

# Forest and Range Assessment and Indicator Development



## Briefing to Board of Forestry & Fire Protection

June 17, 2015

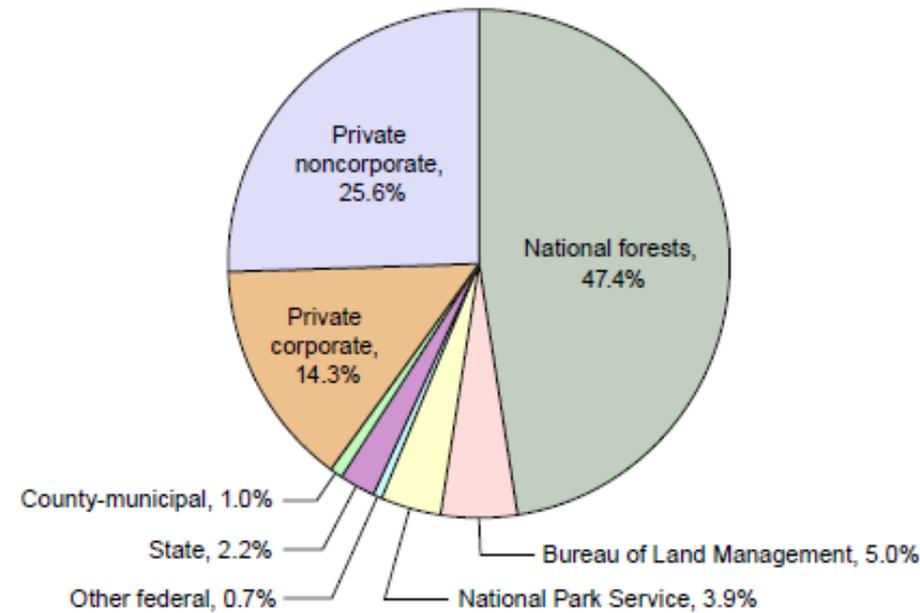
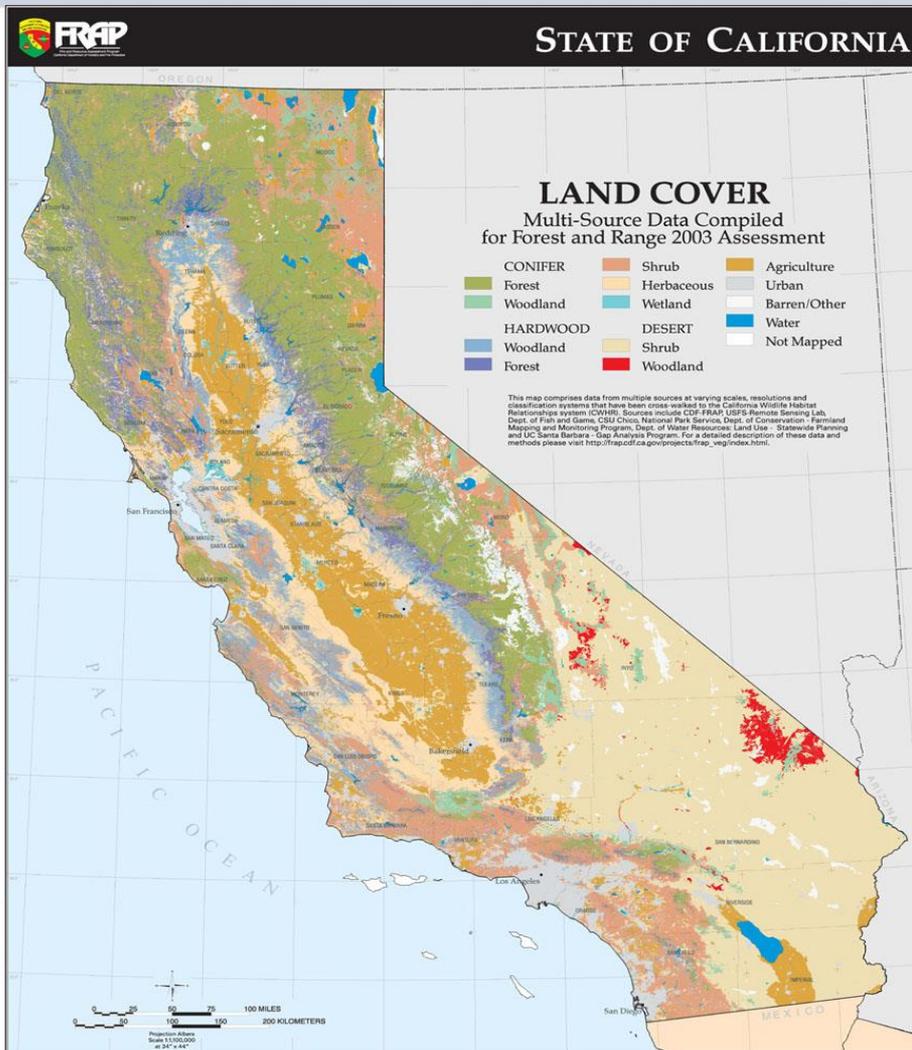
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<http://frap.cdf.ca.gov/>

# Assessing California's Diverse Land Base



# Forest & Rangeland Resources Assessment - State and Federal Mandate

## **State Mandate: PRC 4789 (1977)**

The Legislature finds and declares as follows:

(a) The forest resources of California provide vitally important economic and environmental benefits to the people of California.

(b) Demands on forest resources in California are expected to increase significantly in the next decades.

(c) Forest resources in California are limited.

(d) Better use of forest resources can result where there is good information as to anticipated needs and constraints and the potentials for meeting such needs consistent with Section 4513.

(e) The necessary information is not now available and should be developed.

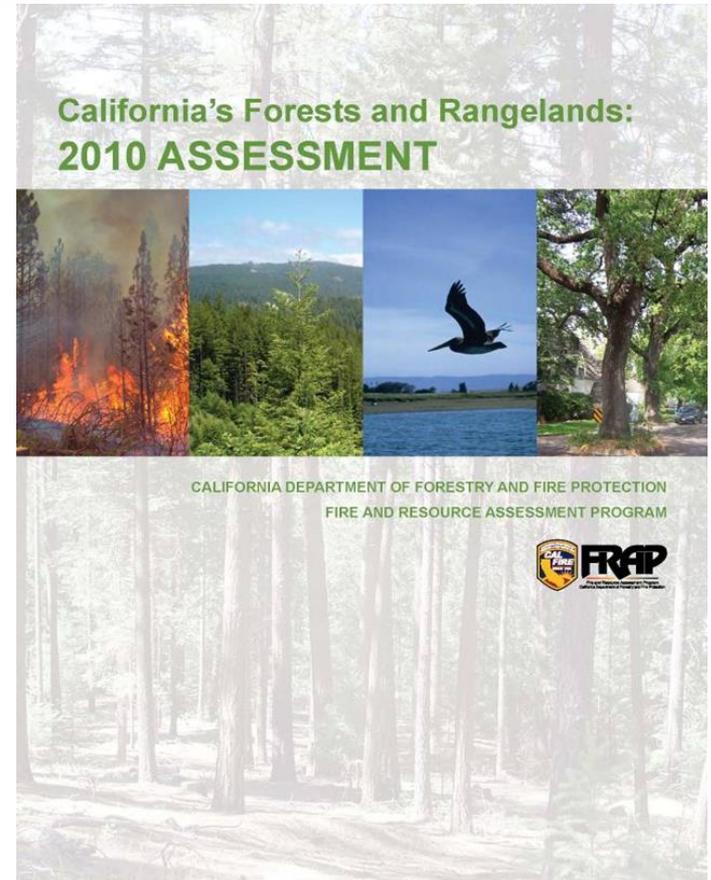
(f) It is the intent of the Legislature to provide for the assessment of California's forest resources in order to develop and implement forest resources policies for the state.

## **Federal Mandate:**

First introduced under the 2008 Farm Bill – Forestry Title

# Purposes of the Statewide Resource Assessment

- Focus resources
- Analysis that crosses all ownerships
- Identify threats, benefits
- Identify priority areas
- Integrate existing statewide plans
- Identify necessary partner and stakeholder involvement



# Forest Resource Policy Statement

## Board Requirement

(a) Based on a review of the assessment prepared pursuant to Section 4789.3, and consistent with Sections 740 and 4513, the board shall prepare a forest resource policy statement.

(b) Such policy statement shall recognize distinct differences between the various public and various private owners of forest resources in the state and should include, insofar as is possible, the following:

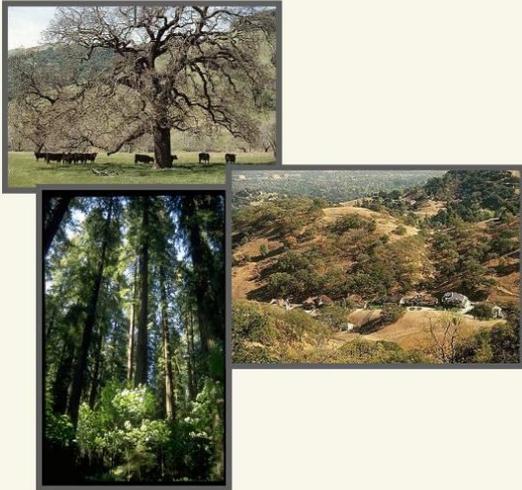
(1) A delineation of specific needs and opportunities for promoting both public and private forest resource management programs in California.

(2) A discussion of priorities for accomplishment of program opportunities, with specified costs, results, and possible constraints on implementation.

(3) An analysis of the relation of the alternative forest resource policies to employment opportunities in California.

# Purposes of the State Resources Strategy

## CALIFORNIA'S FORESTS AND RANGELANDS: 2010 STRATEGY REPORT



- Identify long-term strategies
- Investment strategies
- Develop timeline
- Identify partner and stakeholder involvement
- Monitoring
- Identify integration with S&PF programs



# The Forest Action Plan

- A component of the larger State and Private Forestry redesign effort.
- Required under the Cooperative Forestry Assistance Act, as amended by the 2008 Farm Bill.
- Completed in June, 2010.
- Required update at least every 10 years.

# California's Forest and Rangeland Assessment Framework

- Purpose:
  - Provide an evaluation of forest and range resources across California that identifies priority landscapes
- Objectives:
  - Analyze forest conditions and trends across all lands
  - Meet both state and federal assessment mandates
  - Identify
    - Threats and assets in each of 3 national assessment themes and 11 subordinate subthemes
    - 23 suggested priority landscapes based on these threats and assets

# California Assessment Approach (Mirrors National Redesign Guidance)

## Theme 1: Conserve working forest landscapes

- *Population Growth, Development Impacts, Sustainable Forests and Rangelands*

## Theme 2: Protect forests from harm

- *Wildfire Threat, Forest Pests, and other threats to forest health*

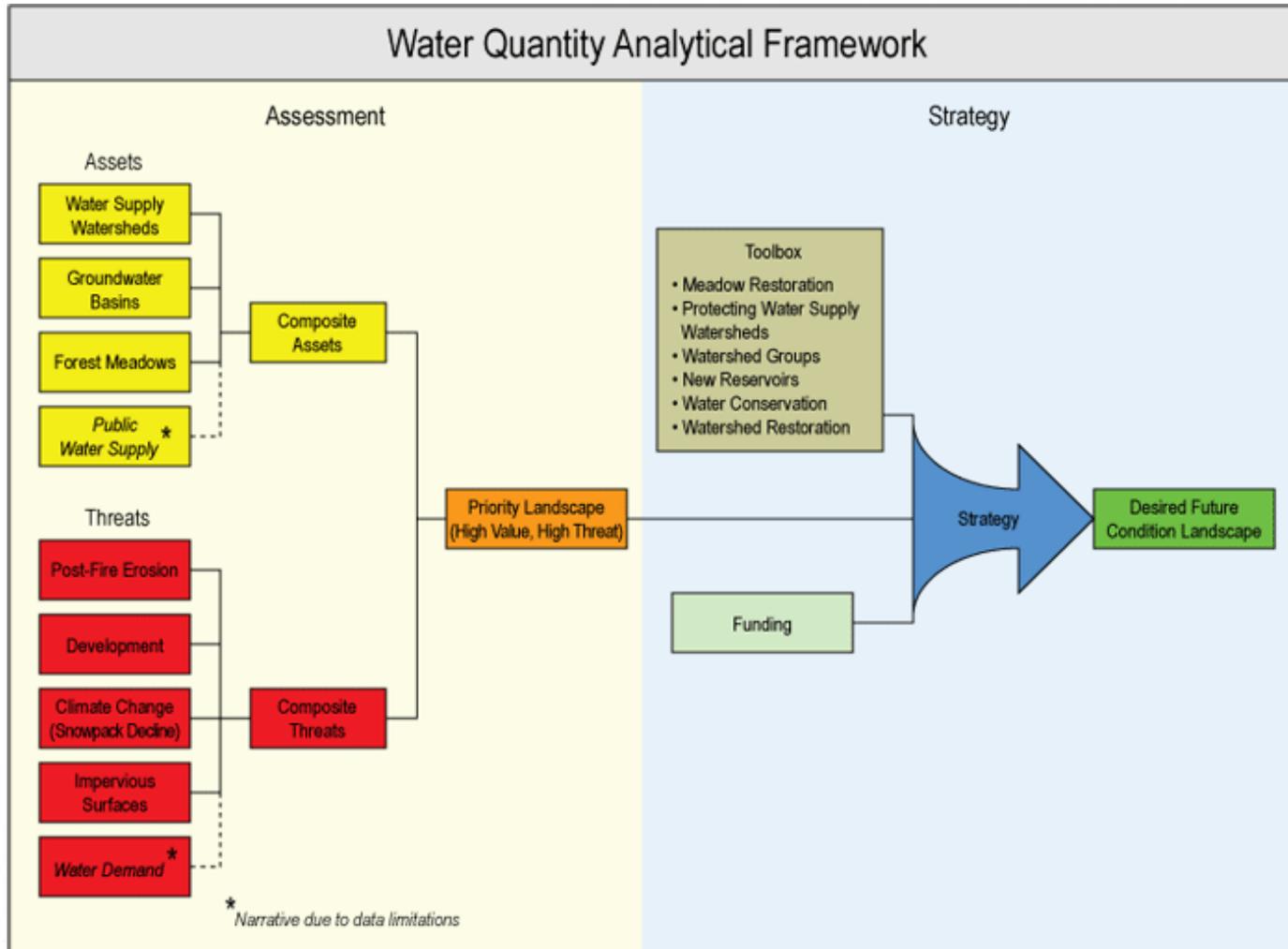
## Theme 3: Enhance Public Benefits from Trees and Forests

- *Water Resources, Urban Forests, Community Wildfire Planning, Emerging Markets, Wildlife, Green Infrastructure, Climate Change*

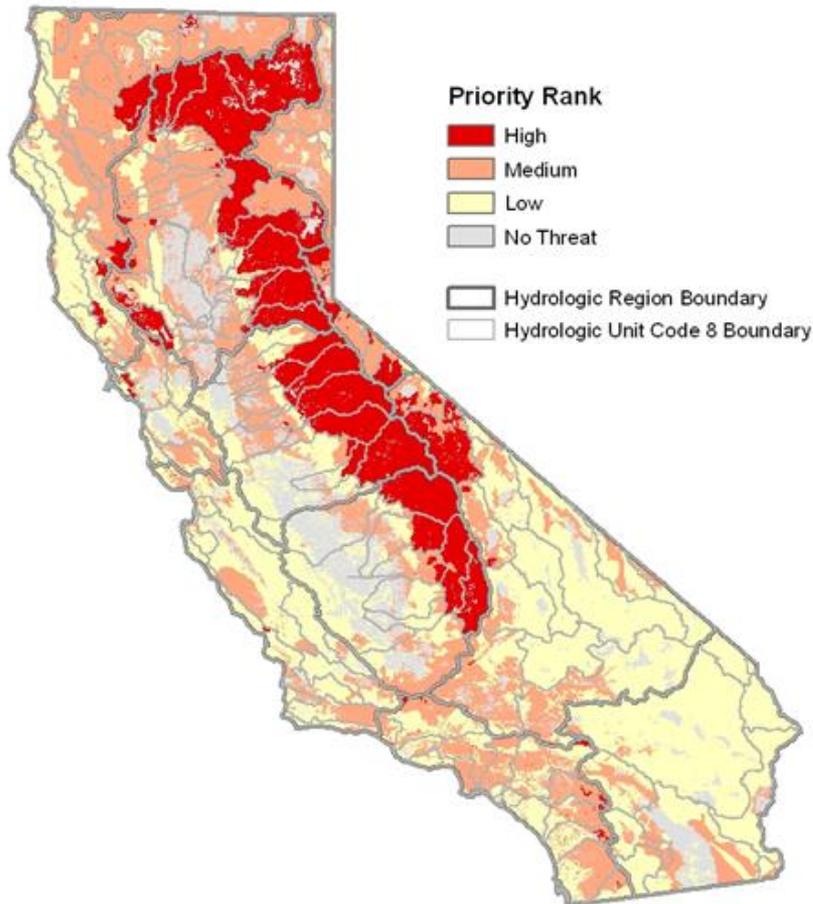
Note: Each topic is a separate chapter supported by one or more priority landscapes

# Assessment Analysis Framework

## Example - Water Supply



# Priority Landscape Water Supply



## Key Findings

- Water supply - The upper watersheds in the Sierra and Cascades have the greatest concentration of high priority landscape.
  - region is critical for water supply
  - threats from climate change, wildfire, and development
- The North Coast bioregion also has substantial water supply assets.
  - basins are predominately rain-fed
  - water supply impacts from climate change are probably less dramatic.
- Groundwater basins in the Central Valley bioregions are an abundant resource that is also the most threatened.

# Water Resources Existing Strategies

## California Water Plan: Resource Management Strategies - Forest Management

### Key Issues

Meadow Restoration

Riparian Forests

Fuels/Fire Management

Road Management

Urban Forestry

### Recommendations

Monitoring & Research

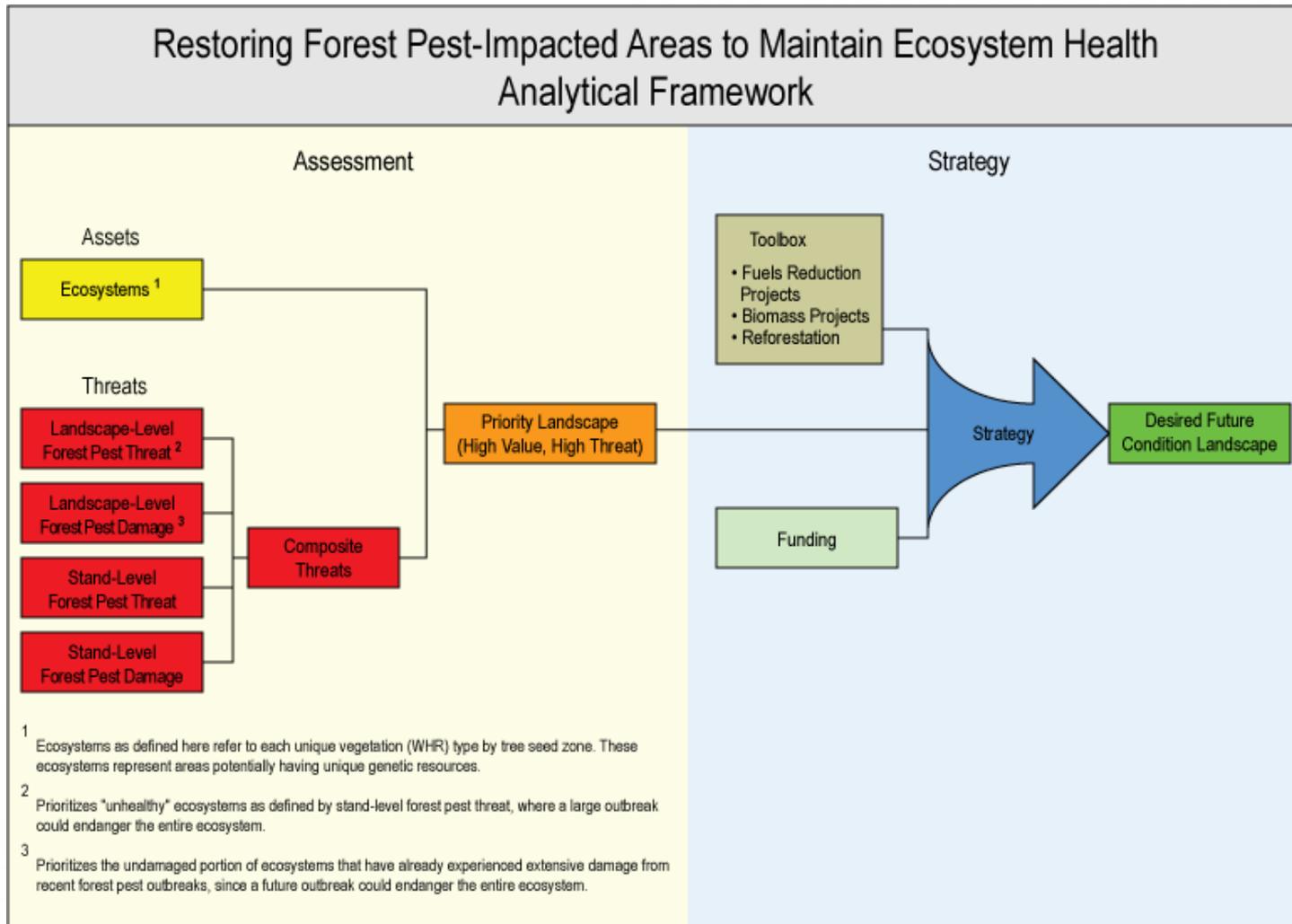
Coordination

Funding

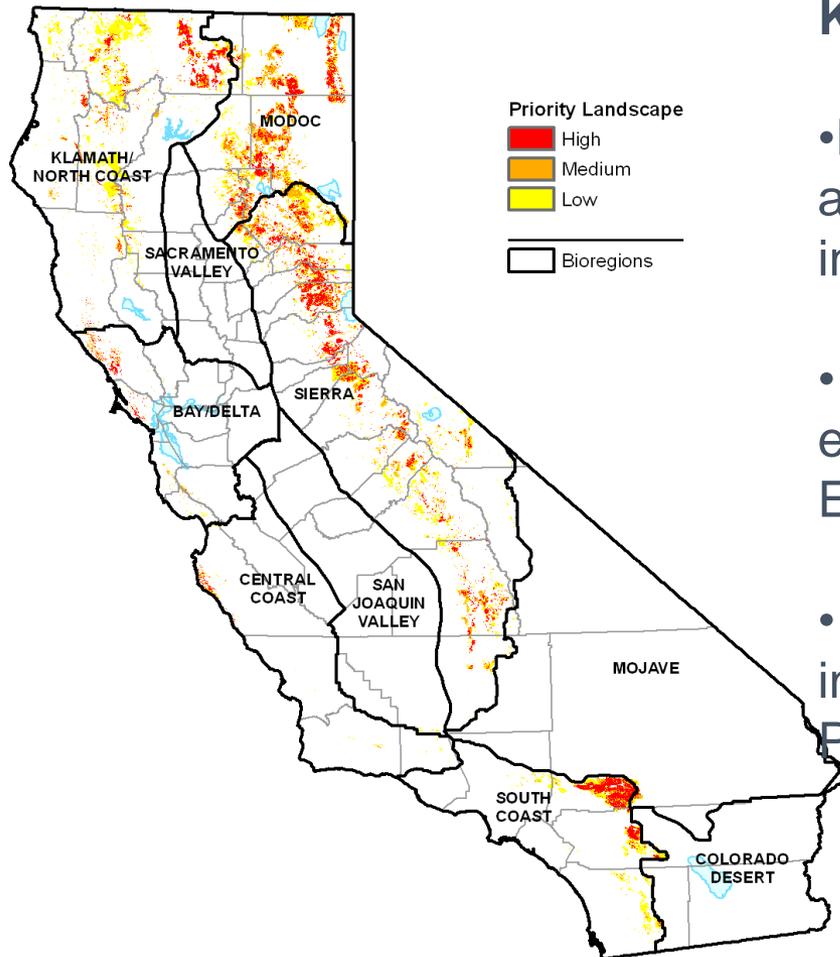
Regulatory Requirements

<http://www.waterplan.water.ca.gov/strategies>

# Forest Ecosystems Most Impacted by Insect and Disease Outbreaks



# Forest Ecosystems Most Impacted by Insect and Disease Outbreaks



## Key Findings

- Forest Pests cause widespread commercial, aesthetic, economic and environmental impacts throughout California's ecosystems.
- Ecosystems currently suffering the most extensive damage are Sierran Mixed Conifer, Eastside Pine, Red Fir and White Fir.
- Those at greatest risk from future damage include White Fir, Red Fir and Lodgepole Pine.



# Montreal Process

The Montréal Process is the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests.

- Formed in 1994, member nations represent approximately 60% of world's temperate and boreal forests
- Framework of criteria and indicators that provide a common definition of what characterizes sustainable management of forests.

For more detail, go here:

[http://www.rinya.maff.go.jp/mpci/criteria\\_e.html](http://www.rinya.maff.go.jp/mpci/criteria_e.html)

# Seven MP Criteria

1. Conservation of biological diversity
2. Maintenance of productive capacity of forest ecosystems
3. Maintenance of forest ecosystem health and vitality
4. Conservation and maintenance of soil and water resources
5. Maintenance of forest contribution to global carbon cycles
6. Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies
7. Legal, institutional and economic framework for forest conservation and sustainable management

# Indicator Development - Steps



Photo courtesy Santa Rosa PressDemocrat

- Public Advisory Meetings - FRASC
- Meeting with Agency Partners
  - USFS, DFW, DWR, DoC, Parks, ARB, CAL EPA ...
- California Biodiversity Council – Inter-Agency Working Group
- UC Davis – Technical Assistance

# Assessment Indicators – Public Outreach

## Forest and Rangelands Assessment Steering Committee (FRASC):

- Ten ~quarterly public meetings/webinars, 3 hours each
  - Stakeholder, public and agency input for 2015 Assessment
  - Invited guest panelists (1 – 4 per meeting, not from CAL FIRE)
  - 20 – 45 participants/meeting, depending on the topic
  - From March 2012 – November 2014
  - Nearly all chapter topics covered in the 2015 Assessment
  - Input used in selecting candidate indicators by topic
  - Prompted by 2008 Farm Bill (Forest Action Plan)

# Assessment Indicators – Public Outreach

FRASC meeting/webinar topics (incl. indicators):

- Introduction to FRAP Assessments
- Sustainable Forestry
- Rangeland Issues
- Wildlife Habitat
- Rural Economies
- Wildfire
- Water Quality and Quantity
- Community Wildfire Planning
- Climate Change
- Green Infrastructure/  
Education/Recreation

# Assessment Indicators – Public Outreach



The image shows a screenshot of the 'CA Forest & Rangeland Indicators' website. The header features a green background with a forest image and the title 'CA Forest & Rangeland Indicators' in white, with the subtitle 'California sustainability indicators for forests and rangelands' below it. A navigation menu includes 'Home', 'Frameworks', 'Criteria', 'Candidate Indicators', 'All Indicators', 'Catalog', 'About', and 'Contact Us'. The main content area is divided into several sections: 'About Forest and Rangeland Indicators' with a descriptive paragraph and a 'Read more' link; four circular icons representing 'Candidate List of Forest and Rangeland Indicators', 'Complete List of Forest and Rangeland Indicators', 'Indicator Frameworks', and 'New User Registration'; and a 'Ponderosa Pine' article by Fraser Shilling with a photo of a pine tree. On the right, there is a 'User login' section with input fields for 'Username \*' and 'Password \*', and links for 'Create new account' and 'Request new password', along with a 'Log in' button.

## CA Forest & Rangeland Indicators

California sustainability indicators for forests and rangelands

[Home](#) [Frameworks](#) [Criteria](#) [Candidate Indicators](#) [All Indicators](#) [Catalog](#) [About](#) [Contact Us](#)

### About Forest and Rangeland Indicators

The purpose of this project and this website is to track and share **Forest and Rangeland Indicators** and their **frameworks**. Indicators are measurable parameters corresponding to part or all of a natural or human system that, when evaluated, tell a story about the condition of the system.

[Read more](#)



Candidate List of Forest and Rangeland Indicators



Complete List of Forest and Rangeland Indicators



Indicator Frameworks



New User Registration

#### Ponderosa Pine



by Fraser Shilling

#### User login

Username \*

Password \*

[Create new account](#)  
[Request new password](#)

# Climate and Forestry Indicator – Example

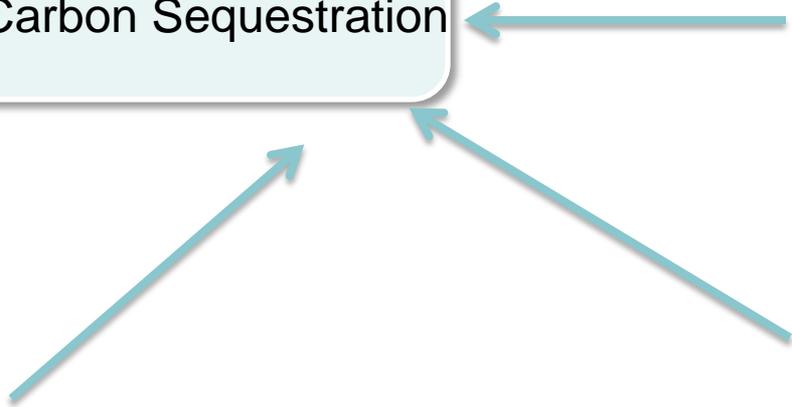
**MPC (5):**  
**Forests & Climate**

**Indicator A:**  
**Net Carbon Sequestration**

**Metric 2:**  
Emissions from Natural Processes  
(mortality, wildfire...) and Harvesting

**Metric 1:**  
Carbon Sequestration in Live Trees

**Metric 3:**  
Storage in wood products and landfill



# Indicator – Carbon Sequestration Across All Forestlands

Source	Type	C (tonnes)	CO2e (tonnes)
Growth	Storage	-16,367,285	-60,067,936
Model Mortality	Emission	5,455,351	20,021,137
Wildfire	Emission	1,719,915	6,312,087
Harvest (merch)	Emission	565,315	2,074,706
Harvest (non-merch)	Emission	791,776	2,905,819
Wood Products (in-use)	Pool	-389,436	-1,429,231
Wood Products (landfill)	Pool	-48,796	-179,081
Net		-8,273,161	-30,362,499

Source: 2010 Forest and Range Assessment; FIA data (2001 – 2007)

# Indicators – Proposed List

- Indicators – See handouts for complete list.

	1. Proposed Sustainable Forestry Indicators	MPC
1.1	Total forest ecosystem carbon pools and changes	5
1.2	Total forest product carbon pools and changes	5
1.3	Acreage of timberland in need of restoration treatment to reduce or increase stocking	3
1.4	Net growth of growing stock on timberland, and net growth to removals to removals ratio	2
1.5	Area and percent of timberland by management regime	2
1.6	Hauling distance from timberland to nearest operating mill	2
1.7	Amount of timberland managed under forest certification, or other sustainable forestry standards	6
1.8	Dollars and acres of timberland served by landowner assistance programs, by program type and funded activities	7

- Review and comment on proposed indicator list