4.3	4.2
Burn unit preparation	4.1	4.3
Insurance limitations	2.3	5.8



**Table 1.** Size of areas under management and areas treated

USFS, USDA Forest Service; BLM, Bureau of Land Management; CAL FIRE, California Department of Forestry and Fire Protection; CDPR, California Department of Pesticide Regulation

	Area under management (ha)	Average annual area burned, 2006 to 2008 (ha)
USFS	3 435 847	7848
BLM	1 532 967	722
NPS	178 693	2155
USFWS	59 967	8293
Cal Fire	–	1721
CDPR	102 497	43
TC	602 375	112
Tribes	16 997	0
NGOs	–	20
Total all	5 929 343	20 915

**Table 5.** Mean ratings of impediments to prescribed fire by public and private lands managers in northern California, 2009

Impediment	Public lands (n = 40)	Private lands (n = 19)
Narrow burn window	8.0	8.7
Regulations	6.7	8.3
Lack of adequate personnel	6.1	6.4
Environmental laws	5.6	7.3
Residential areas near burn	5.7	6.6
Lack of adequate funding	4.9	7.2
Liability	4.5	7.5
Fuel loading	5.3	5.7
Planning costs	4.7	5.6
Public opinion	3.9	6.1
Preference for alternative strategies	4.3	4.2
Burn unit preparation	4.1	4.3
Insurance limitations	2.3	5.8

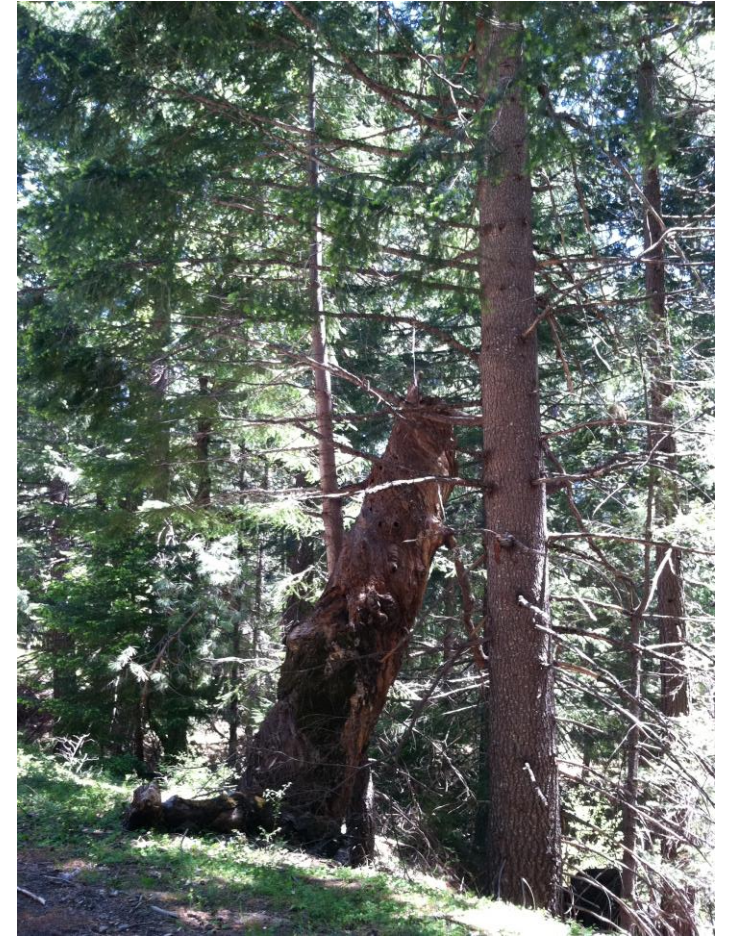
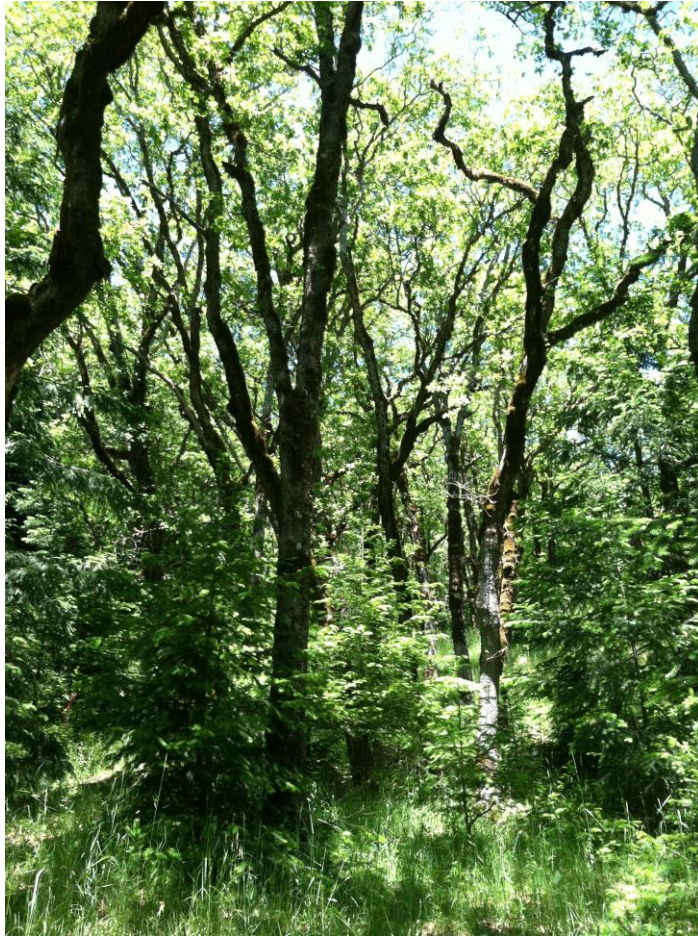


Narrow burn window:

Limited weather windows where we can meet burn objectives



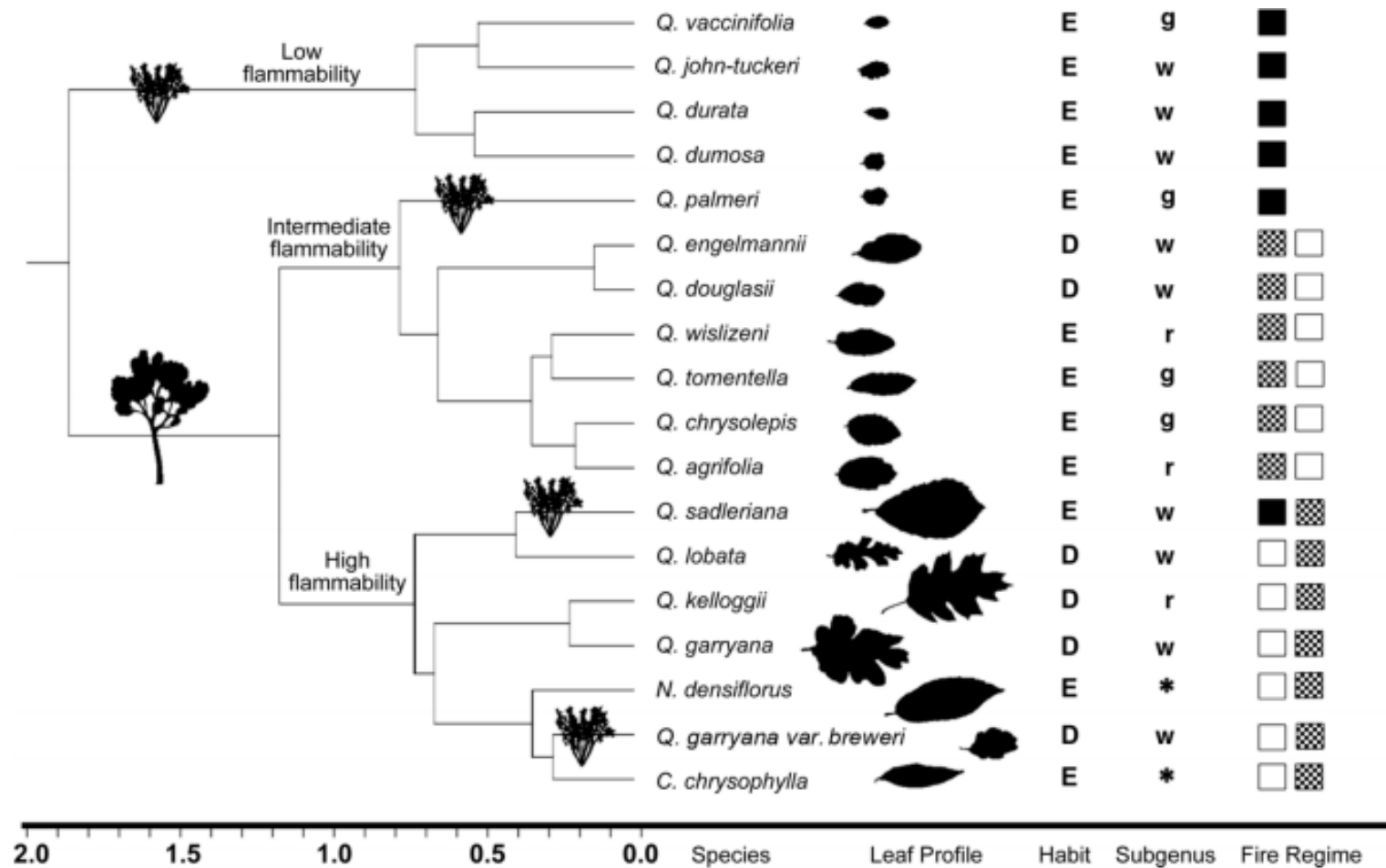
# Case study: North Coast oak woodlands











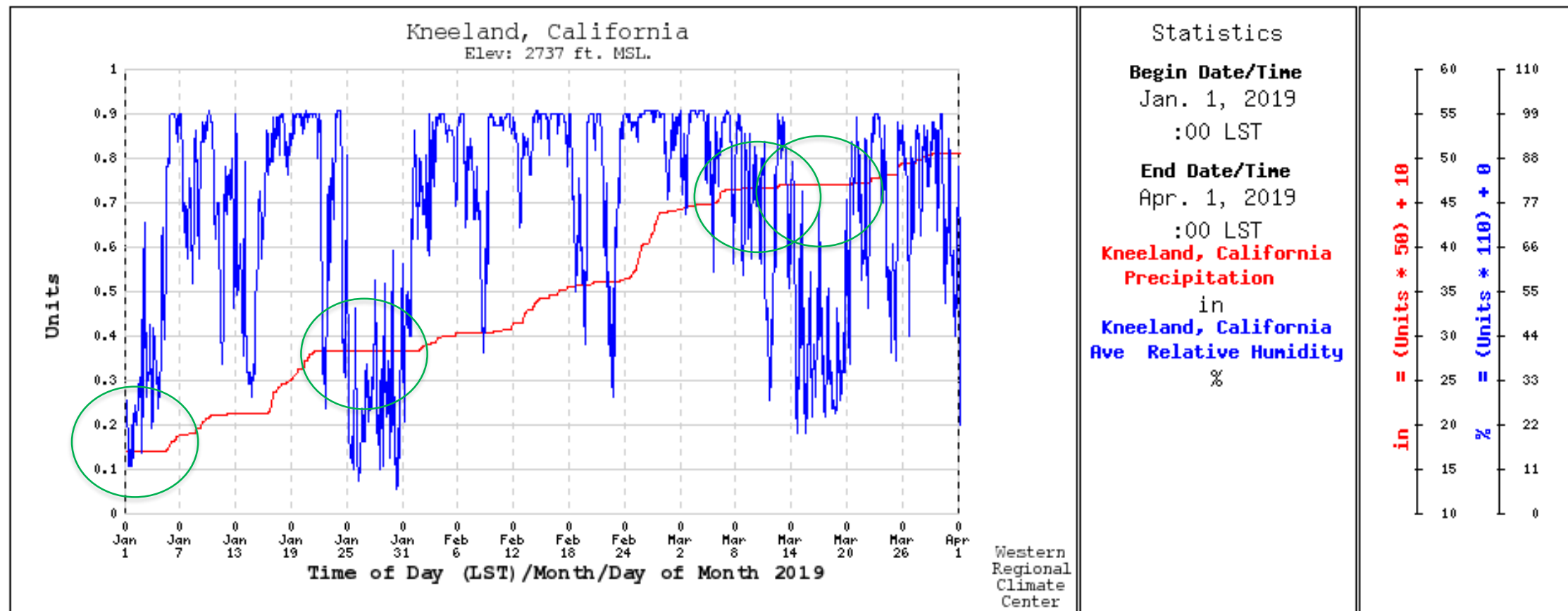
From Engber and Varner 2012



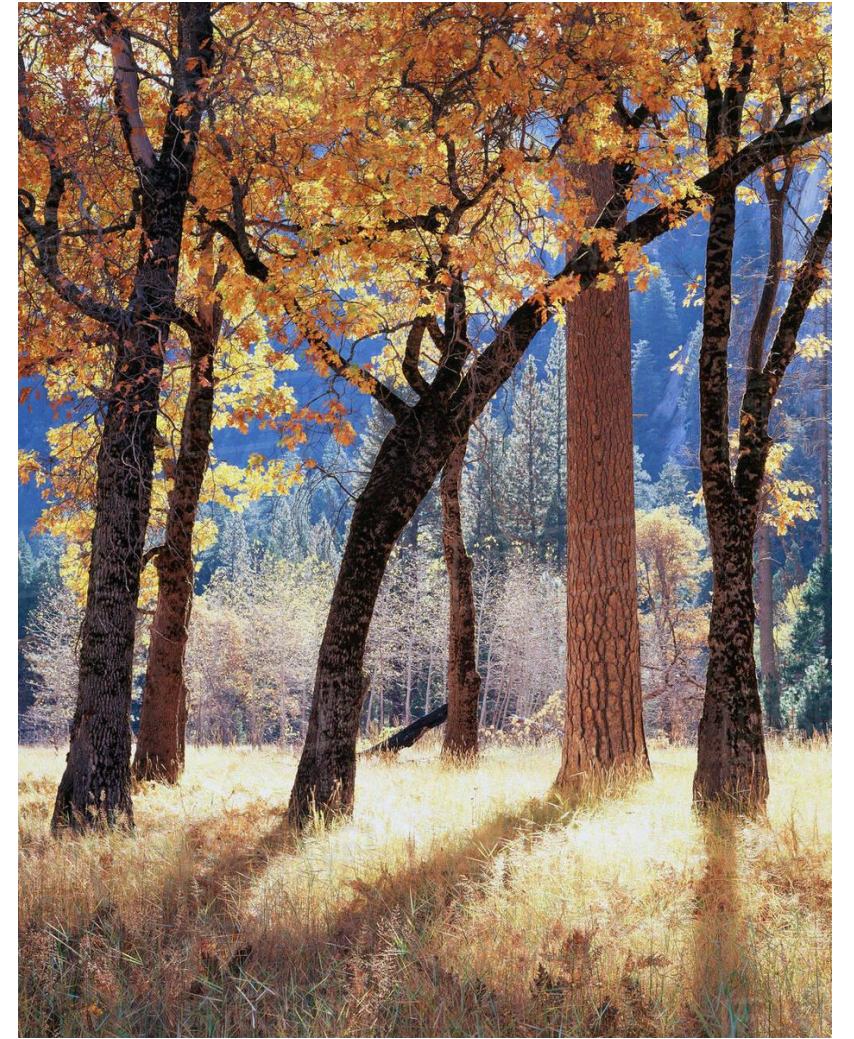
# Exploring winter burn windows











# What's actually limiting the burn window?

- Weather
- Burn plans
- Attitude (“it won’t work”)
- Vacation/holidays/scheduling
- Politics
- Seasonal fire crews



Lack of adequate personnel:

Who can participate?

# Permitted ranch burning in CA 1945-1977

200,000  
acres!

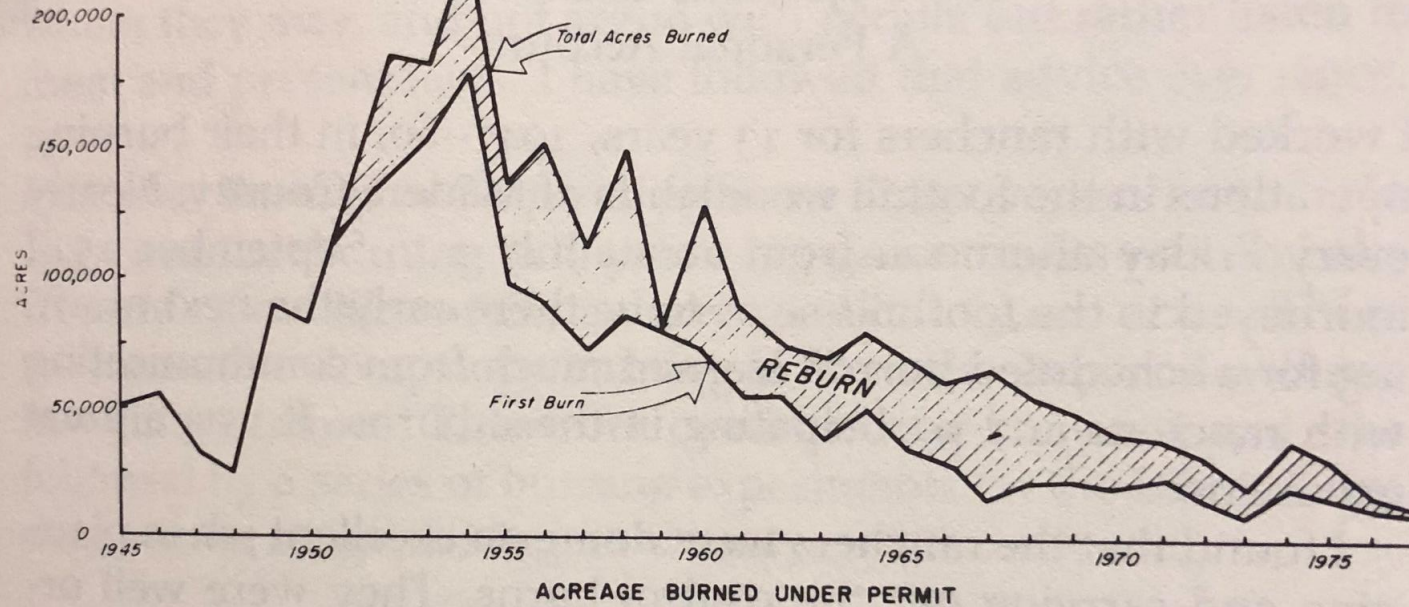
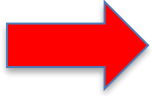


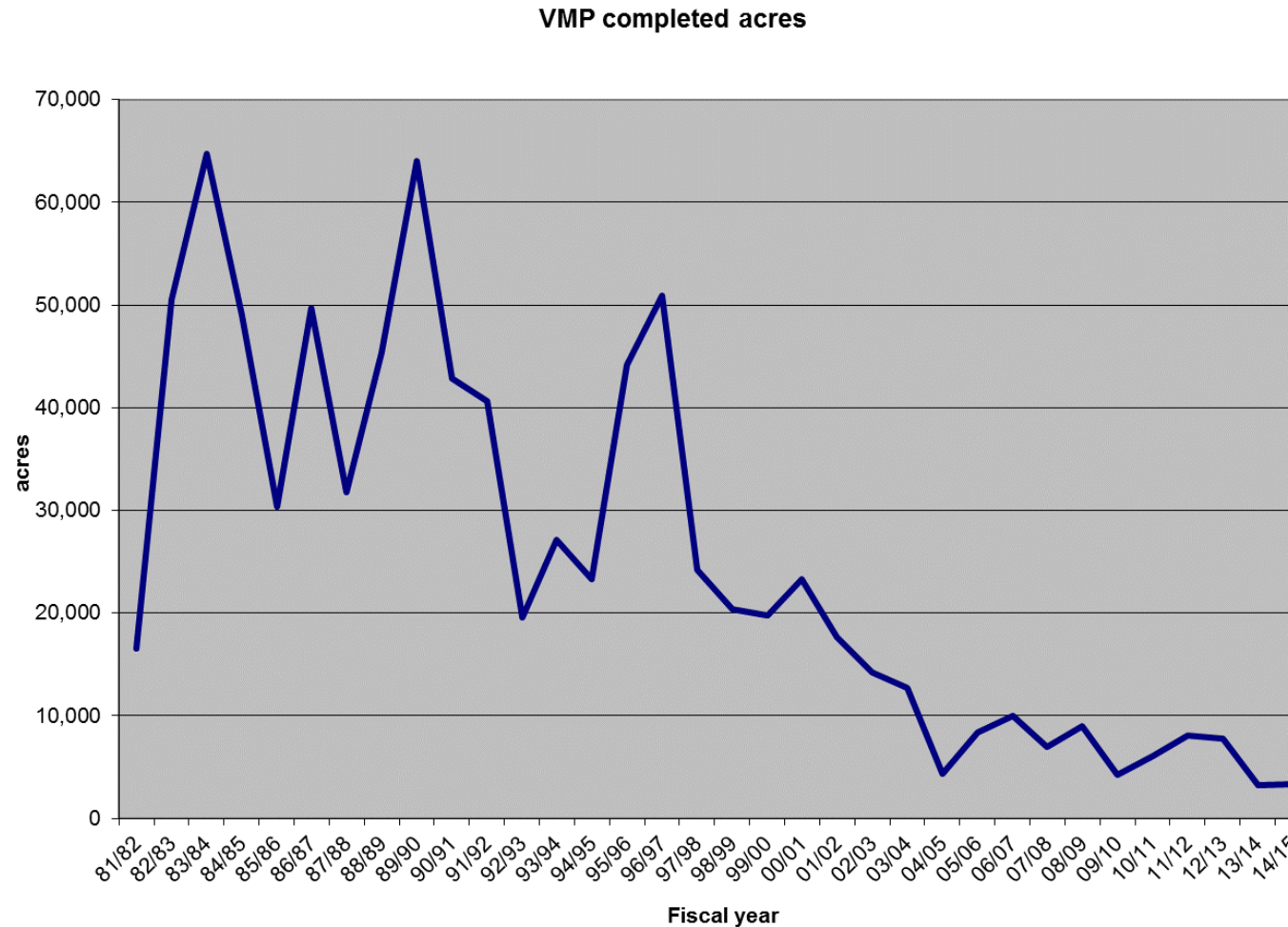
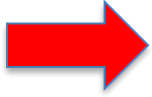
Figure 41. Acreage burned by California ranchers under permit from 1945 to 1977 to reduce fire hazard and improve grazing for livestock and wildlife. (Graph from the California Department of Forestry.)

\*From Biswell 1999



# CAL FIRE private lands prescribed fire acres, 1981-2015

65,000  
acres at  
height of  
VMP



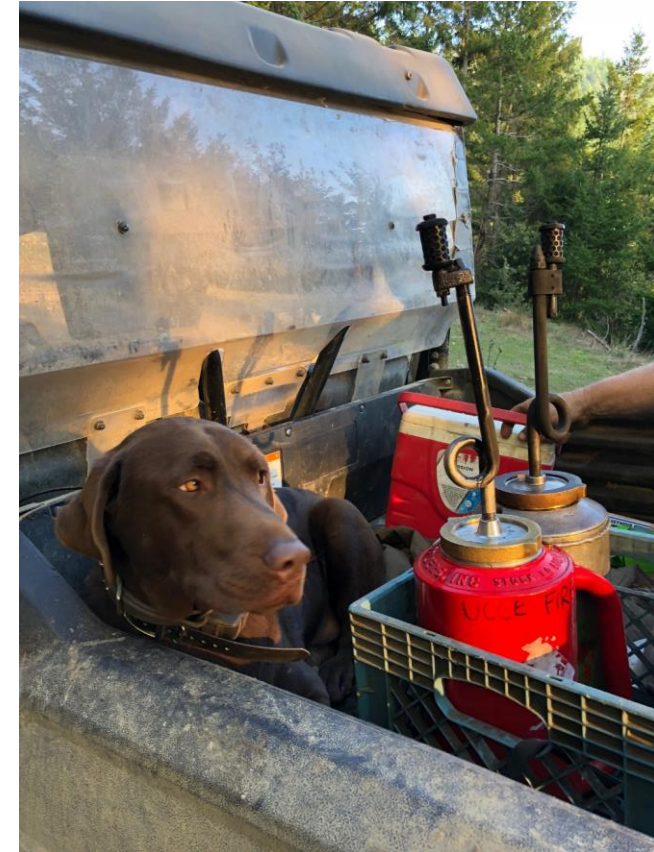
<10k  
acres/year  
in last 15  
years



# Great Plains Prescribed Burn Associations (PBAs) 2015 survey

- 27 PBAs conducted **1,094 burns covering 472,235 acres** in 8 years
- Escape rate of 1.5%, with no insurance claims or lawsuits

*From Weir et al. 2015*









# Humboldt County Prescribed Burn Association

- Formed March 9, 2018
- Board of Directors & by-laws established
- 72 paying members;  
250-person mailing list
- 2,500 acres of projects  
identified on local ranches and  
timberlands
- Burn trailer



# Humboldt County Prescribed Burn Association



- Neighbors helping neighbors—similar to old rangeland associations
- VFD involvement + training
- Grants and equipment
- Private burn bosses as needed
- UCCE: research, education, and outreach on burning



# 922 acres since June 2017!





# California's largest NRCS-funded burn





# Do fire users need to be fire professionals?



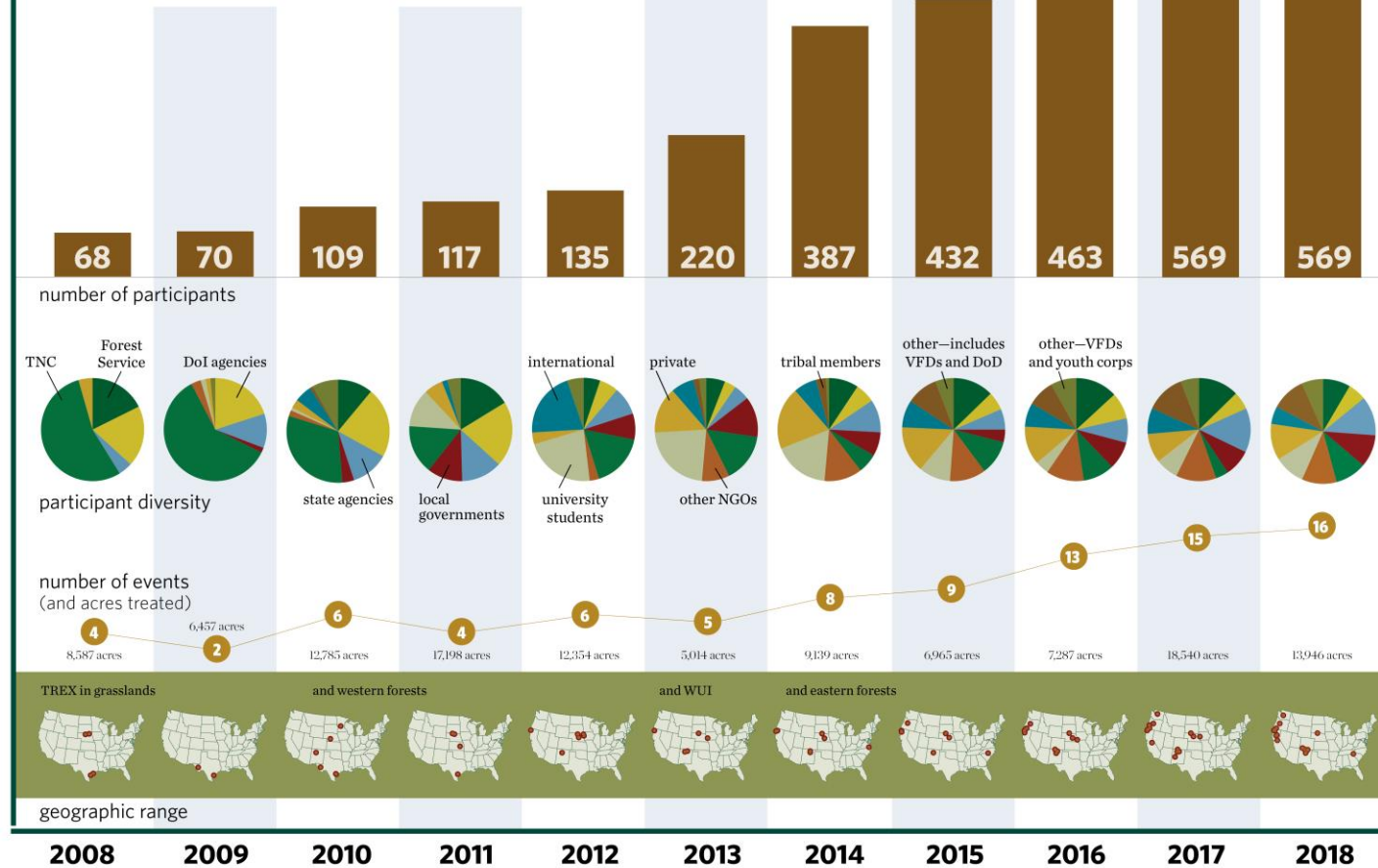
- Fire suppression culture..?
- Comfort with fire
- Qualifications

Within the fire profession, who gets to have a voice?

How do we innovate and grow as a field?



## PRESCRIBED FIRE TRAINING EXCHANGES (TREX) 2008-2018



v. 8 Jan 19





**“WTREX is what kept me in fire—the only work I’ve ever had passion for. It also gave me the support system and valuable coping mechanisms to deal with the realities that I faced on a day-to-day basis outside of WTREX.”**

**—Participant, 2 years after WTREX**



**“The thing that hit me the hardest was that there is a very big problem in fire, and that I’m a part of the problem...I’m conscious of these problems now, and I’ll be able to self-evaluate and check myself from now on. I’ll also share these things with the people I love—my crew...”**

**“I feel selfish because I think I took away more from the WTREX than anyone else who was there. I thought I was just there to burn, but I didn’t see any of this other stuff coming. The WTREX was a magical event.”**

**-Utah hotshot (male), WTREX 2016**











**Today's fire problems are so complex that we need to elevate diversity in intellect, talent, and perspective in order to solve them.**







# Thank you!

**Lenya Quinn-Davidson**

Area Fire Advisor

University of California Cooperative Extension

[lquinndavidson@ucanr.edu](mailto:lquinndavidson@ucanr.edu)

(707) 445-7351

