Bringing fire back to private lands through the Humboldt County Prescribed Burn Association

Jeffery Stackhouse & Lenya Quinn-Davidson
University of California Cooperative Extension
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
Great Plains PBAs – 2015 survey

- 27 PBAs conducted 1,094 burns covering 472,235 acres in 8 years
- Only one official report of injury
- Escape rate of 1.5%, with no insurance claims or lawsuits (Weir et al. 2015)

Note: There are 58 Counties in CA
Humboldt County Prescribed Burn Association

• Neighbors helping neighbors—
  • Branding culture
• VFD involvement + training
• CAL FIRE support
• Private burn bosses as needed
• UCCE: research, education, and outreach on burning
• Learn By Doing Model!
Humboldt County Prescribed Burn Association

- 80 paying members; 250-person mailing list
- ~5000 acres of projects identified on local ranches and timberlands
- In a capacity building phase...
  - Ship is built, but not yet sailing itself.
Burn trailer!

- California Deer Association donated $24k in 2017 for purchase of a burn trailer and 3 slip-in units.
- Cal-Deer donated another 12k in 2018 for 30 radios + frequency.
- Redwood National Park donated used hand-tools, hose, and other items in 2017.
- We caution building a PBA with grant reliance, but rather a program with community reliance.
17 broadcast burns since June 2017!
What and when are we burning?

- Late phenology species
- Forest/Wildland-urban interface fuels reduction
- Blackberry management
- Woody encroachment on rangelands
- Fir removal from oak woodlands
- Other/Training
Medusahead

Starthistle

Barbed goatgrass
Natives & forage

Medusahead, goatgrass, starthistle
Natives & forage  

Growth  

Senescence

Medusahead, goatgrass, starthistle

Late Phenology Invasive
Late-season annual weeds

Photos by: Guy Kyser
Medusahead Cover 1 Year Post-Burn - Humboldt

![Graph showing medusahead cover percentage for burned and not burned treatments with or without seeding.]
Filaree 1 Year Post-Burn – Both Counties

**Humboldt**

**Tehama**

![Graphs showing Filaree percentage for Humboldt and Tehama counties with seed treatment and burn treatment effects.]
Cow Lactating 1st 90 days – CP%
June 29, 2017
- 18 acres: Medusahead
- $500: Burn Plan
- $1500: Burn Boss
- $600: VFD Stipends
- $100: Air Quality + other
  - $150/acre + ~30 people

June 26, 2018
- 3 acres: Vineyard Edge
- 3 acres: Medusahead
- No Burn Plan
- $1500 Burn Boss
- $100: Air Quality + other
  - $267/acre + ~25 people

Grass Seeding Trial: Oct 15, 2018
- 1.5 acres: Clover + CA Brome Trial
- $100: Air Quality
- $66/acre + 3 people
October 20, 2018
  - 3 acres: Forest/Urban
  - $1000 Burn Plan
  - $1500 Burn Boss
  - $830 Air Quality + other
    • $1110/acre + 25 people

April 29, 2019
  - 4 acres: Forest understorey
  - No Burn Plan
  - No Burn Boss
  - $145 Air Quality + other
    • $36/acre + 20 people

Large slash piles: Fall 2018; Spring 2019
  - 2-180 acres
  - $145 - $315: Air Quality
  - $3-$73/acre
  - 1 to 4 people
April 25, 2018
- 5 acres (over 2k acres): Scattered Blackberry
- $500: Burn Plan
- $1500: Burn Boss
  • (NRCS Requirement)
- $100: Air Quality + other
  • $420/acre + 10 people

April 25, 2019
- 2 acres: Snow/Blackberry
- No Burn Plan
- No Burn Boss
- $145 Air Quality + other
  • $72/acre + 3 people
Wednesday’s Field Trip:
California’s largest NRCS-funded burn
Oct 31, 2017
- 140 acres: Coyote Brush
- $500: Burn Plan
- $1000: Burn Boss
- $200: Air Quality + other
  • $12/acre + ~25 people

Nov 3, 2017
- 145 acres: Coyote Brush
- Reused Burn Plan
- $1000 Burn Boss
- $800: Air Quality + other
  • $12/acre + ~30 people

Oct 26, 2018
- 215 acres: Coyote Brush
- $500: Burn Plan
- $1000: Burn Boss
- $1000: Air Quality + other
  • $5/acre + ~35 people

Oct 17, 2018
- 130 acres: Coastal shrub
- Reused Burn Plan
- $1000 Burn Boss
- $200: Reused Air Quality + other
  • $9/acre + ~30 people
Fir encroachment into oak woodlands
Dec (14, 17, 19) 2017 & Jan (2, 3) 2019
- 13-163 acres: Oak Woodland
- No Burn Plan
- No Burn Boss
  - $1.5 - $13/acre
  - 2-12 people
Developing a “Search Image”
Identifying Rx Fire Search Images:

- See the resource concern
- See the burn unit
- See the opportunity
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17/18 HumCo Winter RH

Kneeland California
Daily Data run on 4/26/2019 11:32 PST.

Relative Humidity (%) vs. Day of Year
Daily Humidity (Average and Range)

Western Regional Climate Center

University of California
Agriculture and Natural Resources - Cooperative Extension
17/18 HumCo Winter Oak Windows

Kneeland, California
Daily Data run on 4/26/2019 11:32 PST.

Relative Humidity (%)

Day of Year
Daily Humidity (Average and Range)
17/18 HumCo Winter Oak Windows
17/18 HumCo Best Winter Oak Windows

2017: 13 days with average Humidity below 30
• 1/13 = 7.7% capture rate
18/19 HumCo Best Winter Oak Windows

6 days with average Humidity below 30
- 0/6 = 0% capture rate
Humboldt County PBA’s 22 month burn record

- 2017: 5 burns @ ~210 acres
- 2018: 9 burns @ ~515 acres
- 2019: 5 burns @ ~195 acres

= 19 burns totaling 920 acres

Missing burn windows is a fact of life. Not knowing when they are being missed is a lack of adequate search image...
Questions?

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