SONOMA LAND TRUST

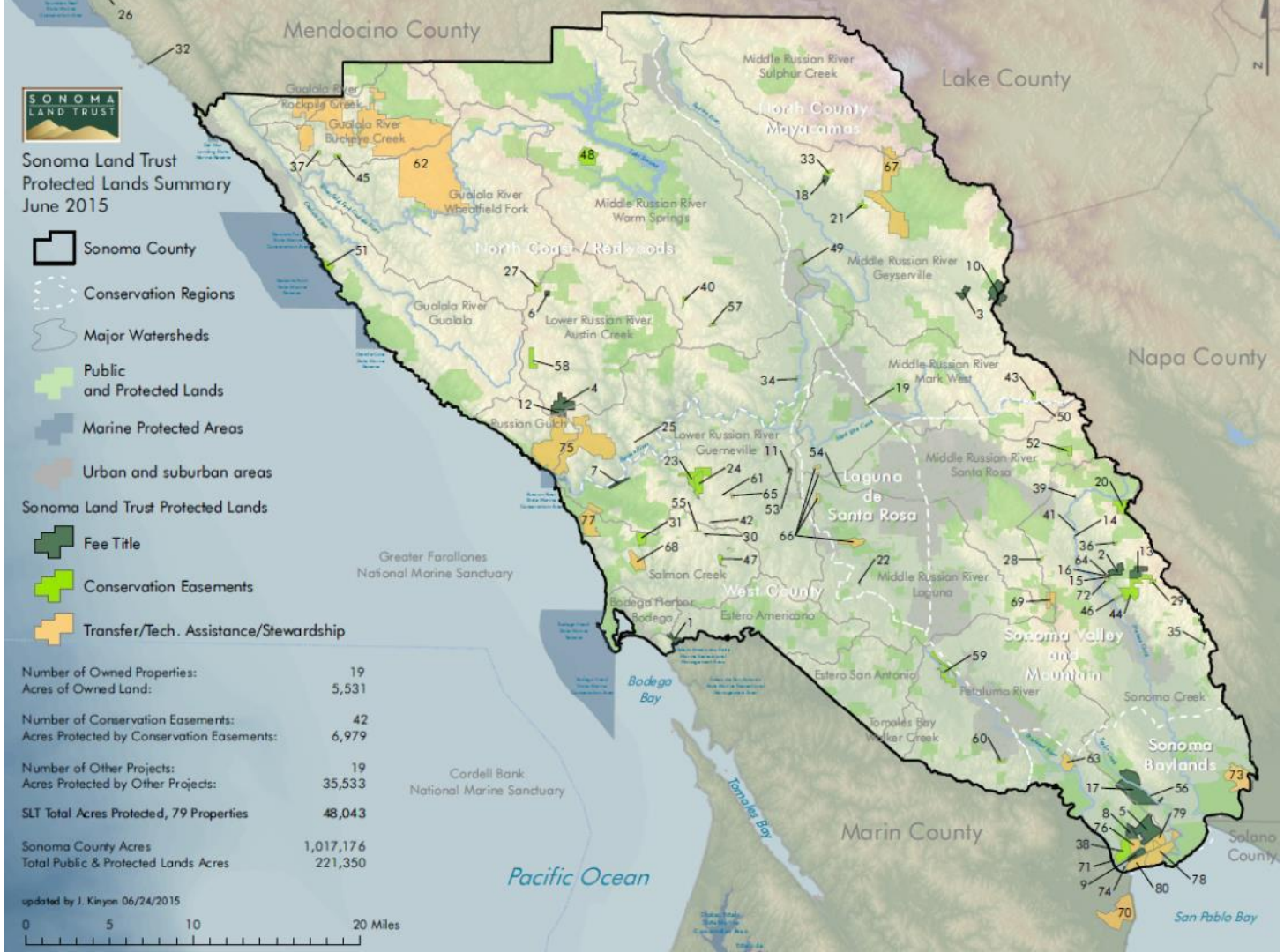
40 YEARS OF LAND PROTECTION IN SONOMA COUNTY

SONOMA LAND TRUST
... to protect the land forever

Celebrating 40 years

Our mission

To protect the scenic, natural, agricultural and open landscapes of Sonoma County for the benefit of the community and future generations.


Sonoma Land Trust
Protected Lands Summary
June 2015
Sonoma County
Conservation Regions
Major Watersheds
Public and Protected Lands
Marine Protected Areas
Urban and suburban areas
Sonoma Land Trust Protected Lands
Fee Title
Conservation Easements
Transfer/Tech. Assistance/Stewardship
Number of Owned Properties: 19
Acres of Owned Land: 5,531
Number of Conservation Easements: 42
Acres Protected by Conservation Easements: 6,979
Number of Other Projects: 19
Acres Protected by Other Projects: 35,533
SLT Total Acres Protected, 79 Properties 48,043
Sonoma County Acres 1,017,176
Total Public & Protected Lands Acres 221,350
updated by J. Kinyon 06/24/2015
0 5 10 20 Miles
Mendocino County
Lake County
Napa County
Marin County
Solano County
Pacific Ocean
Bodega Bay
Tomales Bay
San Pablo Bay
Greater Farallones National Marine Sanctuary
Cordell Bank National Marine Sanctuary
North County Mayacamas
North Coast / Redwoods
West County
Laguna de Santa Rosa
Sonoma Valley and Mountain
Sonoma Baylands
Middle Russian River Sulphur Creek
Middle Russian River Warm Springs
Middle Russian River Geyserville
Middle Russian River Mark West
Middle Russian River Santa Rosa
Middle Russian River Laguna
Lower Russian River Austin Creek
Lower Russian River Guerneville
Gualala River Gualala
Gualala River Wheatfield Fork
Gualala River Buckeye Creek
Gualala River Rockpile Creek
Russian Gulch
Salmon Creek
Bodega Harbor
Estero Americano
Estero San Antonio
Petaluma River
Sonoma Creek
Tomales Bay
Walker Creek

Little Black Mountain Preserve

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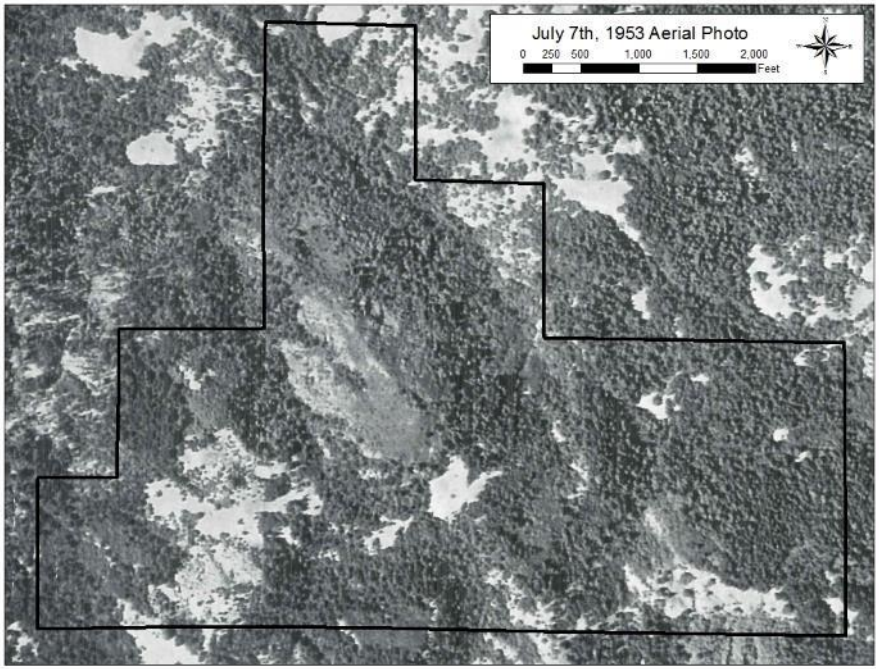

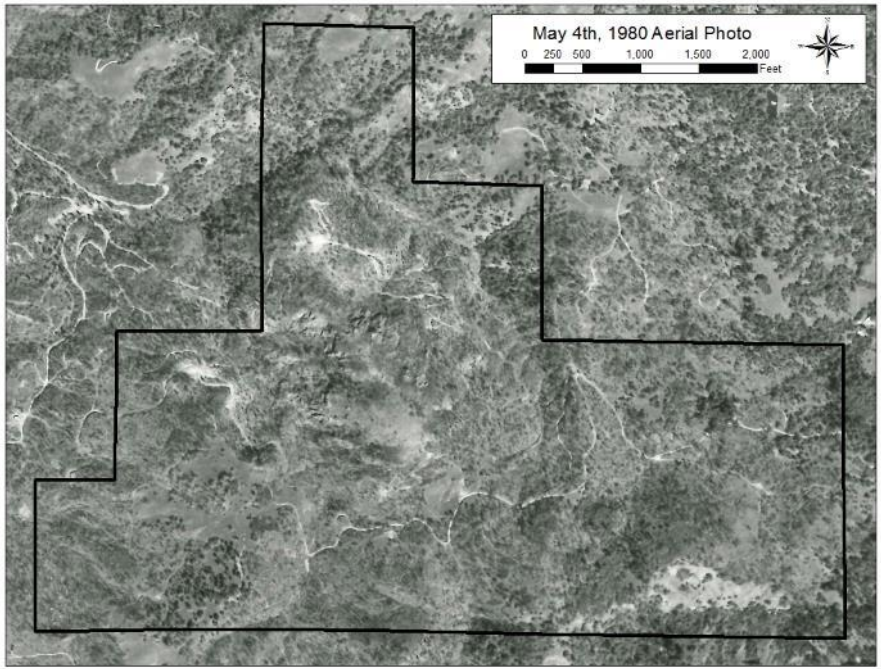

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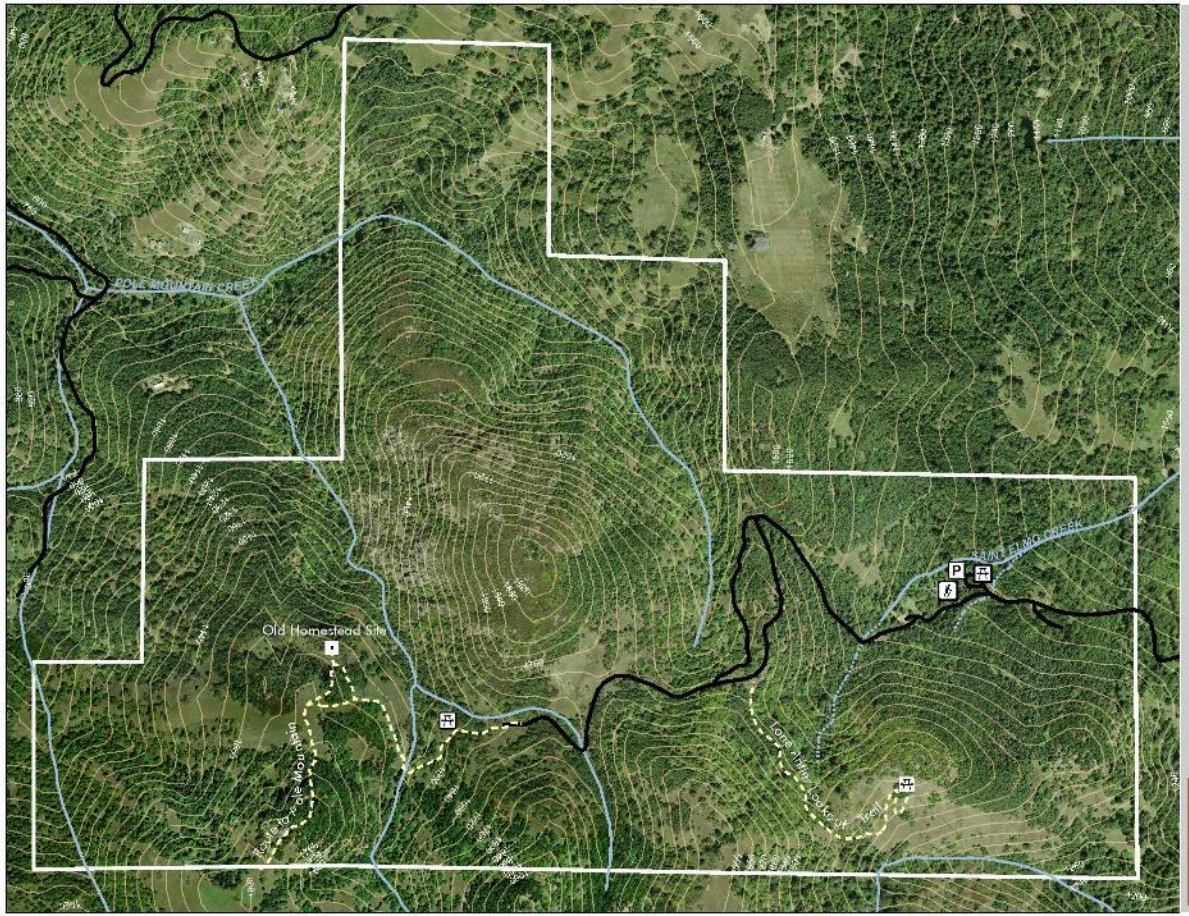

Little Black Mountain Preserve

Trails & Recreation

Figure 8

- Property Boundary
- Trails
- Intermittent Creek
- Road
- Streams
- 40 ft Contour Interval

Property boundaries are approximate only.
Source: County of Sonoma Enterprise GIS Database 2013
Imagery: SCAPOSD 2013
Map produced by SLT 4/2014

N
W E
S

0 250 500 1,000 Feet

SONOMA LAND TRUST

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Project Costs

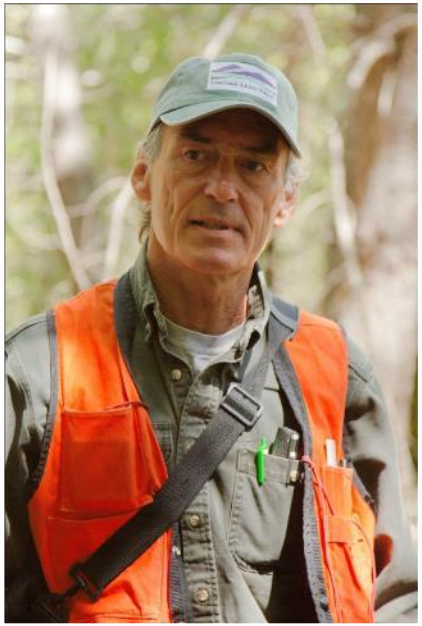
CalFire CFIP Cost-Share

Fuel Reduction Crews (Great Tree Tenders)

Conservation Corps North Bay

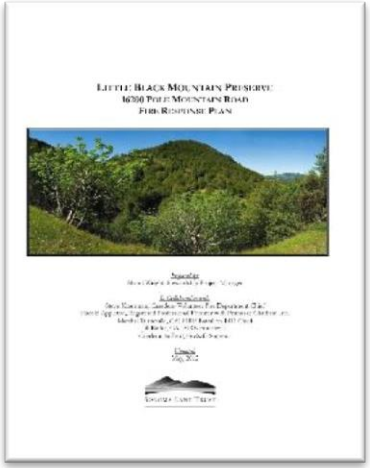
FireSafe Sonoma Chipper Program

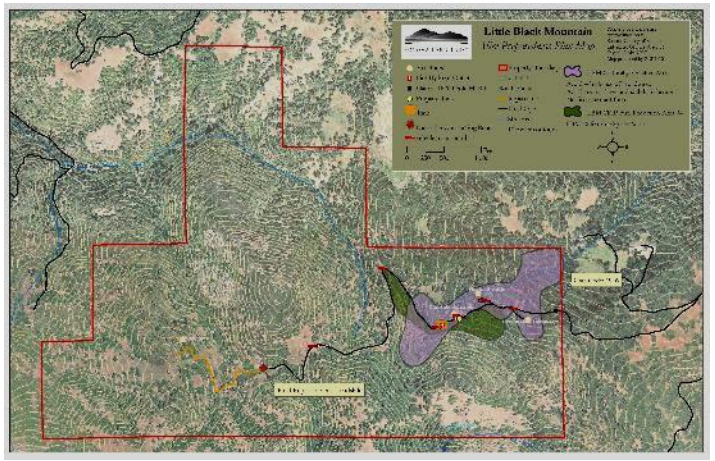
Project Guidelines



- Focus on removing suppressed, spindly or dead/dying trees.
- Emphasis on wildlife habitat: snags, downed wood, and preference for redwood/madrone.
- Leave buffers in drainages.
- Open up stands to reduce competition while allowing for increased species and age-class diversity.
- Maintain safety access corridors.
- Consider the view-shed.

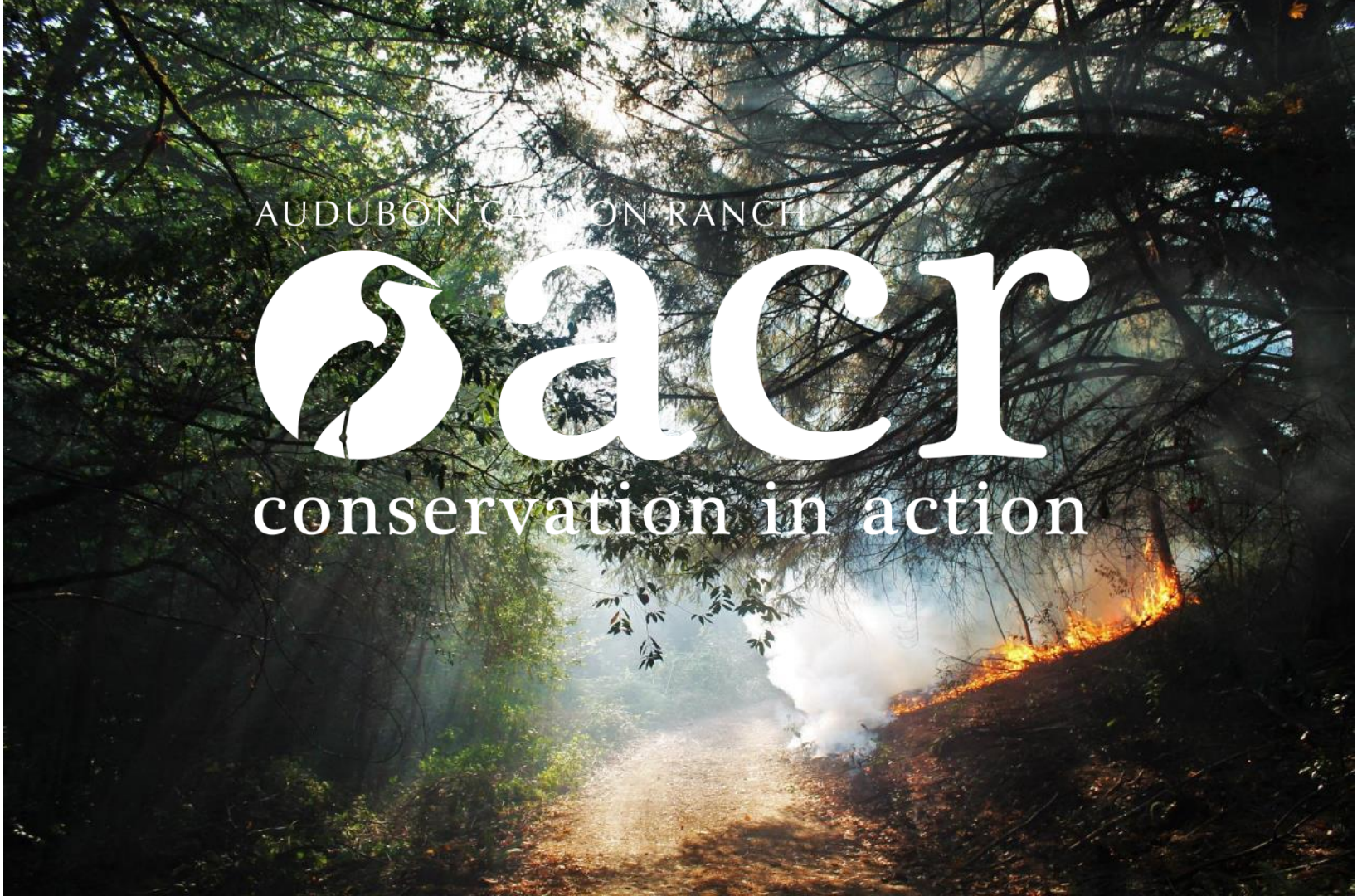
Fire Response Plan





Partnerships & Acknowledgement

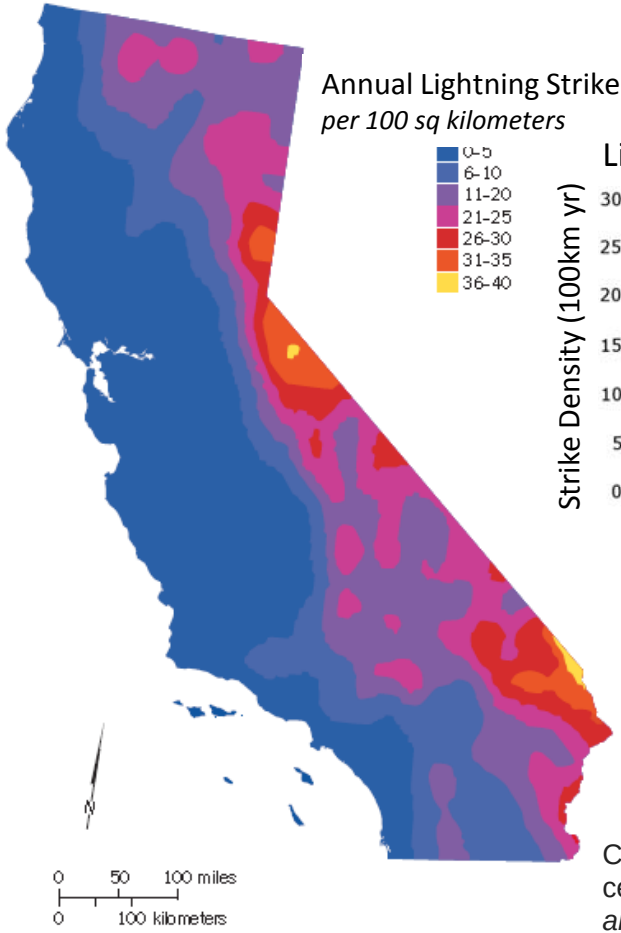
- Harold Appleton, RPF
- Jill Butler, CalFire
- Conservation Corps North Bay
- FireSafe Sonoma
- Cazadero Volunteer Fire Dept.

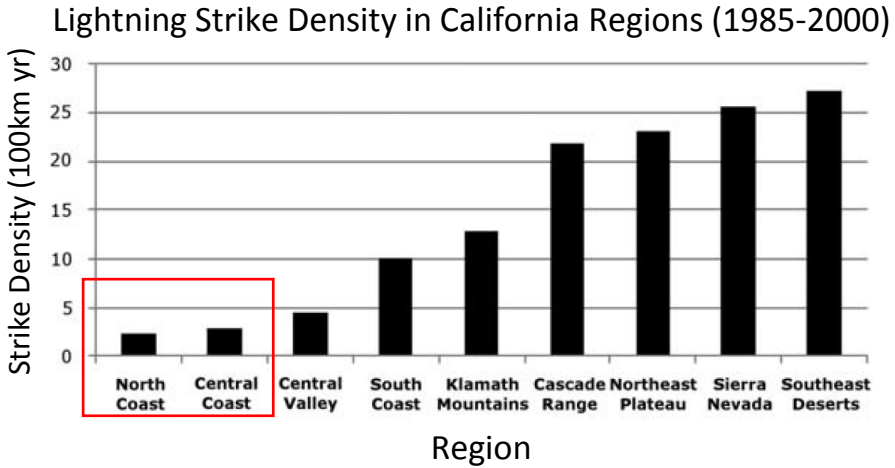

AUDUBON CANYON RANCH
acr
conservation in action

Prehistoric fire area and emissions from California's forests, woodlands, shrublands, and grasslands

Stephens et al. 2007. *Forest Ecology and Management*, *251*(3), 205-216.

“Approximately 1.8 million ha burned annually in California prehistorically (pre 1800). Our estimate of prehistoric annual area burned in California is 88% of the total annual wildfire area in the entire US during a decade (1994–2004) characterized as “extreme” regarding wildfires. The idea that US wildfire area of approximately two million ha annually is extreme is certainly a 20th or 21st century perspective. 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.”





Cuthrell, Rob Q., et al. "A land of fire: Anthropogenic burning on the central coast of California." *Contemporary issues in California archaeology* (2012): 153-172.

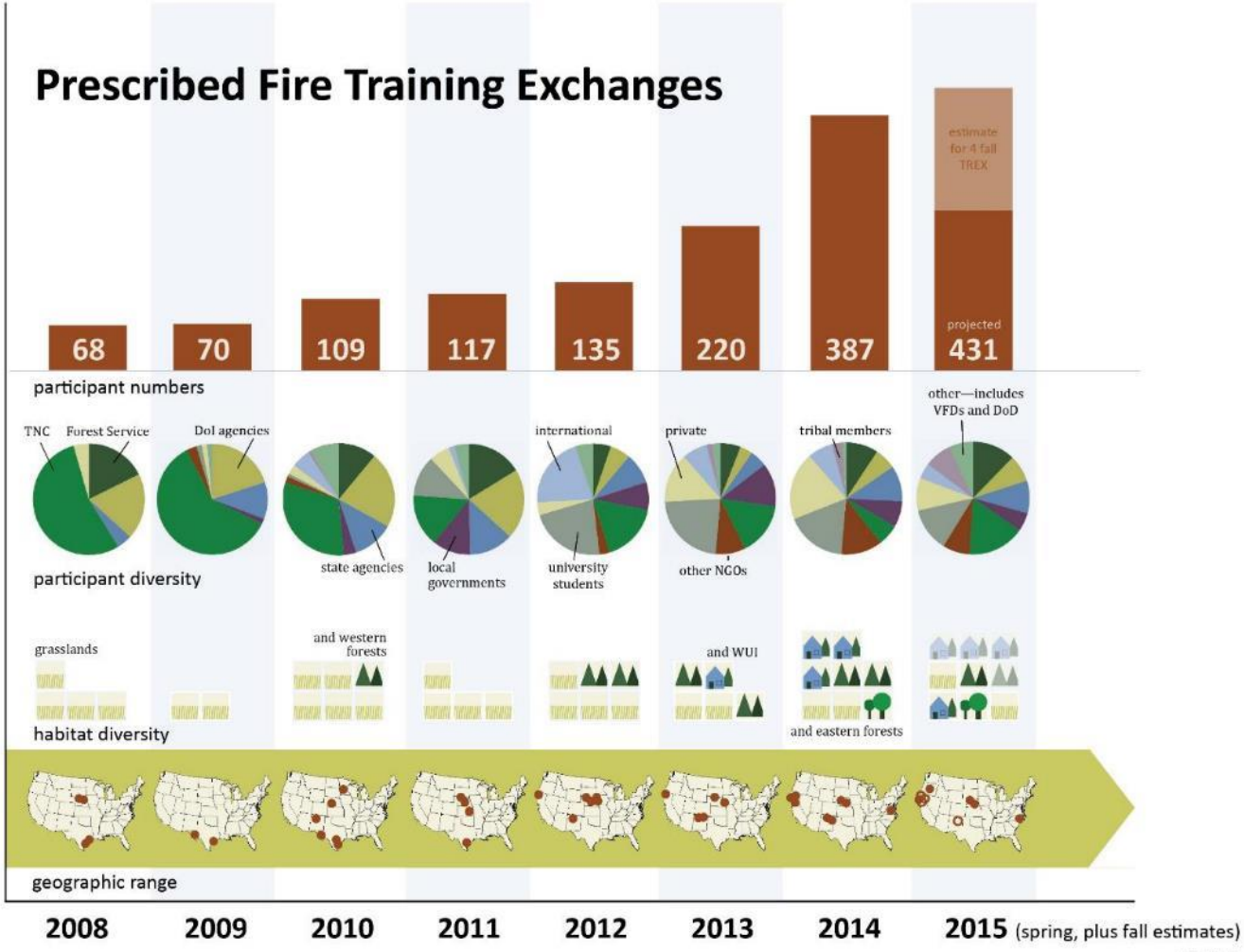
FS Agreement No. 16-MU-11052012-148
Cooperator Agreement No.

MEMORANDUM OF UNDERSTANDING
FOR THE PURPOSE OF INCREASING THE USE OF FIRE TO MEET ECOLOGICAL AND OTHER MANAGEMENT OBJECTIVES

Between the
USDA, FOREST SERVICE
PACIFIC SOUTHWEST REGION
AND
SIERRA FOREST LEGACY,
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION,
STATE OF CALIFORNIA SIERRA NEVADA CONSERVANCY,
THE NATURE CONSERVANCY,
USDI, NATIONAL PARK SERVICE PACIFIC REGION,
THE WILDERNESS SOCIETY,
THE SIERRA CLUB,
CENTER FOR BIOLOGICAL DIVERSITY,
NORTHERN CALIFORNIA PRESCRIBED FIRE COUNCIL,
SOUTHERN SIERRA PRESCRIBED FIRE COUNCIL

[Cal]TREX!

FLN


Prescribed Fire Training Exchanges
estimate for 4 fall TREX
projected
68
70
109
117
135
220
387
431
participant numbers
TNC
Forest Service
DoI agencies
state agencies
local governments
international
university students
private
other NGOs
tribal members
other—includes VFDs and DoD
participant diversity
grasslands
and western forests
and WUI
and eastern forests
habitat diversity
geographic range
2008
2009
2010
2011
2012
2013
2014
2015 (spring, plus fall estimates)

v. 21 Jul 15

Sasha Berleman, PhD
Fire Ecologist, Audubon Canyon Ranch
sasha.berleman@egret.org


CALIFORNIA DEPARTMENT OF
FORESTRY & FIRE PROTECTION
CAL
FIRE
SINCE 1885


83

Drought, Fire, Pests & Disease: Forest Management Challenges

Steven Swain
Environmental Horticulture Advisor
UCCE Marin & Sonoma Counties

Forest Management

- Forests regulated themselves just fine (better?) without us
  - … but they were different forests
    - North bay dominated by conifers
  - … in different climates
    - Yosemite was a glacier
  - Fire
  - Weather events (drought, storms)
  - Pests & Diseases

Forest Management

- Native Americans were good at working with these elements
  - Mostly by favoring one (fire) over the others
  - They managed native forests this way for thousands of years
    - Except the last ~100
  - Native American benchmark
  - Human management is natural in our forests

Fire as a management tool

- Kills some small trees
  - Encourages larger trees
- Reduces other small trees to stump sprouts
- Raises big tree canopies
- Culls weak trees
- Keeps stands open
- Selects for fire resistance
- Can we manage like fire in its absence?
  - Do we want to?

Photo courtesy Igor Lacan, UCCE Advisor

Drought as default manager

- Selects for different things:
  - Not (?) fire resistance
  - Pest & pathogen resistance
  - Drought resistance
    - Smaller, tougher trees
- May be inevitable
  - Global warming
- “Stunted” above ground
  - Maybe bigger below ground!

Native Pests & Pathogens

- What usually kills stressed trees
  - Mimic fire in some ways
    - Take out stressed trees quickly
  - Mimic drought in others
    - Killed trees are often the bigger or older ones
  - Bark beetles
  - Root rots (e.g.: Armillaria)
  - Botryosphaeria
    - Madrone
    - Giant sequoia
    - Grapes
- Improve tree health
  - UC IPM

Exotic pests: The wild-card

- May not respond to existing management strategies
- Don’t always prefer stressed trees
  - May prefer strongest, healthiest trees
- Fire may cull (or may not)
  - But even if it worked, could it be practiced widely enough?

Management Options

- No management
  - Drought
  - Catastrophic fire (weedy species)
- Small scale fuels
  - Not quite the same as fire
- Prescribed burns
  - Bigger, wetter forests
- Manage for pests
  - Vector removal
  - Pathogen biology
    - Limited scope
  - Law of unintended consequences
- Manage for biodiversity
  - Pests / Pathogens cull trees
  - Global warming
    - Drought
  - Know your lands and plants
  - Preserve rare species

Resources

- Current forest pests / pathogens of concern:
  - California Oak Mortality Task Force website: www.suddenoakdeath.org
  - UCR Center for Invasive Species Research: http://cisr.ucr.edu/
    - Gold spotted oak borer, polyphagous shot hole borer, others
- UC ANR Forestry website: http://ucanr.edu/sites/forestry/
- UC IPM website: http://ipm.ucanr.edu/
- California Forest Pest Council: http://caforestpestcouncil.org/
- CalFire's website: http://www.fire.ca.gov/
- US Forest Service: https://www.fs.fed.us/
- Natural Resource Conservation Service: https://www.nrcs.usda.gov/
  - Soil web survey: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
- Local Resource Conservation District: http://www.carcd.org/rcd_directory0.aspx

- These presentations are on line at: http://ucanr.edu/MarinIPM
- Steven Swain: svswain@ucanr.edu
  415 473 4226