KLAMATH-CASCADE REGIONAL MEETING

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

CalEPA California Environmental Protection Agency

California Natural Resources Agency

California Air Resources Board

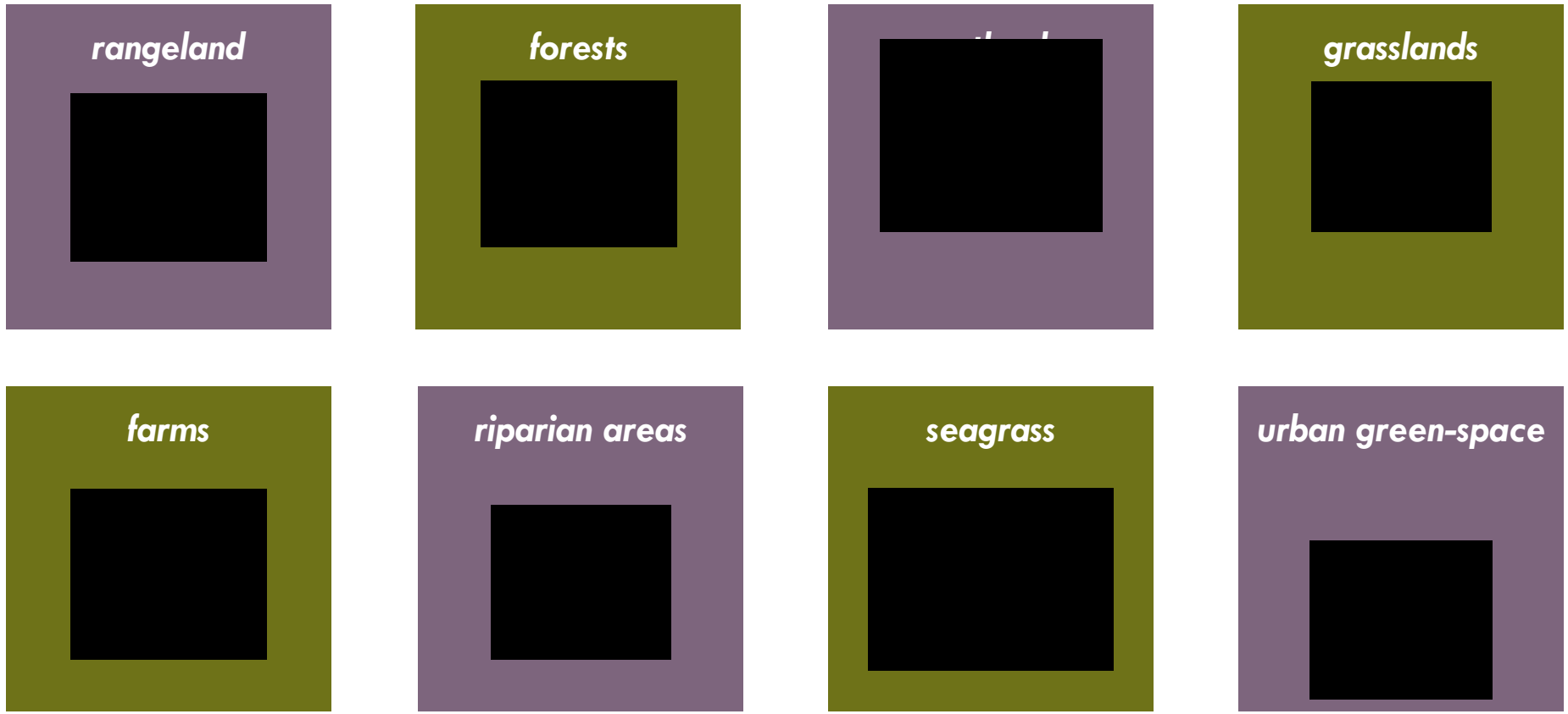
cdfa California Department of Food & Agriculture

California Strategic Growth Council

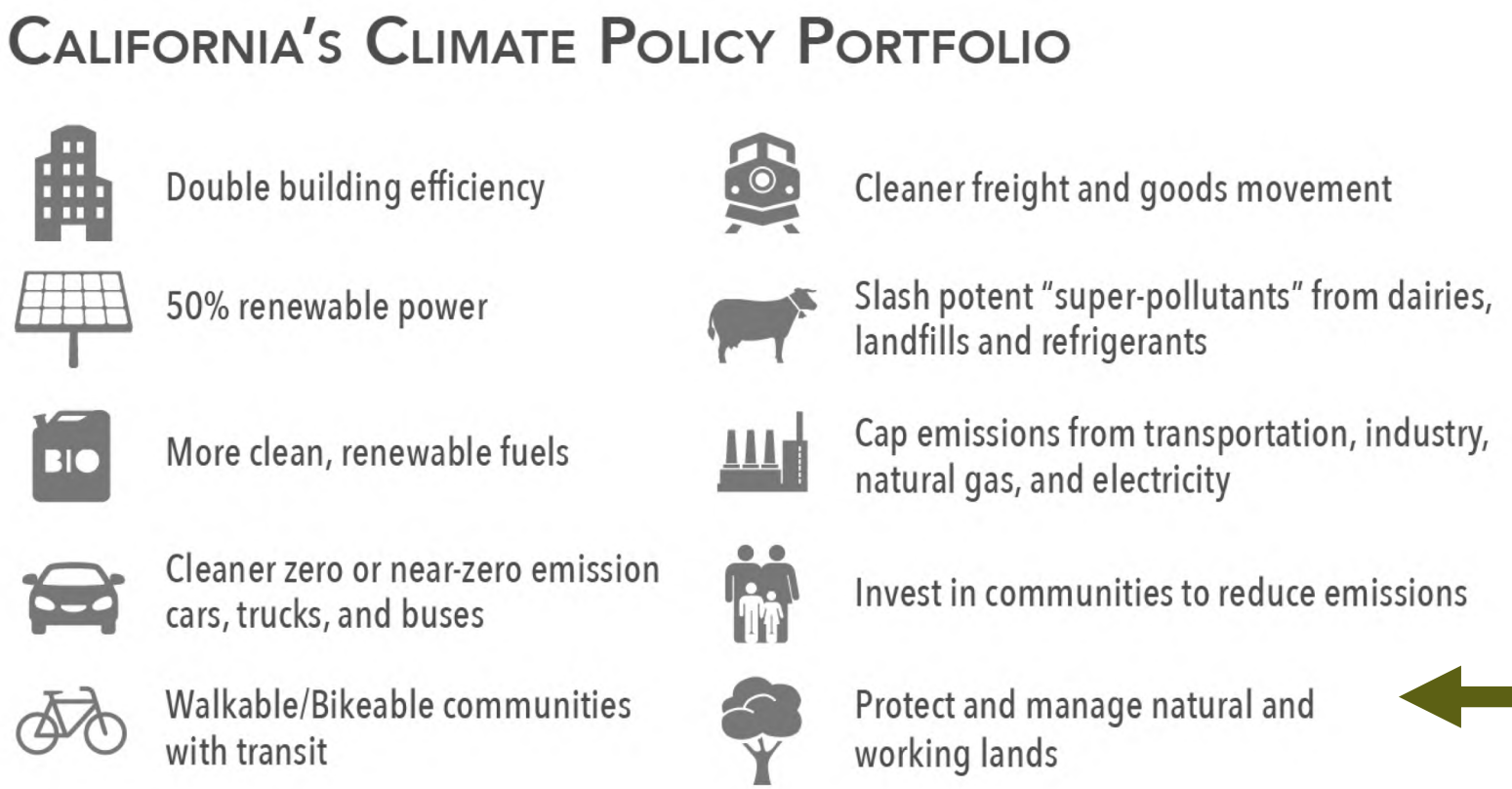
Agenda

1. Overview of state direction for natural and working lands
2. Overview of draft goals for conservation, restoration, and management in the Klamath-Cascade region
3. Discussion of regional draft goals and outlook for future implementation

California's natural and working lands



Overarching goal



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_2e 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

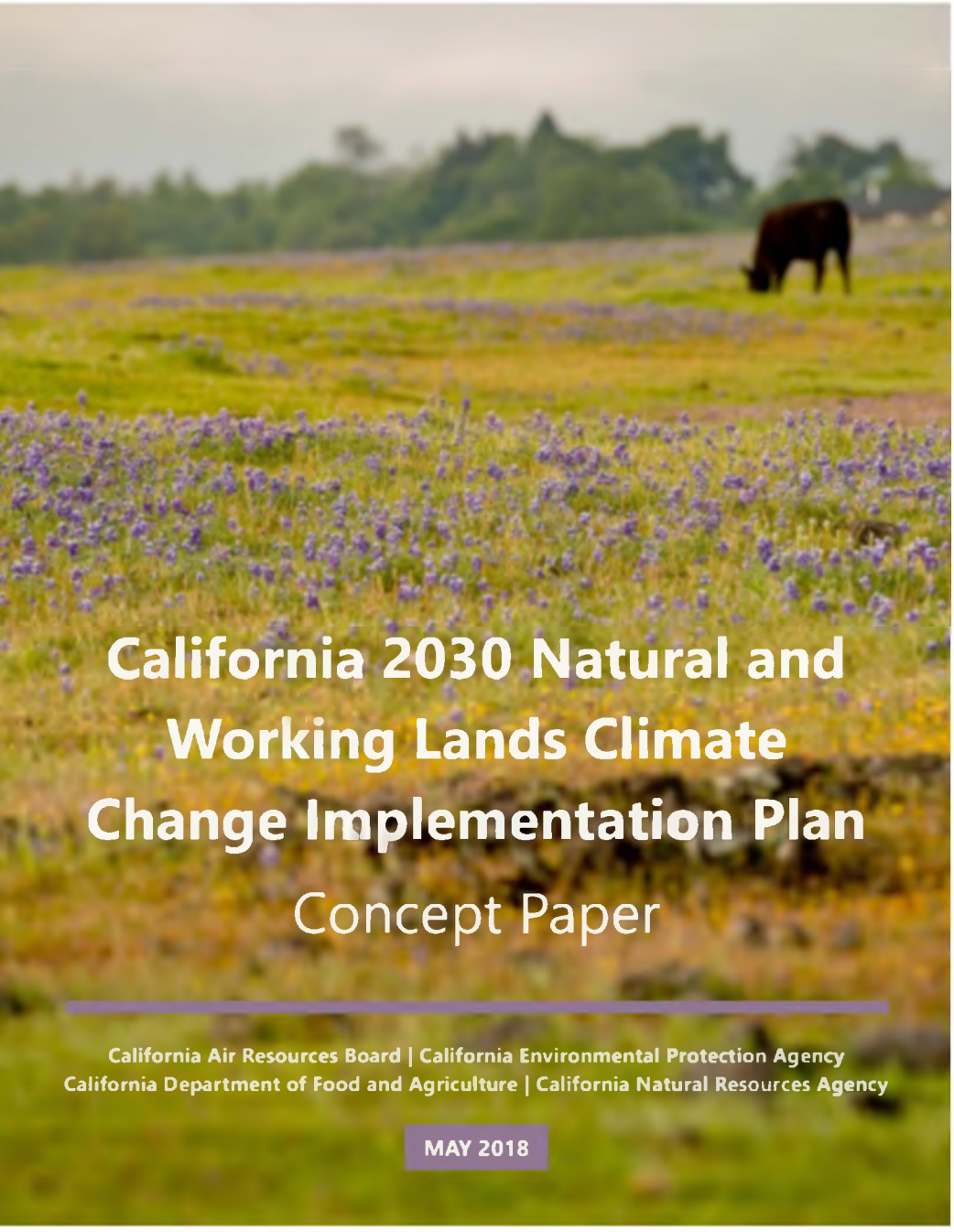
→

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



California 2030 Natural and Working Lands Climate Change Implementation Plan

Concept Paper

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

- 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 these activities through programs that often do not have carbon sequestration as their primary goal
- Facilitates **tracking** and **reporting** on progress towards goal

Multiple benefits of implemented projects

Land protection, restoration, and management activities in the plan

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

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

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)

- 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

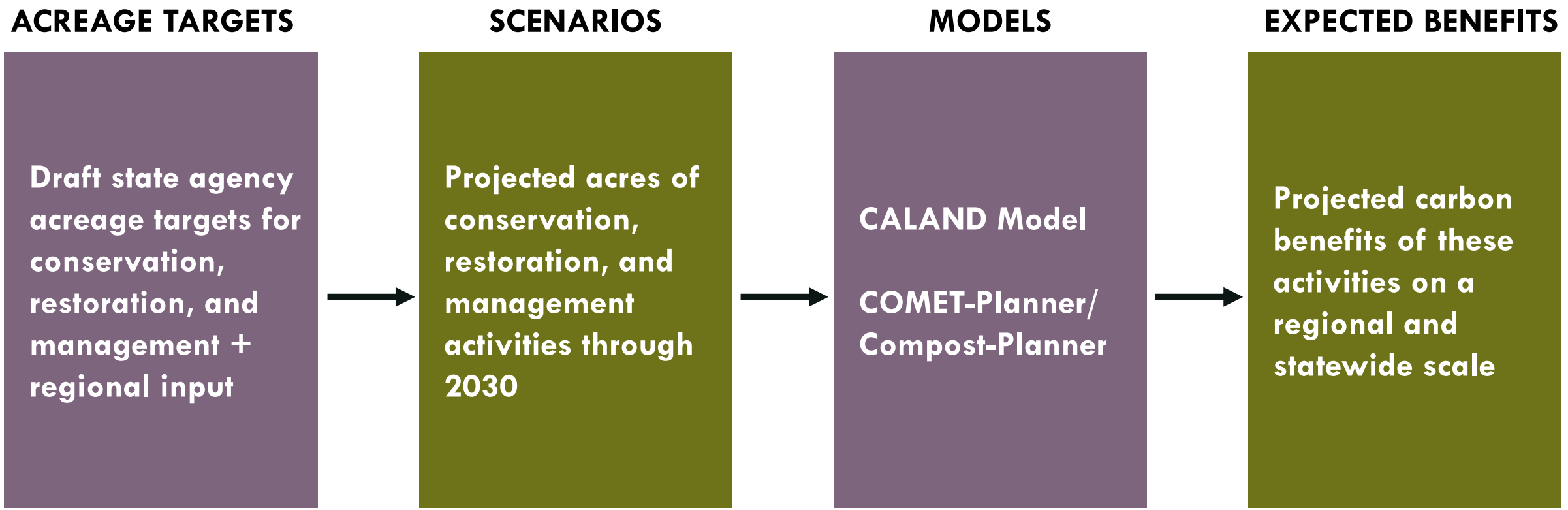
BUSINESS-AS-USUAL SCENARIO

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



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

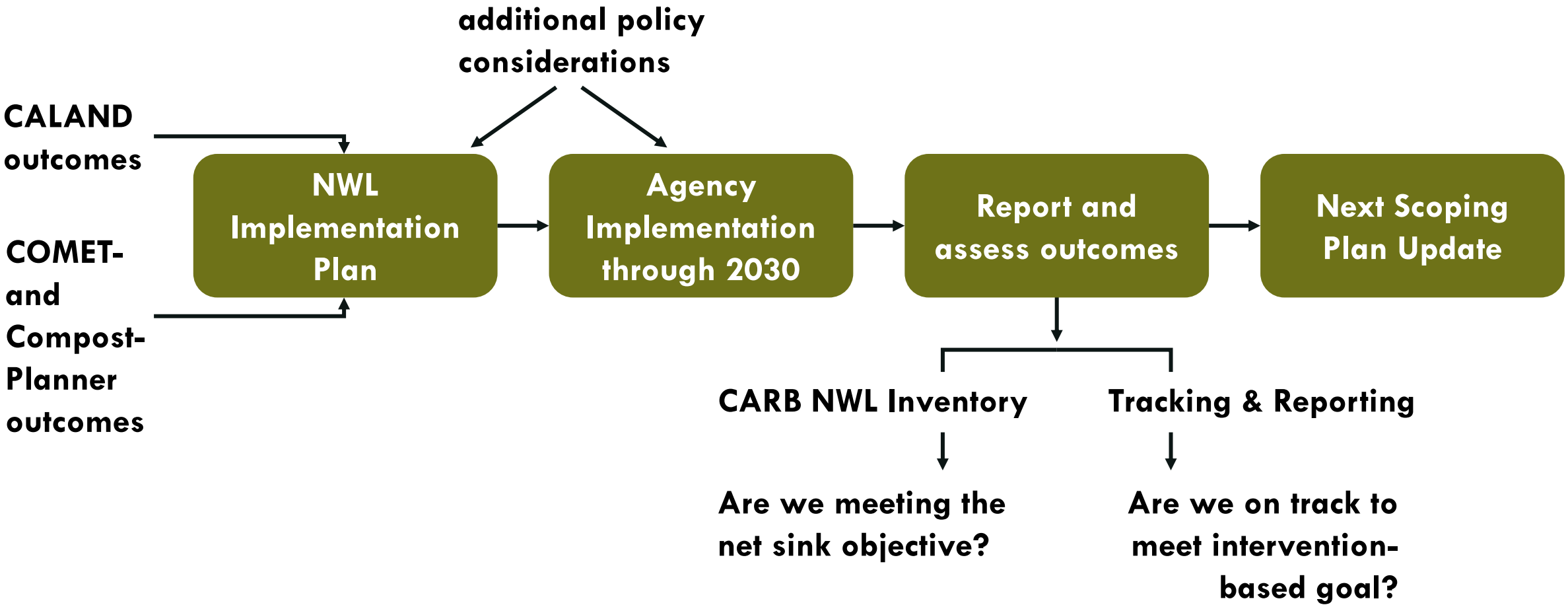
- Annual reporting on expected benefits based acres protected and brought under management using:
  - CALAND and other methods
  - COMET-Planner and existing quantification methodologies developed as part of California Climate Investments
- Develop a system for tracking and reporting actual outcomes

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



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

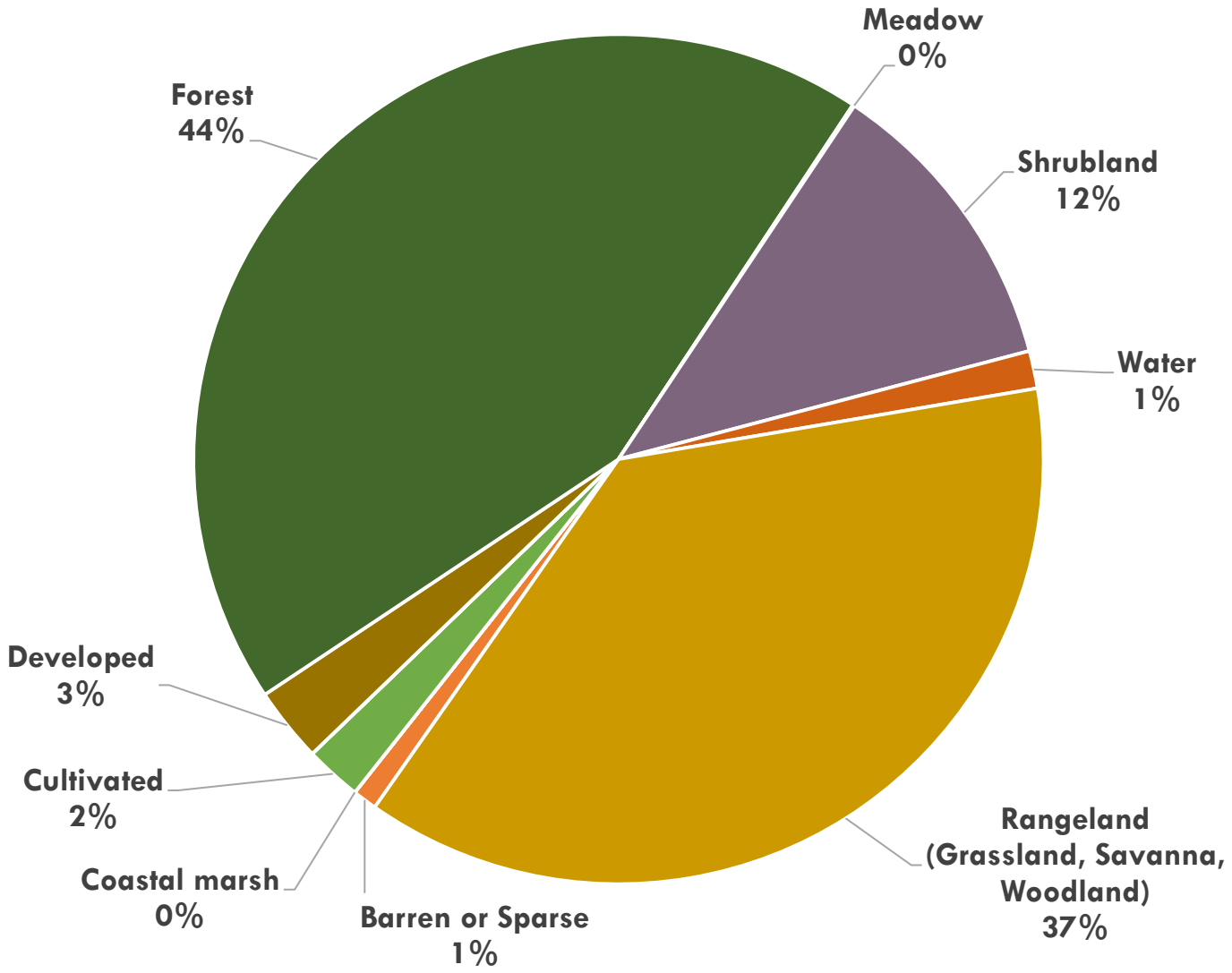
November 2018

Release final Implementation Plan

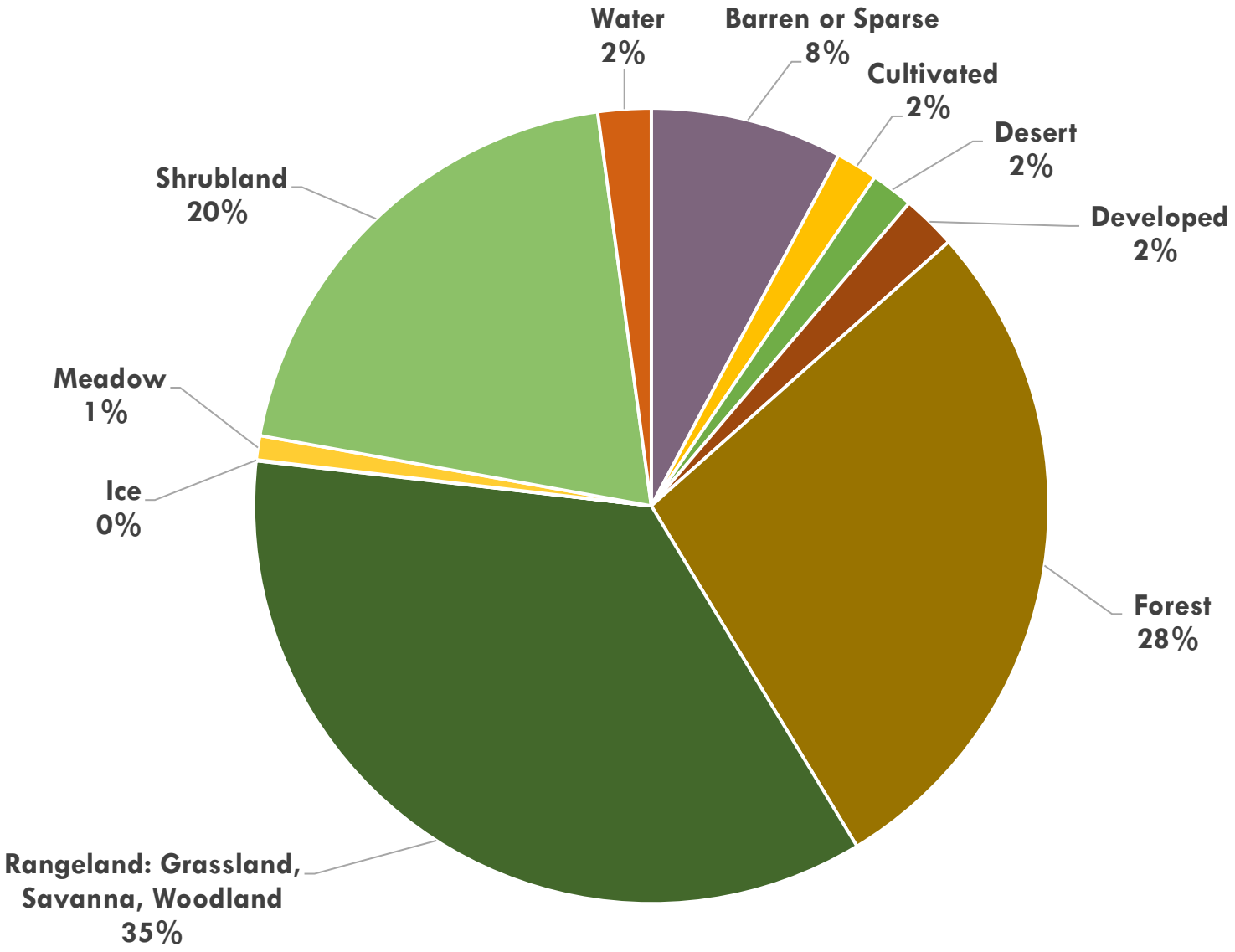
DRAFT ACREAGE TARGETS FOR THE KLAMATH-CASCADE REGION

Klamath/ Interior Coast Ecoregion
and Sierra/ Cascades & Eastside Ecoregions

Land Cover in the Klamath/Interior Coast Ecoregion



Land Cover in the Sierra Nevada & Eastside Regions



Setting acreage targets

Three scenarios based on:

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BASELINE SCENARIO

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BUSINESS-AS-USUAL SCENARIO

Maintaining California's current track

AMBITIOUS SCENARIO

More aggressive levels of state funding for programs/ voluntary efforts

KLAMATH/ INTERIOR COAST: Compiled acreage targets

Practice	BAU	Ambitious	Implementing Agencies/ Departments
Land Protection	283,915	299,187	Wildlife Conservation Board, State Parks
Reforestation	60	60	State Parks
Partial Cut/ Fuel Reduction	97,200	130,920	Department of Forestry and Fire Protection, State Parks
Forest Understory Treatment	3,600	3,600	State Parks
Forest Prescribed Burn	42,792	57,448	Department of Forestry and Fire Protection, State Parks
Less Intensive Forest Management	96,805	128,408	Department of Forestry and Fire Protection, Department of Water Resources
Additional Forest Biomass Utilization	12,000	15,600	Department of Forestry and Fire Protection
Oak Woodland Restoration	360	480	State Parks
Meadow Restoration	600	720	State Parks
Riparian Restoration	1,938	2,770	Department of Conservation, Department of Water Resources, Wildlife Conservation Board
Soil Conservation Practices	--	--	--
Rangeland Rotational Grazing	--	--	--
Rangeland Composting	--	--	--
Urban Forest Expansion	--	10%	--

KLAMATH/INTERIOR COAST: Forest management acreage targets

Description	Practice	BAU	Ambitious	Implementing Agencies/ Departments
Reforestation of non-regenerated forest area post-wildfire	Reforestation	60	60	State Parks
Removal of a portion (20%) of the live canopy and standing dead trees for forest health objectives; represents a group of specific practices that require high levels of basal area to remain in the forest, such as uneven-aged management and thinning for fuel reduction*	Partial Cut/ Fuel Reduction	97,200	130,920	Department of Forestry and Fire Protection, State Parks
Clearing and removal of forest understory to support forest health objectives	Forest Understory Treatment	3,600	3,600	State Parks
Prescribed burning for forest fire fuel reduction and ecological restoration; can be modeled as in sequence with mechanical thinning	Forest Prescribed Burn	42,792	57,448	Department of Forestry and Fire Protection, State Parks
Change from even-aged management to uneven-aged management (partial cut) or areas of no harvest (reserve areas) or extension in harvest rotation period	Less Intensive Forest Management	96,805	128,408	Department of Forestry and Fire Protection, Department of Water Resources
Increase in the percentage of slash material diverted to bioenergy and wood products, away from pile burning and decay	Additional Forest Biomass Utilization	12,000	15,600	Department of Forestry and Fire Protection

KLAMATH/INTERIOR COAST: Ecological restoration & land conservation acreage targets

Description	Practice	BAU	Ambitious	Implementing Agencies/ Departments
Reestablishment of oak woodlands on grasslands and cultivated lands	**Oak Woodland Restoration**	360	480	State Parks
Restoration of meadows in mountain regions	**Meadow Restoration**	600	720	State Parks
Riparian trees, primarily oaks, are established on grassland or cultivated lands	**Riparian Restoration**	1,938	2,770	Department of Conservation, Department of Water Resources, Wildlife Conservation Board
Reduced conversion of natural and working lands to urbanized land	**Land Protection**	283,915	299,187	Wildlife Conservation Board, State Parks

SIERRA NEVADA: Compiled acreage targets

Activity	Sierra/Cascade		Eastside		Implementing Agencies/ Departments
	BAU	Ambitious	BAU	Ambitious	
Reforestation	2,568	2,568	36,033	42,757	WCB, State Parks, Sierra Nevada Conservancy, CAL FIRE
Partial Cut	349,447	5,370,388	17,780	563,280	State Parks, DWR, WCB, CAL FIRE, Tahoe Conservancy, Sierra Nevada Conservancy
Forest Understory Treatment	30,552	42,400	0	0	State Parks, Tahoe Conservancy, Sierra Nevada Conservancy
Forest Prescribed Burn	104,562	132,306	0	0	State Parks, CAL FIRE, Sierra Nevada Conservancy, Tahoe Conservancy
Less Intensive Forest Management	156,000	202,800	0	0	CAL FIRE
Additional Forest Biomass Utilization	25,430	42,290	0	0	CAL FIRE, Tahoe Conservancy, Sierra Nevada Conservancy
Oak Woodland Restoration	522	750	0	0	State Parks
Meadow Restoration	27,281	81,843	2,718	8,156	CDFW, WCB, Tahoe Conservancy, Sierra Nevada Conservancy
Riparian Restoration	2,309	3,558	28	100	DOC, DPR, DWR, WCB, Tahoe Conservancy
Soil Conservation Practices	183	348	12	24	State Parks
Rangeland Rotational Grazing	0	60,000	0	0	State Parks
Rangeland Composting	0	0	0	0	--
Urban Forest Expansion	-	+10% expansion in urban tree canopy		+10%	CAL FIRE, Natural Resources Agency

SIERRA NEVADA: Forest management acreage targets

Description	Practice	Sierra/Cascade		Eastside		Implementing Agencies / Departments
		BAU	Ambitious	BAU	Ambitious	
Reforestation of non-regenerated forest area post-wildfire	**Reforestation**	2,568	2,568	36,033	42,757	WCB, State Parks, Sierra Nevada Conservancy, CAL FIRE
Removal of a portion (20%) of the live canopy and standing dead trees for forest health objectives; represents a group of practices that require high levels of basal area to remain in the forest, such as uneven-aged management and thinning for fuel reduction*	**Partial Cut**	349,447	5,370,388	17,780	563,280	State Parks, DWR, WCB, CAL FIRE, Tahoe Conservancy, Sierra Nevada Conservancy
Clearing and removal of forest understory to support forest health objectives	**Understory Treatment**	30,552	42,400	0	0	State Parks, Tahoe Conservancy, Sierra Nevada Conservancy
Prescribed burning for forest fire fuel reduction and ecological restoration; can be modeled as in sequence with mechanical thinning	**Prescribed Burn**	104,562	132,306	0	0	State Parks, CAL FIRE, Sierra Nevada Conservancy, Tahoe Conservancy
Change from even-aged management to uneven-aged management (partial cut) or areas of no harvest (reserve areas) or extension in harvest rotation period	**Less Intensive Forest Management**	156,000	202,800	0	0	CAL FIRE
Increase in the % of slash material diverted to bioenergy and wood products, away from pile burning & decay	**Additional Biomass Utilization**	25,430	42,290	0	0	CAL FIRE, Tahoe Conservancy, Sierra Nevada Conservancy

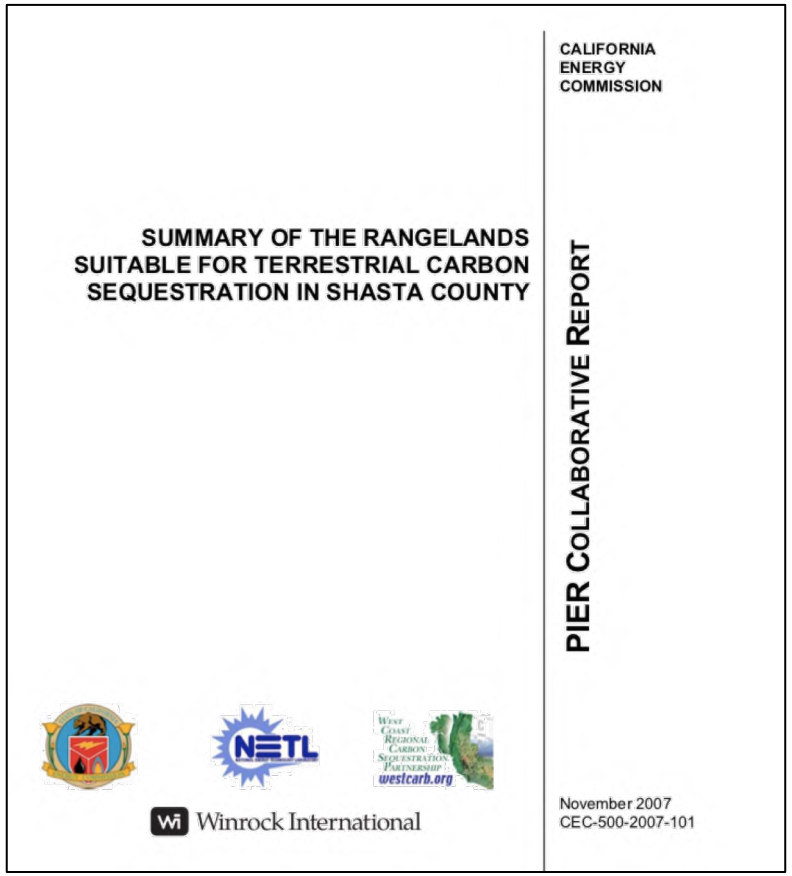
*Some acres listed under 'partial cut' will be slotted under 'prescribed burn' or 'understory treatment after further analysis; the 5,370,388 acres represents need for fuel reduction treatment.

SIERRA NEVADA: Ecological restoration & land conservation acreage targets

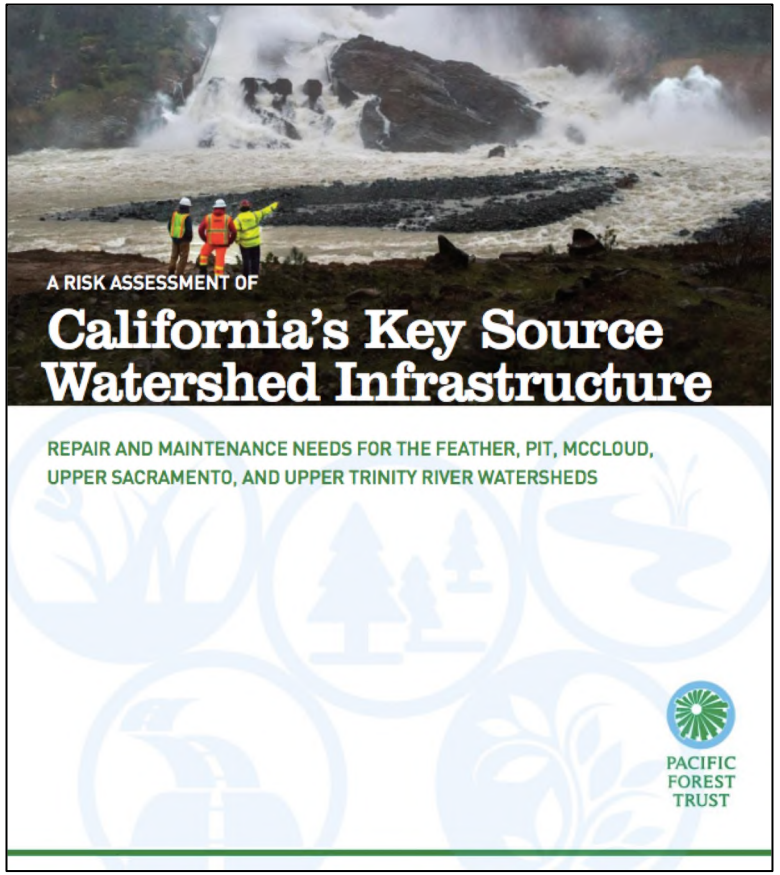
Description	Practice	Sierra/Cascade		Eastside		Implementing Agencies/ Departments
		BAU	Ambitious	BAU	Ambitious	
Reestablishment of oak woodlands on grasslands and cultivated lands	**Oak Woodland Restoration**	522	750	0	0	State Parks
Restoration of meadows in mountain regions	**Meadow Restoration**	27,281	81,843	2,718	8,156	CDFW, WCB, Sierra Nevada Conservancy, Tahoe Conservancy
Riparian trees, primarily oaks, are established on grassland or cultivated lands	**Riparian Restoration**	2,309	3,558	28	100	DOC, State Parks, DWR, WCB, Tahoe Conservancy
Reduced conversion of natural and working lands to urbanized land	**Land Protection**	461,150	512,016	64,028	118,673	WCB, Sierra Nevada Conservancy, DWR, DOC

Developing targets for conservation and restoration: what regional plans, goals, and strategies should be included?

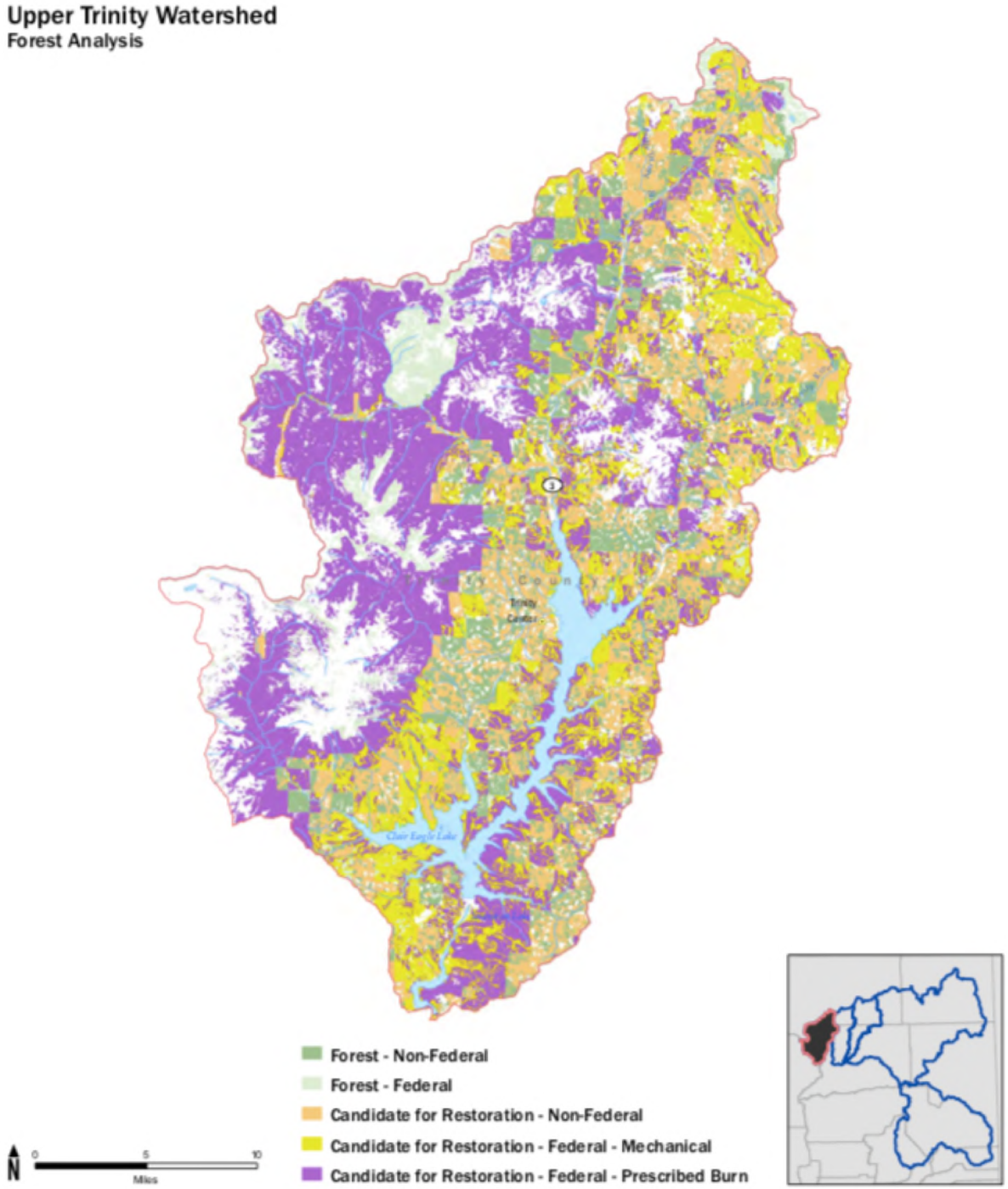
Rangeland management; afforestation; oak woodland restoration



Forest management; riparian and meadow restoration



Pacific Forest Trust analysis of land for restoration, Upper Trinity Watershed



Developing targets for rangelands and cultivated lands

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

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.

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.

240,000

*total acres of **cultivated land** in the Klamath/Interior Region*

4,200,00

*total acres **rangeland** in the Klamath/Interior Region*

QUESTIONS & DISCUSSION

Discussion 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?

CONSERVATION, RESTORATION, & MANAGEMENT ACTIVITIES

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

Feedback on Acreage Targets

BY JULY 9

Please submit written comments on acreage targets to:

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Thank you

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