

Climate Change Adaptation in California

- **Statewide Programs**
- **Coastal Initiatives and Programs**
 - CA Coastal Conservancy
- **CA Coastal Commission**
 - SF Bay Conservation Development Commission



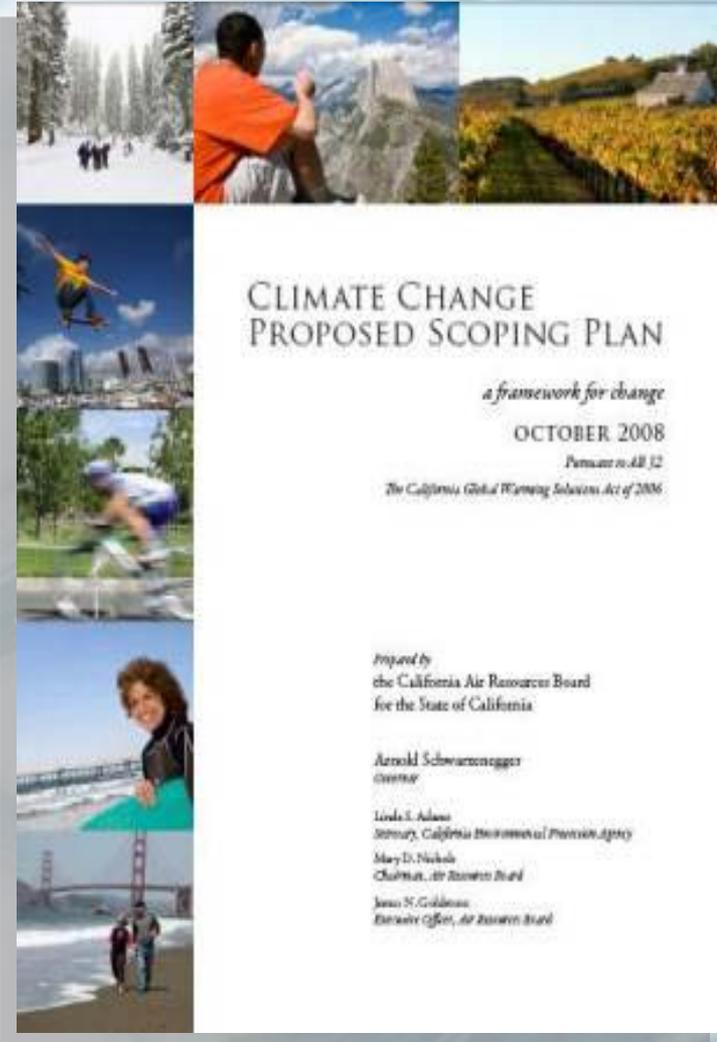
California's Statewide Climate Change Emissions Reduction Programs

Landmark Legislation: AB 32 (2005)

- Focuses on emission reduction and mitigation
- Specific emission reduction targets
- Completed: Proposed Scoping Plan October 2008

Senate Bill 375 (2008)

- Requires regional plans to address GHG emissions from land use and transportation
- 2050 emission targets set for metropolitan areas.



California's Climate Change Adaptation Programs and Initiatives

Executive Order S-13-08

Sea Level Rise

- Recognizes need for statewide consistency in planning for sea level rise
- Proposes National Academy of Sciences panel to conduct sea level rise assessment by 12-1-10
- Directs state agencies to consider a range of SLR scenarios in project planning to reduce risks in the interim

Climate Adaptation Strategy

- CA Natural Resources Agency coordinates and completes by June 30, 2009



California's Climate Change Adaptation Strategy

- Summarizes known science on predicted impacts to California
- Assesses vulnerabilities and outlines solutions to promote resiliency
- Issues addressed through six sectors:
 - Water
 - Ocean and coastal resources
 - Infrastructure
 - Biodiversity
 - Working landscapes
 - Public health
- The Ocean Protection Council is coordinating the development of the ocean and coastal resources sector



Coastal and Ocean Resources Adaptation Strategy

OPC has been working with CCC, BCDC, SLC, DFG, State Parks, NOAA, OST, and several academic advisors

Adaptation Strategy will:

- Set statewide policies**
- Provide guidance to local and regional governments**
- Establish research priorities**
- Set a timeline for updating vulnerability assessments and future versions of the adaptation plan**



Gleason's Beach

West Coast Governors' Agreement and other OPC projects

- **WCGA climate action coordination team (ACT)**
- **National Academies study on SLR**
 - Working with OR and
 - WA to have this be a
 - WCGA project
- **Current Studies**
 - Vulnerability assessment
 - interactive climate impacts modeling tool



CA Coastal Conservancy: Climate Change Adaptation Initiatives



- ***2007 Strategic Plan:*** impacts of climate change must be considered in prioritizing project expenditures. Contains strategic directives to:

“Incorporate latest scientific understanding of sea-level rise into consideration when planning facilities”

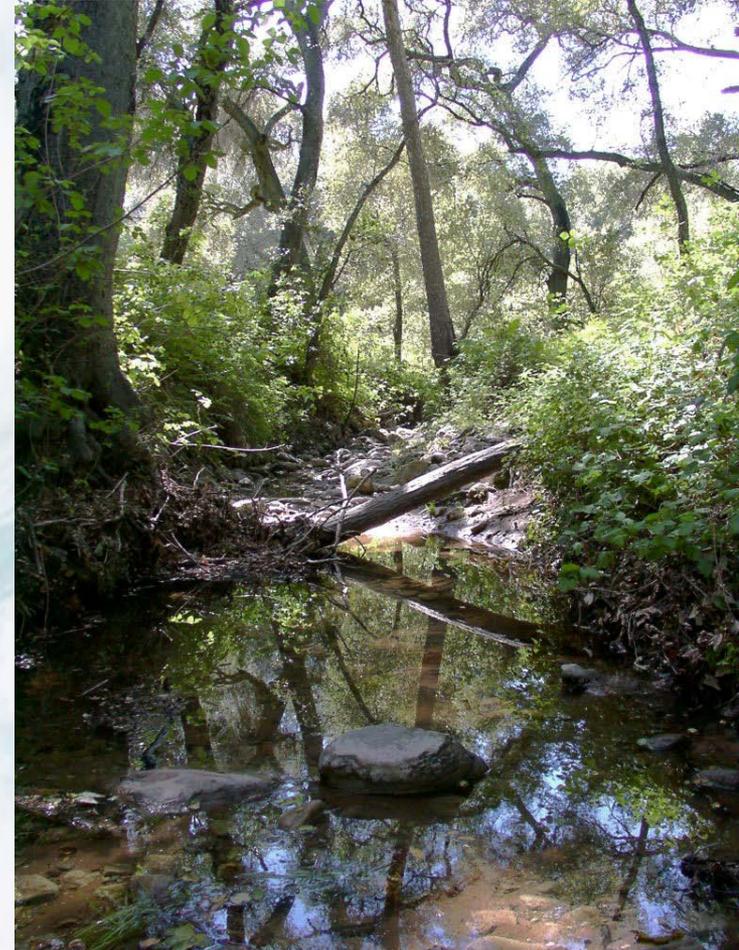
“Incorporate predicted evolutions in habitat due to climate change when planning restoration and enhancement”

CA Coastal Conservancy: Climate Change Adaptation Initiatives



Proposed climate change project selection criteria for Conservancy Board adoption:

- 1. Green House Gas Reduction: construction projects receive priority for funding when:**
 - Use BMPs to minimize energy use
 - Provide carbon offsets
 - Meet LEED standards in building design
- 2. Projects likely to be impacted by climate change will identify and address project vulnerability under climate change**



“Climate Change and Project Vulnerability Criteria: Project objectives, project design and project siting consider and address vulnerabilities from a range of climate change scenarios.”



Guidance under development will describe proposed approaches to support adaptation:

- Adequate buffers from eroding shorelines
- Baseline and periodic monitoring
- Adaptive management
- Carbon sequestration
- Pilot projects that implement adaptation strategies

Priority projects for climate change adaptation:

- Trails and structures sited and designed for sustainability
- Wetland transition zones for migration with SLR
- Wildlife corridors, habitat reserves, floodplains
- Ag lands and working landscapes that incorporate BMP's





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Climate Change efforts of the California Coastal Commission

Climate Programs at the Commission – Ongoing or About to be Started

- Climate Change Task Force, started Fall 2007
- Coastal Impact Assistance Program (CIAP) 2009 - 2011
- NOAA Coastal Fellow 2009 - 2011
- Staff education
- Climate change issues addressed in permits
- Mitigation for GHG emissions
- Climate change issues addressed in Local Coastal Programs
- Reduced Filing Fees as incentives for Green Building
- Climate Change Website
- Climate Change research considerations submitted to Resources Agency and Energy Commission
- Participation on multi-agency committees and task forces



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Projecting Sea Level Rise for Planning Proposes

- **Broad range of scientific projections of future SLR**
 - IPCC values (0.2 to 0.6 m rise by 2100) are conservative
 - Best current science converging on figure of 0.5 to 1.5 m in next 100 years (Rahmstorf, 2007; Jevrejeva 2008)
 - Does not include local uplift/subsidence effects (California is a tectonically active coast)
 - Does not include major changes to rate of glacial melting (Greenland and West Antarctica)

- **Delta Vision numbers**
 - 0.4 meters (16 inch) increase by 2050
 - 1.4 meters (55 inch) increase by 2100



Handling GHG emissions and SLR in the CCC's review processes

- **Greenhouse Gas Emissions**
 - Analysis of life cycle emissions for large projects
- **Sea Level Rise**
 - **Sensitivity analysis for sea level rise effects**
 - Identify what Sea Level Rise would be critical to project
 - Consequences of or response to Sea Level greater than critical
 - **Conservative approach for estimating future bluff retreat rates**
 - e.g., use of *maximum* rather than *average* historic rates



BCDC's Climate Change Work

- Legislation
- JPC
- SLR guidance: 16 & 55
- Background report and BPA for climate change



BCDC's Climate Change Work

- Resilient design competition
- Climate Ready Estuaries Pilot
- EPA grant to assess shoreline protection
- CIAP Grant
- Local government outreach