

# Informational Update: Natural & Working Lands and Nature-Based Strategies

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MAY 22, 2025



# Natural & Working Lands: Critical Ecosystem Services

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**FORESTS & SHRUBLAND**



**GRASSLANDS**



**WETLANDS**



**CROPLANDS**



**OTHER LANDS**



**DEVELOPED LANDS**

# Carbon Neutrality

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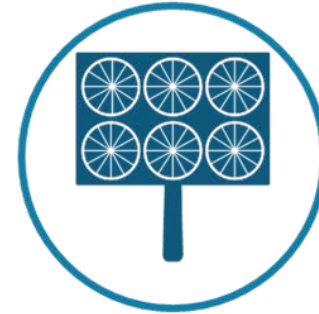
AB 32 Sources  
Fossil Fuels/Industrial  
Land fills  
Dairies

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Natural and Working Lands

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Other Carbon Removal

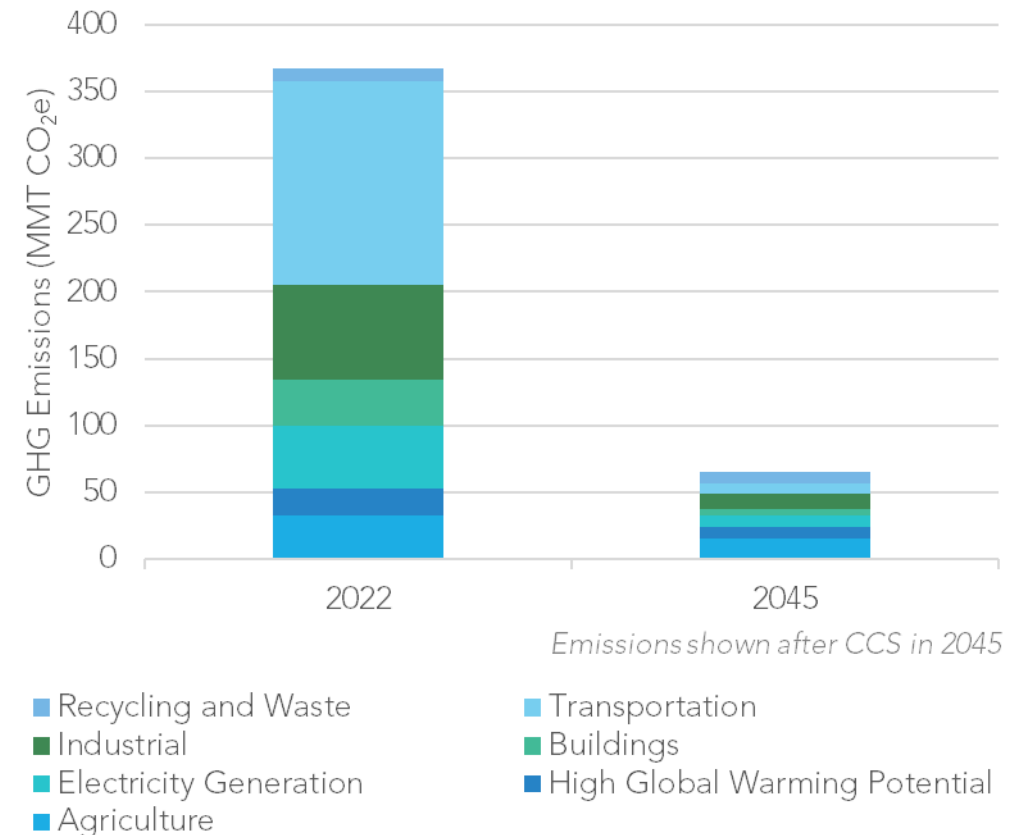
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Carbon  
Neutral

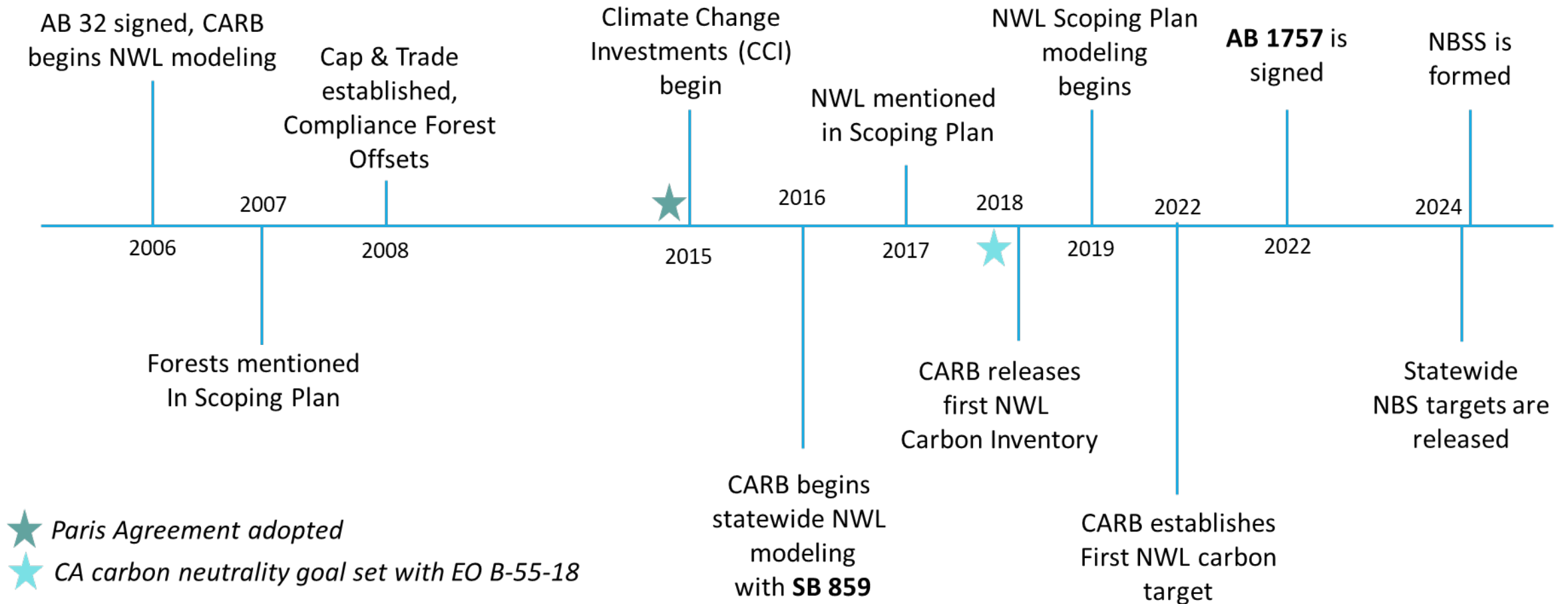
# Ongoing Reductions in Anthropogenic GHGs

## 2045 Target: 85% Reduction below 1990

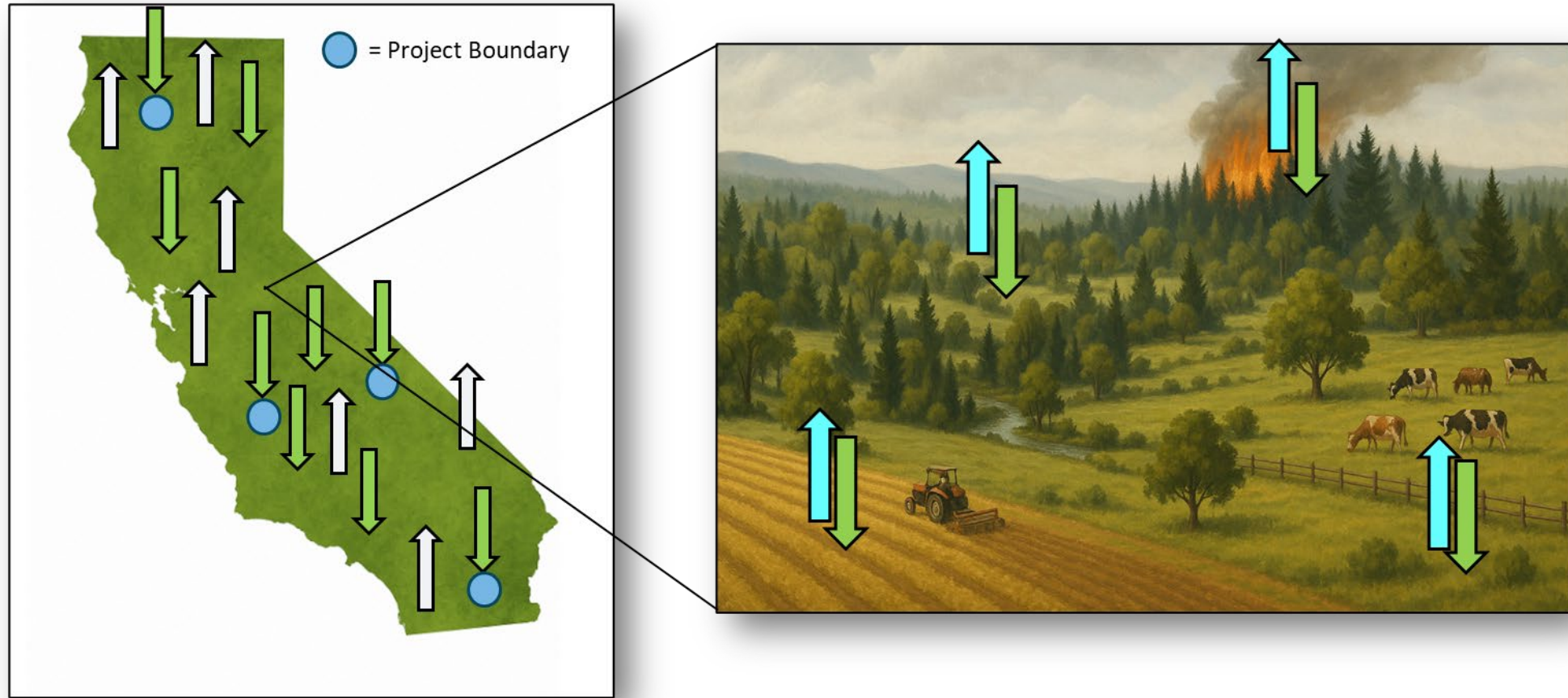
- Some emissions remain in the AB 32 Sectors even after application of CCS
- Need carbon dioxide removal to compensate for residual emissions to achieve carbon neutrality
- Governor's letter to include carbon removal targets for 2030 and 2045
- This decade requires unprecedented deployment and scaling of clean technology and energy
  - Leverage federal and state funds



# Natural & Working Lands and Climate: History and Statutory Direction



# Natural & Working Lands Carbon Inventory: Purpose & Scope

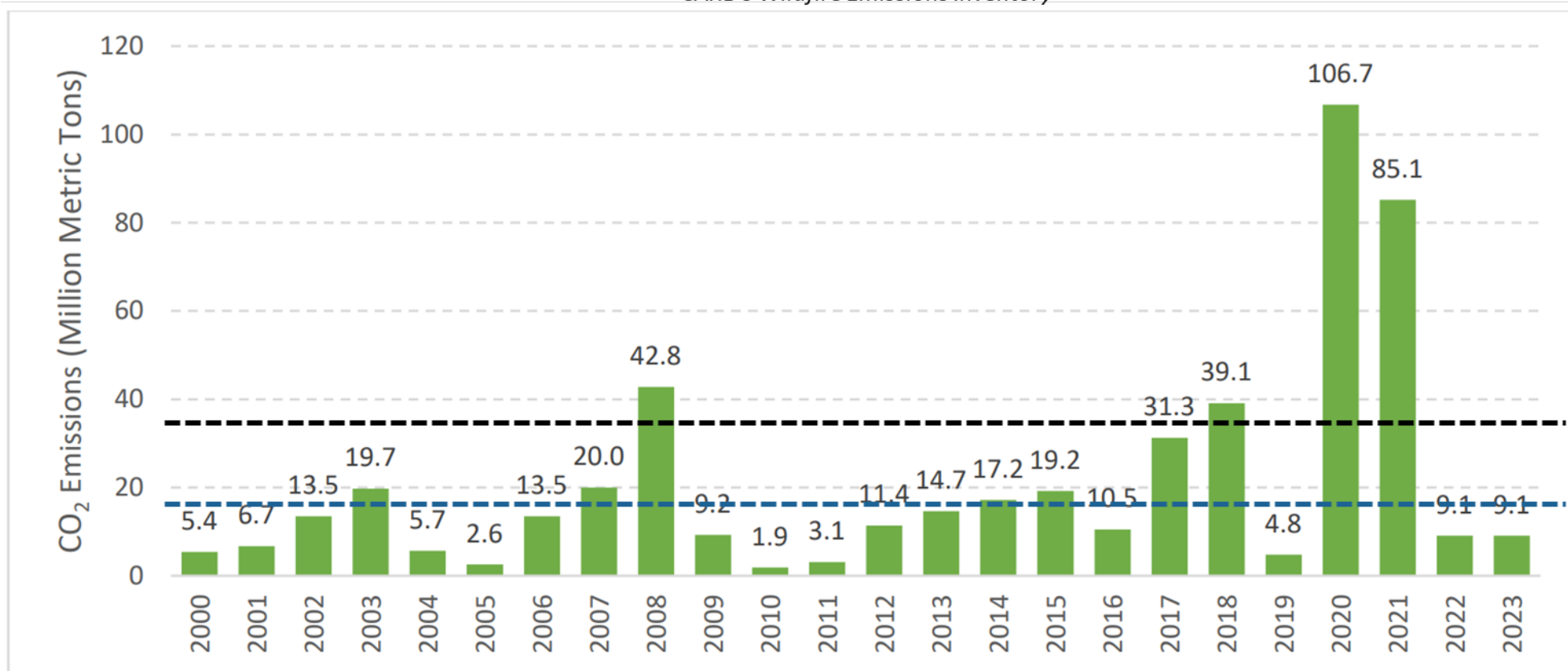




# Wildfire Emissions in Perspective

## Total Wildfire CO<sub>2</sub> Emissions per Year

—CARB's Wildfire Emissions Inventory



Average Annual GROSS  
Carbon Sequestration in  
Forests and Rangelands

—CARB's SB 901 Report

Average Annual  
Carbon Transformed  
by Forest  
Management

—CARB's SB 901 Report

# Natural & Working Lands Carbon Inventory: 2025 Update (& Beyond)

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- Best available, open-access methods and datasets
  - Field data
  - Flux towers
  - Drone, Airborne, Satellites
  - Super computers
- Tracks the contribution of lands to carbon neutrality
- Incorporate the impacts of climate action and inaction
- Includes wildfires, droughts, and other natural disturbances



# Nature-Based Solutions

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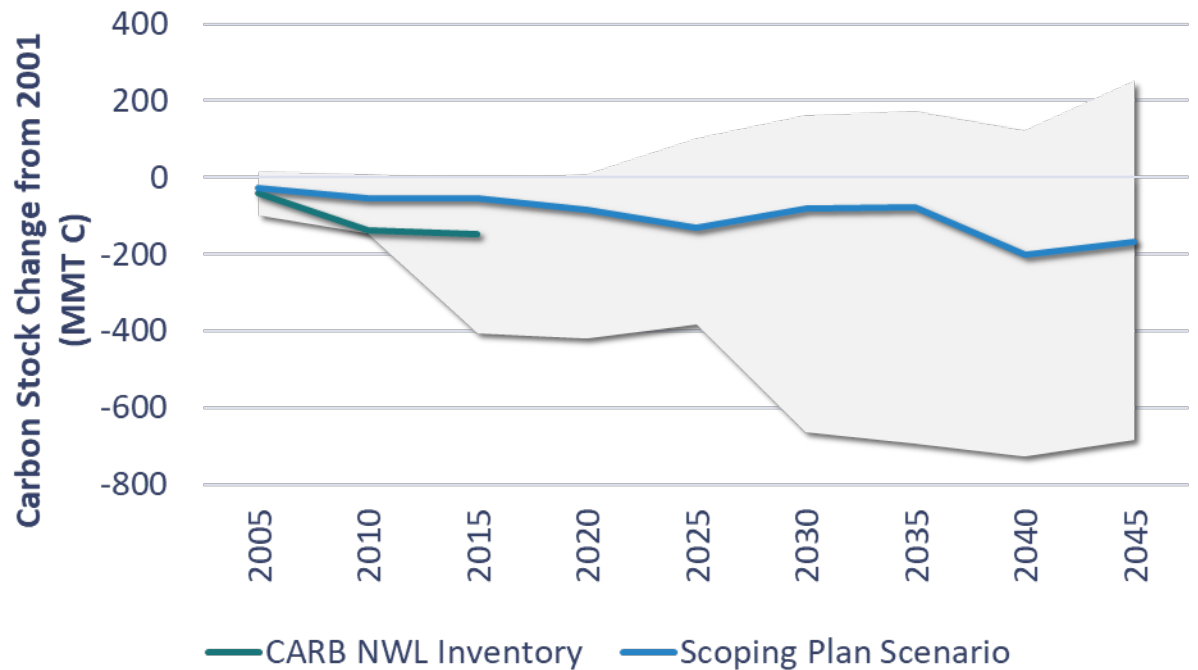
- Promote sustainable carbon stocks and limit future GHG emissions
- Increase resilience to climate change impacts
- Safeguard public health
- Protect food and water security
- Foster biodiversity



*-2022 Natural and Working Lands Climate Smart Strategy*

# 2022 AB 32 Scoping Plan Update

- Carbon Target:
  - Lose no more than 4% carbon stock from California's lands from 2014 – 2045
- Actions can provide carbon dioxide removal to support carbon neutrality
- Actions provide health and other benefits
  - \$3.1B/year in health cost saving from avoided wildfire emissions alone.
  - Water quality benefits, reduced pesticide exposure, increased biodiversity, increased resiliency, and other benefits



# AB 1757 Nature Based Solutions Targets

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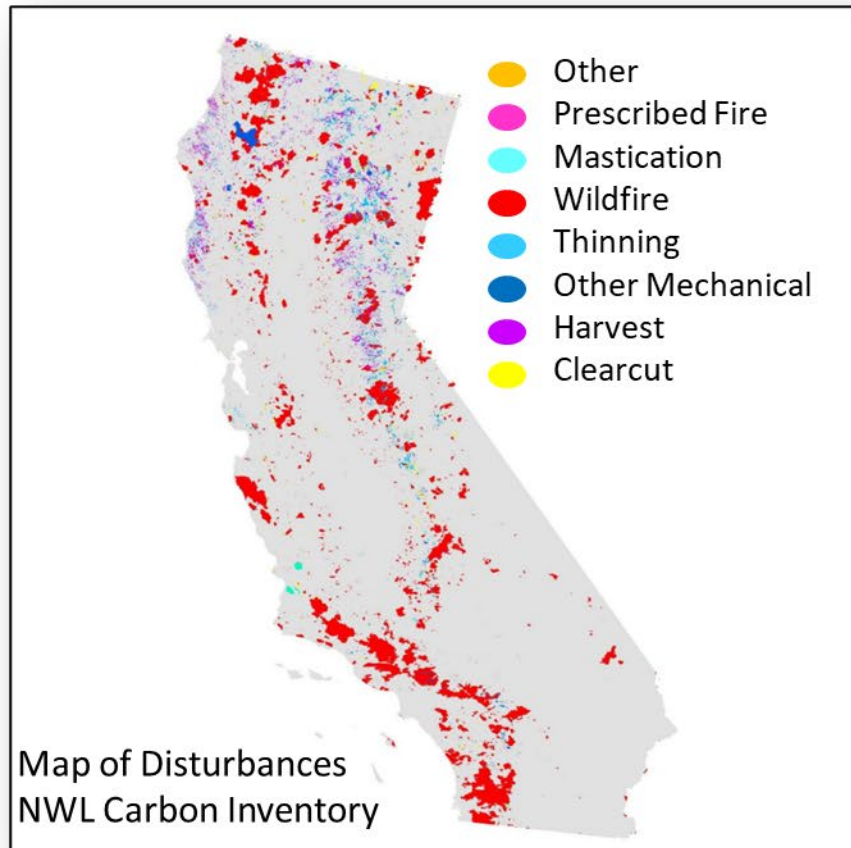
**By 2045**

- 30M+ acres of wildfire fuel reduction treatments
- 10M+ acres of restoration
- 8M+ acres of conservation
- 3M+ acres of healthy soils practices
- 20% total statewide agriculture in organic production
- 1M+ acres of afforestation
- 1M+ acres of urban greening, defensible space, sea level rise protection

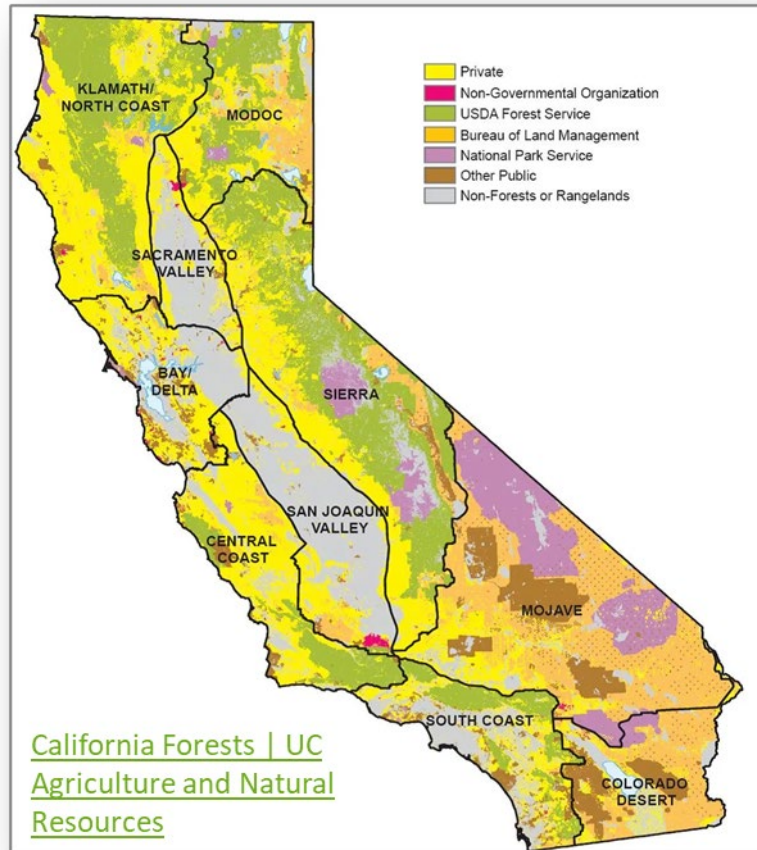
**In 20 years, the equivalent of half of California's total area to receive NBS climate action**



# Land Management Tracking



# Land Ownership is Diverse



Ownership by Land Type (%)

Land Type	Federal	State	Local	Private	Non-profit
Forests	55	2	2	41	<1
Shrublands	68	4	2	27	<1
Croplands	1	<1	<1	98	<1
Wetlands	17	8	3	71	1
Developed lands	8	1	3	88	<1
Grasslands	13	2	2	81	1
Other lands	78	5	1	16	<1
<b>TOTAL</b>	<b>48</b>	<b>3</b>	<b>2</b>	<b>47</b>	<b>&lt;1</b>

NWL Climate Smart Strategy



# Collaboration

- Collaboration is key to advance CARB's work on nature-based solutions:
  - NBS land management & tracking
  - Policy development & implementation
  - Data products & methods development
  - Science & monitoring

## Partners include:

- Within CARB: AQPSD, STCD, RD, and PIO
- State: CNRA, CDFA, CalFIRE, and many more
- Federal: USFS, USDA, NASA, USGS, EPA, and more
- Private: Academic, NGO, Industry





# Take-aways

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- **Natural & working lands are an important part of California's strategy** to achieve carbon neutrality.
- **Nature-based climate solutions are needed** to ensure California's lands lose no more than 4% carbon stock between 2014 and 2045.
- **These dynamic landscapes require advanced science and technology** to monitor trends, assess co-benefits, and evaluate trade-offs with other ecosystem services.
- **Collaboration drives progress**, connecting science, policy, and implementation through partnership with other agencies and organizations.