

SF BAY  
AREA  
REGIONAL  
MEETING

# California's 2030 Natural and Working Lands Climate Change Implementation Plan



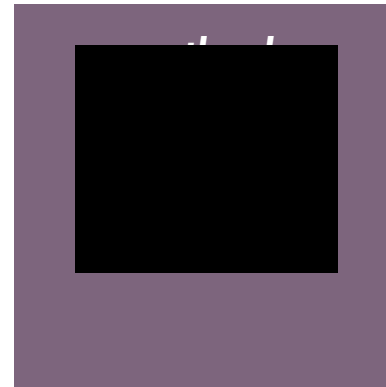
# Agenda

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1. Overview of state direction for natural and working lands
2. Overview of draft goals for conservation, restoration, and management in the Bay Area
3. Discussion on draft goals and outlook for future implementation

# California's natural and working lands

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# Overarching goal

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## CALIFORNIA'S CLIMATE POLICY PORTFOLIO



Double building efficiency



Cleaner freight and goods movement



50% renewable power



Slash potent "super-pollutants" from dairies, landfills and refrigerants



More clean, renewable fuels



Cap emissions from transportation, industry, natural gas, and electricity



Cleaner zero or near-zero emission cars, trucks, and buses



Invest in communities to reduce emissions



Walkable/Bikeable communities with transit



Protect and manage natural and working lands



***Fully integrate natural and working lands into California's climate change policy portfolio***

# December 2017 Scoping Plan directive

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- **Maintain** lands as a **resilient carbon sink** – achieve net zero or negative greenhouse gas emissions
- **Minimize**, where applicable, net greenhouse gas and black carbon **emissions**
- Sets a **preliminary goal** for sequestration and avoided emissions of at least 15-20 MMT CO<sub>2</sub>e by 2030 through existing pathways and new incentives

# Achieving California's vision for natural and working lands

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2030 Natural and Working Lands Climate Change Implementation Plan



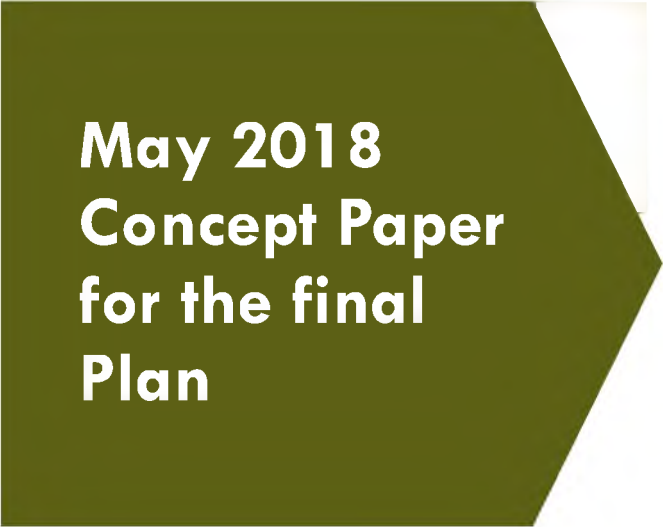
Blueprint for achieving state vision for natural and working lands:



Increased ability for land to sequester carbon and provide other benefits


- 1. Protect** land from conversion to more intensified uses by increasing conservation practices and local planning processes that avoid greenfield development;
- 2. Enhance** the resilience of and potential for carbon sequestration on lands through management and restoration;
- 3. Innovate** biomass utilization such that harvested wood and excess agricultural and forest biomass can be used to advance renewable energy and fuels objectives

- **Health**
- **Social**
- **Economic**
- **Environmental**



**May 2018  
Concept Paper  
for the final  
Plan**

<https://arb.ca.gov/cc/natandworkinglands/nwl-implementation-plan-concept-paper.pdf>

A photograph of a cow grazing in a field of purple flowers. The cow is in the middle ground, facing left. The field is filled with small purple flowers in the foreground, transitioning to green grass in the middle ground. In the background, there are trees and a cloudy sky.

# California 2030 Natural and Working Lands Climate Change Implementation Plan Concept Paper

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California Air Resources Board | California Environmental Protection Agency  
California Department of Food and Agriculture | California Natural Resources Agency

MAY 2018



# State-funded activity (“intervention-based”) approach

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- Plan relies on using identified activities (interventions)
- Sets an ambitious but achievable goal with targets that are saleable
- Focuses on State-supported land conservation, restoration, and management activities for State agency departments, boards, and conservancies
- Implementation will leverage new and existing programs at various departments and agencies & California’s history of implementing these activities through programs that often do not have carbon sequestration as their primary goal
- Programs will continue to provide ecosystem and societal co-benefits while sequestering carbon
- Facilitates tracking and reporting on progress towards goal

# Multiple benefits of implemented projects

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biodiversity &  
habitat



water supply  
& quality



protection  
from climate  
impacts



tourism &  
recreation



public  
health



economic  
development



cultural &  
spiritual  
values



temperature  
cooling

# Land protection, restoration, and management activities in the plan

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***Land protection*** Avoided conversion of land for development

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***Agricultural practices*** Cultivated land soil conservation, rangeland compost amendment, rotational grazing, conservation crop rotation, mulching, riparian restoration

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***Urban forests*** Expansion of existing urban tree canopy

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***Forest management*** Understory treatment, partial cut, prescribed burn, biomass utilization, improved management

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***Restoration activities*** Restoration and expansion of the extent of mountain meadows, managed wetlands, oak woodlands, riparian areas, and seagrass

# Goals of final Plan

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1

Help integrate natural and working lands with broader State climate strategy and future Scoping Plan

2

Include a final statewide 2030 intervention-based sequestration goal for natural and working lands

3

Identify scale and scope of State-supported **land conservation, restoration, and management acreage targets** needed for long-term objectives & 2030 goal

# Tools for setting the 2030 carbon goal

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Two tools for projecting the carbon impacts of conservation, restoration, and management activities:

**California Natural and  
Working Lands Carbon and  
Greenhouse Gas Model  
(CALAND)**

**COMET-Planner  
Compost-Planner**

# California Natural and Working Lands Carbon and Greenhouse Gas Model (CALAND)

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- Developed by Lawrence Berkeley National Laboratory
- Empirically-based landscape-scale carbon accounting model
- Simulates effects of various practices and land use or land cover change on carbon dynamics



# COMET-Planner & Compost-Planner

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- **COMET-Planner:** developed by Colorado State University and U.S. Department of Agriculture Natural Resources Conservation Service
- **Compost-Planner:** developed by CARB with an interface developed by USDA-NRCS
- Both provide estimates of the net climate benefits resulting from implementation of various land-based management practices



# Setting acreage targets

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Three scenarios based on:

**no state activities**



**BASELINE SCENARIO**

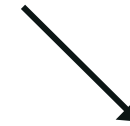
Regulatory minimum  
only

**two alternatives**



**BUSINESS-AS-USUAL  
SCENARIO**

Maintaining  
California's current  
track



**AMBITIOUS  
SCENARIO**

More aggressive levels  
of state funding for  
programs/ voluntary  
efforts



# Projecting carbon impacts of conservation, restoration, and management targets

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## ACREAGE TARGETS

Draft state agency acreage targets for conservation, restoration, and management + regional input



## SCENARIOS

Projected acres of conservation, restoration, and management activities through 2030



## MODELS

CALAND Model  
COMET-Planner/  
Compost-Planner



## EXPECTED BENEFITS

Projected carbon benefits of these activities on a regional and statewide scale

# Results of projections

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- Alternative scenarios compared to baseline to show impact of state activities
- Projections will provide outlook on scale needed and reasonableness of proposed strategies

# Additional considerations

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- Near and long-term carbon impacts
- Climate change impacts, health, social, economic, and environmental benefits
- Cost effectiveness
- Geographic, environmental, social, and economic suitability
- Permanence, or long-term effect

# Tracking and reporting

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- Annual reporting on expected benefits based acres protected and brought under management using:
  - CALAND and other methods
  - COMET-Planner and existing quantification methodologies developed as part of California Climate Investments
- Develop a system for tracking and reporting actual outcomes

# Assessing progress towards long-term objective

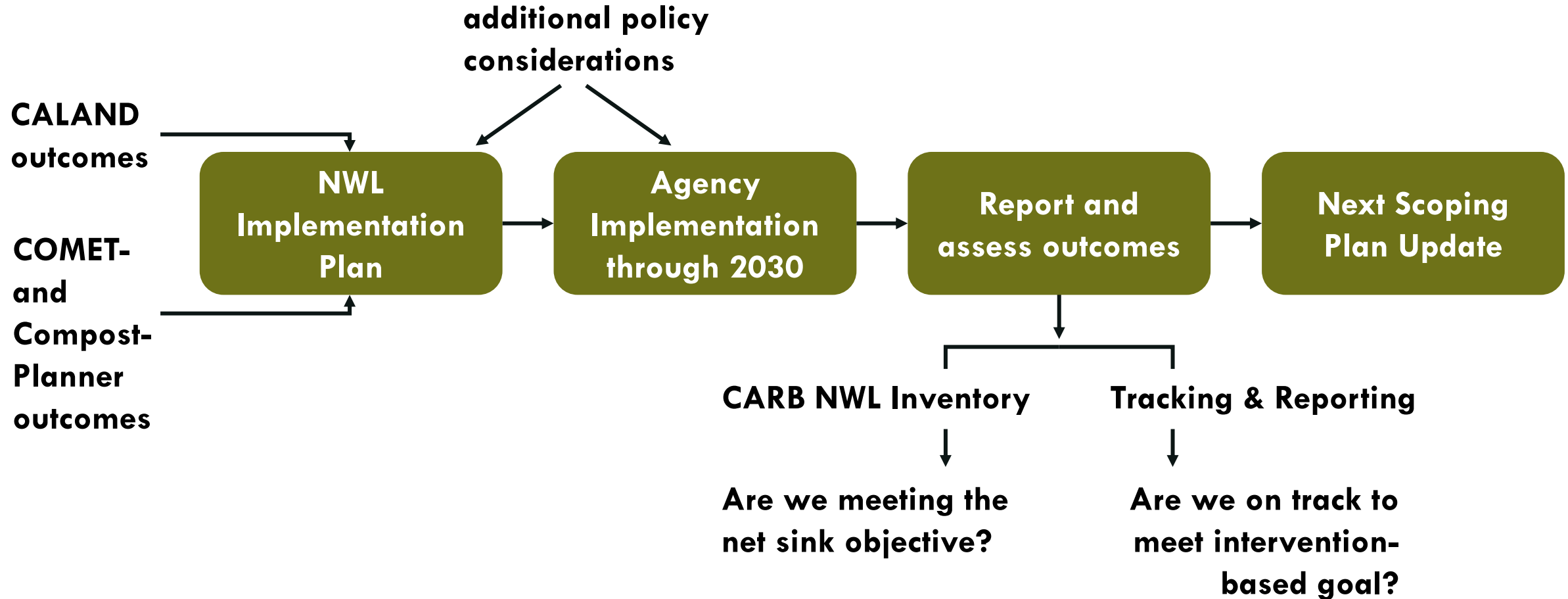
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## *Natural and Working Lands GHG Inventory*

- Retrospective snapshot of carbon stocks, stock-change and resulting GHG flux
- Used to assess progress on sector objective of net sequestration or negative emissions
- Will capture the effects of implemented interventions, along with other gains or losses that occur over the same timeframe
- Will help indicate scale of interventions needed

# Framework: putting it all together

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# Moving Forward

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**June 2018**

Regional meetings



**Summer 2018**

Develop draft  
2030 natural and  
working lands  
goal and Plan



**September  
2018**

Announce natural  
and working  
lands  
intervention-  
based carbon  
goal



**November  
2018**

Release final  
Implementation  
Plan



**DRAFT GOALS FOR  
NATURAL AND  
WORKING LANDS IN  
THE SAN FRANCISCO  
BAY AREA**

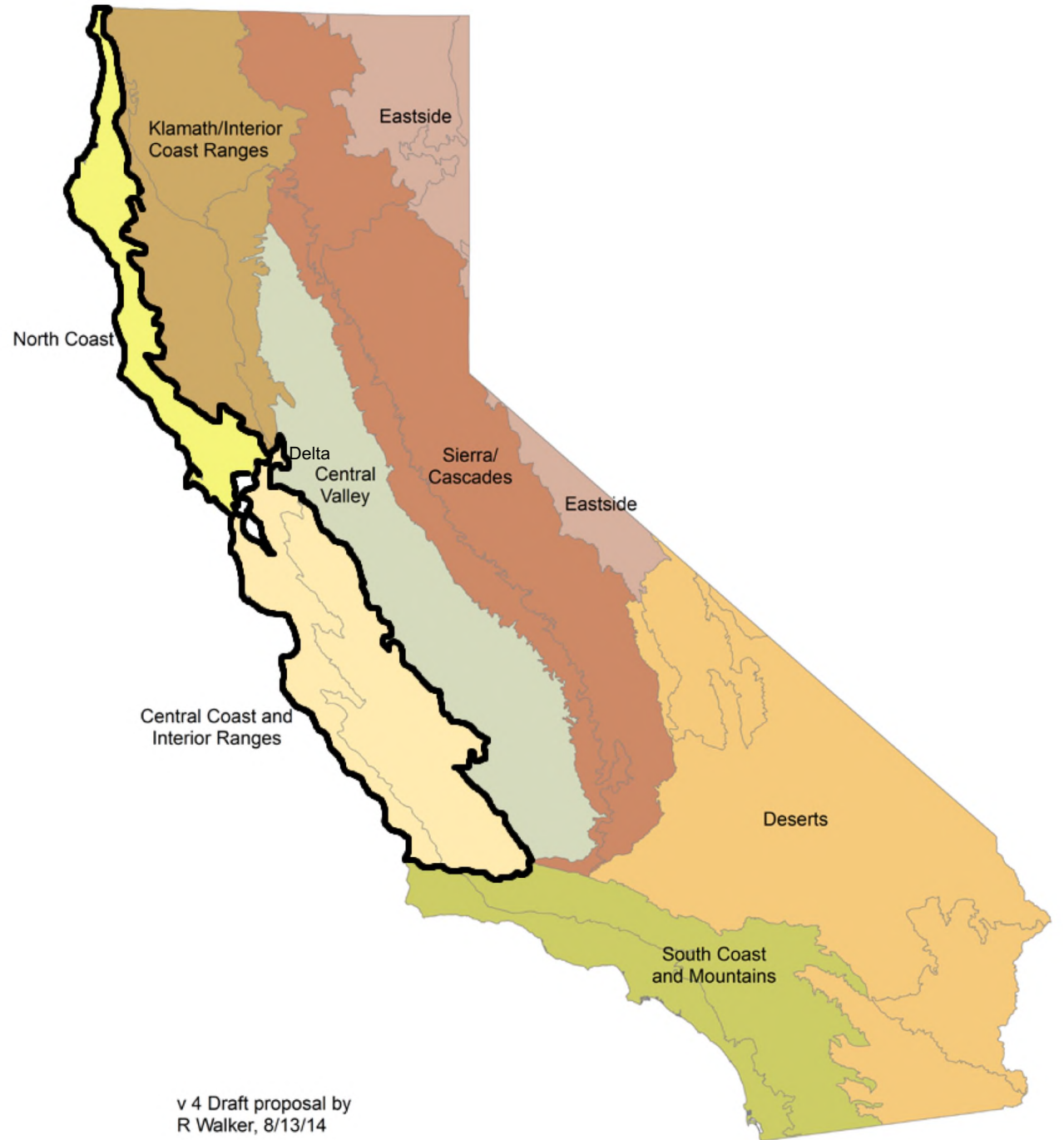




# Bay Area Ecoregions

North Bay:  
*North Coast*

South Bay, East Bay:  
*Central Coast*





**Protected Areas**

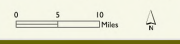
- Fee Title
- Agricultural or Conservation Easement

**Other Lands**

- Department of Defense

**Other features**

- Water Bodies
- Urban
- County
- Highway



# Setting acreage targets

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Three scenarios based on:

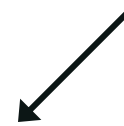
**no state activities**



**BASELINE SCENARIO**

Regulatory minimum  
only

**two alternatives**



**BUSINESS-AS-USUAL  
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More aggressive levels  
of state funding for  
programs/ voluntary  
efforts

# Agency and department projections

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- **Business-as-usual alternative:** How many acres could be restored or managed over 12 years assuming current bond and program funding?
  - Includes projections based on current grant and bond-funded programs through the State Coastal Conservancy, Department of Fish and Wildlife, State Parks, and other departments and existing plans and goals, such as the Baylands Ecosystem Habitat Goals Project
- **Ambitious alternative:** How many acres could be restored or managed over 12 years with an ambitious but achievable increase in funding?
  - Assumes acceleration of business-as-usual work

# Departments contributing to conservation, restoration, and management targets in the SF Bay Area

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State Coastal Conservancy

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Department of Conservation (DOC)

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Department of Fish and Wildlife (CDFW)

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Department of Water Resources (DWR)

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Department of Parks and Recreation (DPR)

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Department of Forestry and Fire Protection (CAL FIRE)

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Wildlife Conservation Board (WCB)

# Compiled acreage targets for the Central Coast

Practice	BAU	Ambitious	Implementing Agencies
Land Protection	118,739	142,001	Wildlife Conservation Board, Department of Water Resources, Coastal Conservancy, State Parks, Department of Conservation
Reforestation	-	-	-
Partial Cut/ Fuel reduction	31,344	37,652	CAL FIRE, State Parks
Forest Understory Treatment	3,840	4,080	Department of Parks and Recreation
Forest Prescribed Burn	14,328	20,024	CAL FIRE, State Parks
Less Intensive Forest Management	-	-	-
Forest Biomass Utilization	-	-	-
Oak Woodland Restoration	2,323	7,089	State Coastal Conservancy, State Parks
Meadow Restoration	-	-	-
Coastal Wetland Restoration	19,294	27,271	Coastal Conservancy, Wildlife Conservation Board; Department of Fish and Wildlife, Department of Water Resources, State Parks
Riparian Restoration	3,073	4,467	Department of Conservation, State Parks, Department of Water Resources, Wildlife Conservation Board
Soil Conservation Practices	1,715	2,741	State Parks
Rangeland Rotational Grazing	101,400	111,000	State Parks
Rangeland Composting	-	-	-
Seagrass Restoration	-	-	Coastal Conservancy, Ocean Protection Council
Urban Forest Expansion	-	+10% expansion in canopy	CAL FIRE, Natural Resources Agency

# Ecological Restoration and land protection targets for the Central Coast

Description	Practice	BAU	Ambitious	Implementing Agencies
Reestablishment of oak woodlands on grasslands and cultivated lands	<b>Oak Woodland Restoration</b>	2,323	7,089	State Coastal Conservancy, State Parks
Creation of saline tidal wetlands in coastal regions	<b>Coastal marsh Restoration</b>	19,294	27,271	State Coastal Conservancy, Wildlife Conservation Board; Department of Fish and Wildlife, Department of Water Resources, State Parks
Riparian trees, primarily oaks, are established on grassland or cultivated lands	<b>Riparian Restoration</b>	3,073	4,467	Department of Conservation, State Parks, Department of Water Resources, Wildlife Conservation Board
Creation of sub-tidal seagrass beds where none previously existed	<b>Seagrass Restoration</b>	-	-	State Coastal Conservancy, Ocean Protection Council
Reduced conversion of natural and working lands to urbanized land	<b>Land Protection</b>	118,739	142,001	Wildlife Conservation Board, Department of Water Resources, State Coastal Conservancy, State Parks, Department of Conservation

# Bay Area contributions to selected acreage targets

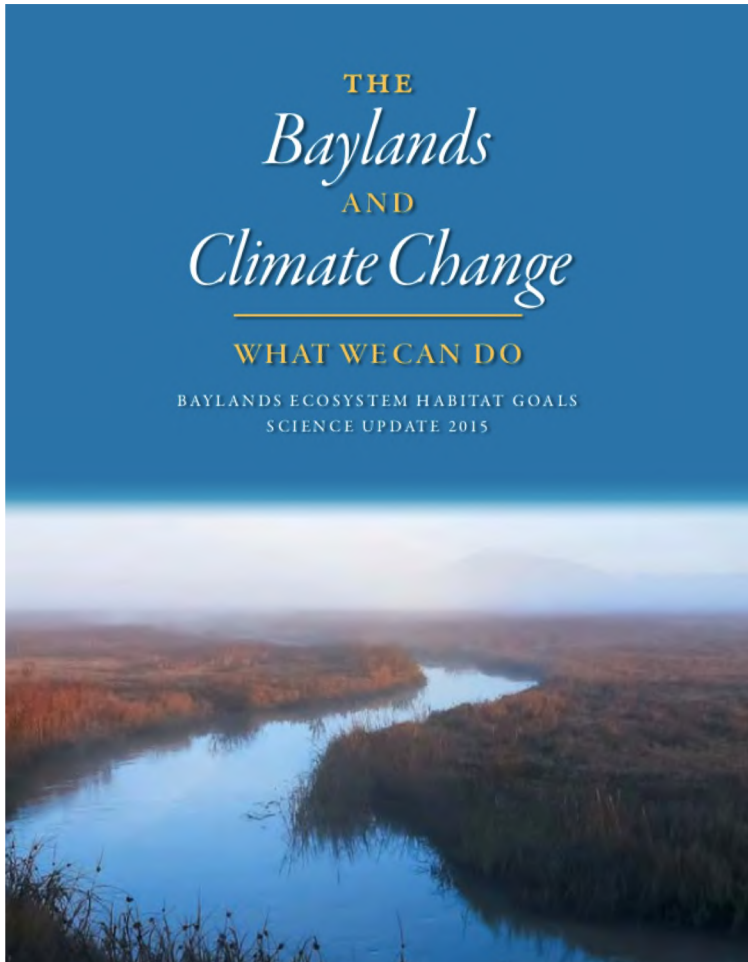
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<b>Description</b>	<b>Practice</b>	<b>BAU</b>	<b>Ambitious</b>	<b>Implementing Agencies</b>
Creation of saline tidal wetlands in coastal regions	<b>Coastal marsh restoration</b>	25,000	38,000	State Coastal Conservancy, Department of Fish and Wildlife, Department of Water Resources
Reestablishment of oak woodlands on grasslands and cultivated lands	<b>Oak woodland restoration</b>	1,396	4,187	State Coastal Conservancy, State Parks



# Coastal marsh restoration targets

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**25,000 acres**

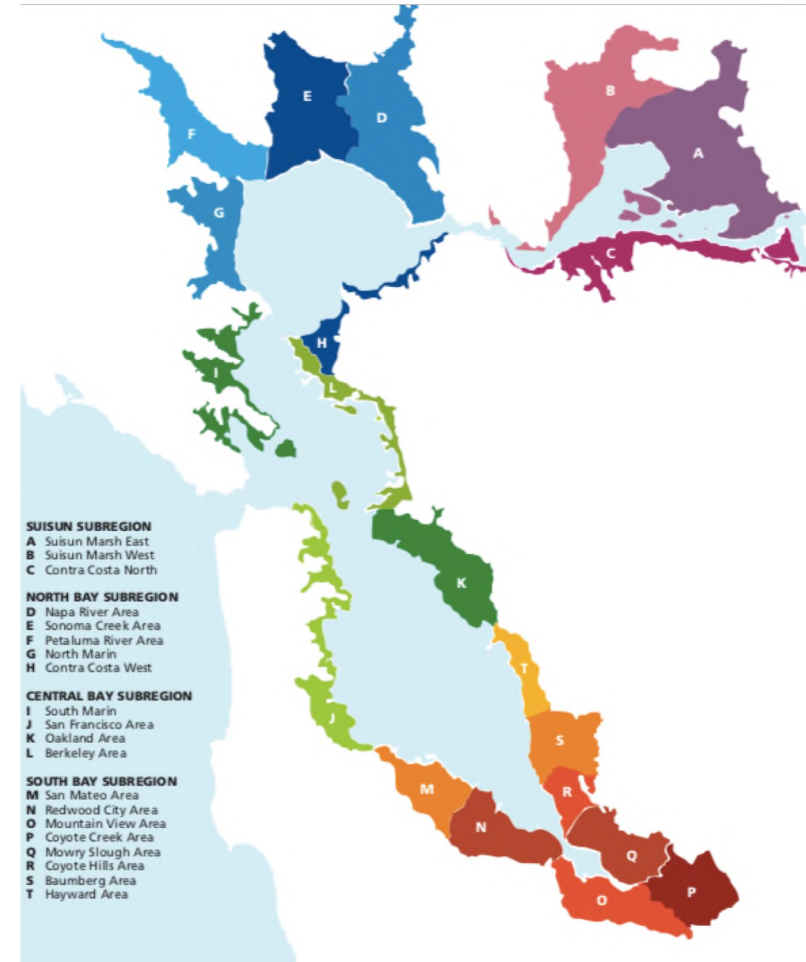
business-as-usual target for coastal marsh restoration in the Bay Area

**38,000 acres**

ambitious target for coastal marsh restoration in the Bay Area

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Both targets based on existing programs and informed in part by Baylands Ecosystem Habitat Goals



# Developing targets for rangelands and cultivated lands

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## **Soil conservation practices**

Includes cover cropping, reduced tillage, no-till, mulching, and compost

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## **Rangeland compost application**

Compost is applied to traditionally managed rangeland (grassland, savanna, and woodland land types in CALAND) and repeated either every 10 years or every 30 years. The base land type is traditionally managed rangeland.

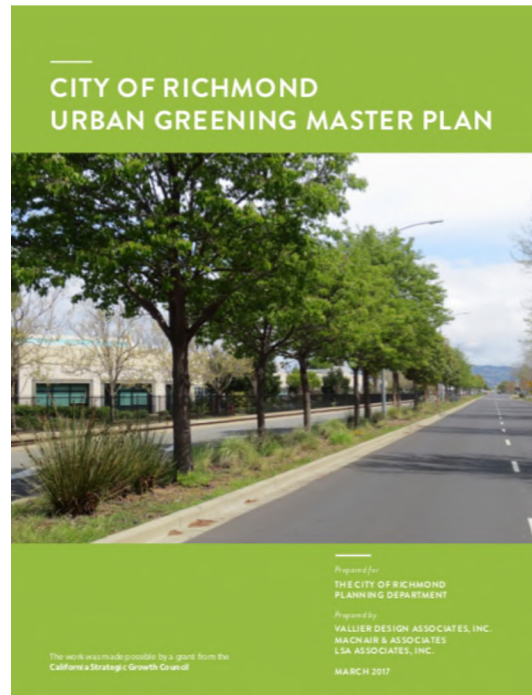
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## **Prescribed grazing practices**

Managing the harvest of vegetation with grazing and/or browsing animals with the intent to achieve specific ecological, economic, and management objectives.

# Developing targets for urban forests

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Are there existing regional goals for urban forest expansion that should be reflected in urban forest targets?





# QUESTIONS + DISCUSSION

# Discussion Questions

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1. Are **regional projects** reflected in the baseline and more ambitious draft acreage targets for conservation, restoration, and management?
2. How should the **ambitious** scenario be scoped for activities in your region? Are there existing regional planning and goal-setting documents that should be included within the ambitious scenario?
3. What are your regional implementation **priorities**? What is needed to support successful regional implementation?

## CONSERVATION, RESTORATION, & MANAGEMENT ACTIVITIES

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**Land protection** Avoided conversion of land for development

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**Agricultural practices** Cultivated land soil conservation, rangeland compost amendment, rotational grazing, conservation crop rotation, mulching, riparian restoration

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**Urban forests** Expansion of existing urban tree canopy

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**Forest management** Understory treatment, partial cut, prescribed burn, biomass utilization, improved management

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**Restoration activities** Restoration and expansion of the extent of mountain meadows, managed wetlands, oak woodlands, riparian areas, and seagrass

# Feedback on Acreage Targets

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**BY JULY 2**

please submit written comments on  
acreage targets to:

[emma.johnston@resources.ca.gov](mailto:emma.johnston@resources.ca.gov)

# Thank you

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