

August 2023

Adaptation on Natural and Working Lands: From the State to the Regional Scale



NATURE-BASED
CLIMATE SOLUTIONS

California's Climate Smart Lands Strategy



CALIFORNIA
CLIMATE
ADAPTATION
STRATEGY



CALIFORNIA
natural
resources
AGENCY



Delta
Stewardship
Council

A CALIFORNIA STATE AGENCY

What sector do you represent?

- State Agency
- Local/Regional Agency
- Non Governmental Organization
- Private Sector

Today's Presentation



Harriet Lai Ross

Associate Deputy Executive Officer
Delta Stewardship Council



Amanda Hansen

Deputy Secretary for Climate Change
California Natural Resources Agency



Dan Constable

Environmental Program Manager
Delta Stewardship Council



Morgan Chow

Senior Environmental Planner
Delta Stewardship Council

Context

- Executive Order N-82-20
- Natural and working lands is foundational to State's climate solutions
- Natural and working lands can sequester and store carbon, limit future GHG emissions, protect people and nature from climate impacts





Amanda Vockerodt Hansen
Deputy Secretary for Climate Change
California Natural Resources Agency

NATURE-BASED

CLIMATE SOLUTIONS

THE BIG PICTURE



OVERVIEW

PRIORITIES

REGIONS

CALIFORNIA CLIMATE ADAPTATION STRATEGY

Photo credit: State Parks

Updated in 2021 | 2024 Update Coming Soon

Organized around six outcome-based priorities
California's north stars
that guide all resilience actions



Priority
**Strengthen Protections for
Climate Vulnerable Communities**

A red-tinted photograph showing a group of people in a community setting, possibly a town square or public gathering.



Priority
**Bolster Public Health and Safety
to Protect Against Increasing
Climate Risks**

A brown-tinted photograph showing people wearing hard hats and safety gear, likely at a construction or safety training site.



Priority
**Build a Climate Resilient
Economy**

A green-tinted photograph showing a person in a hard hat working on a solar panel array.



Priority
**Accelerate Nature-Based
Climate Solutions and
Strengthen Climate Resilience of
Natural Systems**

A green-tinted photograph showing a person standing in a natural, outdoor setting, possibly a park or natural area.



Priority
**Make Decisions Based on the
Best Available Climate Science**

A blue-tinted photograph showing a group of people gathered around a table, possibly in a meeting or workshop.



Priority
**Partner and Collaborate to
Leverage Resources**

A purple-tinted photograph showing a group of people standing together outdoors, possibly at a community event or meeting.

**WHAT ARE
WE TALKING
ABOUT?**

KEY TERMS



Priority
**Accelerate Nature-Based
Climate Solutions and
Strengthen Climate Resilience of
Natural Systems**

- **“Nature-based solutions”** describe actions that work with and enhance nature to help address societal challenges. This term is an umbrella concept being used across the world to describe a range of approaches that protect, sustainably manage, and restore nature to deliver multiple outcomes, including addressing climate change, improving public health, increasing equity, and protecting biodiversity.
- **“Natural and working lands”** are a cornerstone of California’s nature-based climate solution sector. These lands cover approximately 95 percent of the state’s 105 million acres.
- **“Climate smart”** is the term we use to describe land management that delivers climate benefits through nature-based solutions.















STRATEGY

EXECUTIVE ORDER ON NATURE-BASED SOLUTIONS EO N-82-20

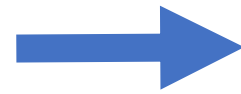
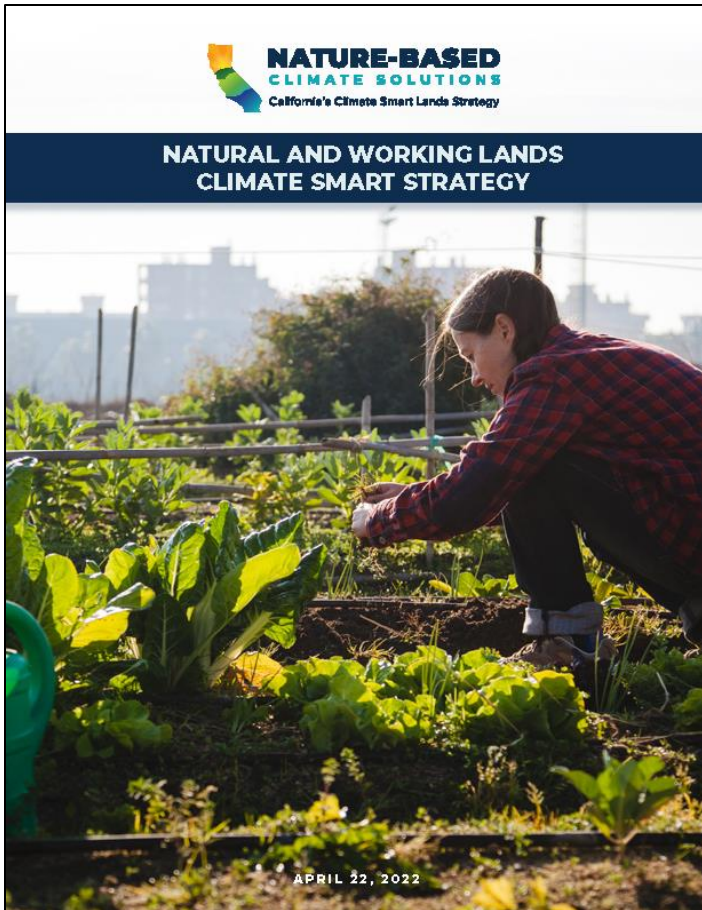


In October 2020, Governor Newsom outlined a comprehensive and results-oriented agenda to expand nature-based solutions across California.

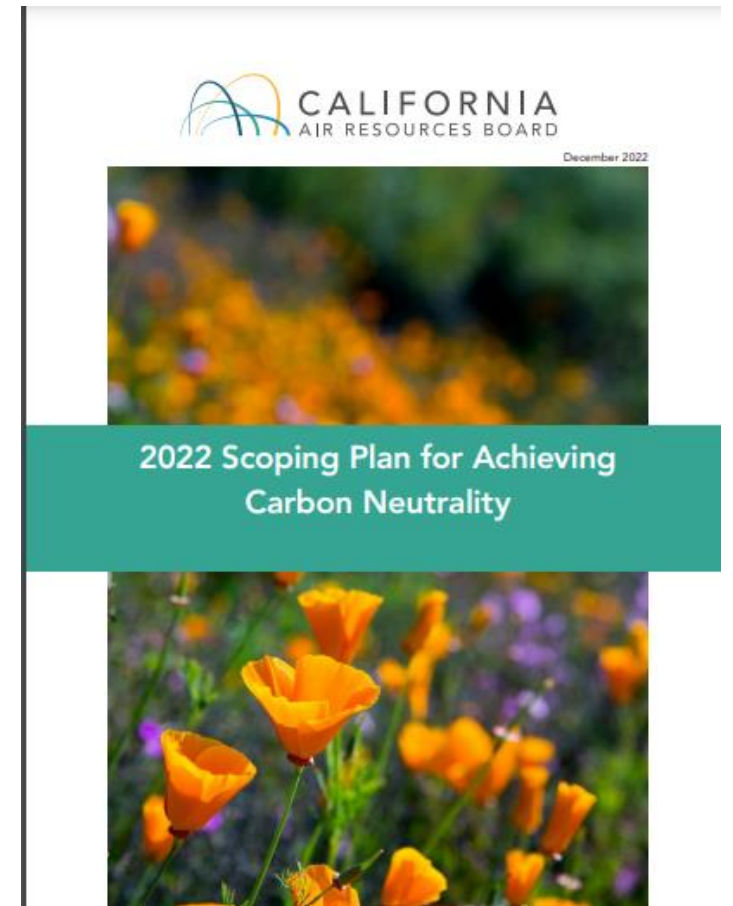
It called for restoring nature and landscape health to deliver on our climate change goals and other critical priorities, including improving public health and safety, securing our food and water supplies, and achieving greater equity across California.

PLANS IN ACTION

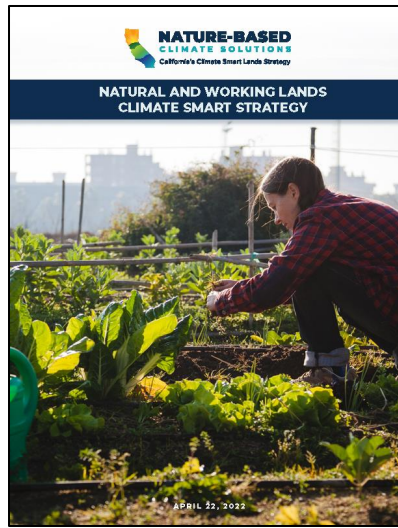
Adaptation



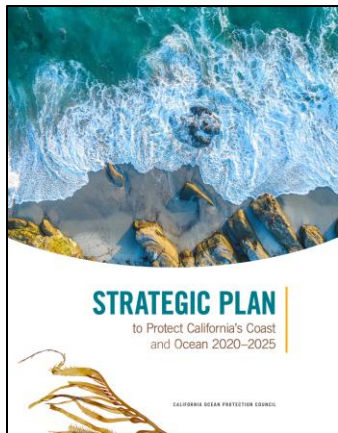
Mitigation



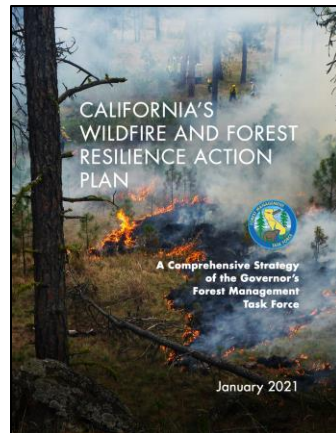
PLANS IN ACTION



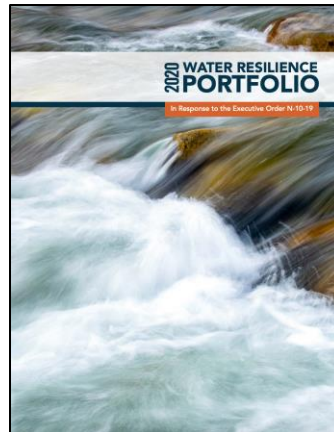
Plans Including Nature-Based Climate Solutions



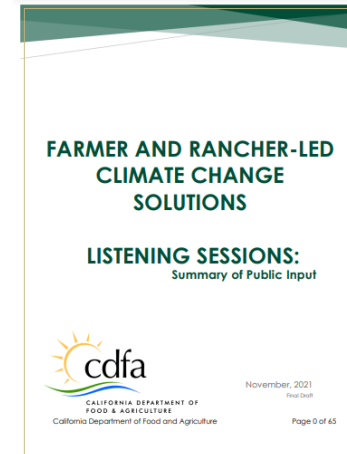
OPC Strategic Plan



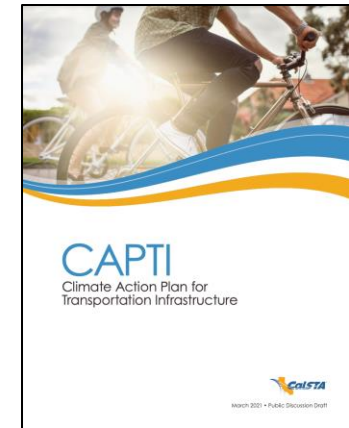
Wildfire/Forest Resilience Action Plan



Water Resilience Portfolio



Farmer/Rancher Led Climate Change Solutions



Climate Action for Transportation Infrastructure

And many more...



NATURE-BASED

CLIMATE SOLUTIONS

California's Climate Smart Lands Strategy



NATURE-BASED CLIMATE SOLUTIONS

California's Climate Smart Lands Strategy

NATURAL AND WORKING LANDS CLIMATE SMART STRATEGY



APRIL 22, 2022

CALIFORNIA'S NATURAL AND WORKING LANDS



Forest



Shrubland/
Chaparral



Grasslands



Wetlands



Croplands



Sparsely Vegetated Lands



Seagrasses & Seaweeds



Developed Lands

OVERARCHING GOALS

- 1. Align existing state efforts** impacting natural and working lands under one cohesive strategy, and identify opportunities to improve our approaches over time.
- 2. Increase awareness** of nature-based climate solutions and their ability to deliver environmental, economic, public health, and equity improvements in California.
- 3. Guide and accelerate** both near-term and long-term **climate action on California's lands**, prioritizing durable solutions that deliver multiple outcomes
- 4. Advance equity and opportunity** for all regions and residents of California as we implement nature-based climate solutions, and prioritize investments that benefit climate vulnerable communities.
- 5. Begin to track and measure our collective efforts** to accelerate climate smart land management and meet natural and working lands targets identified in the state's Climate Change Scoping Plan.



INTRODUCTION



- Defines California's eight natural and working landscapes.
- Summarizes how these lands can deliver on our climate change goals – carbon neutrality and climate resilience.
- Describes how nature-based climate solutions can deliver on other priorities, such as improving public health, increasing our food and water security, and supporting economic prosperity.

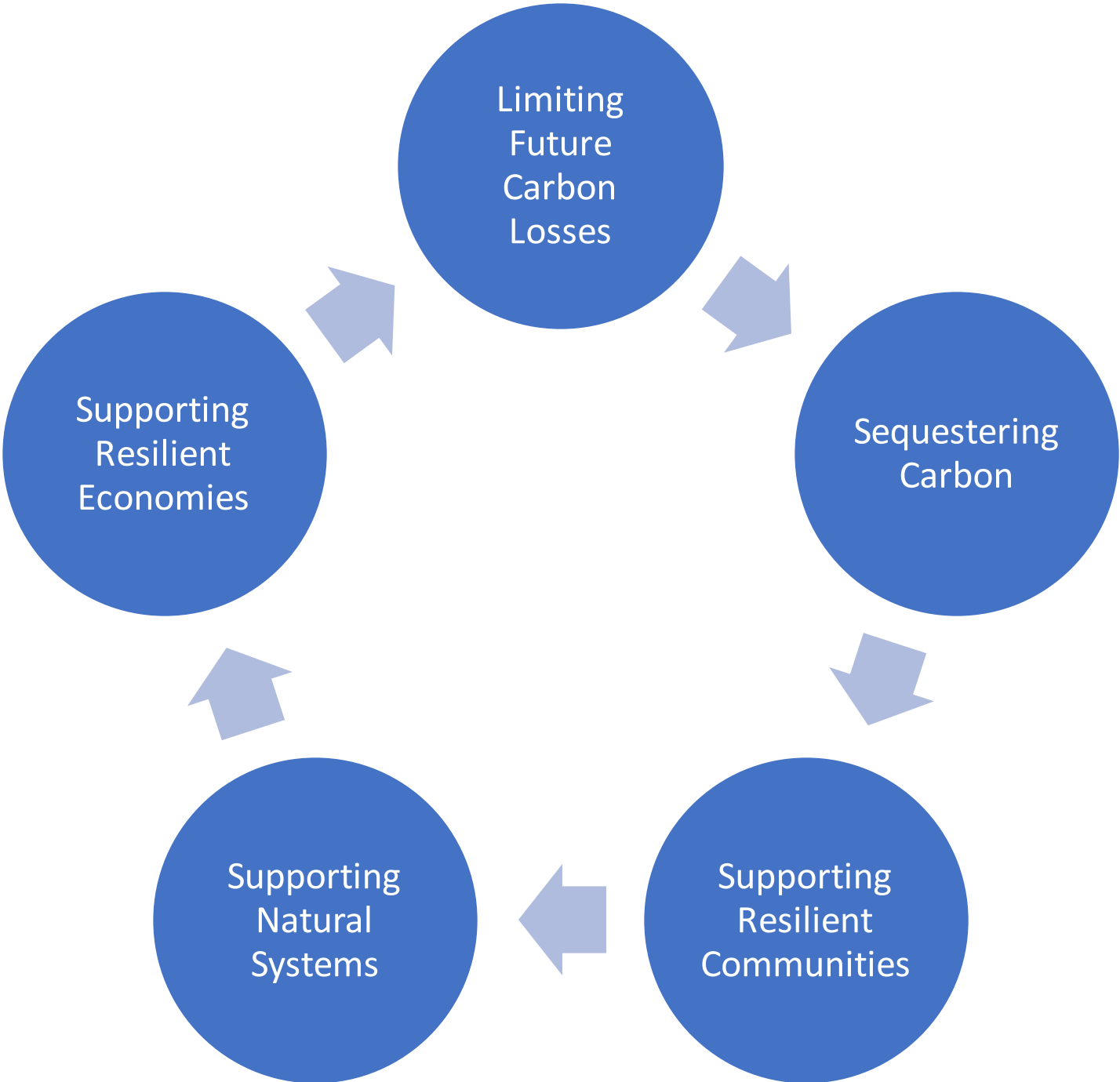
SUMMARY OF STATE ACTIONS

Summarizes existing efforts underway to drive climate smart land management in California:



- Legislative Directives
- Stewardship of State-Owned Lands
- Strategies and Plans
- Grant Funding
- Partnerships
- Science, Research, Data, Analysis
- Policies and Regulations
- Outreach, Education, Capacity and Technical Support
- Leveraging Funding and Finance
- Market Mechanisms
- Equity
- Tracking Action and Measuring Outcomes

PRIORITY APPROACHES



The NWL Strategy

**describes the
climate action
potential**

for each of
California's natural
and working
landscapes.

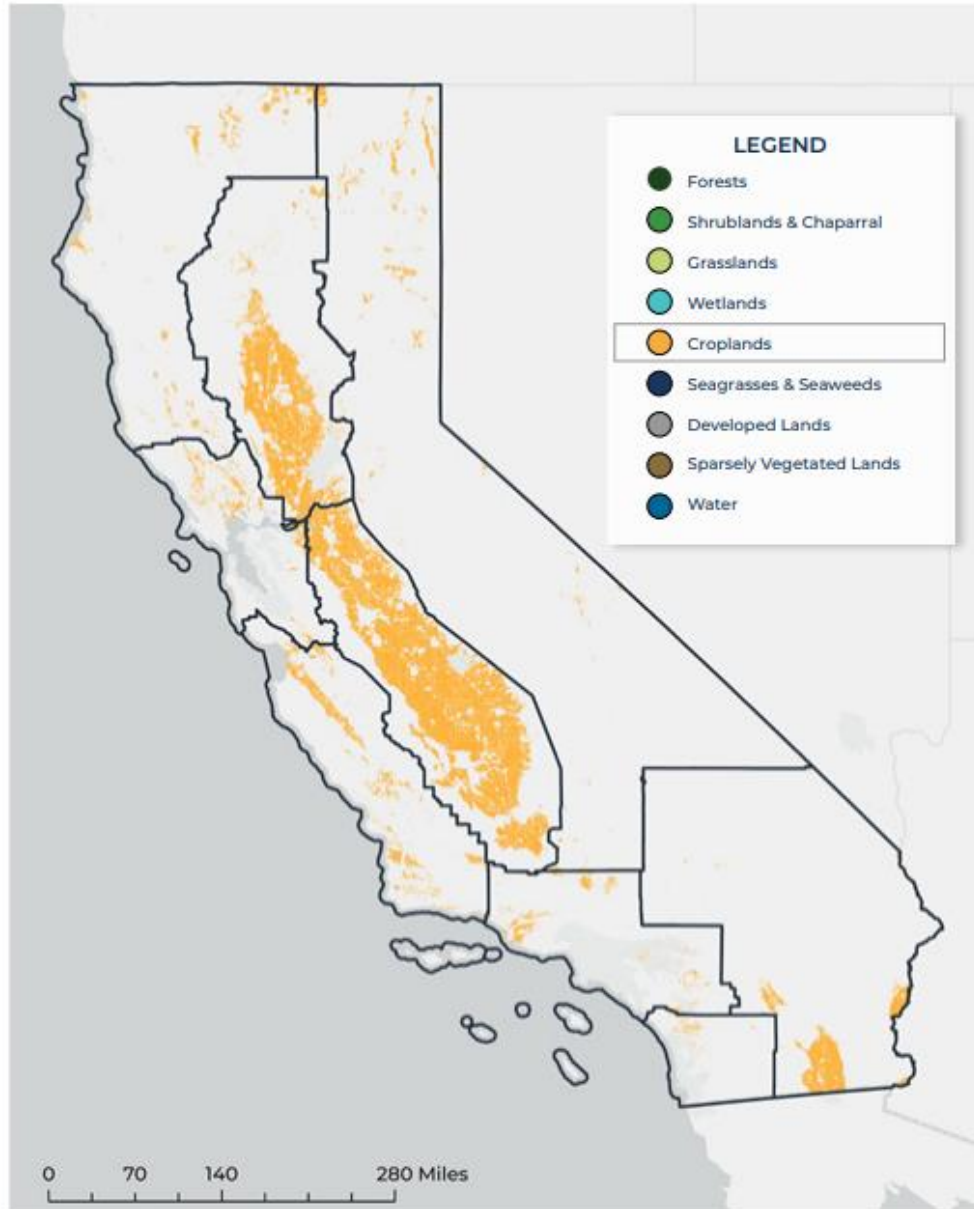
PRIORITY APPROACHES

The NWL Strategy

lists priority actions to deliver on our climate change goals

on each of California's natural and working landscapes.

- F. Expand and maintain both urban tree canopy and green spaces to moderate urban heat islands, decrease energy use, and contribute to carbon sequestration. Close the tree canopy gap in low-income/disadvantaged communities, particularly those vulnerable to the impacts of extreme heat, hazardous air quality, and/or with the least access to nature.
- G. Utilize place-based tree and plant selection and intensity with the principle of “the right tree for the right place,” to ensure the species selection process considers climate, water, and locally-specific circumstances.
- H. Protect urban trees from pests, disease, and drought for as long as feasible, and seek the highest and best use for trees and other biomass that must be removed due to pests and disease or for valid management purposes.
- I. Connect communities with greenways/greenbelts; consider how these landscapes can protect communities (particularly the most vulnerable) from climate impacts such as flooding, fires, heat, etc.
- J. Protect and restore urban river/streams, riparian areas, floodplains, seasonal wetlands, and corridors.
- K. Increase water-reuse and recycled water for urban green spaces.



PRIORITY APPROACHES

The NWL Strategy

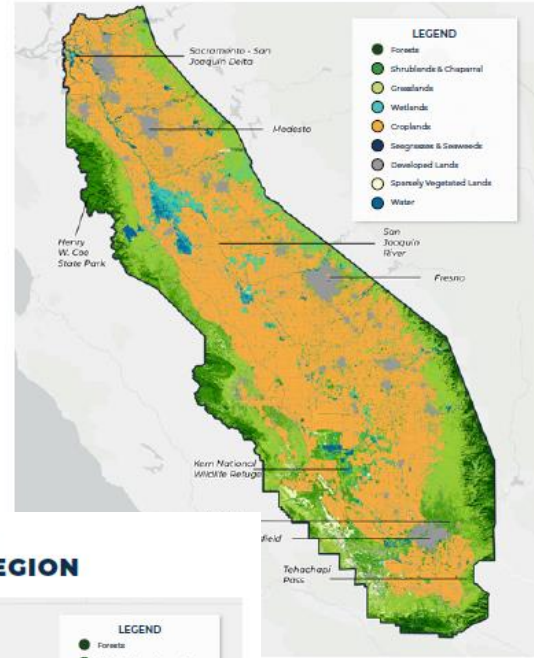
identifies where each natural and working landscape can be found

across California's 105 million acres.

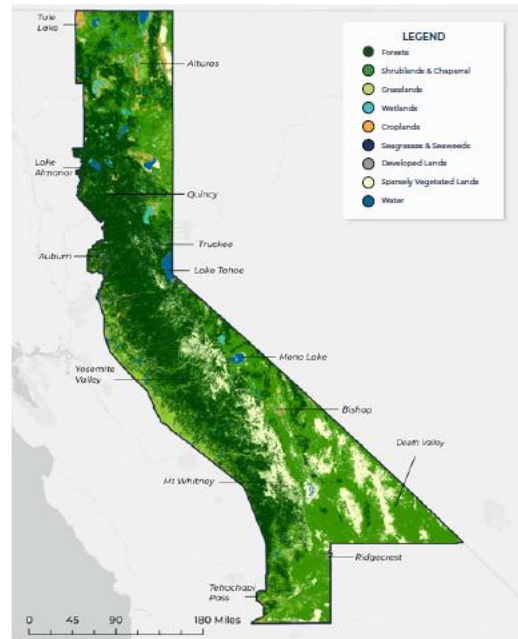
**REGIONAL LAND COVER MAP
LOS ANGELES REGION**



**REGIONAL LAND COVER MAP
SAN JOAQUIN VALLEY REGION**



**REGIONAL LAND COVER MAP
SIERRA NEVADA REGION**



REGIONAL SNAPSHOTS

Explores opportunities for climate smart land management across all regions in California.



TRACKING ACTION, MEASURING OUTCOMES

The NWL Strategy identifies options to track nature-based climate action and measure progress.



NEAR TERM PRIORITIES

The Strategy outlines seven building blocks of the state's natural and working lands agenda in the near term and identifies key areas of focus within each.

BUDGET

CALIFORNIA'S CLIMATE BUDGET



California Climate Commitment | Multiyear Budget Agreement



\$13.8 Billion
Clean Transportation



\$10.1 Billion
Zero-Emission Vehicles



\$8.7 Billion
Drought & Water Resilience



\$8.2 Billion
Clean Energy & Reliability



\$2.8 Billion
Wildfire & Forest Resilience



\$1.5 Billion
Community Resilience



\$1.4 Billion
Nature Based Solutions



\$1.2 Billion
Sustainable Agriculture



\$1.1 Billion
Coastal Resilience



\$975 Million
Climate Homes



\$723 Million
Climate Schools & Research



\$477 Million
Climate Innovation



\$443 Million
Circular Economy



\$404 Million
Extreme Heat



\$321 Million
Climate Health



\$315 Million
Climate Jobs

\$52.3 BILLION TOTAL

July 2023



California
Climate Action

RECORD FUNDING FOR NATURE-BASED CLIMATE SOLUTIONS

Some program examples include...

Forest Conservation Program | California Desert Conservation Program | Riparian Habitat Conservation Program | NWL Climate Adaptation and Resiliency Program | Urban and Community Forestry | Multi-benefit Land Repurposing Program | Healthy Soils Program | Forest Health Program | State Conservancies Support for Nature-Based Solutions | Urban Agriculture | Climate Smart Land Management Program | Forest Improvement Program for Small Landowners | Rangeland, Grazing Land & Grassland Protection Program | Local and Tribal Nature-Based Solutions Corps | Urban Greening Program | Tribal Nature-Based Solutions Program | Compost Permitting Pilot Program | Forest Legacy Program | Post-Fire Reforestation and Regeneration | Regional Forest Capacity | Streamflow Enhancement Program | Aquatic Habitat and Drought Resilience and Expediting Large Scale Habitat | Green Schoolyards | Healthy and Resilient Forests | Oak Woodlands Conservation Program | Nature-Based Solutions Wetlands Restoration Program

LEGISLATION

LEGISLATIVE MANDATE

AB-1757 California Global Warming Solutions Act of 2006: climate goal: natural and working lands

- Determine an **ambitious range of targets** for the NWL sector.
- Integrate these targets into the Scoping Plan and other **relevant state policies**.
- Improve and standardize GHG emissions **accounting** for the NWL sector, including co- benefits.
- Review and update the Natural and Working Lands Climate Smart **Strategy**.
- Provide recommendations on **modeling and analysis** to make decisions on best available science.
- Establish an **Expert Advisory Committee**.
- Develop **standard methods for tracking** GHG and resilience benefits from NWL climate action.
- **Report on progress** toward meeting NWL targets.



PUBLIC
COMMENT

We are seeking public input to develop California's nature-based climate solution targets through September 15, 2023!

Check out CNRA's "Expanding Nature-Based Solutions" page for more information!

<https://resources.ca.gov/Initiatives/Expanding-Nature-Based-Solutions>



THANK YOU!

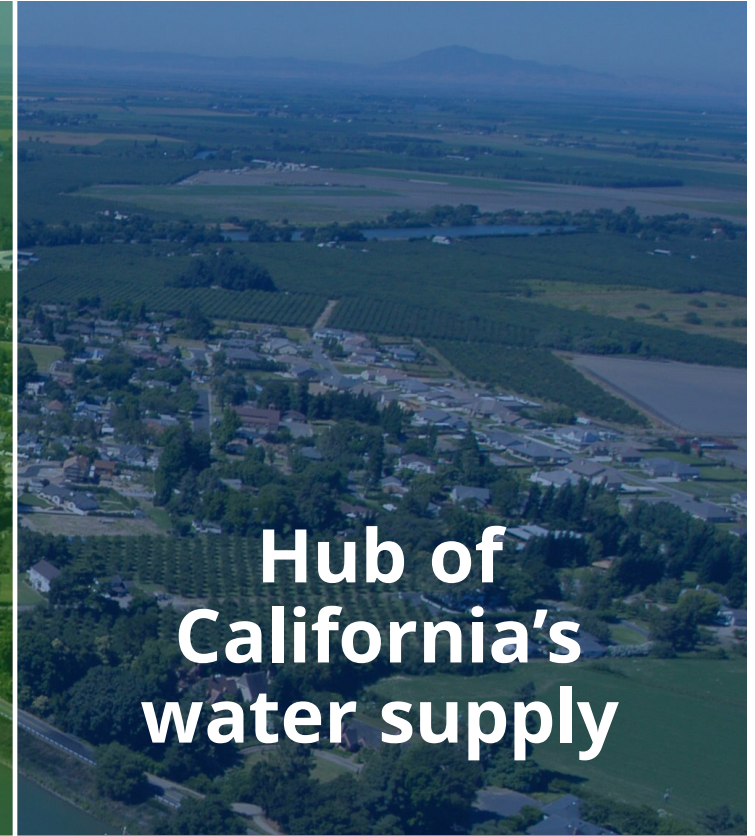
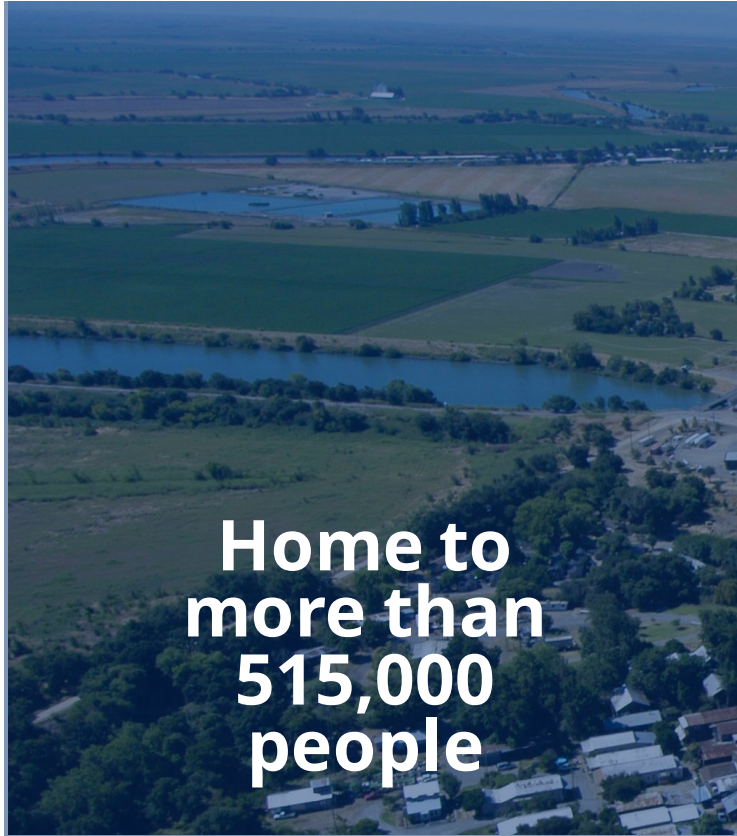


Working at a Regional Scale

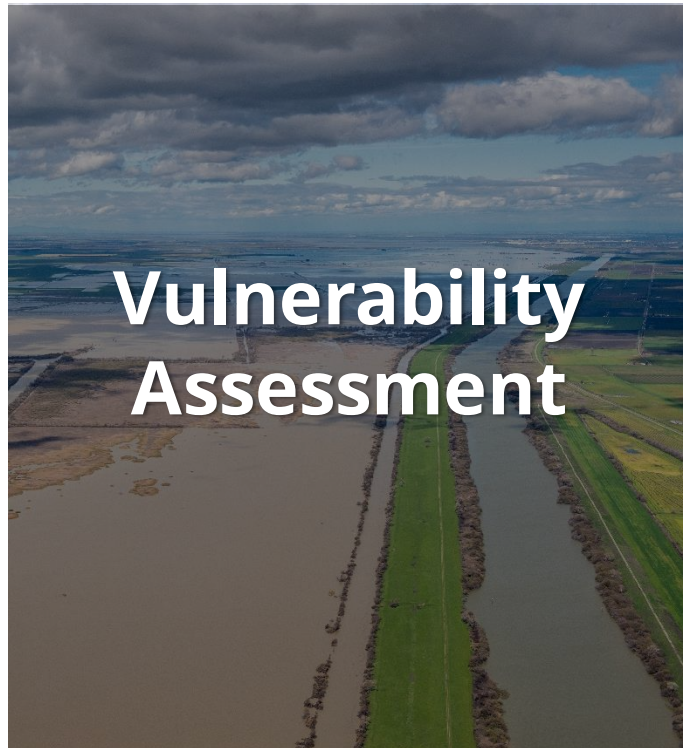
Harriet Lai Ross
Associate Deputy Executive Officer
Delta Stewardship Council

Sacramento-San Joaquin Delta

The Delta is...



Delta Adapts =



Overarching goal is to build climate resilience in the Delta

Adaptation Planning

- Adaptation Plan provides a suite of strategies for local and state agencies, practitioners
- Roadmap for implementation and funding
- Identifies vulnerable communities, addresses equity and prioritizes action in socially vulnerable communities



Kelly M. Grow / California Department of Water Resources (2019)

Regional Challenges

- Delta = large region, urban to rural settings with different needs and challenges
- Conducting outreach
- Identifying, defining, and serving vulnerable communities
- Many jurisdictions and State departments preparing their own vulnerability assessments; some adaptation plans
- No single entity is responsible to climate adaptation



Discuss with your neighbor

Introduce yourself to your neighbor

What barriers are you experiencing in planning for and implementing actions on natural and working lands?



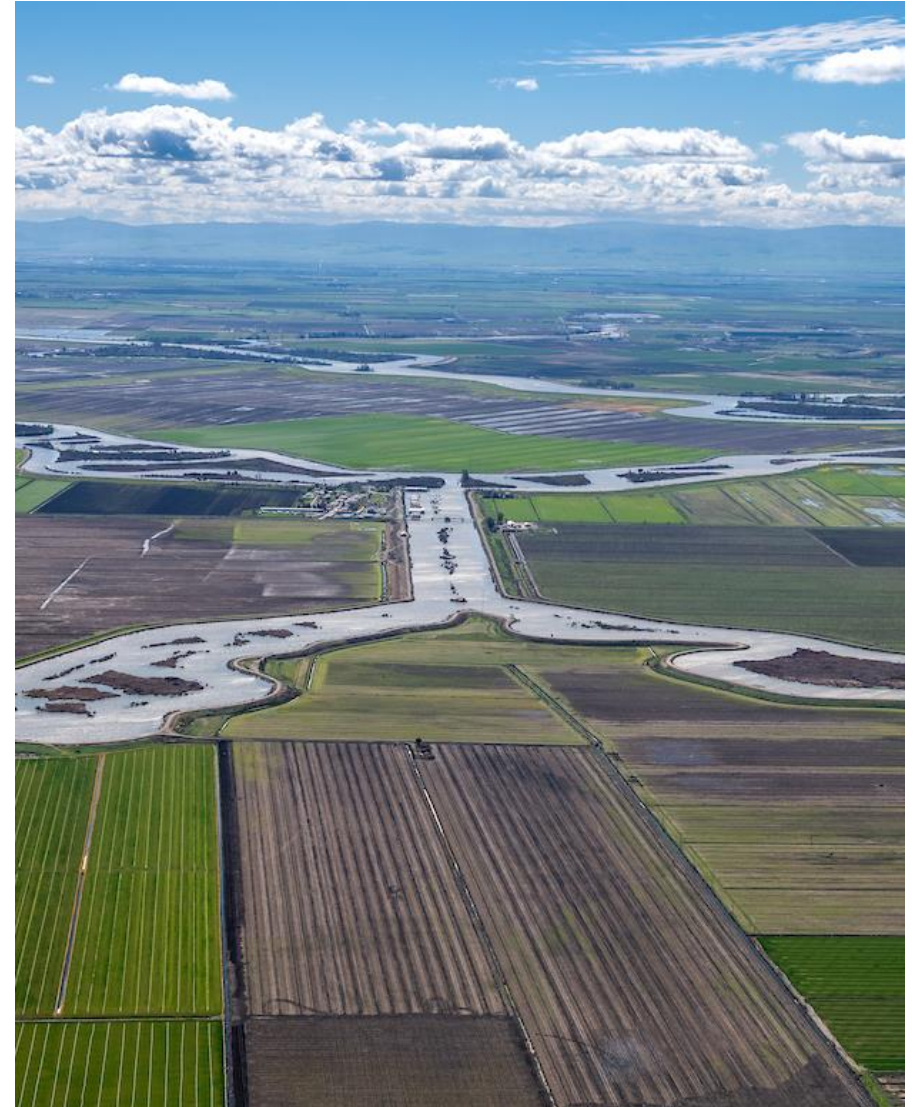
Agriculture

Morgan Chow

*Senior Environmental Planner,
Delta Stewardship Council*

Direct outreach to landowners

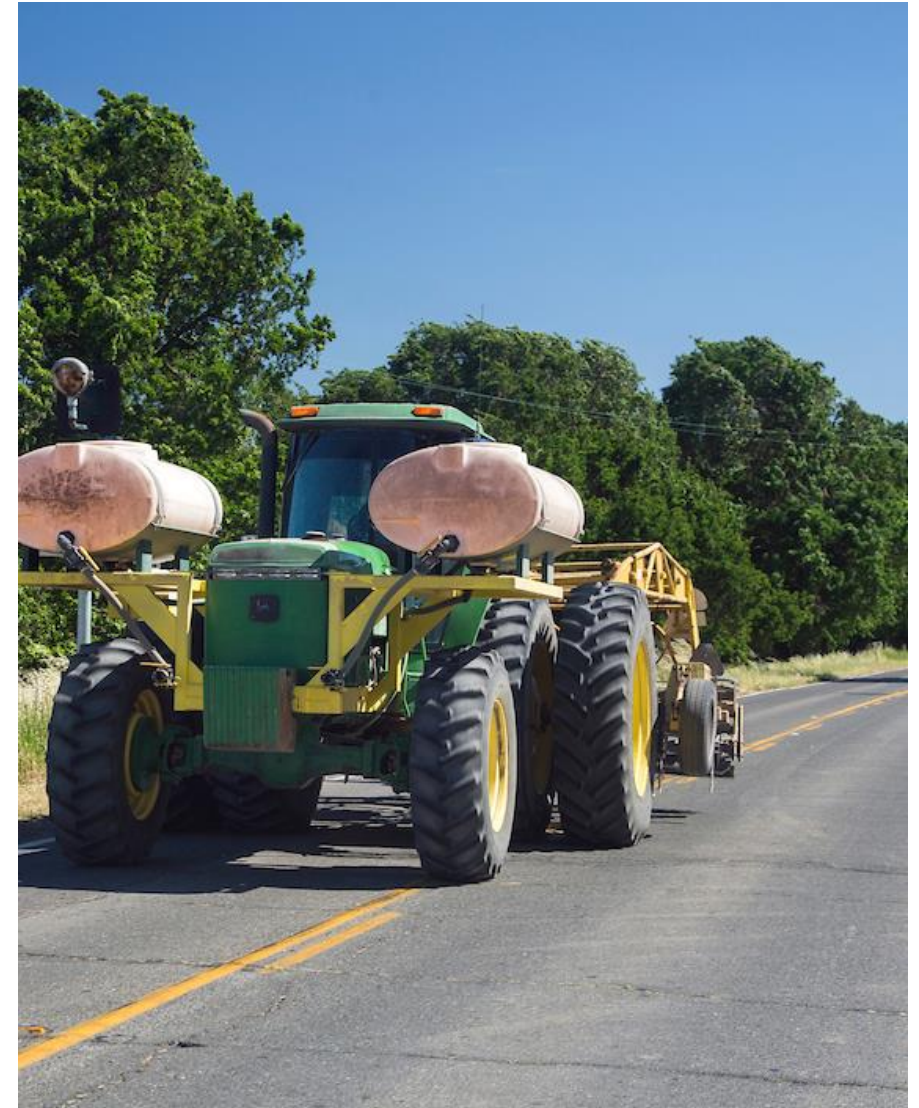
- Significance of Delta agriculture
- Addressed the need to hear directly from landowners
- Followed outreach best practices and acknowledge barriers to engagement:
 - Work through their trusted partner
 - Meet community where they're at
 - Tailor messaging
 - Be clear on how input will be used
- **POLL:** What are some strategies you have used that have been successful in building trust and buy-in with new groups?



California Department of Water Resources

Grower Group Interviews: Overview

- Conducted **7** small group interviews spring 2022 and sent a follow up survey (26 responses)
- Key concerns:
 - **Climate changes:** salinity, increasing mildew and invasive species, wildlife conflicts, earlier snowpack melt, levee stability and maintenance, siltation and dredging, decreasing fog, loss of chill hours
 - **Regulations & market forces:** labor costs and shortages, increasing high value permanent crops, permitting burdens, low trust in government
 - **Land use:** conflicts with recreation, habitat restoration, investor farms purchasing land



California Department of Water Resources

Grower Group Interviews: Key Takeaways

- **Adaptation strategies in use:**
 - Water conservation strategies
 - Tile drains to keep roots dry
 - Leaching to manage salinity
 - Crop choice: Annual/ row crop systems; crop switching based on water availability and salt tolerance; interest in rice subsidence benefits
 - Agro-tourism to diversify revenue
- **Priorities:**
 - Support multi-generational, family, small farms
 - Support unique Delta crops (asparagus, pears)
 - Farmers are the stewards of the Delta; engine of the region

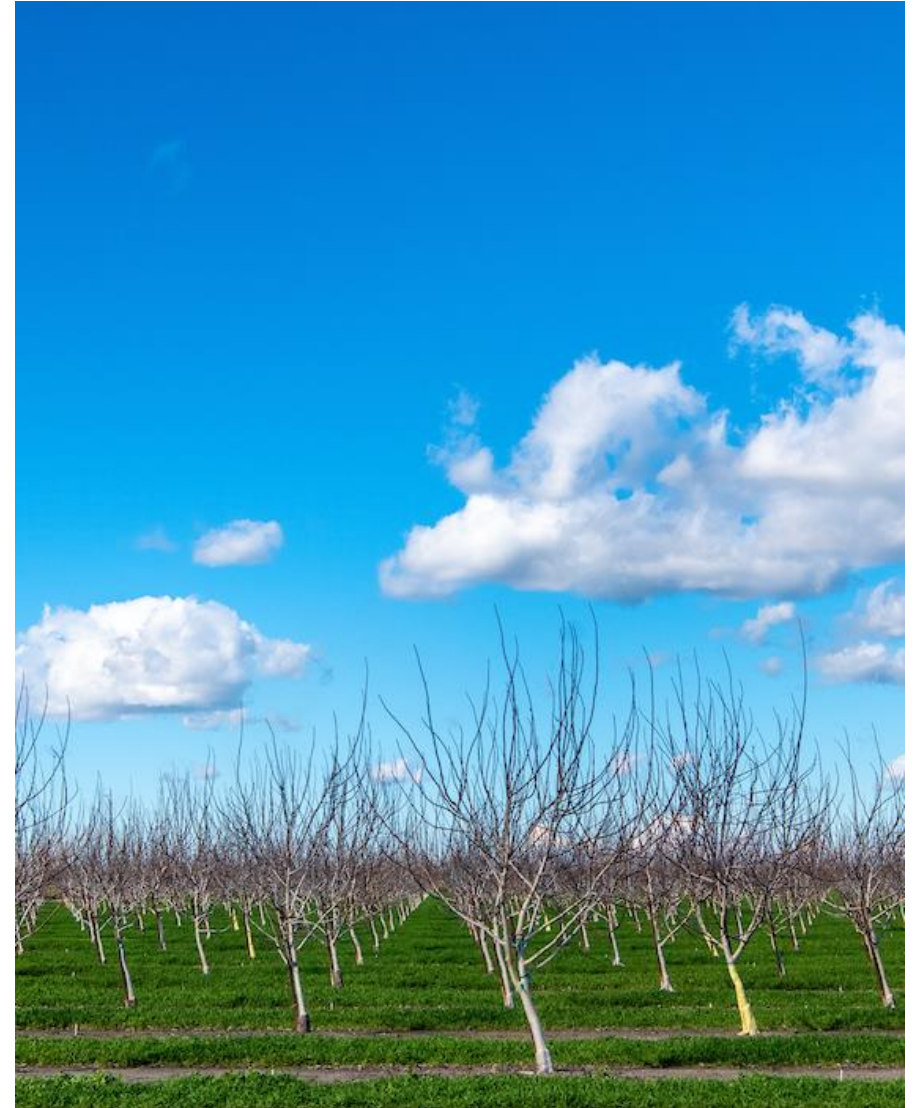


California Department of Water Resources

Grower Group Interviews: Key Takeaways

- **Adaptation needs:**

- Incentives and resources for practices and system conversion and invasive management
- Flood and salinity protection and management
- Education for public and policy-makers on Delta agriculture
- Economically-viable alternative land use options other than agriculture

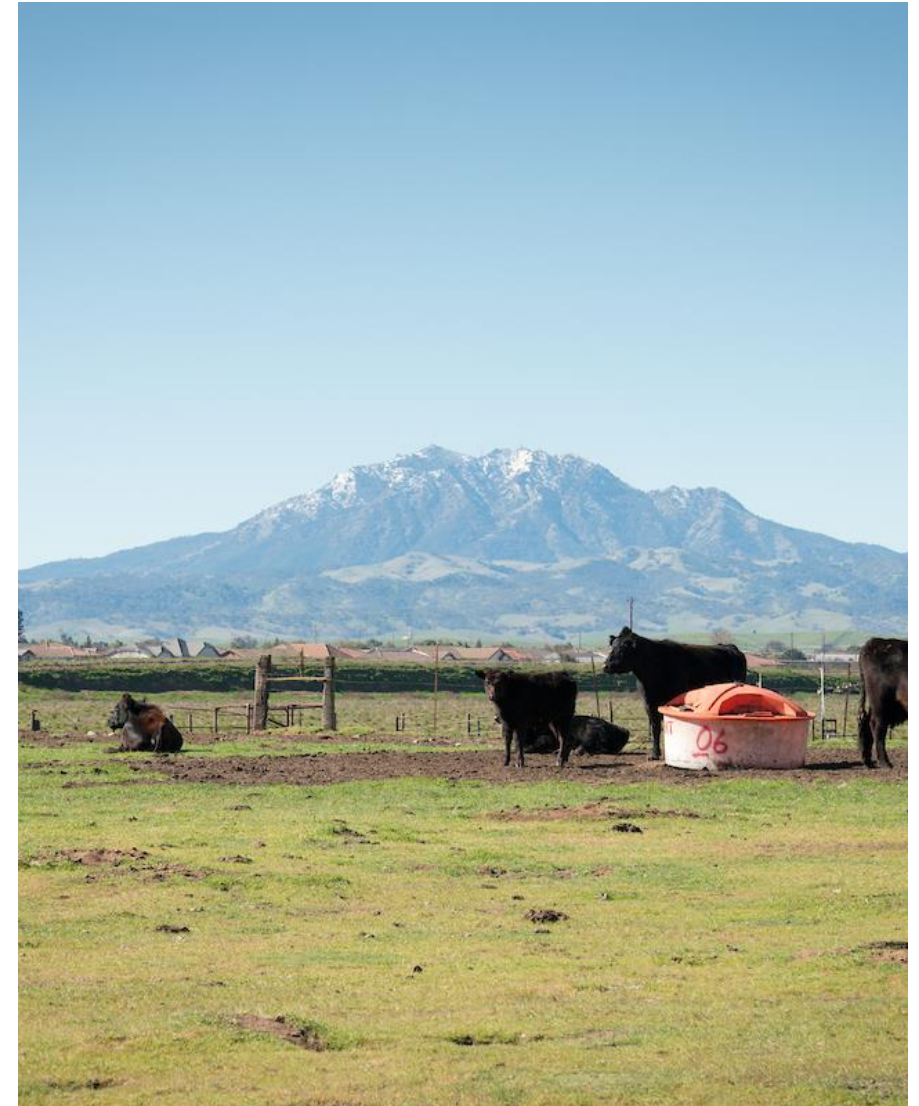


California Department of Water Resources

Agriculture Strategies to address needs

- Climate-smart farming practices:
 - Irrigation efficiency and management*
 - Build soil health*
 - Planting and crop changes
- Regionwide and system changes*
- Diversify business opportunities and income streams on ag lands*
- Strategic ag land retirement
- Build an equitable regional food system

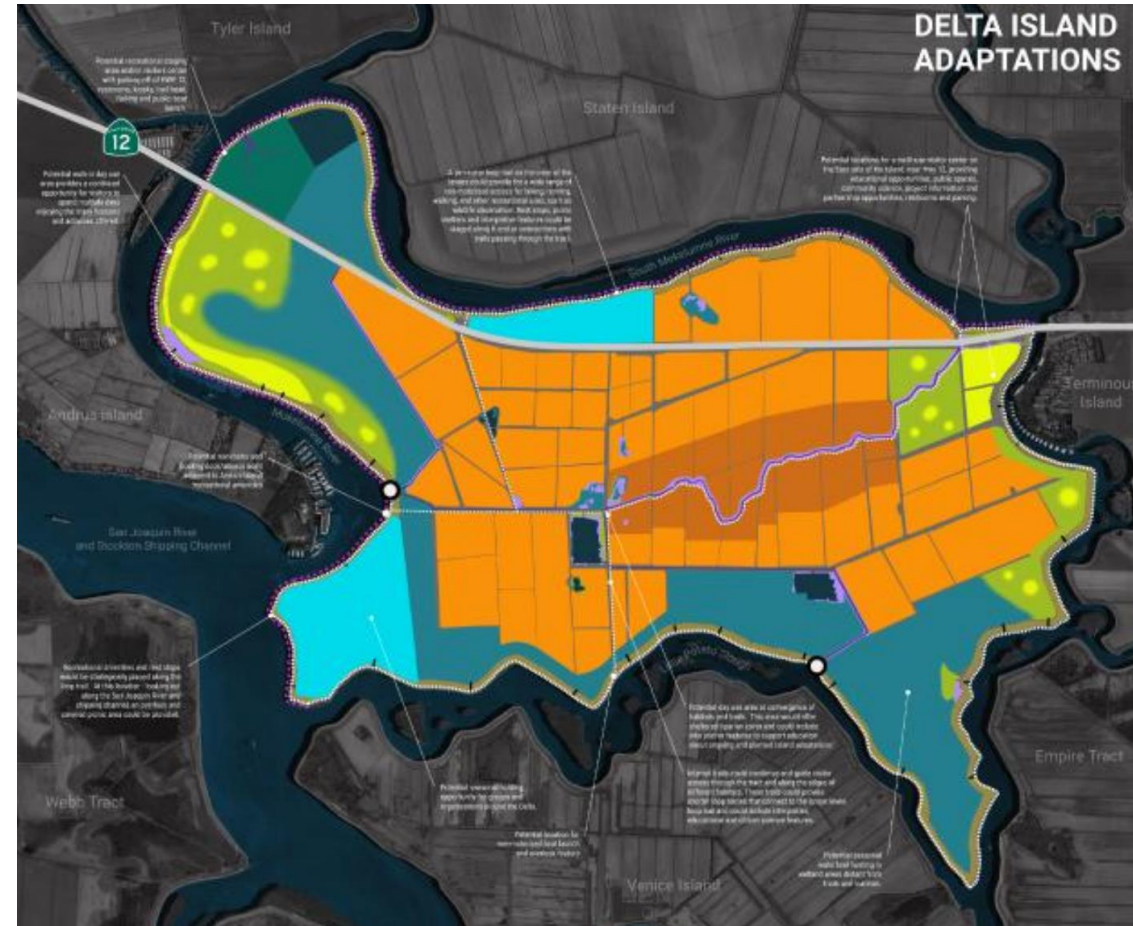
*included in CA Natural and Working Lands Strategy for croplands to help meet state's carbon goals



California Department of Water Resources

Case studies on Delta Working Lands

- Solano Land Trust: alternating crops planted according to water-year prediction
 - Dry farming, rotational fallowing
- Bouldin Island Delta Islands Adaptation
 - Crop mosaic of paludiculture and wetlands
- Agro-tourism efforts in the North and Central Delta



<https://deltaislandadaptations-ucdavis.hub.arcgis.com/>



Ecosystems

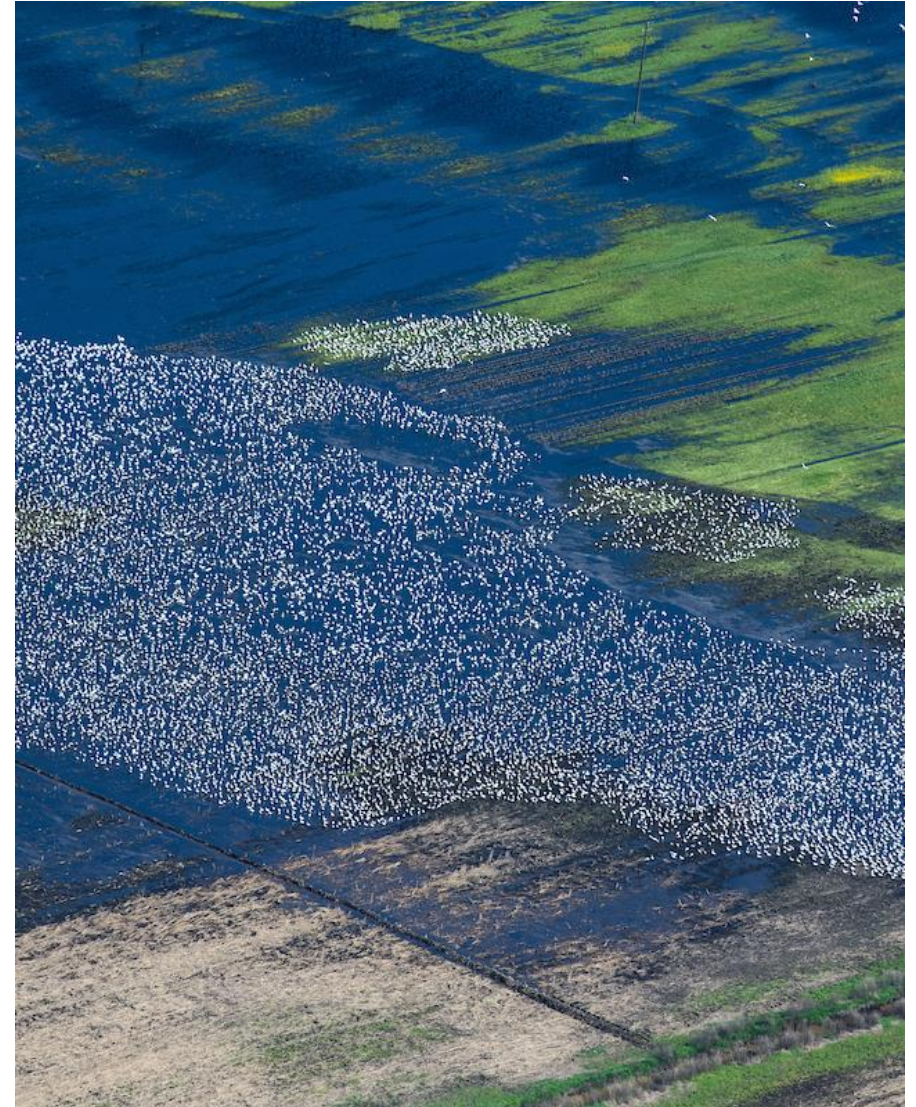
Daniel Constable

*Environmental Program Manager,
Delta Stewardship Council*



Ecosystems and Adaptation

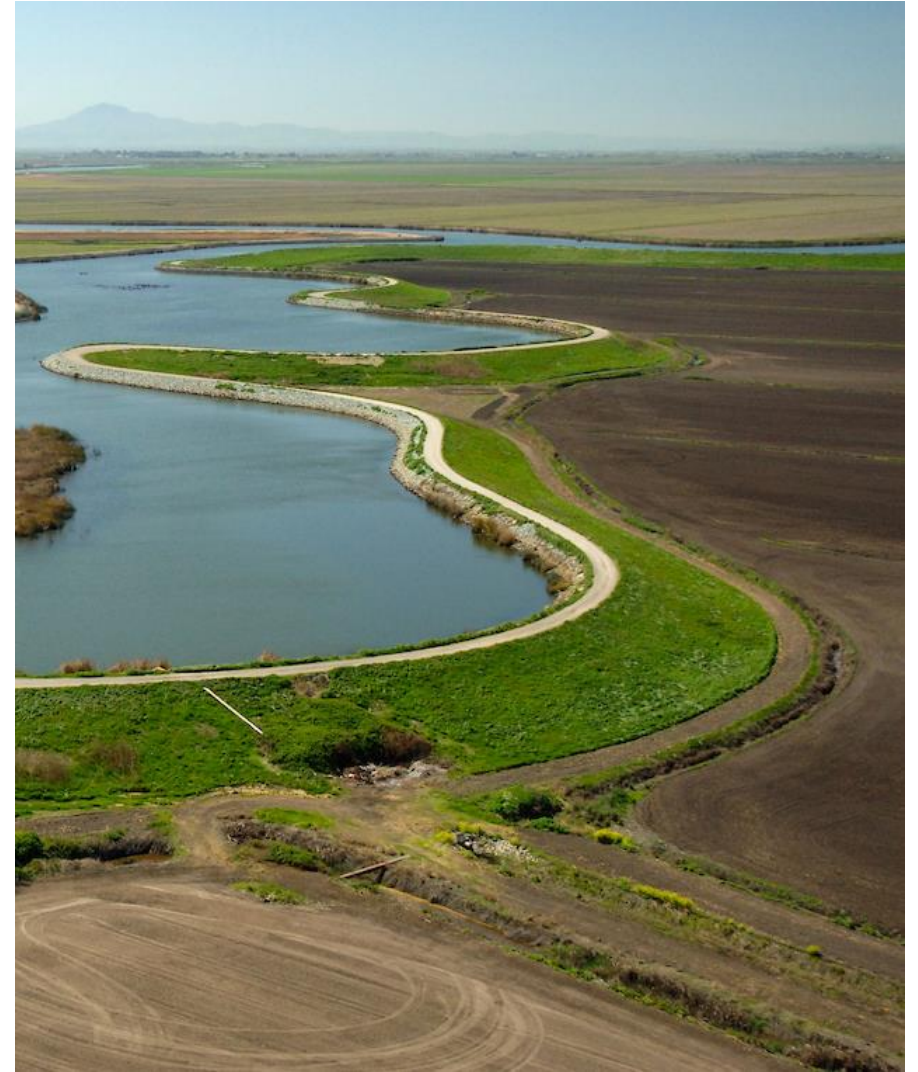
- Can view ecosystem *requirements* to adapt to climate change and as a *way* to adapt
- Ecosystems also provide opportunities for mitigation
- Our approach has been to frame adaptation as a way to regain and retain functional ecosystems and climate refugia



California Department of Water Resources

Natural lands strategies

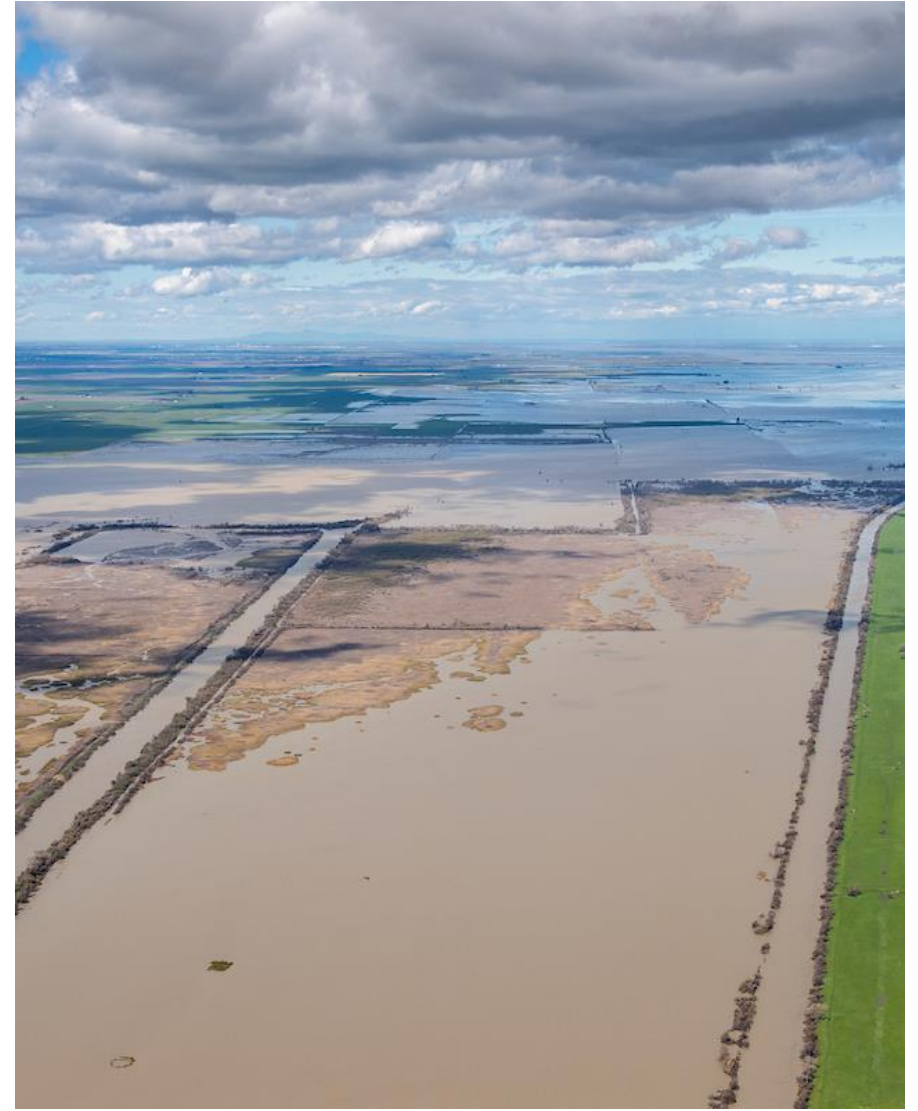
- Accelerate the pace and scale of restoration as an adaptation tool
- People and equity first, but with a clear connection to nature-based solutions
- Regional planning: Optimal location biogeophysics, available land, minimized negative impacts
- Prioritize subsided and highly-organic lands
- Increase funding by an order of magnitude



Paul Hames / California Department of Water Resources (2008)

Examples and implementation

- Multibenefit projects
- Public-private partnerships
- Mosaic land uses
- Increasing pace and scale



Ken James / California Department of Water (2019)

Challenges for regional restoration

- Politics, regulations, and 'competing' interests loom large
- Existing land use, policies, regulations
- Economic and long-term management considerations
- Regional, statewide, and global benefits – potential local, concentrated impacts



Kelly M. Grow/ California Department of Water (2018)

What climate smart strategies on natural and working lands have you seen work well/not well?



Takeaways

- Work with stakeholders to understand values and adaptation needs
- Engage those most affected, utilize outreach best practices
- Integrate equity throughout
- Targeted investments in underserved communities
- Results in multi benefits
- Economically viable solutions are easier to implement

Thank you

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