



California's Perspective on Mass Timber

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Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.

Mass timber should be a part of the building and climate solution.



Photo by Bernard Andre, construction images © TG Photography, www.woodworks.org

A photograph of a dense forest with tall, slender trees and sunlight filtering through the canopy. In the top-left corner, there is a small orange square icon with a white speech bubble and a plus sign.

Context

- 33 million acres of forest land in CA = 1/3 of the state's land area
 - 60% is publicly owned
 - 57% federal
 - 3% state
 - 40% is privately owned
 - 14% industrial
 - 26% non-industrial (tribes, families, & individuals)



Issues

- Fire exclusion
- Overstocked forests
- Drought
- Increased temperatures
- Size, intensity of wildfires
 - Smoke
 - Water supply
- Bark beetle infestations
 - 2010 – 2018 >129 million trees died
- CA's climate goals

Forest Carbon Plan: May 2018

Forest Goals

- Resilient
- Adaptive to climate change
- Long-term carbon sinks
- Not source of GHG and black carbon emissions from wildfire

California Forest Carbon Plan

Managing Our Forest Landscapes in a Changing Climate



May 2018

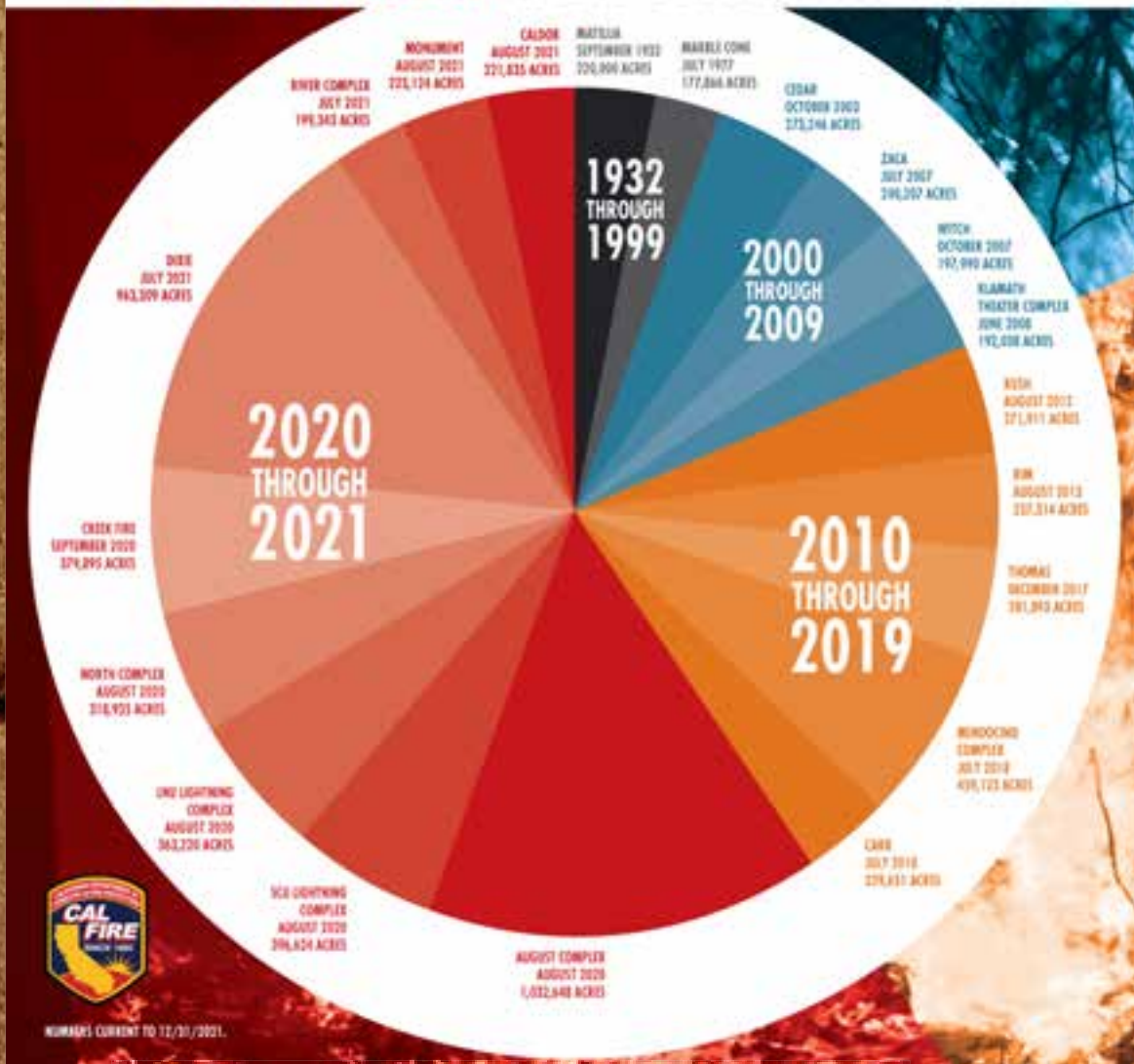


Executive Order B-52-18: May 2018

- Doubled land managed to 500,000 acres
- Streamlined permitting for landowners
- Supported innovative forest products, established Joint Institute
- Requested \$96 million for Forest Carbon Plan
- Review of International Code Council Tall Wood Ad Hoc code change proposals for adoption into intervening code cycle

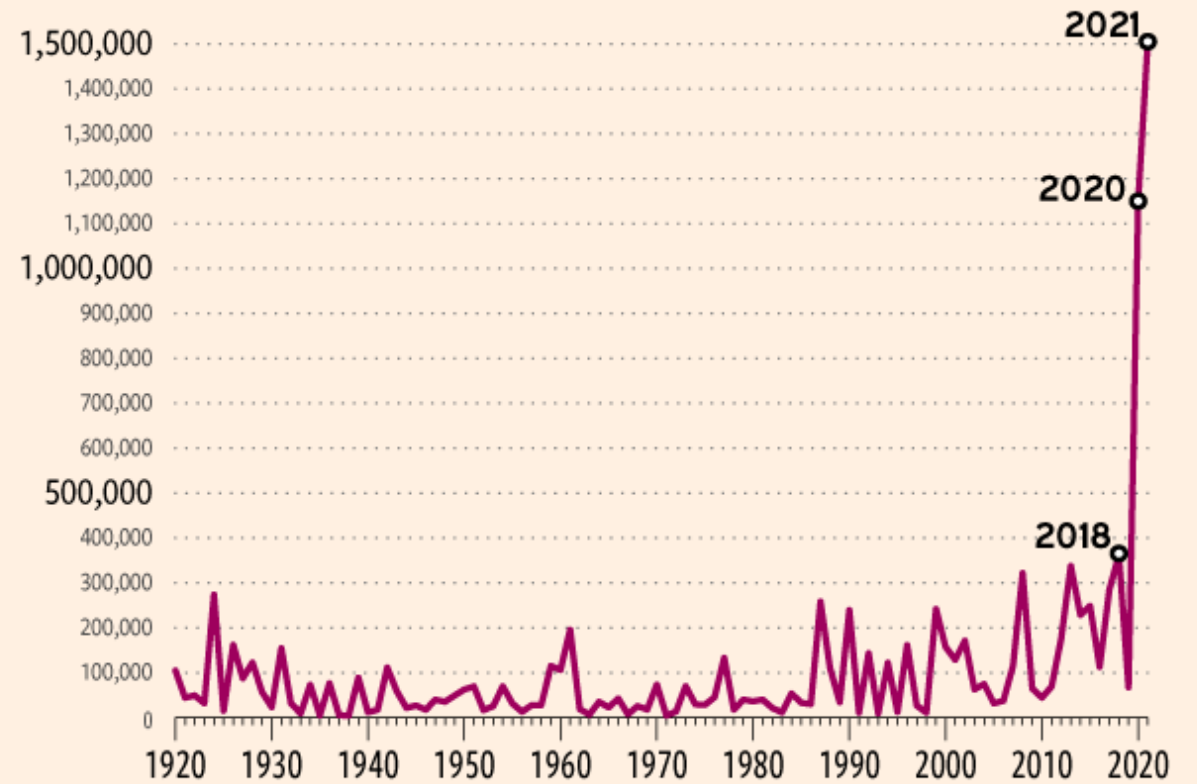
Wildfires

TOP 20 LARGEST CALIFORNIA WILDFIRES



ACRES BURNED in the SIERRA NEVADA

Every year since 1920



Sierra Nevada Conservancy 1/24/2022

Tree Mortality

- 2021
 - 9.5 million trees over 1.3 million acres died
 - Temp 3.4°F above avg
 - 2nd warmest year on record
 - 3rd driest year on record
- 2020 - No Flyover, Covid
 - Temp 2.6°F above avg
 - 6th warmest year on record
 - August, 5.2°F above avg; Sept 5.5°F above avg
- 2019
 - 15.1 million trees over 2.2 million acres died
 - Temp was 1.0°F above avg

Innovative Wood Products – Part of the Solution

- Support Forest Restoration Projects
- Utilize salvaged wood
- Rural economic development
- Long-term carbon sequestration, reduced reliance on carbon-intense construction materials
- Encourage capacity building, bring industry to the state, further reduce CA's carbon footprint



Photo by TallWood Design Institute

Assembly Bill 2518, Innovative Forest Products and Mass Timber

- Board of Forestry
 - Identify barriers
 - In-state production of mass timber, other innovative forest products
 - Workforce training, job creation
 - Identify solutions
 - Consistent with forest climate objectives
 - Innovative forest products
 - Mass timber workforce training, job creation

 **Sierra Institute**
for Community and Environment



2021

MASS TIMBER AND OTHER INNOVATIVE WOOD PRODUCTS IN CALIFORNIA:

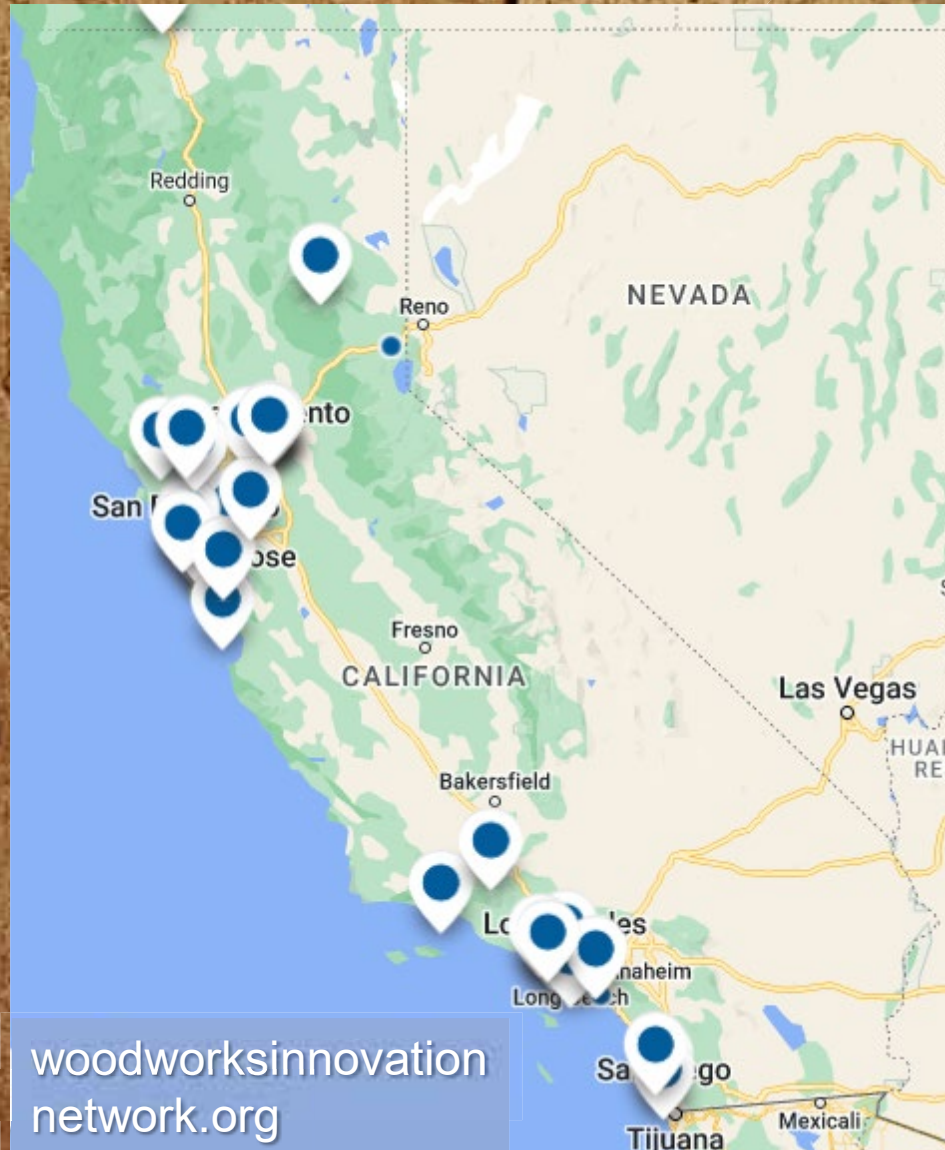
A STUDY OF BARRIERS AND POTENTIAL
SOLUTIONS TO GROW THE STATE'S
SUSTAINABLE WOOD PRODUCTS SECTOR



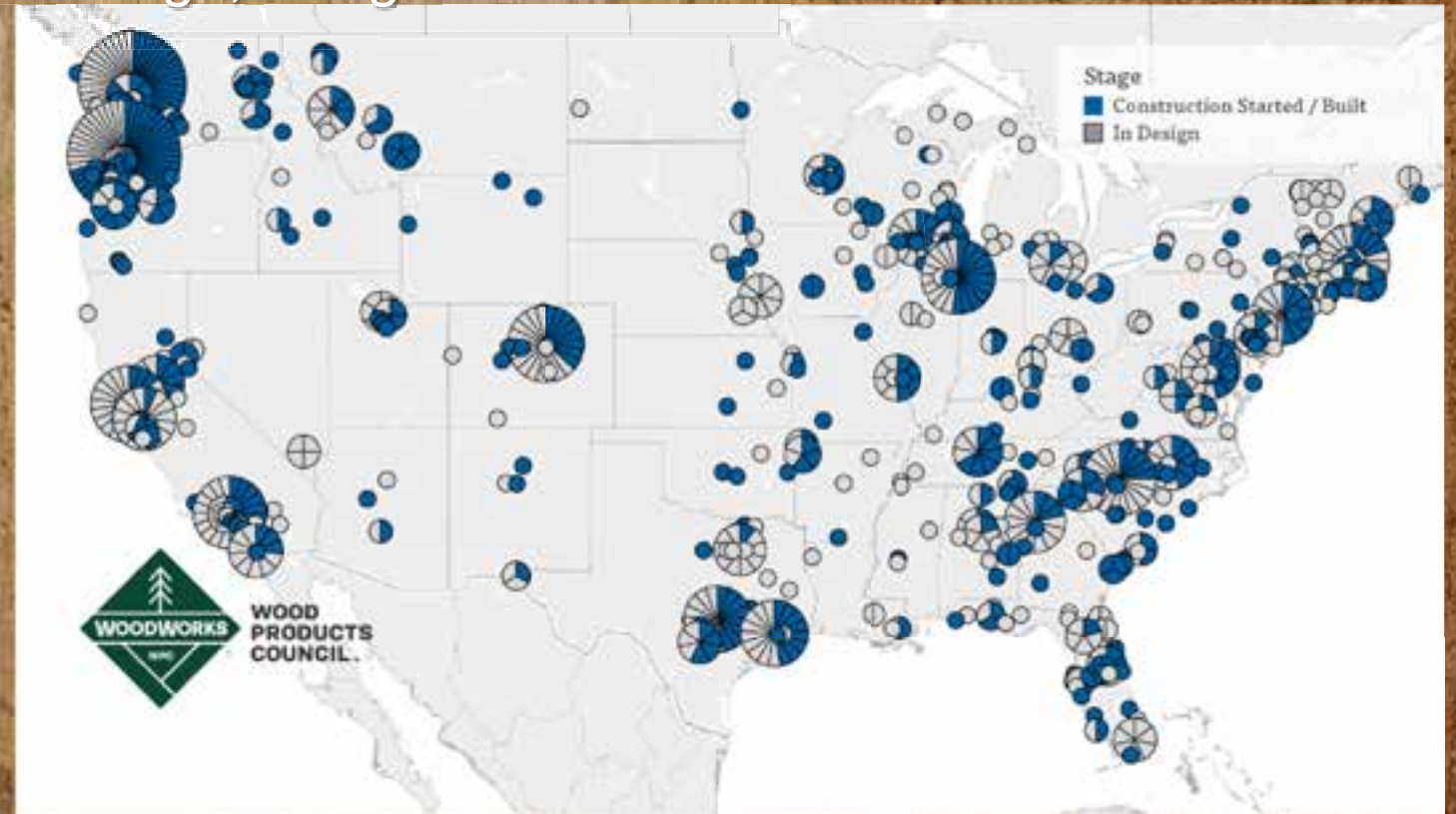
California Promotes Architectural Innovation Through Mass Timber Competition

- **Winners**
 - CA College of the Arts, SF - \$200,000; 107,000 sq/ft; 4 stories
 - Skid Row Housing Trust, LA - \$200,000; 77,190 sq/ft; 14 stories
 - OC Sanitation District - \$40,000; 109,000 sq/ft
 - Sunnydale Development Company - \$40,000; 31,000 sq/ft
- **Honorable Mentions**
 - Microsoft – 640,000 sq/ft; 2 stories
 - Tahoe Regional Arts Foundation – 75,000 sq/ft

Mass Timber Projects in Design and Constructed in US, Dec 2021



As of March 2022, 1,384 multi-family, commercial, or institutional projects have been constructed, or are in design, using mass timber.

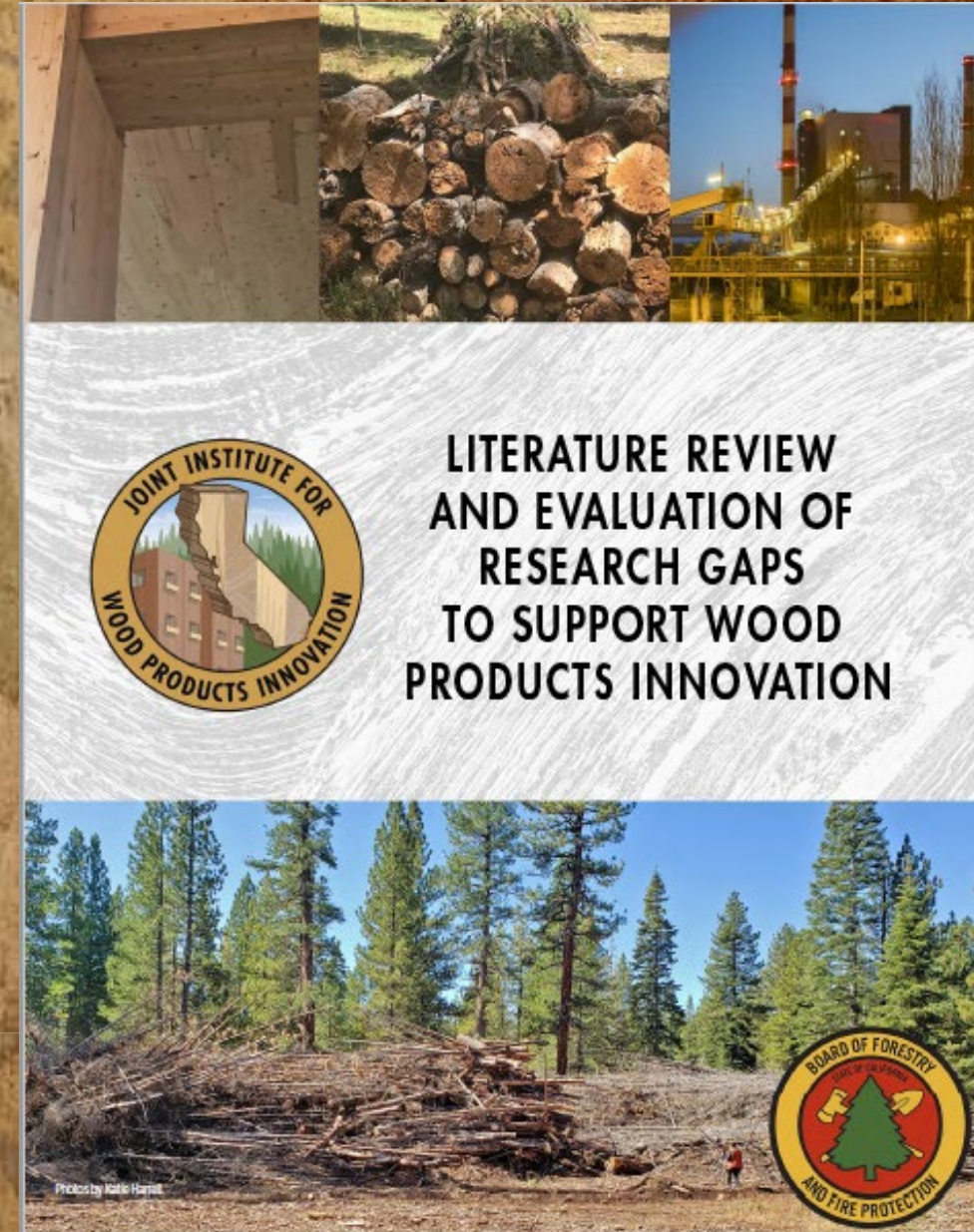


Source: WoodWorks, March 31, 2022

* This total includes modern mass timber and post-and-beam structures built since 2013

Joint Institute for Wood Products Innovation

- CA forest product information, research, analysis to increase economic drivers for healthy forests
- Long-term ecological and economic sustainability
- Education and outreach
- Increased forest resilience, long-term carbon storage, and local economies
- Industry retention/development in CA





TALLWOOD
DESIGN INSTITUTE



Final Report

Cross-Laminated Timber Layup Tests Using Western
Wood Products Association (WWPA) White fir Species
Group

Submitted by

TallWood Design Institute

to the

Joint Institute for Wood Products Innovation

June 2021

Mass Timber

Pending Contract

Mixed Species CLT
Layup Tests Using
Western Wood
Products Association
White Fir Species
Group



Photo Credit: Holmberg Group

Dr. Daniel Sanchez
& Dr. Haris Gilani

University of California, Berkeley
February 22, 2022



Pending: Measuring Transport Properties for Concrete Containing CNC: Porosity, Resistivity, and Chloride Ingress

FOREST BIOMASS PILE AND BURN DATA: PRELIMINARY ANALYSIS AND MAPPING



UNDERSTANDING INTENTIONAL FIRE IN THE FORESTED LANDS OF CALIFORNIA



CLERE Inc.
California Law Empowering Renewable Energy

A Research Collaboration between
California Law Empowering Renewable Energy,
Spatial Informatics Group, and Blue Tree Analytics



Spatial Informatics Group



COLLEGE OF ENGINEERING | School of Civil and Construction Engineering

Cellulose Nanocrystals as a Value-Based Additive for Low Carbon Footprint Concrete with Limestone

Siva Chopperla, Siva Ramanathan, Burkan Isgor, and Jason Weiss

Oregon State University

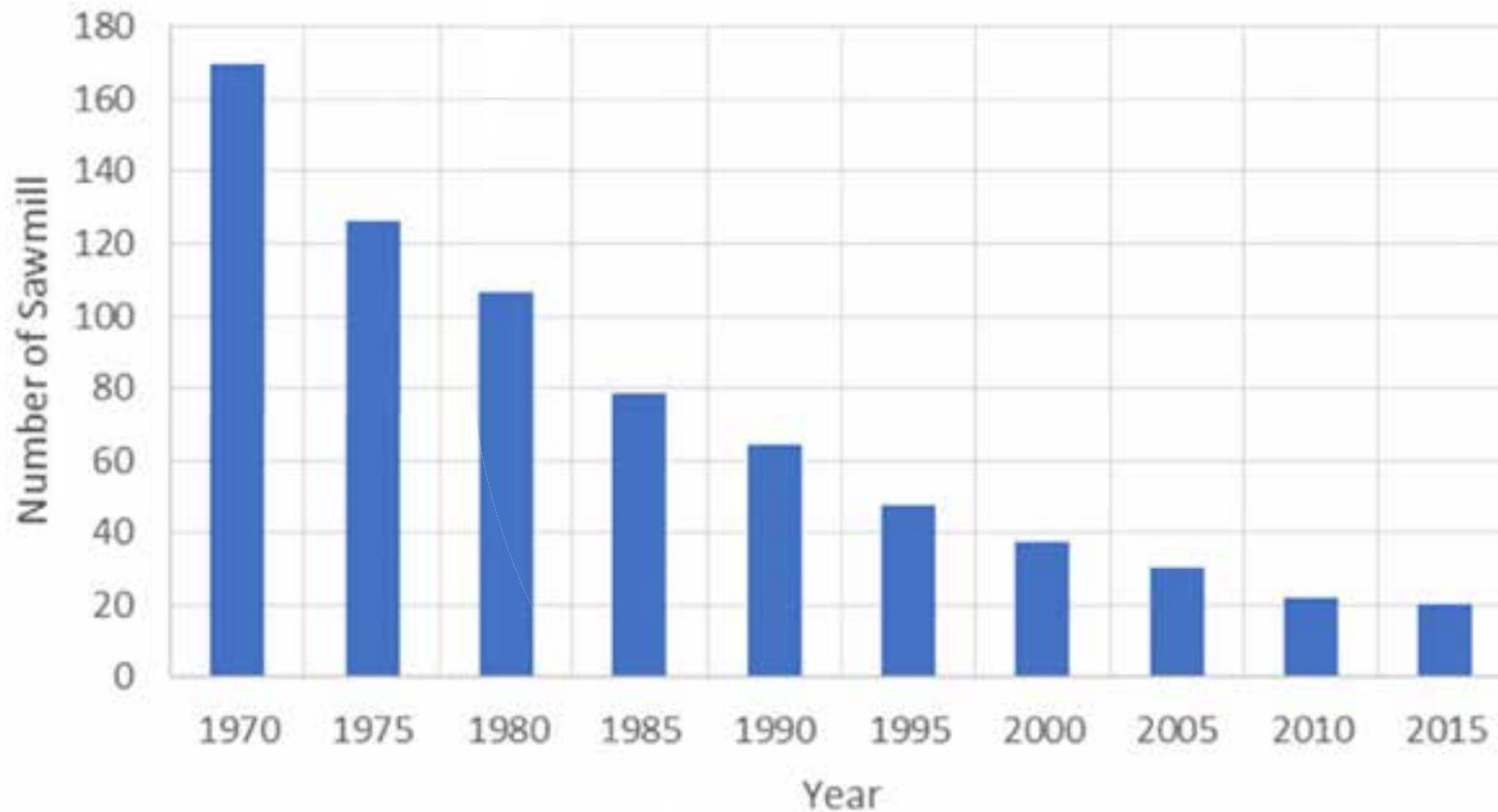


Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Wood Processing and Biomass Utilization Infrastructure

OPEN SAWMILLS, 1970-2015

California Sawmills: 1970 - 2015



- Not including portable sawmills
- Existing mills have upgraded, resulting in increased capacity and efficiencies
- Companies are still investing in mill improvements



Forest Service
U.S. DEPARTMENT OF AGRICULTURE

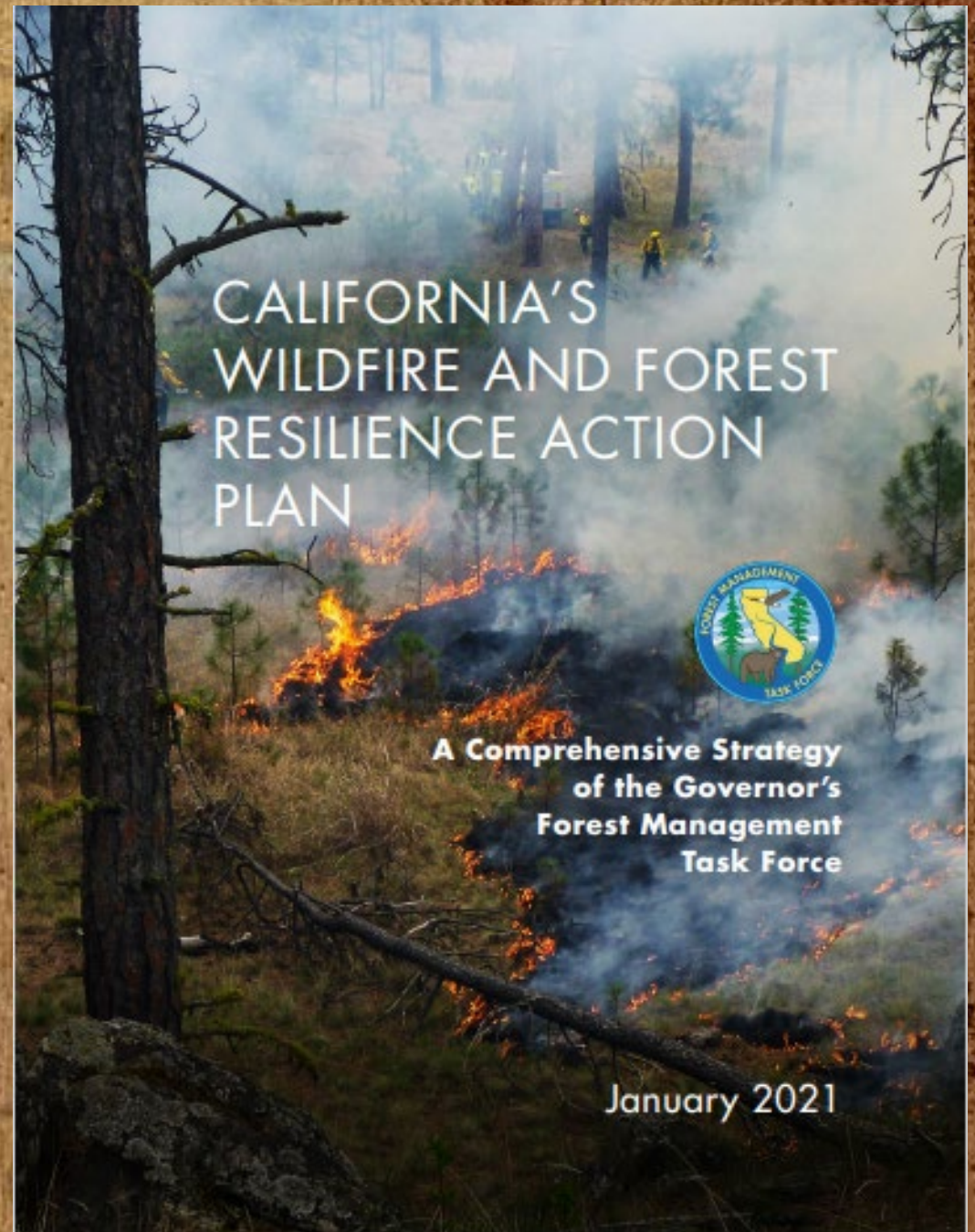
ACTIVE PRIMARY PROCESSING FACILITIES

- 22-24 sawmills consume 0.5 to 200+ MMBF
- 2 green veneer plants
- 1 export chipping facility
- 1 whole-log shavings mill
- 1 utility pole manufacturer
- 1 particle board plant, also processes whole logs
- 13 biomass power plants that use primarily forest biomass
- * At least 2 Small Industrial Sawmills (3-15 MMBF log scale) expected to be operational within 18 – 24 months



Photos by USFS

Create a Sustainable Wood Products Market in California



Climate Catalyst Fund: Goals, Partners, and Priorities

- Seeks to engage investment opportunities and provide technical assistance across all 58 counties
- Emphasizes inclusive prosperity in the climate transition
 - Sustainable Agriculture and Forestry
 - Transportation Emissions Reduction
 - Circular Economy/Waste-to-Value
 - Climate Technology Supply Chain
 - Clean Power Market Stability and Expansion

\$74

MILLION

First capitalization of the Catalyst Fund this year, for Sustainable Agriculture and Forestry



Pillars of Catalyst Program

Cultivating Private Partnerships (GO-Biz)

- Nurture/grow technologies and businesses with climate solutions
- Help companies and investors navigate the state system
- Convey market insights to policy makers

Mobilizing Capital (IBank)

- Catalyst Fund (IBank): Flexible, low-cost capital and credit support
- Leverage \$3+ private dollars per every public dollar invested
- Revolving fund: re-invest proceeds to grow future sectors

Optimizing Government (Statewide)

- Coordinate all levels of government to deliver climate outcomes
- Improve public incentives for greater impact
- Streamline regulations for priority sectors

Woody Feedstock Aggregation

5 Pilot Projects



- Budget
 - \$2.5 million
 - \$500,000 per project
- Goals
 - Establish reliable access to woody feedstock
 - Improve feedstock supply chain logistics
 - Explore/assess market opportunities in each target region
 - Increase feedstock aggregation, especially in areas with community fire resilience benefits

Business and Workforce Development



Photo by CalFire

**Up to \$24
Million
Available
to Wood
Products
Projects**



Photo by Board of Forestry and Fire Protection

So...Back to the Beginning...

California considers mass timber to be a part of the state's climate and housing solution.

Thank you for your time.

Katie Harrell

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