

SACRAMENTO  
VALLEY &  
DELTA  
REGIONAL  
MEETING

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



# Agenda

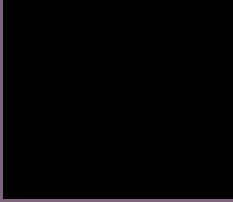
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1. Overview of state direction for natural and working lands
2. Overview of draft goals for conservation, restoration, and management in the Sacramento Valley and Delta
3. Discussion on draft goals and outlook for future implementation

# California's natural and working lands

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*rangeland*



*forests*



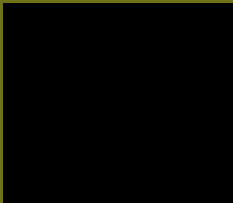
*shrublands*



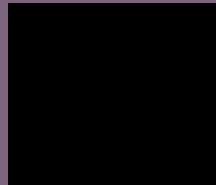
*grasslands*



*farms*



*riparian areas*



*seagrass*



*urban green-space*



# 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:



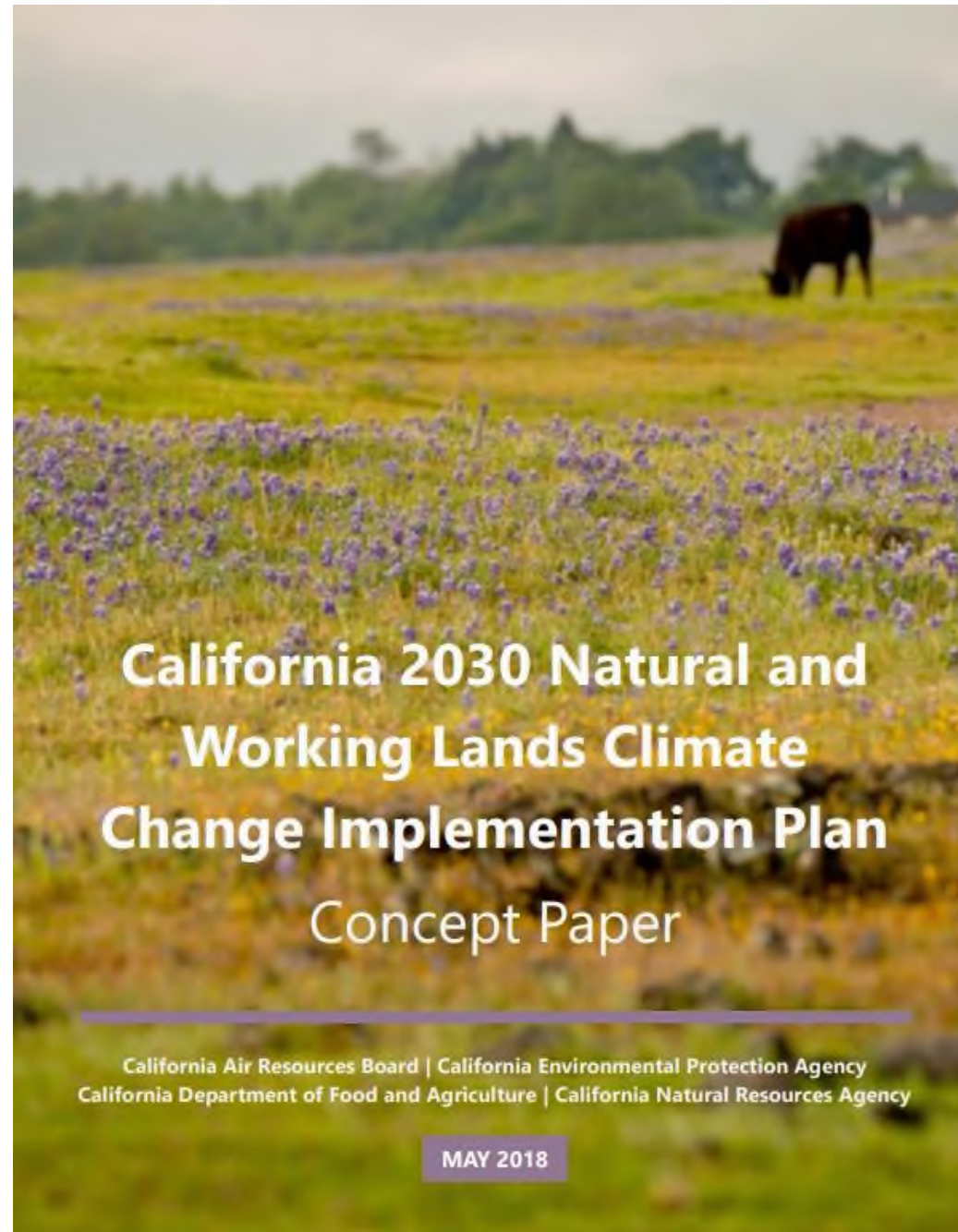
Increased ability for land to sequester carbon and provide other benefits

- 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>



# 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 conservation programs
- 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**



**climate  
adaptation**



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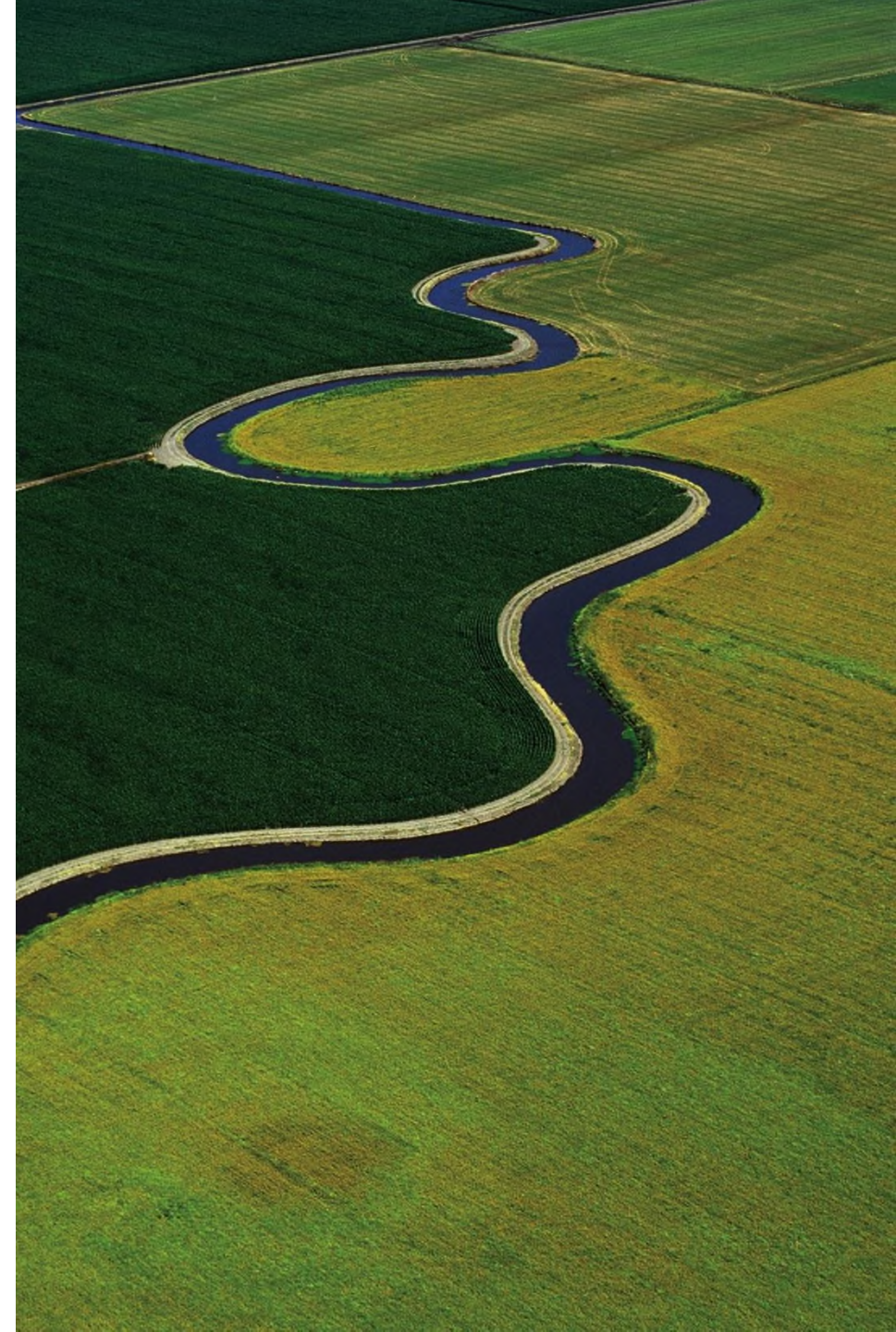
- Developed by Lawrence Berkeley National Laboratory
- Empirically-based landscape-scale carbon accounting model
- Simulates effects of various practices and land use or land cover change on carbon dynamics



# 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**

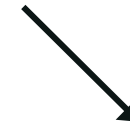
Regulatory minimum  
only

**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

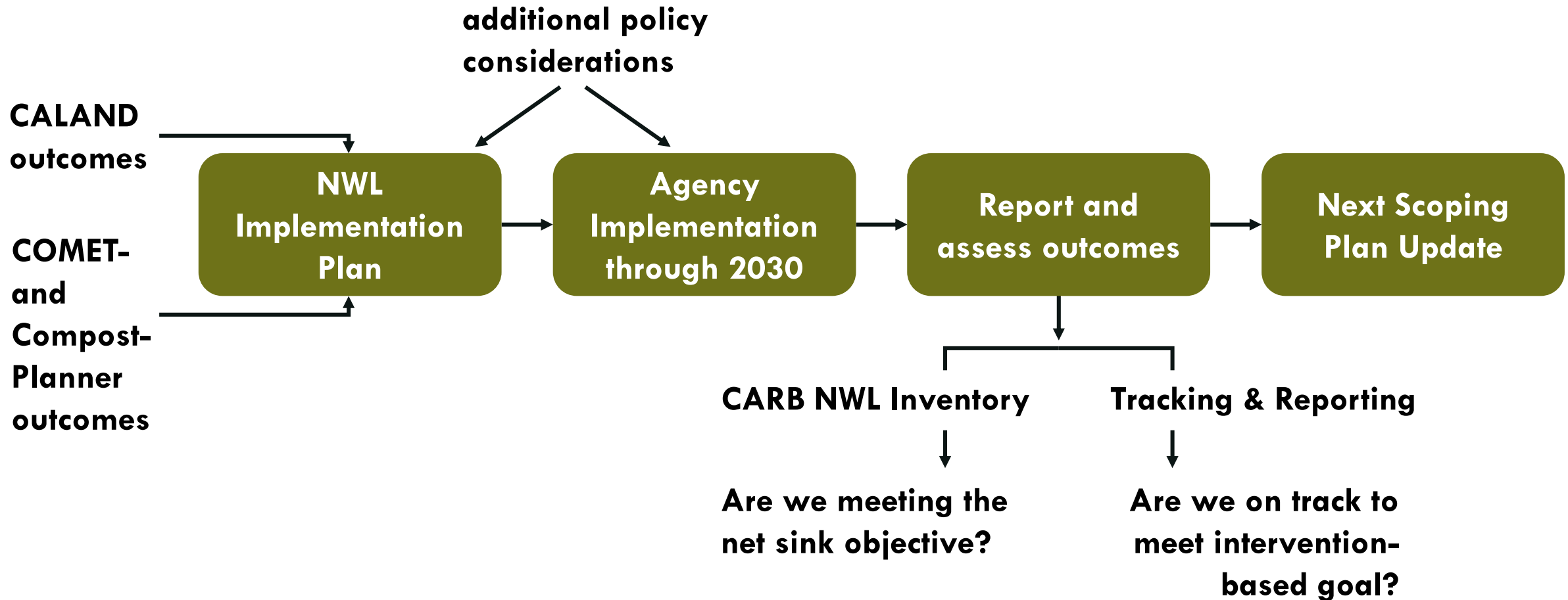
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## *Natural and Working Lands GHG Inventory*

- 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  
SACRAMENTO  
VALLEY & DELTA**

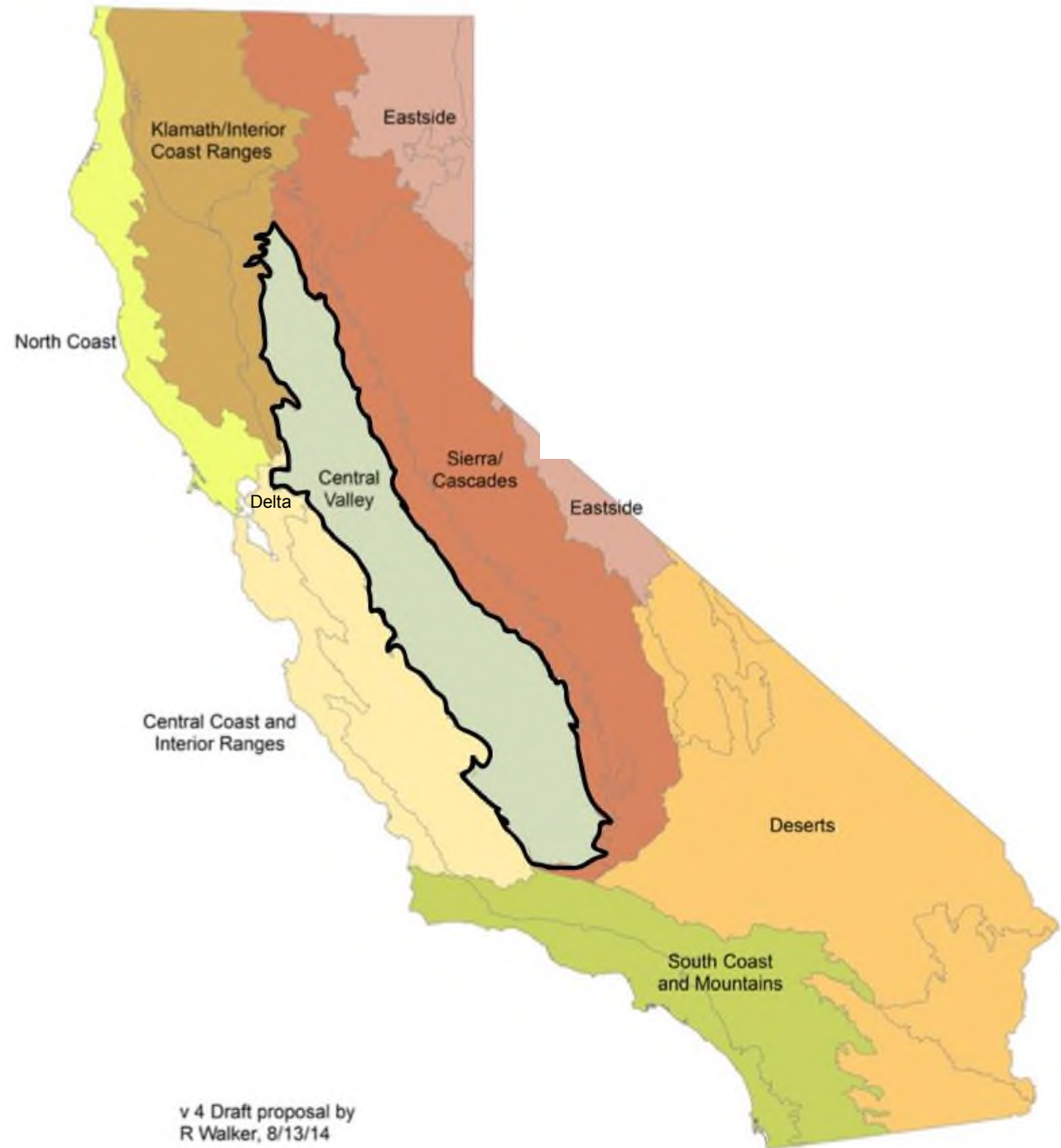
# Ecoregions Encompassing the Sacramento-San Joaquin Delta and Valley

## ***Sacramento Valley:***

Northern part of Central Valley  
Ecoregion





## ***Sacramento-San Joaquin Delta:***

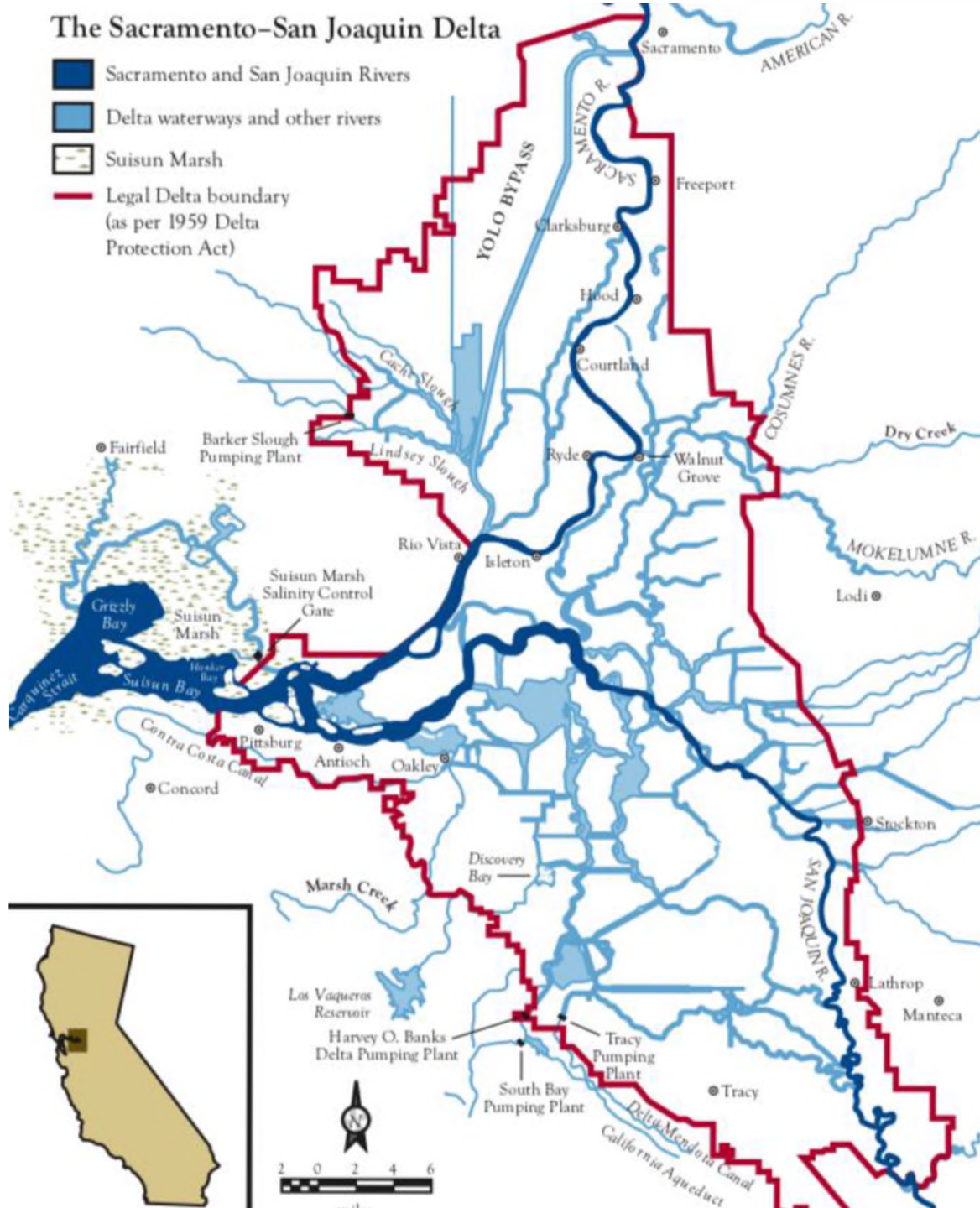
Legal Delta boundary





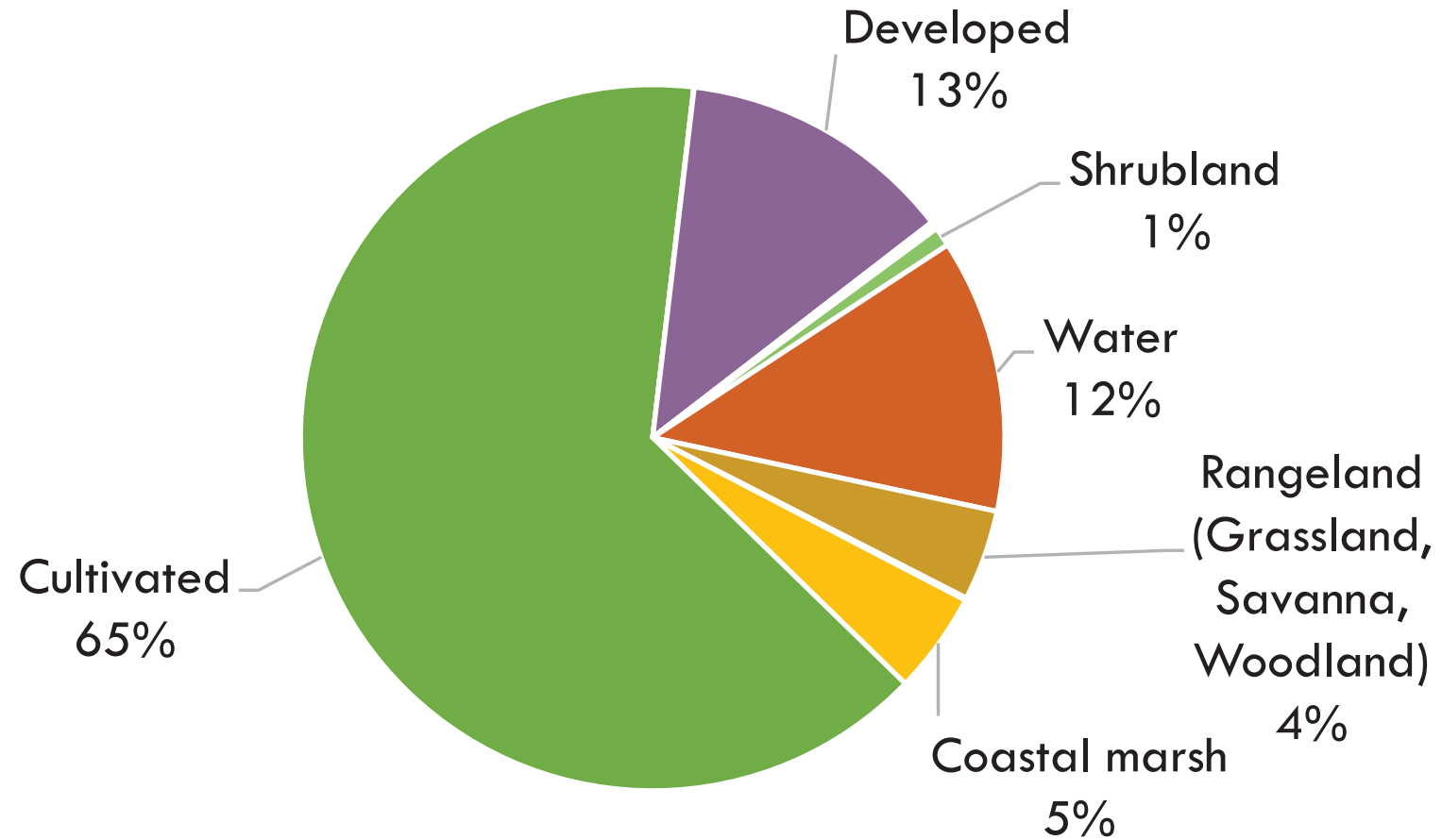
# The Sacramento-San Joaquin Delta

-  Sacramento and San Joaquin Rivers
-  Delta waterways and other rivers
-  Suisun Marsh
-  Legal Delta boundary (as per 1959 Delta Protection Act)



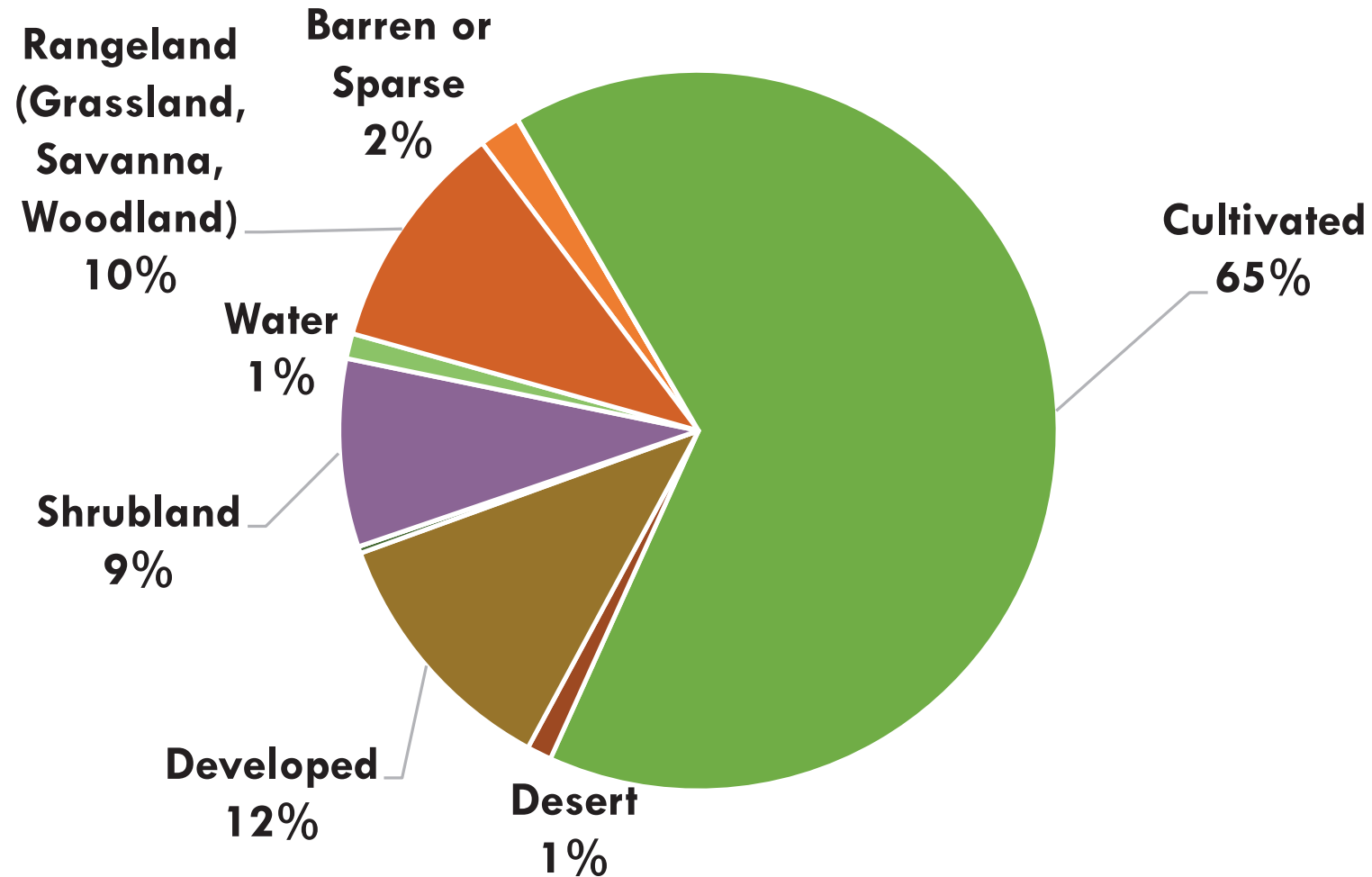
# Land Cover in the Sacramento-San Joaquin Delta

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# Land Cover in the Central Valley

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# Setting acreage targets

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Three scenarios based on:

**no state activities**



**BASELINE SCENARIO**

Regulatory minimum  
only

**two alternatives**



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# 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 Delta Conservancy, Department of Fish and Wildlife, Department of Water Resources
- **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 reporting conservation, restoration, and management targets in the Sacramento Valley and Delta Regions

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Delta 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)

# DELTA REGION: Compiled acreage targets

Practice	BAU (acres)	Ambitious (acres)	Reporting Agencies
Land Protection	8,514	21,577	Department of Water Resources, Department of Conservation, State Parks
Delta Wetland Restoration	15,000	30,000	Delta Conservancy, Wildlife Conservation Board, Department of Water Resources
Riparian Restoration	5,000	10,000	Delta Conservancy, Wildlife Conservation Board, Department of Conservation, Department of Water Resources
Coastal Marsh Restoration	41	51	Wildlife Conservation Board
Urban Forest Expansion	-	10% expansion in canopy	Department of Forestry and Fire Protection, Natural Resources Agency

**Practices not reported for this region:** reforestation, forest partial cut/ fuel reduction, forest understory treatment, forest prescribed burn, improved forest management, additional forest biomass utilization, oak woodland restoration, meadow restoration, soil conservation, rangeland rotational grazing, rangeland composting, coastal wetland restoration, seagrass restoration

# DELTA REGION: Restoration and conservation practice descriptions & acreage targets

<b>Description</b>	<b>Practice</b>	<b>BAU (acres)</b>	<b>Ambitious (acres)</b>	<b>Reporting Agencies</b>
Conversion of cultivated lands to fresh managed wetlands in the Sacramento-San Joaquin Delta	<b>Delta wetland restoration</b>	15,000	30,000	Delta Conservancy, Wildlife Conservation Board, Department of Water Resources
Riparian trees, primarily oaks, are established on grassland or cultivated lands	<b>Riparian Restoration</b>	5,000	10,000	Delta Conservancy, Wildlife Conservation Board, Department of Conservation, Department of Water Resources





# 15,000 - 30,000 ACRES OF WETLAND RESTORATION

Reflective of the amount of **deeply subsided land** in the Delta (approx. 250,000 acres) & the amount of land under **public ownership** (approx. 40,000 acres) that could accommodate wetlands; includes all **EcoRestore** targets for wetlands

# 5,000 - 10,000 ACRES OF RIPARIAN RESTORATION

Reflective of over 1,000 miles of denuded waterways in the Delta that were once natural riparian habitat

# CENTRAL VALLEY REGION: Compiled acreage targets

Practice	BAU (acres)	Ambitious (acres)	Reporting Agencies
Land Protection	155,554	236,801	Department of Water Resources, Wildlife Conservation Board, Department of Conservation, State Parks
Forest expansion	455	683	Department of Water Resources
Partial cut/ fuel reduction	13,620	20,710	Department of Water Resources, State Parks
Forest Understory Treatment	120	900	State Parks
Forest Prescribed Burn	-	600	State Parks
Oak Woodland Restoration	496	1,452	State Parks
Meadow Restoration	481	570	State Parks, Department of Water Resources
Riparian Restoration	14,913	22,462	Department of Conservation, State Parks, Department of Water Resources, Wildlife Conservation Board
Soil Conservation Practices	120	300	State Parks
Rangeland Rotational Grazing	-	60	State Parks
Urban Forest Expansion		10% canopy expansion	Department of Forestry and Fire Protection, Natural Resources Agency

**Practices not reported for this region:** reforestation, improved forest management, additional forest biomass utilization, rangeland composting, coastal wetland restoration, seagrass restoration

# CENTRAL VALLEY REGION: Restoration & conservation practices descriptions and targets

Description	Practice	BAU	Ambitious	Reporting Agencies
Reestablishment of oak woodlands on grasslands and cultivated lands	<b>Oak Woodland Restoration</b>	496	1,452	State Parks
Riparian trees, primarily oaks, are established on grassland or cultivated lands	<b>Riparian Restoration</b>	14,913	22,462	Department of Conservation, State Parks, Department of Water Resources, Wildlife Conservation Board
Reduced conversion of natural and working lands to urbanized land	<b>Land Protection</b>	155,554	236,801	Department of Water Resources, Wildlife Conservation Board, Department of Conservation, State Parks

# Developing targets for rangelands and cultivated lands

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## **Soil conservation practices**

Including cover cropping, reduced tillage, no-till, mulching, and compost application on cultivated lands

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## **Rangeland compost application**

Compost is applied to traditionally managed rangeland (grassland, savanna, and woodland land types) 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

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## **Herbaceous or woody cover establishment**

# 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 10**

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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**Shelby Livingston**, *California Air Resources Board*

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