



# UPDATE ON PRESCRIBED BURNING

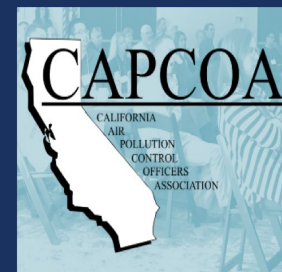
## BALANCING AIR QUALITY AND LAND MANAGEMENT NEEDS



CARB BOARD HEARING \* JULY 25, 2019



CALIFORNIA  
AIR RESOURCES BOARD



# CALIFORNIA'S NATURAL AND WORKING LANDS

*rangeland*



*forests*



*wetlands*



*grasslands*



*farmland*



*riparian areas*



*seagrass*



*urban green-space*



## NATURAL AND WORKING LANDS: SINK OR SOURCE?

- 5.5 Billion MT total ecosystem carbon (2014)
- 170 MMT carbon loss (2001-2014)

Equivalent to 635 MMT CO<sub>2</sub>e

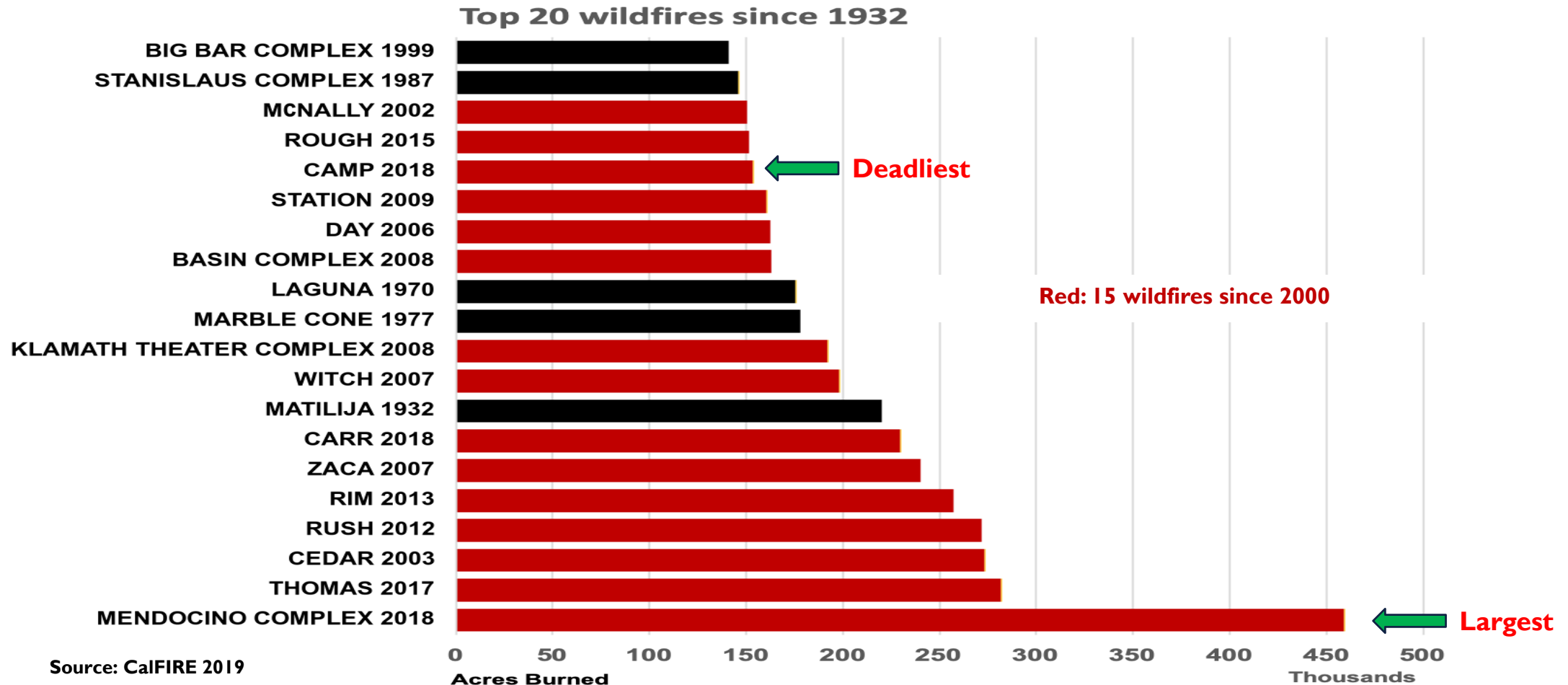






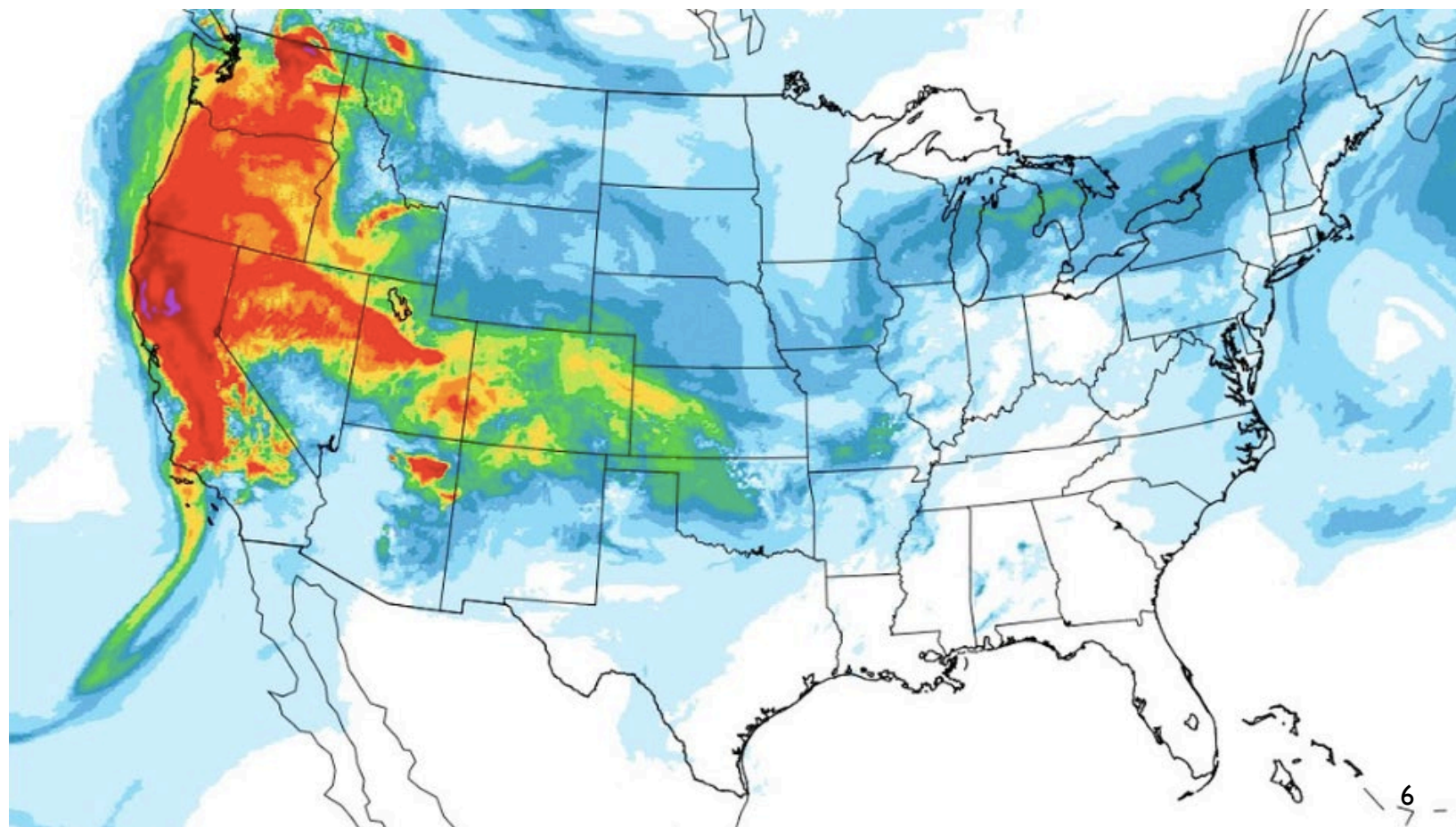


# CALIFORNIA WILDFIRES ARE INCREASING IN SIZE AND INTENSITY



# WILDFIRE SMOKE POSES A MAJOR PUBLIC HEALTH RISK

- ❑ Smoke may travel thousands of miles, impacting millions of people.
- ❑ Fine particulate penetrates deep into lungs.
- ❑ Wildfire smoke includes toxics from burning homes, businesses, and vehicles.
- ❑ Wildfire season in California is now extending into the winter months.



Wildfire smoke concentrations on August 8, 2018 (National Weather Service)



# PRESCRIBED BURNING REDUCES RISK OF WILDFIRE



- ❑ Prescribed fire has been used for many years by Native Americans and land managers to reduce vegetation and risk of future wildfire.
- ❑ Conducted under controlled conditions and optimal meteorology.
- ❑ Less smoke exposure for the public than uncontrolled wildfires.
- ❑ Improves forest health and return to more natural ecosystem.
- ❑ Healthier, less dense forest stores more carbon, less susceptible to disease and future megafires.

# RECENT WILDFIRES TRIGGER REPORTS AND LEGISLATIVE ACTION



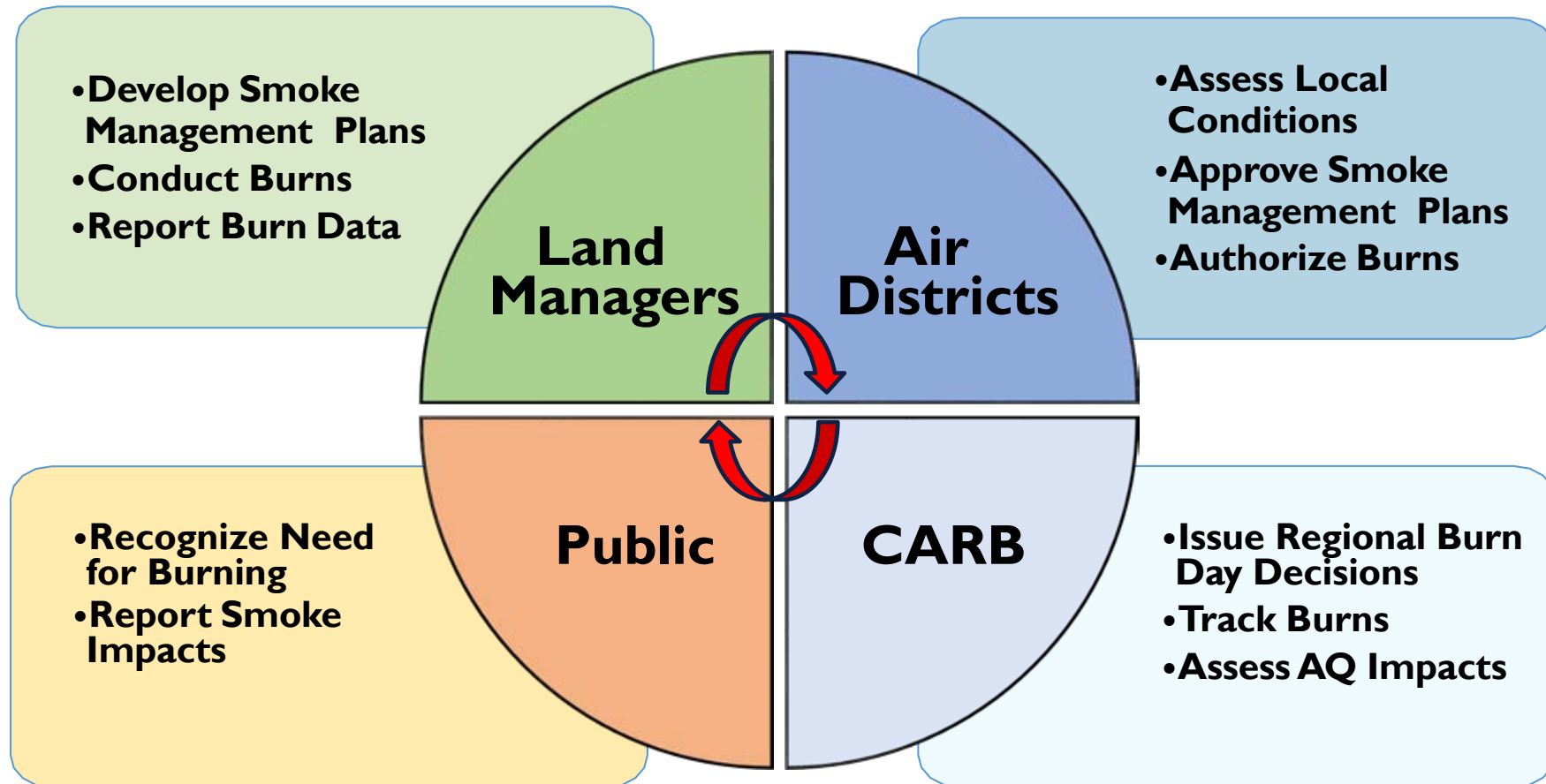


# COMMON RECOMMENDATIONS

- ❑ Significantly increase the number of acres treated with prescribed fire.
  - ❑ Improve coordination between land management, air quality, and other agencies.
  - ❑ Allocate more resources to allow for more prescribed fire.
  - ❑ Streamline regulatory and permitting processes.
  - ❑ Educate the public about forest resiliency and the need for fire on the landscape.

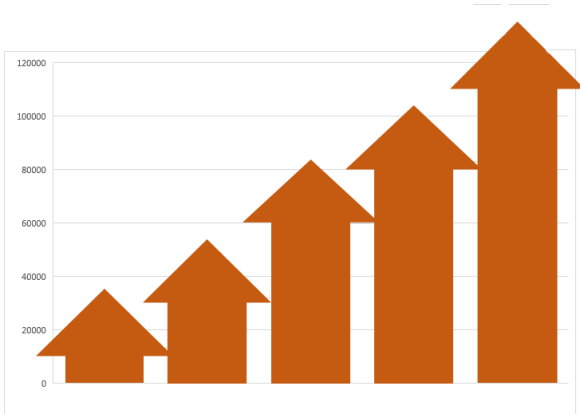


# CALIFORNIA PARTNERS ENGAGED IN PRESCRIBED FIRE

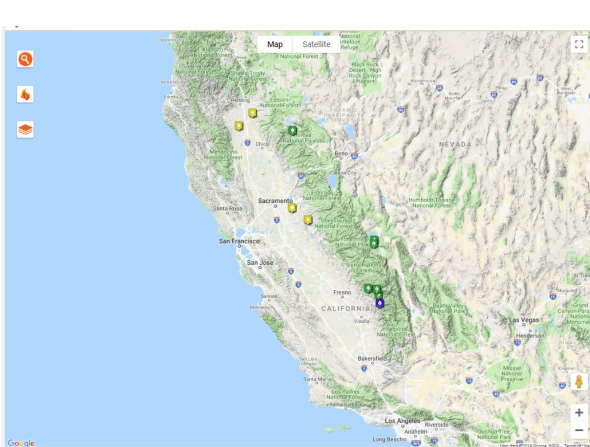




# CARB'S NEW PRESCRIBED FIRE PROGRAM ELEMENTS



Better utilize available permissive burn days

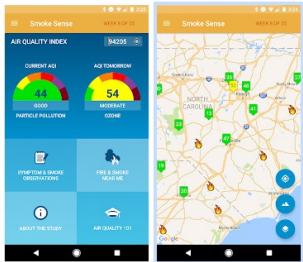


Enhance Prescribed Fire Information Reporting (PFIRS) tool

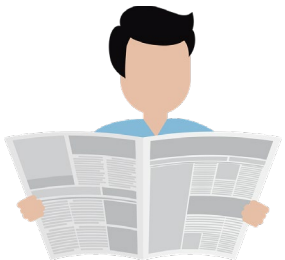
# CARB'S NEW PRESCRIBED FIRE PROGRAM ELEMENTS



Strengthen prescribed fire air monitoring network



Develop new mobile smoke information app for the public



Increase and coordinate public outreach and messaging

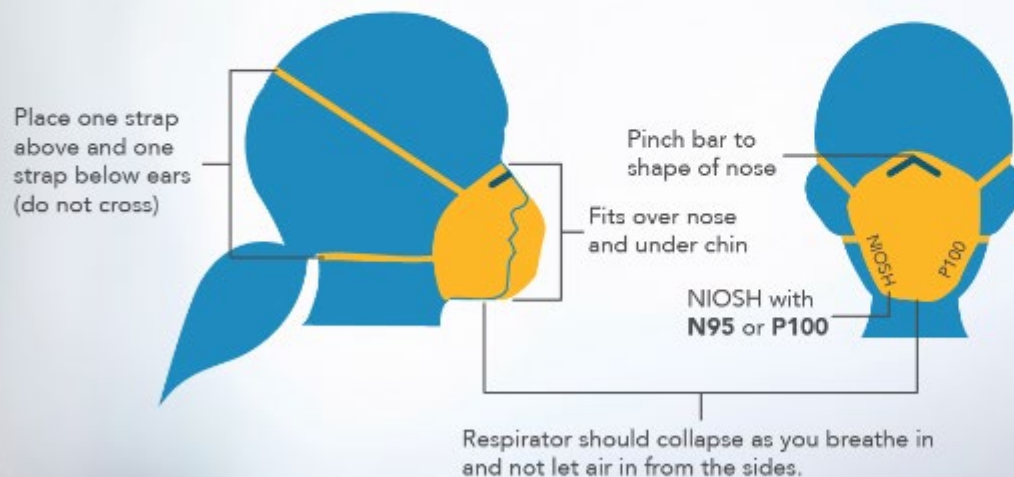


# WILDFIRE SMOKE PROTECTION

## The right respirator\* and proper fit can reduce your exposure to wildfire smoke

Look for respirators (masks) marked NIOSH with **N95** or **P100**, which can be found online, or in hardware, home repair, or drugstores.

*\*Respirators are not designed to fit children. Facial hair prevents proper fit and reduces effectiveness.*



### TIPS FOR USAGE

Cloth (wet or dry), paper masks, and tissues will **NOT** filter out wildfire smoke.

If you are dizzy or nauseous, go to where there is less smoke and seek medical attention.

Throw mask away if it's dirty or you find it difficult to breathe.

Use a respirator only after first trying other, more effective methods to avoid smoke. That includes staying indoors and reducing activity. When possible, people at risk should move away from the smoky area.

Ask your doctor before using if you have heart or lung health issues.



# CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION



**Helge Eng**

Deputy Director for Resources  
Management





# FIRE PREVENTION

Not just prescribed fire but concerted use of a number of tools:

- Land use planning
- Retrofit existing homes
- Building codes for new homes
- Evacuation Planning, including ingress, egress
- Power line clearance
- Utility wildfire mitigation plans
- Education
- Enforcement
- Vegetation management - need both prescribed fire and thinning





# FUELS REDUCTION CREWS

- Goal: 500,000 acres per year by 2025
- 10 CAL FIRE fuels reduction crews
- 5 National Guard fuels crews







# CALIFORNIA CLIMATE INVESTMENTS (CCI)

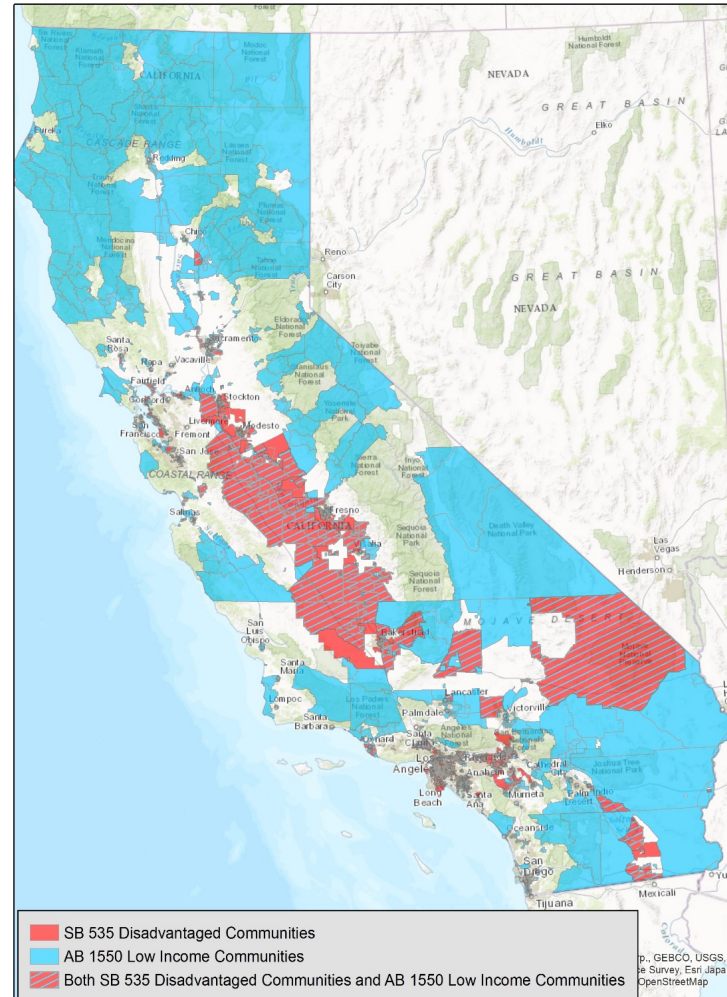
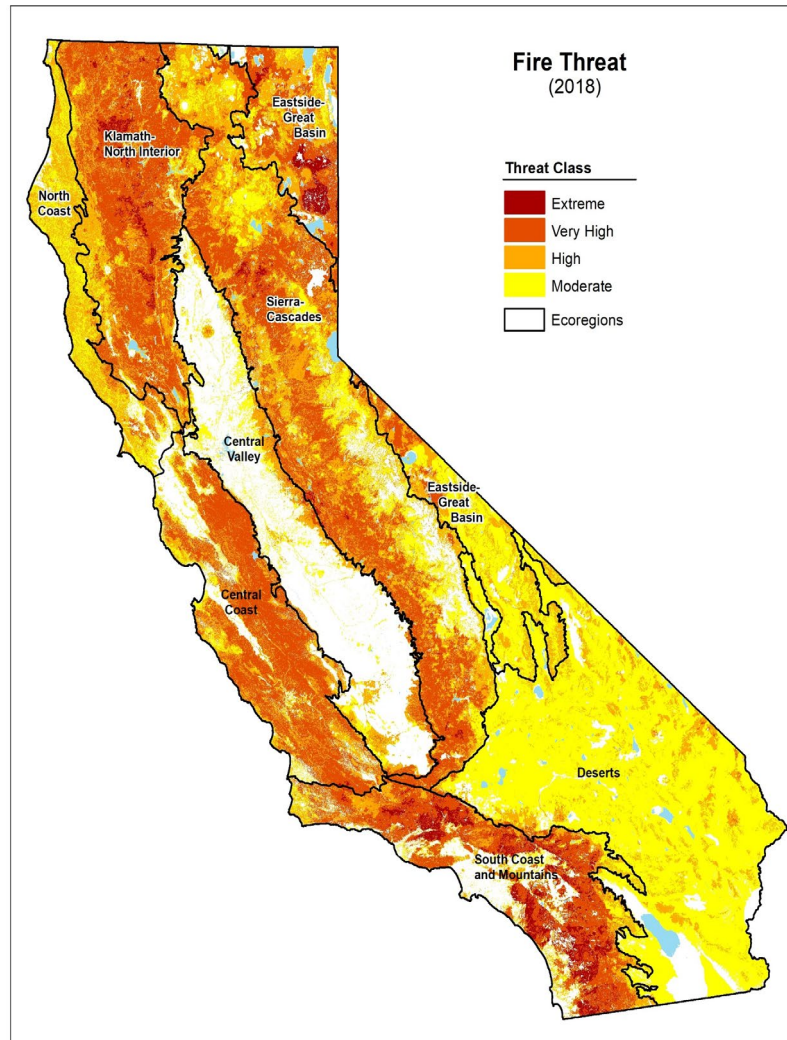
- Forest health
- Wildfire resilience
- Fuels reduction
- Carbon sequestration
- Grants
- Direct funded projects
- \$200 million annually for next 5 years







# HIGH PRIORITY TREATMENT AREAS







# MONITORING

In 2017 the California Air Resources Board (CARB) and the California Department of Forestry and Fire Protection (CAL FIRE) established a Joint Prescribed Fire Monitoring Program (PRC 4495).

- Smoke and air quality as measured by PM2.5 concentrations and other metrics.
- Prescribed fire treatment effectiveness on fire hazard reduction over time, as measured by reduced rate of spread, flame length, crown fire potential, and other metrics.
- Prescribed fire treatment effects on ecosystems over time as measured by changes in aboveground carbon, tree mortality and damage, soil surface conditions, understory plant species diversity and cover, and other variables.
- Pair information on fuel hazard, emissions, and ecological effects with air quality measurements.



*Environmental Beta-Attenuation Mass Monitor (E-BAM) unit deployed to monitor a prescribed fire at Sugar Pine Point State Park, October 2018*





# MONITORING

*Pre- and post-fire measurements of fuels at Sugar Pine Point State Park. October, 2018*

- How much smoke and accompanying greenhouse gas was put into the atmosphere?
- How much of that smoke reached nearby communities?
- Were communities impacted and if so, for how long? How would this compare to wildfire impacts?
- Did we achieve our fuel consumption targets, and how long will the fuel and fire hazard take to return?
- To what extent was the likelihood of crown fire in forested ecosystems reduced?







# UNITED STATES FOREST SERVICE



**John Exline**

Pacific Southwest Region Director  
for Ecosystem Management



# SMOKE MANAGEMENT AND AIR QUALITY

- Thanks to CARB for a 20+ year smoke mgt. partnership.
- **Monitoring, Modeling, and Communication** are key.
- Our coordinated response to wildfire smoke is helping build improved strategies for prescribed fire.
- We have a solid base of coordination and sharing skills to build on.
- Our long time monitoring coordination has led to sound strategies getting quality info to communities.
- We are looking forward to a new MOU with CARB that will help us refine and improve the working relationship.





## PARTNERSHIPS IN PRESCRIBED FIRE

- The Prescribe Fire MOU = multiple partnerships and agreements.
- Cal –Trex agreement helping to build prescribed burning capacity.
- DRI/CANSAC agreement improves forecasts of smoke dispersion and transport.
- NFWF - Allows third party funding and resources to implement prescribed fire.
- Multiple agreements allowing prescribed fire resource sharing across boundaries.







# LONG-RANGE STRATEGIC PLANNING



United States Department of Agriculture

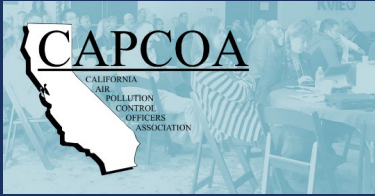
## Land Management Plan for the Inyo National Forest

Fresno, Inyo, Madera, Mono, and Tulare Counties, California;  
Esmeralda and Mineral Counties, Nevada



Forest Service Pacific Southwest Region R5-MB-3032018

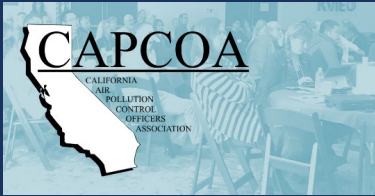
- USDA Forest Service streamlining environmental review.
- Forest-wide prescribed fire NEPA analyses on-going.
- Quantitative risk assessments identify where pre-treatment and prescribed fire is likely to be successful.
- Forest plans are revised to facilitate more prescribed fire, as well as managing natural ignitions.
- Amendment of other forest plans to allow use of managed wildfire for resource objectives.



# CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION



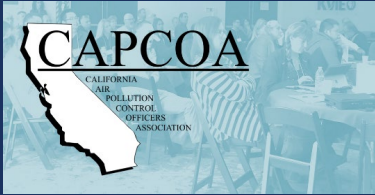
**Erik White**  
President



## LOCAL AIR DISTRICTS TAKING ACTION

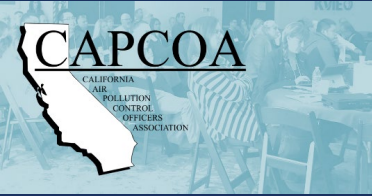
- Both urban and rural areas impacted by wildfires.
- Efforts underway to respond.
  - Coordinated state/air district strategies.
  - Includes increased smoke management, enhanced monitoring, outreach and education.
- Increased response requires integration of local capability/experience with state resources to ensure efficiency of response and confidence of public.





## ENHANCED SMOKE MANAGEMENT PROGRAM

- \$2 million to CARB to assist the local air districts on Smoke Management Programs.
- CARB/CAPCOA developed program design in January 2019.
  - \$1.2M to local districts – improve/update smoke management plans, public outreach, increased air monitoring of prescribed burns.
  - CAPCOA's Program:
    - \$140,000 for quarterly reporting, public messaging, PFIRS.
    - \$300,000 for monitoring of prescribed fires.
    - \$200,000 for enhanced training across CAPCOA.
  - CARB Program: \$150,000 for eBAM caches at local districts.



## NEW INITIATIVES UNDERWAY

- Program status:
  - 32 Air Districts participating in program.
  - CAPCOA's program ready to begin work.
  - CAPCOA participating in various State work groups.
  - Internal work groups established to develop:
    - Enhanced PFIRS.
    - Public outreach materials.
    - Increased monitoring.
    - Consolidated permitting processes.
    - Smoke training program.



# GOVERNOR'S FOREST MANAGEMENT TASK FORCE



**Jennifer Montgomery**  
Director



## SUMMARY

- California wildfires are growing in size and frequency
- Impact on public health and climate are significant
- California lawmakers recognize need for healthier forests
- Local, state, and federal agencies collaborating to facilitate more prescribed fire
- Actions include more crews on the ground, streamlined permitting, enhanced monitoring, and increased public outreach and education
- Improving forest health will help meet climate goals and reduce public exposure to wildfire smoke



THANK YOU