Cowboys, Indians and the Fire-curious:

Brush busting with community based burning and Prescribed Burn Associations

Jared Childress

Prescribed Burn Associations

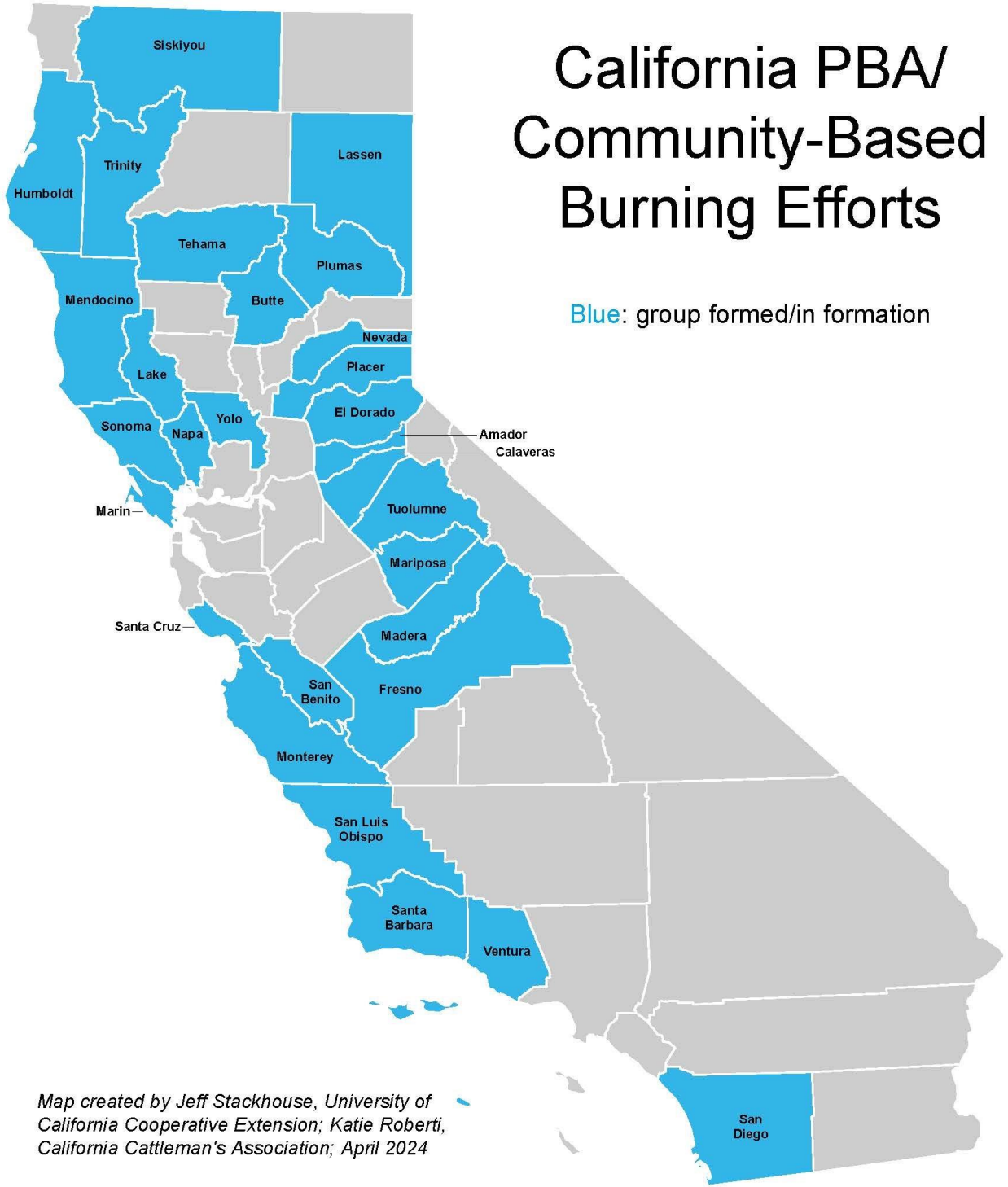
“Burning from the bottom up”

Prescribed Burn Associations Interactive Map

Humboldt County PBA 2017

California PBA/ Community-Based Burning Efforts

Blue: group formed/in formation



Map created by Jeff Stackhouse, University of California Cooperative Extension; Katie Roberti, California Cattleman's Association; April 2024

Central Coast PBA

Monterey, San Benito, Santa Cruz counties

Watsonville Slough Training burn, Sunday July 18. CCPBA first burn!

Building a culture of good fire

“Firelighter” training
Training burns
Pile burn workshops
“Fire followers” tours

Central Coast CalTREX

Spring 2023 Prescribed Fire Training Exchange

WHEN: Saturday, June 3 – Saturday, June 10, 2023

WHERE: Throughout Monterey, San Benito and Santa Cruz Counties

WHO: Tribal members, land managers, ranchers, fire professionals, community members interested in the use of prescribed fire, researchers and students

2023 CC TREX firelighters will engage in 8 days of burning on breath-taking wildlands, learning and working alongside professional fire practitioners, tribal partners, ranchers, land managers, and community members to meet diverse objectives with “Good Fire.”

CC TREX seeks to build capacity for community based burning by promoting the ecological health throughout Monterey Bay area landscapes (Redwood, Oak woodlands, Coastal prairies, Coastal shrublands), while meeting cultural, training and wildfire mitigation outcomes.

Firelighters of varying experience will work on a range of Rx fire skills and taskbooks, from firing and holding operations, to unit preparation and mop-up, to taking on leadership training assignments. We will be collectively sharing knowledge, experience, and resources to build local relationships and increase regional capacity to safely utilize fire as a land management tool.

Signing up: Registration fee is $220. Due to sponsorship from Burn Bot, scholarships may be available upon request. Applications are competitive, and as such priority will be given to regionally based participants, tribal members and those bringing equipment.

Apply here no later than Feb 28th

CC TREX is a project of the CCPBA, UCCE San Benito, RCD of Monterey County and CAL FIRE. Our partners include Santa Lucia Conservancy, the Esselen Tribe, Amah Mutsun Land Trust, Burn Bot, SJSU and the Big Sur Land Trust

Burn plans
Burn Bossing
TREX events
Burn equipment

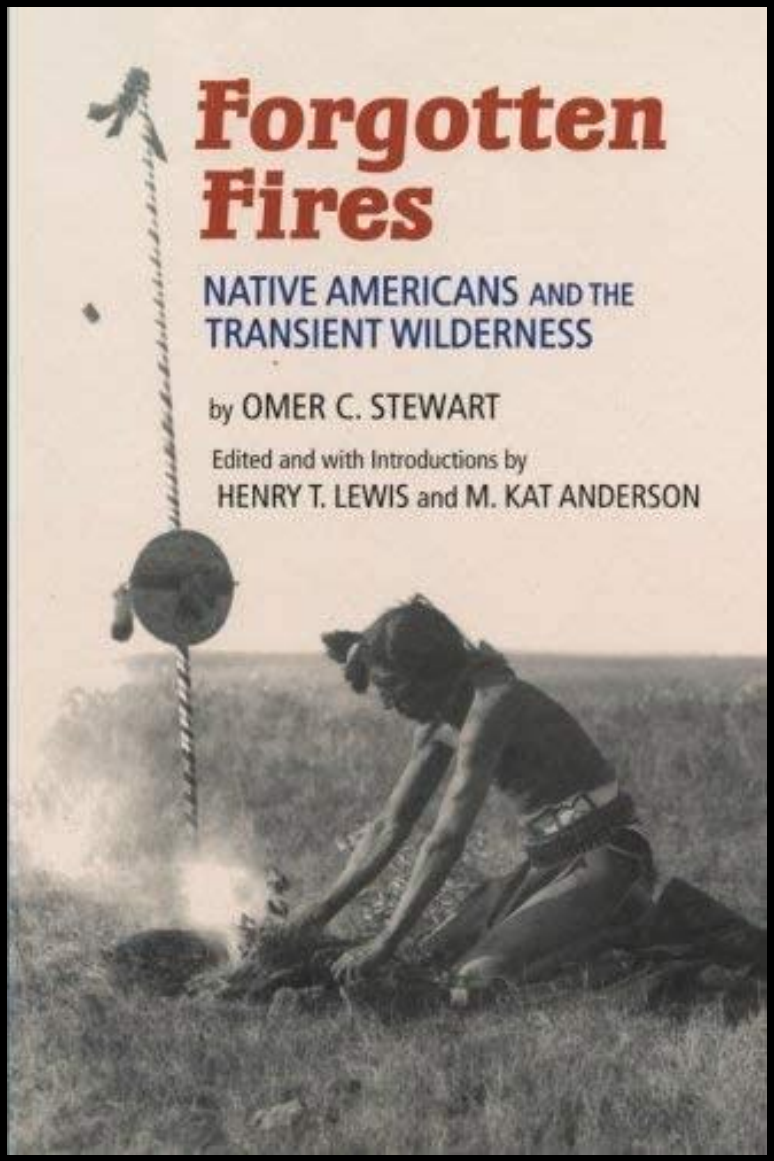
Ecological burning in a “land of contrast”

Redwood forest, Oak savanna, Coastal prairie, Pine woodlands, Coastal scrub, Maritime chaparral, Chamise chaparral

PBAs are nothing without community: Cowboys, Indians, Land Trusts, College Students, Researches, Landowners, Foresters, State Parks, Ecologists, Fire Departments, and the Fire-curious

Why do we burn? All fire in CA can be ecologically appropriate

Because fire was as common as rain

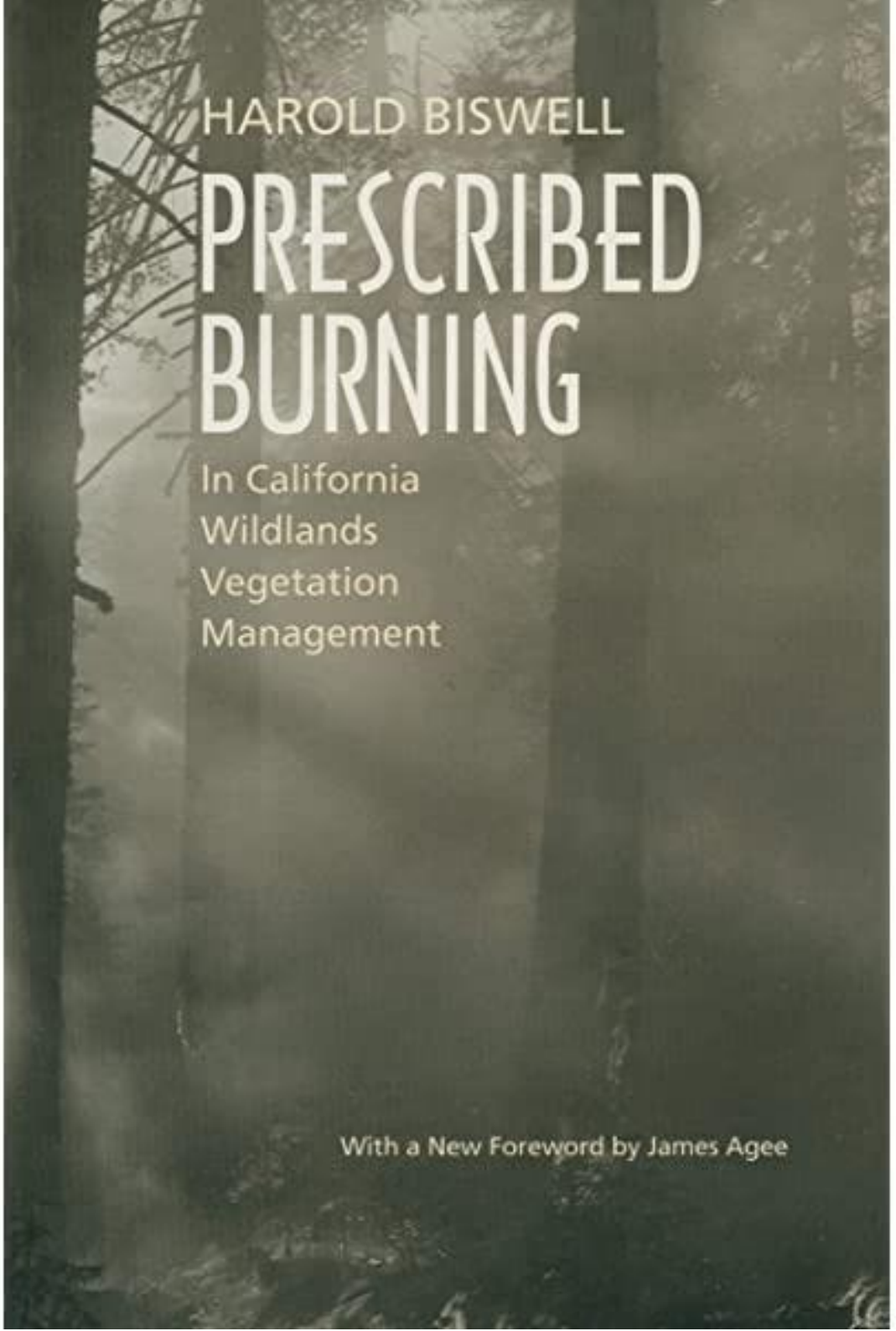


"Approximately 1.8 million ha burned annually in California prehistorically (pre 1800). Skies were likely smoky much of the summer and fall in California during the prehistoric period. Increasing the spatial extent of fire in California is an important management objective."

(Stephens et al. 2007. *Forest Ecology and Management)*

4.3 Million acres!

"fire to enhance specific plant species, optimize hunting conditions, maintain open travel routes, and generally support the flourishing
of the species upon which they depend”
Frank Lake, USFS ecologist/ Karuk Tribe


HAROLD BISWELL
PRESCRIBED BURNING
In California Wildlands Vegetation Management
With a New Foreword by James Agee

California Range Improvement Associations

Figure 51. *Ranchers assembled in early morning for a control burn to be started in another hour or so, when the fuels would be somewhat drier. At this burn, 115 people were involved. Equipment consisted of nine water sprayers. Two jeeps were used to patrol the fire.*

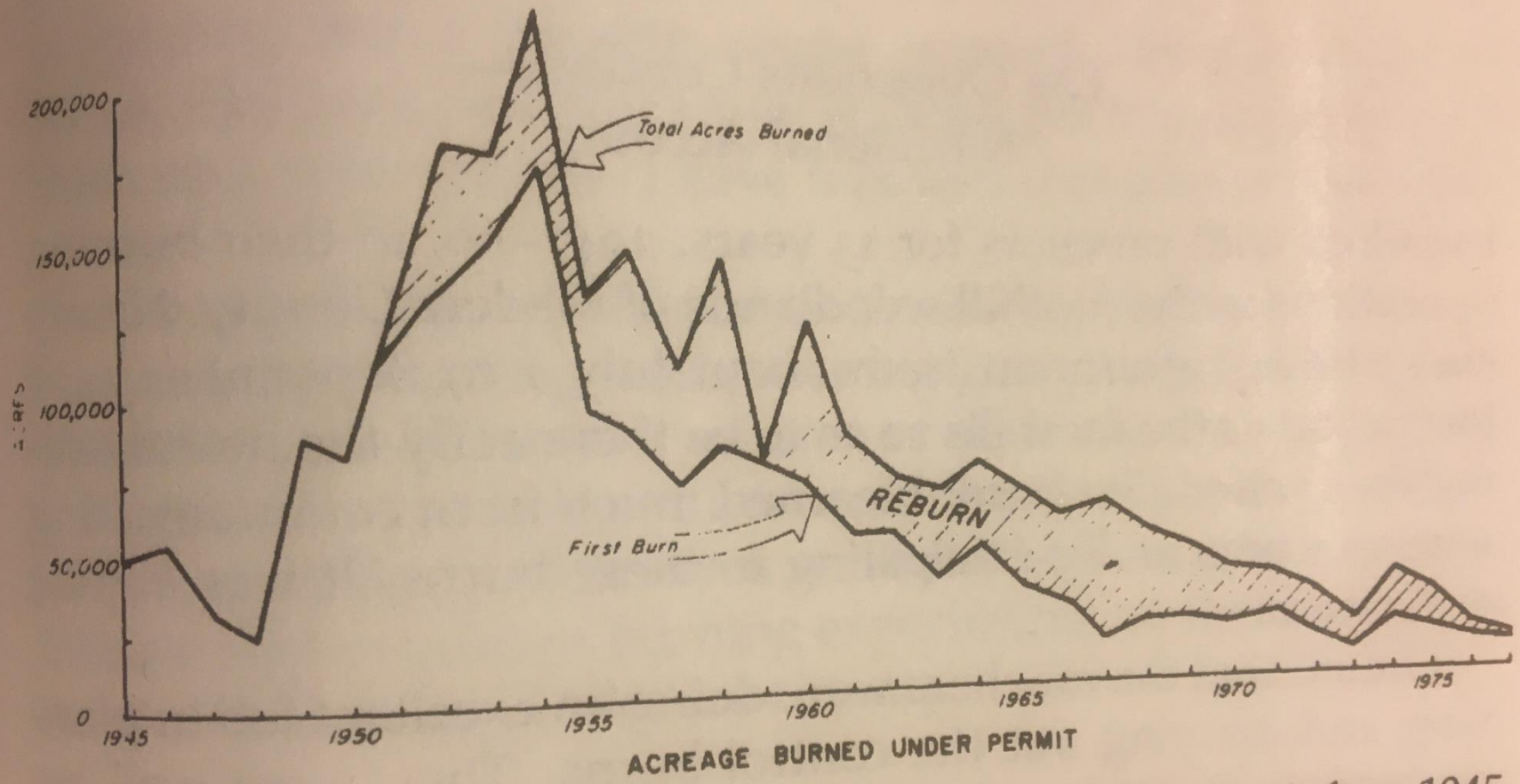
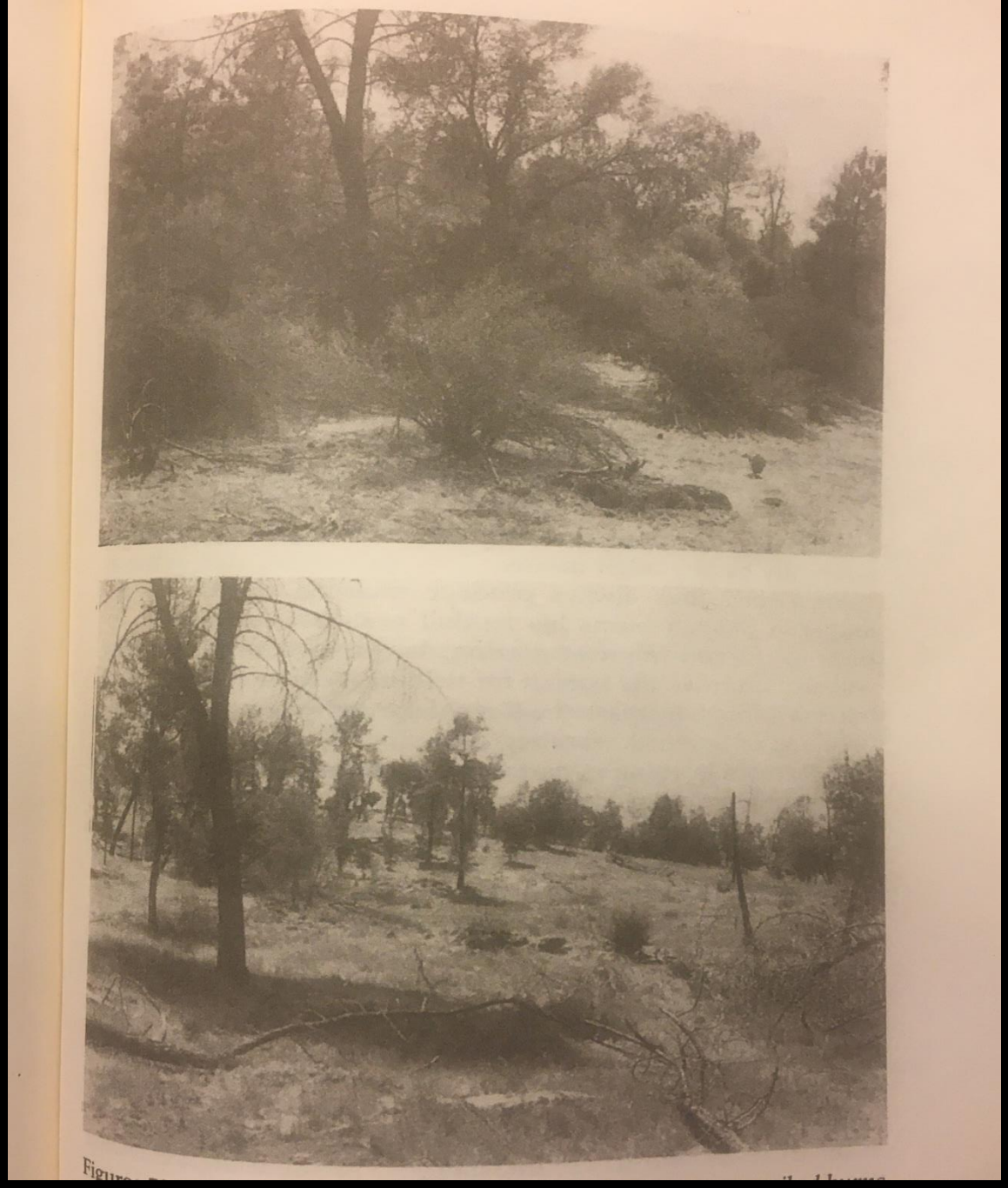


Figure 41. *Acreage burned by California ranchers under permit from 1945 to 1977 to reduce fire hazard and improve grazing for livestock and wildlife. (Graph from the California Department of Forestry.)*

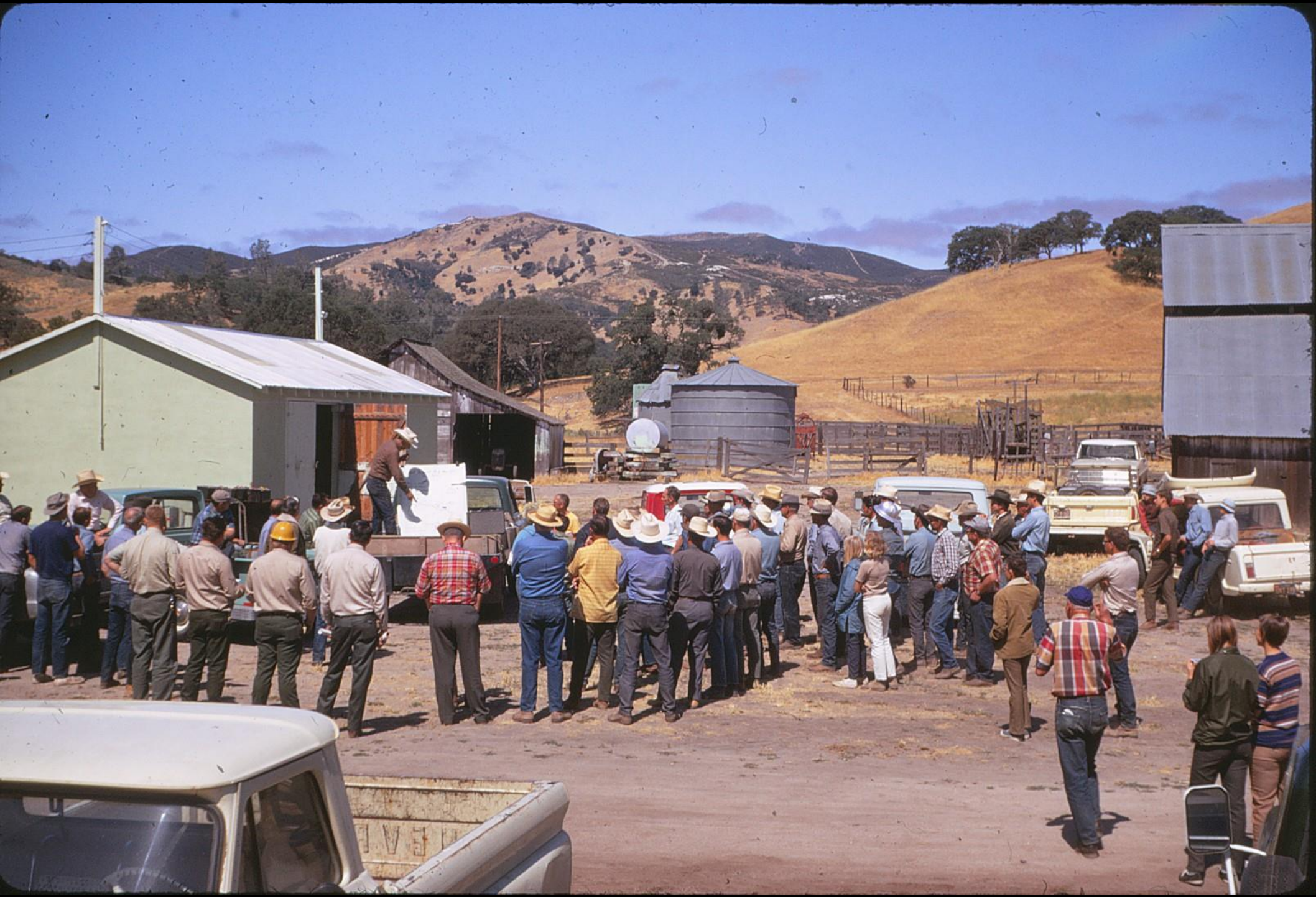
1954: over 250,000 permitted acres burned!



"…for livestock, grazing and for the wildlife habitat and to reduce the wildfire hazard."

San Benito Range Improvement Association
Bear Valley Ranch, Schmidt Family 1970

courtesy Kathy Spencer



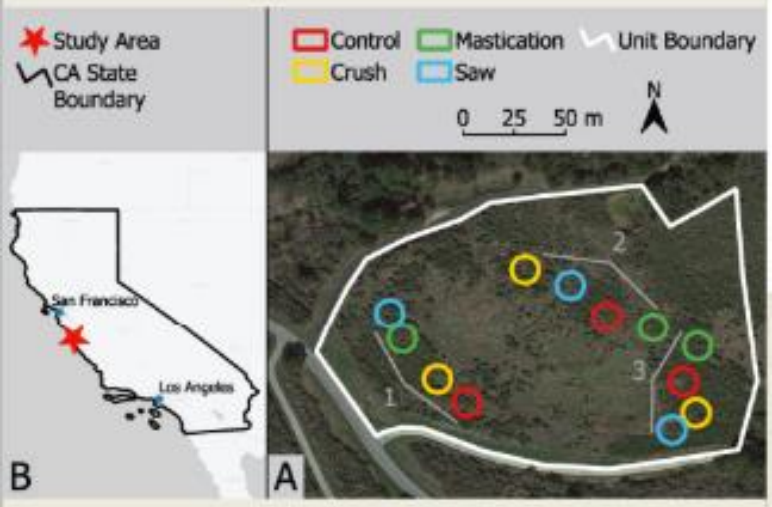
Coyote brush mortality study: mastication vs chainsaw vs crushing vs control

San Jose State University and UC Cooperative Extension

Combining Mechanical Pre-Treatment and Prescribed Fire to Restore Coastal Prairie

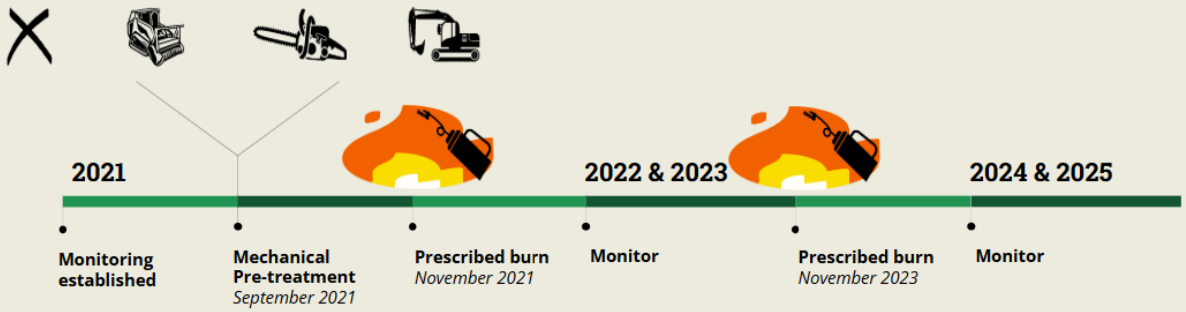
Killian Cook[12], Jannike Allen[12], David Benterou[23], Jared Childress[4], Devii Rao[5], Kate Wilkin[12]
San José State University: [1] Department of Biological Sciences, [2] National Science Foundation Wildfire Interdisciplinary Research Center,
[3] Department of Environmental Studies; [4] Central Coast Prescribed Burn Association; [5] University of California Cooperative Extension

- **Santa Lucia Preserve**, Carmel Valley, CA
- **12 circular plots,** 15 m diameter
- **8 shrubs** selected per plot



Is combining mechanical pre-treatment with a prescribed burn the key to more effective fires and reduced shrub encroachment?

Methods



04. Analyses + Results

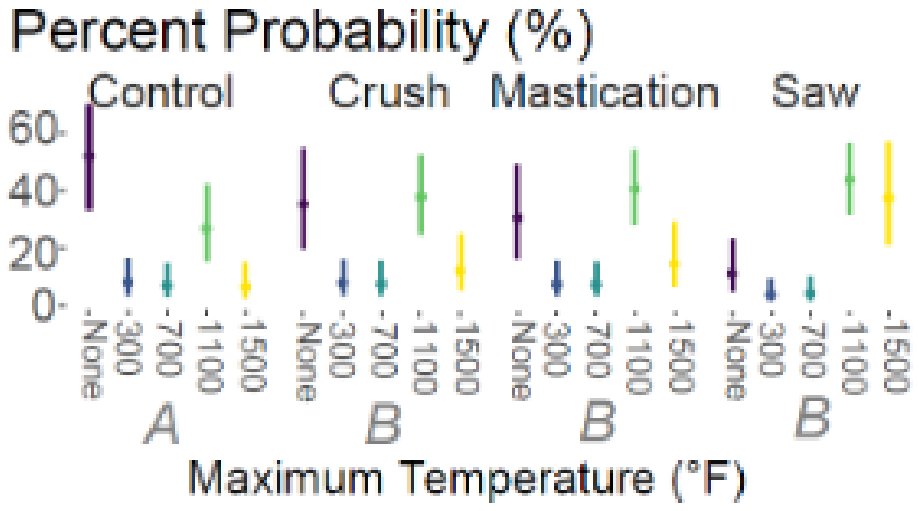


Figure 1: Percent probability that individual coyote brush shrubs reached a maximum temperature threshold for each pretreatment. Dots represent the logistic regression prediction and error bars are the 95 % confidence intervals.

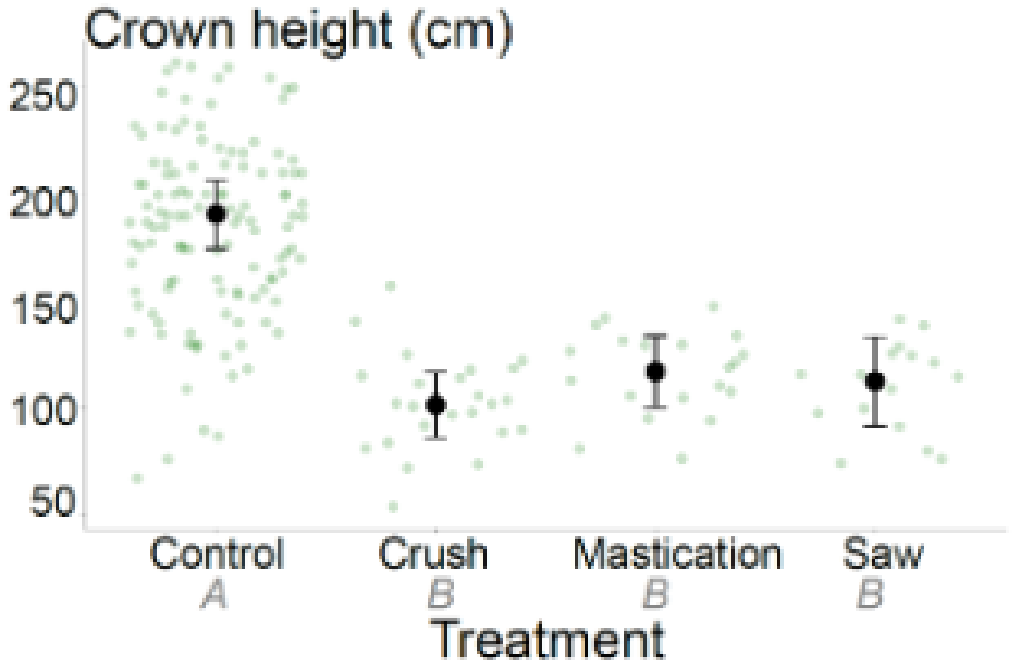


Figure 2: Coyote brush shrub crown height (cm) for each pretreatment. Black dots represent GLMER prediction, error bars are the 95 % confidence intervals, and green dots represent raw data. Letters indicate statistical similarity (P>0.05).

- **Saw plots:** highest flame lengths, fastest rate of spread, and highest temperatures
  Control and crush plots: lowest fire behavior and maximum temperature; crush plots often show slightly increased fire behavior over control plots
  Mastication plots: greater overall results than control or crush, but still less than saw plots
- **Shrub height:** all pretreated plots show reduced shrub height; control plots have much taller shrubs
- **Despite differences, only one shrub died two years post mechanical and prescribed fire treatments**

05. Discussion

- It is encouraging that **mechanical pretreatment does increase efficacy of prescribed burn treatments on reducing shrub prominence**
- However, if **nearly 100% of shrubs resprouted in just 2 years,** where do we shift our focus from here?

- **Ideas:**
  - Is true mortality after one burn necessary, or is **reducing living canopy and weakening the shrub** a sufficient start?
  - Does the key lie not in any particular initial treatment, but in regular treatment over many years-- **"the long game"?**
  - Mature, undisturbed shrubs don't die. What about **previously disturbed shrubs?** What about young, **newly established shrubs?**

- **Where we are now:**
  - Fall 2023 expansion of project into **Wilder Ranch State Park** (plot N=300, shrub N=300)
  - **2nd burn at Santa Lucia Preserve and 1st burns Wilder Ranch,** November 2023
  - **Stay tuned!**

Fall Chamise burning

Winter Chamise Burning

Chamise chaparral burning:
Live fuel moisture below 40%, lots of head fire

Ecological benefits: Native forb/ geophyte stimulation, pollinator response, obligate seeder response, subsurface water, Deer and Elk forage

Winter burning is similar to a branding

Other Ranch burning:
Oak woodland winter burning

Maritime chaparral: Crush, then burn in cool weather. Stimulates obligate seeders, forb promotion, decrease Douglas fir and Oak encroachment, wildfire resilience

Invasive species control:

- Himalayan black berry
- Yellow star thistle and Medusa head grass
- French broom
- Douglas fir

Coastal prairie: Thatch reduction, forb and perennial grass promotion, decrease Douglas fir, Oak and Coyote bush encroachment, wildfire resilience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Check out
CALPBA.ORG