California’s 2030 Natural and Working Lands Climate Change Implementation Plan
Agenda

1. Overview of state direction for natural and working lands
2. Overview of draft goals for conservation, restoration, and management in the San Joaquin Valley
3. Discussion on draft goals and outlook for future implementation
California’s natural and working lands

- Rangeland
- Forests
- Wetlands
- Grasslands
- Farms
- Riparian areas
- Seagrass
- Urban green-space
Overarching goal

**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**

- **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$_2$e by 2030 through existing pathways and new incentives
Achieving California’s vision for natural and working lands

2030 Natural and Working Lands Climate Change Implementation Plan

Blueprint for achieving state vision for natural and working lands:

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

Increased ability for land to sequester carbon and provide other benefits:

- 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

- Plan relies on using **identified activities** (interventions)
- Sets an ambitious but achievable goal with targets that are **scaleable**
- 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

- 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

<table>
<thead>
<tr>
<th><strong>Land protection</strong></th>
<th>Avoided conversion of land for development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural practices</strong></td>
<td>Cultivated land soil conservation, rangeland compost amendment, rotational grazing, conservation crop rotation, mulching, riparian restoration</td>
</tr>
<tr>
<td><strong>Urban forests</strong></td>
<td>Expansion of existing urban tree canopy</td>
</tr>
<tr>
<td><strong>Forest management</strong></td>
<td>Understory treatment, partial cut, prescribed burn, biomass utilization, improved management</td>
</tr>
<tr>
<td><strong>Restoration activities</strong></td>
<td>Restoration and expansion of the extent of mountain meadows, managed wetlands, oak woodlands, riparian areas, and seagrass</td>
</tr>
</tbody>
</table>
Goals of final Plan

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

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)

• 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

• **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

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

**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

• 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

• 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

- Annual reporting on expected benefits based acres protected and brought under management using:
  - CALAND and other methods
  - COMET-Planner, Compost-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

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

CALAND outcomes

NWL Implementation Plan

Agency Implementation through 2030

Report and assess outcomes

Next Scoping Plan Update

additional policy considerations

CARB NWL Inventory

Are we meeting the net sink objective?

Tracking & Reporting

Are we on track to meet intervention-based goal?

COMET- and Compost-Planner outcomes
Moving Forward

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 & WORKING LANDS IN THE SAN JOAQUIN VALLEY
Central Valley Ecoregion
Land Cover in the Central Valley Ecoregion

- Cultivated: 65%
- Desert: 1%
- Developed: 12%
- Shrubland: 9%
- Water: 1%
- Rangeland (Grassland, Savanna, Woodland): 10%
- Barren or Sparse: 2%

Total: 100%
Setting acreage targets

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
Agency and department projections

• **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
CA Natural Resources Agency Departments reporting conservation, restoration, and management targets in the Central Valley Region

Department of Conservation (DOC)
Department of Fish and Wildlife (CDFW)
Department of Water Resources (DWR)
Department of Forestry and Fire Protection (CAL FIRE)
State Parks
Wildlife Conservation Board (WCB)
## CENTRAL VALLEY REGION: Compiled acreage targets

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

**Practices not reported for this region:** reforestation, improved forest management, additional forest biomass utilization, rangeland composting, coastal wetland restoration, seagrass restoration
14,913 - 22,462 ACRES OF RIPARIAN RESTORATION
Riparian trees, primarily oaks, are established on grassland or cultivated lands

155,554 - 236,801 ACRES OF LAND PROTECTION
Reduced conversion of natural and working lands to urbanized land

496 – 1,452 ACRES OF OAK WOODLAND RESTORATION
Riparian trees, primarily oaks, are established on grassland or cultivated lands
Developing targets for practices on rangelands and cultivated lands funded by CDFA’s Healthy Soils Program

Soil management practices

Cropland to herbaceous cover practices

Compost application practices

Establishment of woody cover practices
Soil Management Practices

Cropland Management Practices
Mulching (484)
Residue and Tillage Management - No-Till (329)
Residue and Tillage Management - Reduced Till (345)
Cover crops (340)

Compost Application Practices

Compost Application to Annual Crops (CDFA)
Compost Application to Perennials, Orchards and Vineyards (CDFA)
Compost Application to Grassland (CDFA)

Cropland to Herbaceous Cover Practices:

Herbaceous Wind Barriers (603)
Vegetative Barriers (601)
Riparian Herbaceous Cover (390)
Contour Buffer Strips (332)
Field Border (386)
Filter Strip (393)

Establishment of Woody Cover Practices:

Windbreak/shelterbelt establishment (380)
Riparian Forest Buffer (391)
Hedgerow Planting (422)
Silvopasture (381)
2017 HSP AWARDED PROJECTS

**Incentives Program**
- 51 projects
- 22 counties
- 8,992 tons CO₂e/yr GHG Reduction
- Total grant amount requested: $1.4 million
- 69 applications

**Demonstration Projects**
- 22 projects
- 20 counties
- 1,642 tons CO₂e/yr
- Total grant amount requested: $3.2 million
- 27 applications

Note: Final grant awards subject to change pending CDFA budget evaluations.
**2017 HSP SECOND SOLICITATION AWARDED PROJECTS**

**Incentives Program**
- 33 projects
- 16 counties
- 7,470 metric tons CO2e/yr GHG Reduction
- Total grant amount requested: $918,496
- 43 applications

**Demonstration Projects**
- 6 projects
- 7 counties
- 899 tons CO2eq/year GHG Reduction
- Total grant amount requested: $549,429
- 11 applications

Note: Final grant awards subject to change pending CDFA budget evaluations.
Average CA farm size: 329 acres
79% projects on smaller farms (<250 acres)

Applications Received: $66 + 43 = 109$
Selected for Awards: $51 + 33 = 84$

**2017 HSP INCENTIVES PROJECTS INCLUDING SECOND SOLICITATION**

**Most Popular Practices by Number of Projects**
- Woody Cover: 37 projects
- Compost Application: 67 projects
- Cover Crops: 40 projects

**Most Popular Practices by Acres of Implementation**
- Compost Application: 4710 acres
- Cover Crop: 548 acres
- Mulching: 552 acres
- Reduced/No-till: 704 acres

**Number of Awards by Farm Size**
- Less than 50 acres: 40%
- 50-99 acres: 15%
- 100-249 acres: 20%
- 250-499 acres: 10%
- 500-1000 acres: 15%
- >1000 acres: 5%

**Applications by Acres of Implementation**
- Less than 50 acres: 40%
- 50-99 acres: 15%
- 100-249 acres: 20%
- 250-499 acres: 10%
- 500-1000 acres: 15%
- >1000 acres: 5%
GENERAL QUESTIONS

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?

HEALTHY SOILS PROGRAM QUESTIONS

1. How extensively are the Healthy Soils Program practices used in this agricultural region?

2. What are the challenges and opportunities of using these practices in this agricultural region?
Feedback on Acreage Targets

please submit written comments on acreage targets to:

emma.johnston@resources.ca.gov

BY JULY 10
THANK YOU

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