San Francisco Bay Area

Bruce Riordan
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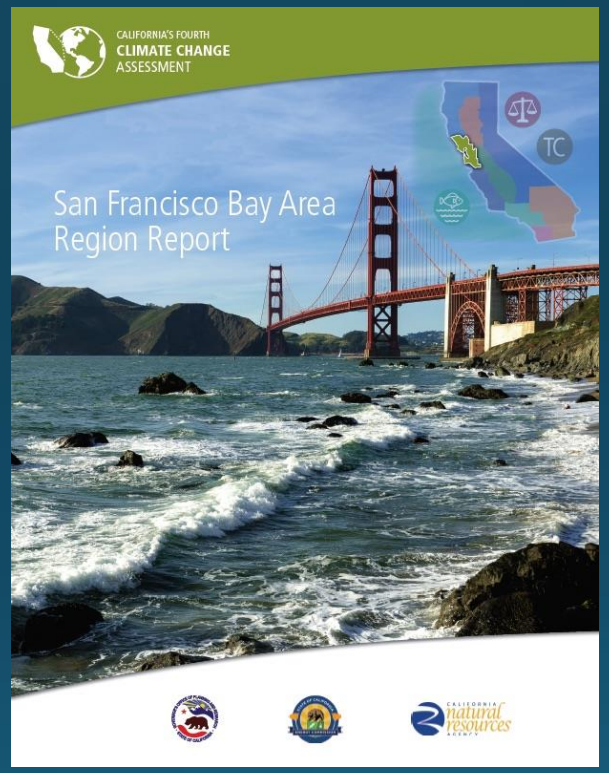
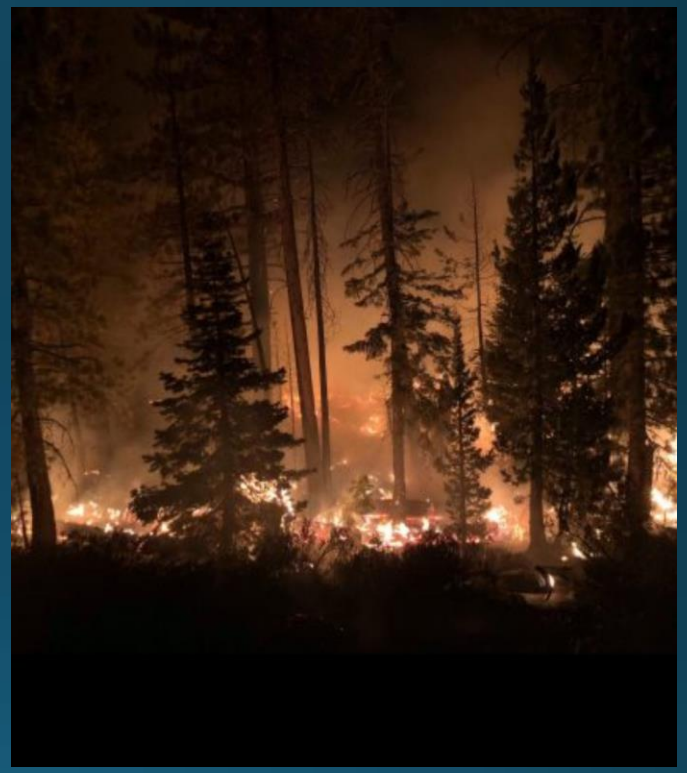


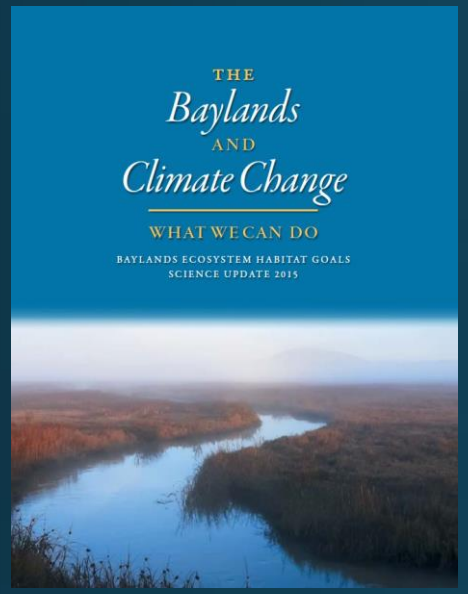


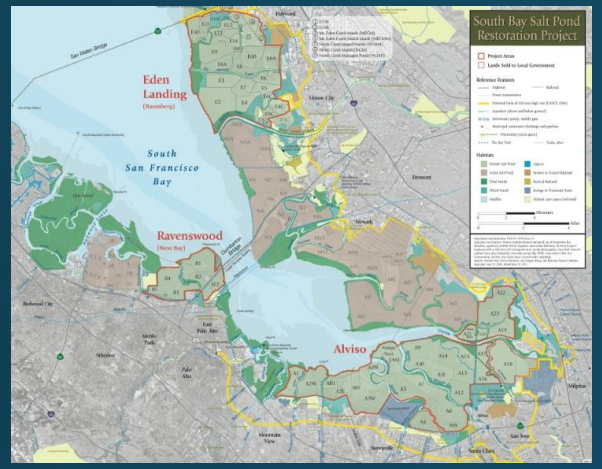
1st Regional Parcel Tax (ever) - $500M

Measure AA - June 7, 2016 - Unofficial Election Results

08/11/2018 05:44 pm *(Reload page to refresh results: Ctrl-F5 [Windows] or Command-R [Mac])*

	Total	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Last updated		*July 7 (Certified)*	*July 7 (Certified)*	*July 5, 9:14 AM (Certified)*	*June 29, 10:59 AM (Certified)*	*June 24, 3:25 PM (Certified)*	*July 7 (Certified)*	*July 6 11:56 AM (Official)*	*June 27, 6:20 AM (Official)*	*July 7 (Official)*
Yes	1,282,182	276,677	169,024	71,862	24,598	186,674	126,943	279,259	51,482	95,663
%	70.32%	75.20%	65.70%	73.50%	59.13%	77.64%	71.98%	70.08%	54.35%	64.30%
No	541,190	91,231	88,249	25,906	17,000	53,766	49,422	119,254	43,248	53,114
%	29.68%	24.80%	34.30%	26.50%	40.87%	22.36%	28.02%	29.92%	45.65%	35.70%





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Oro Loma Ecotone Project – Horizontal Levee

The ecotone slope will:

- Create an upland /transitional ecotone and restore elevation and salinity gradients that are missing in many parts of the Bay due to diking and provide endangered species habitat more resilient to sea level rise;

- Create gently sloping upland to act as buffers to waves and sea level rise, with greater productivity to increase accretion rates, with the ability to treat stormwater, and at costs significantly lower than traditional levee designs;
- Act as treatment wetlands to polish wastewater discharge as an effective, low cost, low energy, and environmentally sustainable method to nearly eliminate nutrient loadings and CECs from the receiving waters.

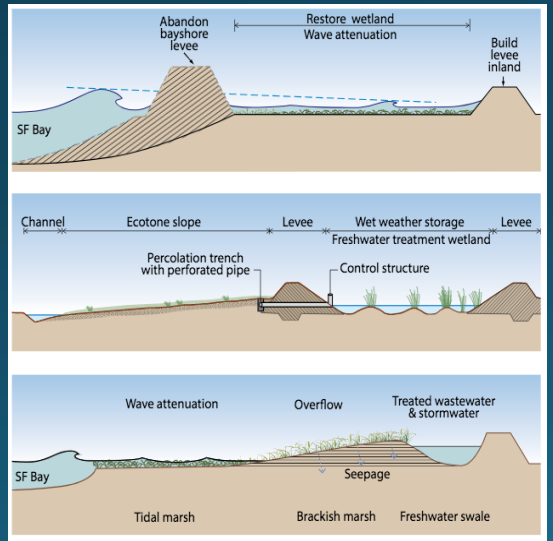
If the pilot projects prove successful, they could be replicated adjacent to WWTPs around San Francisco Bay, built to treat stormwater flows (including summertime 'urban drool'), as well as to create up to 5,000 acres of moist grassland/bayland ecotone around the Bay.

Table 4. Riparian scrub planting plan (three cells)

Species	Common Name	Plants per 10 ft by 40 ft grid	Plants per cell	Plants per 1/3 cell	Total for all Riparian Scrub Cells
Baccharis glutinosa	Marsh baccharis	10	175	58	525
Carex barbarae	Santa Barbara sedge	22	385	128	1,155
Carex praegracilis	Field sedge	22	385	128	1,155
Cornus sericea	Red osier dogwood	5	88	29	263
Rosa californica	California rose	10	175	58	525
Rubus ursinus	California blackberry	30	525	175	1,575
Salis lasiolepis	Arroyo willow	40	700	233	2,100
Sambucus nigra	Black elderberry	5	88	29	263
Total					**7,561**

Table 5. Swale-depression meadow planting plan (three cells)

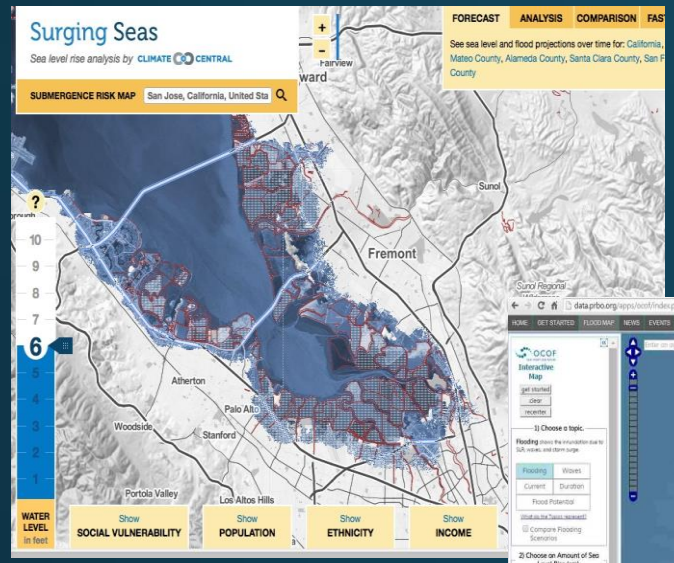
Species	Common Name	Plants per 10 ft by 40 ft grid	Plants per cell	Plants per 1/3 cell	Total for all Swale Depression Meadow Cells
Artemisia douglasiana	California mugwort	15	263	88	788
Baccharis glutinosa	Marsh baccharis	15	263	88	788
Carex praegracilis	Field sedge	15	263	88	788

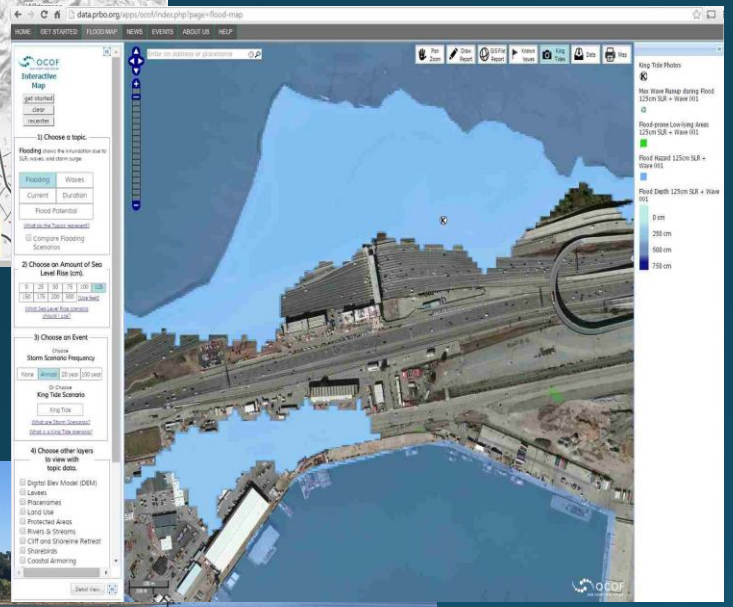


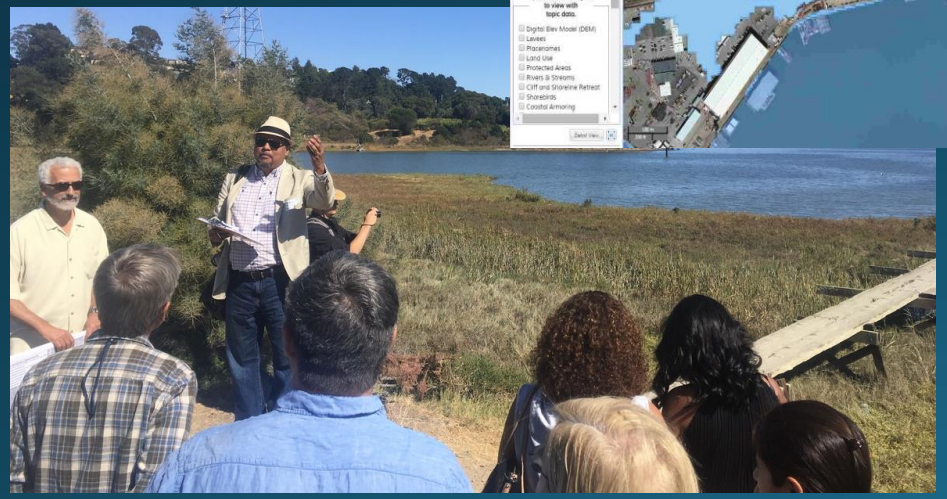
Options for more resilient levees, habitats and shoreline protection. Top: moving the levee inland and buffering it with a wetland; middle, elements of Oro Loma experiment; bottom; profile of possible future shoreline gradient from fresh to salt water habitats. Source: ESA

Oro Loma Ecotone Project

Resilient by Design: Bay Area Challenge

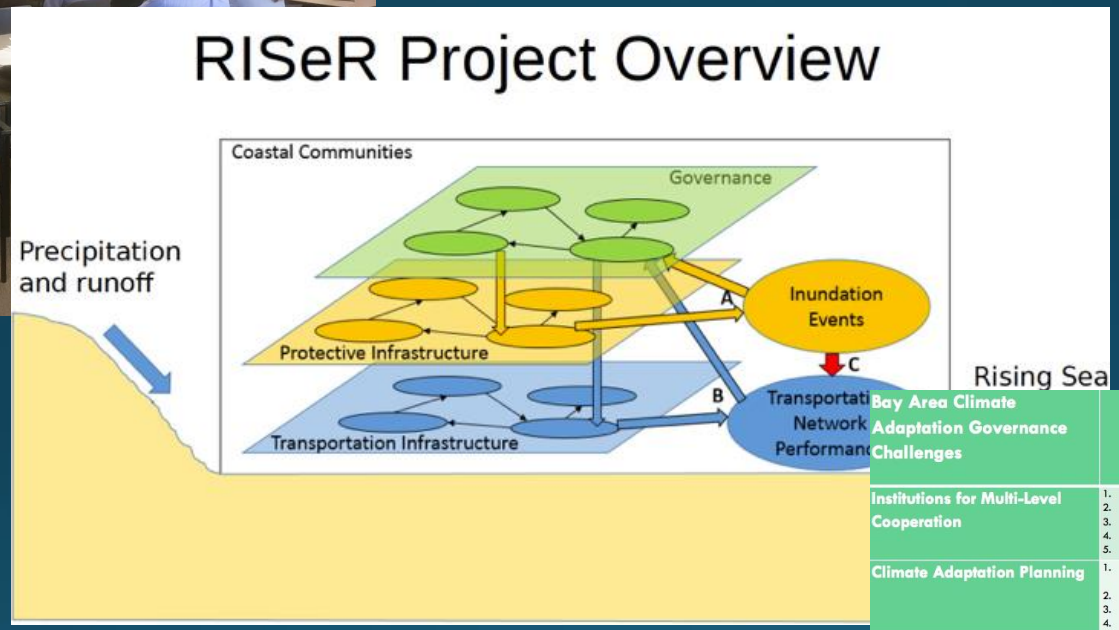




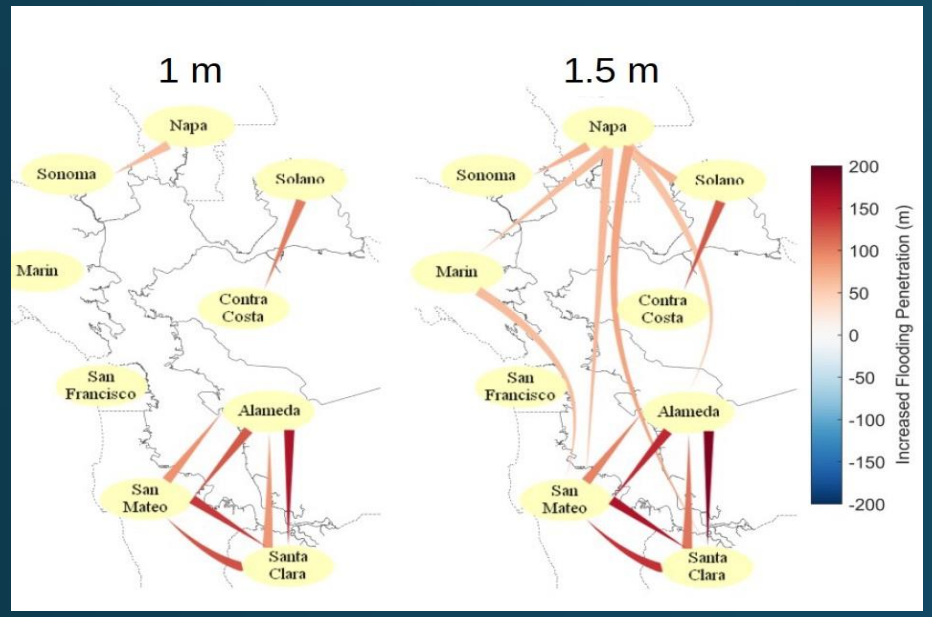


RBD: Bay Area Challenge

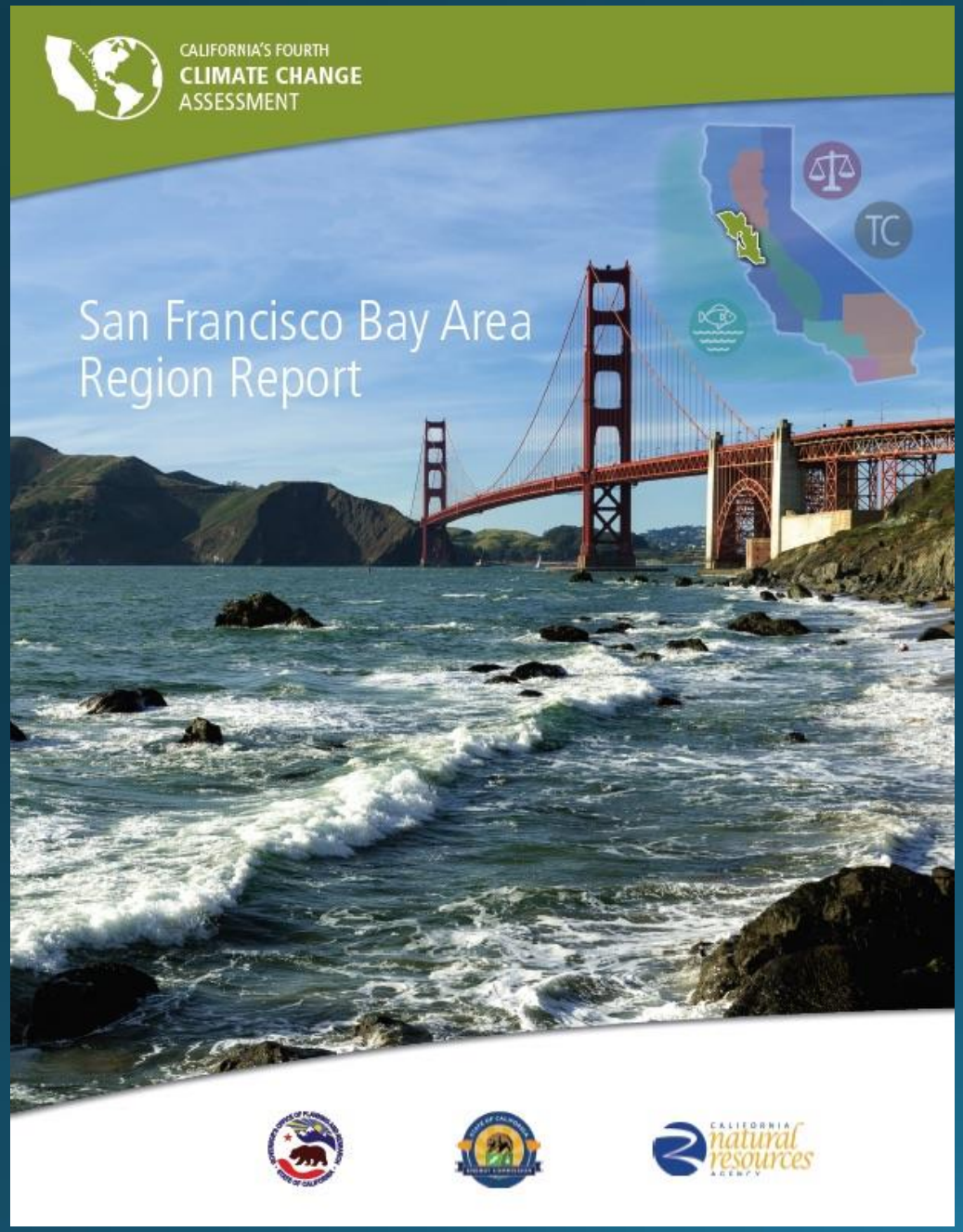
RISeR SF Bay — Regionalism



Bay Area Climate Adaptation Governance Challenges	Proposed Solution Concepts
Institutions for Multi-Level Cooperation	1. Shared governance ("stay in your own lane") 2. Lead agency (BCDC or other existing agency) 3. New "network" administrative agency (e.g.; Delta Stewardship Council) 4. Climate Adaptation Vision or Commission (e.g. Delta Vision, Governor's Commission for a Sustainable South Florida, Western Water Commission) 5. Institutional consolidation: special districts, regional governing boards
Climate Adaptation Planning	1. Update existing regional (SB375, Plan Bay Area, SF Bay Plan, other) and local plans (general plans, congestion management plans, local climate adaptation plans) 2. Overall regional climate adaptation plan 3. Separate but linked new plans for specific issues—sea level rise, temperature, drought 4. Vision Plan and next step recommendations
Funding Portfolio	1. Federal: special legislation, WRDA, transportation funding 2. State: Transportation and bond money, special legislation 3. Regional/Local: parcel taxes, increases in fees, special taxation districts 4. Public-private partnerships
Integrated Permitting	1. Expand scope of Long Term Management Strategy for Dredging and associated Dredged Materials Management Office 2. Create new integrated permitting strategy for green infrastructure 3. Habitat Conservation/Natural Communities Conservation Plan 4. Programmatic CWA Section 404, ESA Section 7, and other permits
Climate Science Enterprise	1. Create centralized web portal for all climate science information 2. Climate science services center (data and assistance/guidance) hosted at agency, university, NGO, or consortium 3. Internal independent science review board 4. External National Academy of Science review panel (e.g. Committee on Independent Scientific Review of Everglades Restoration Progress)
Civic Engagement	1. Community-based adaptation meetings (e.g. Southern Marin Pilot Project) 2. Collaborate with cultural institutions (e.g.; Exploratorium, Cal Academy of Sciences) 3. Digital media strategies 4. Citizen science and in situ visualizations
Political Leadership	1. Create state and federal legislative caucus groups focused on climate adaptation 2. Governor-sponsored regional climate adaptation dialog sessions 3. Legislative staff outreach task force


1 m
1.5 m
Napa
Sonoma
Solano
Marin
Contra Costa
San Francisco
Alameda
San Mateo
Santa Clara
200
150
100
50
0
-50
-100
-150
-200
Increased Flooding Penetration (m)

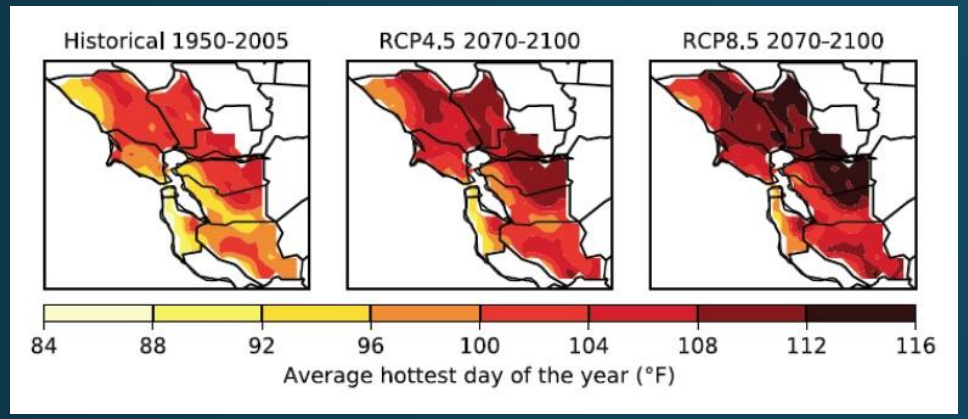
RISeR SF Bay

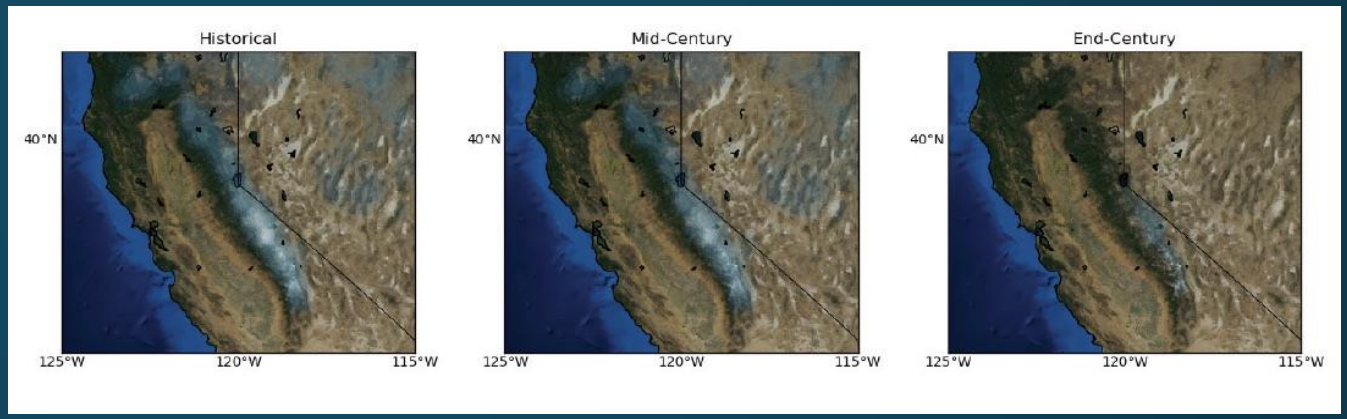


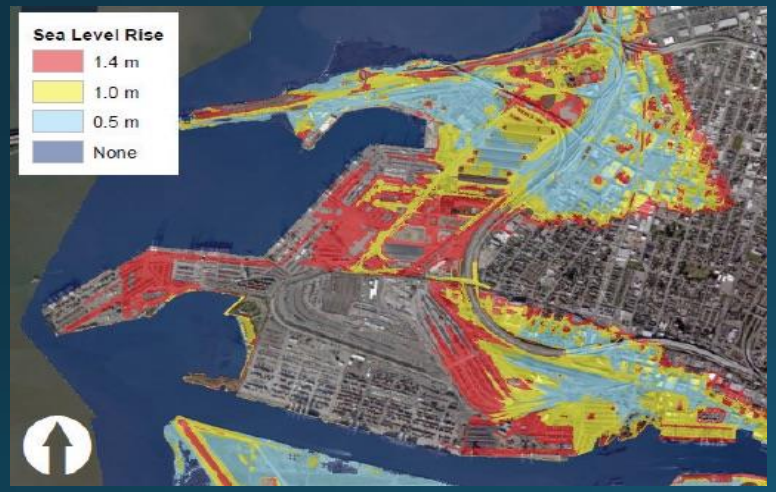
I. Regional Climate Science

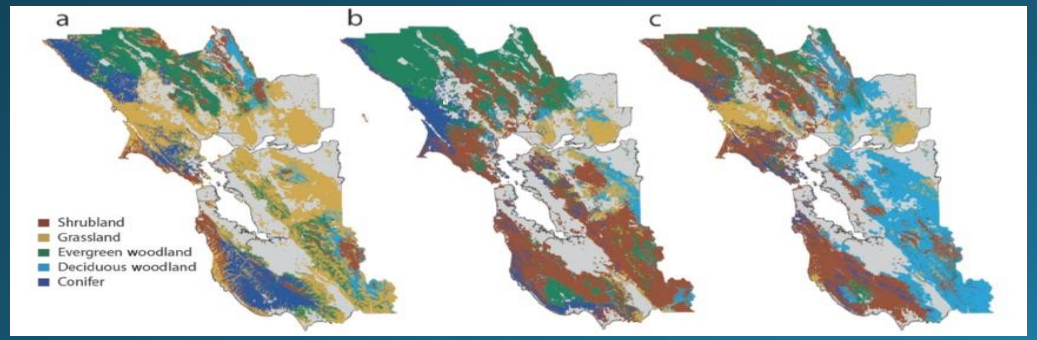
II. Impacts on Social Systems & Built Environment

III. Impacts on Natural & Managed Resource Systems

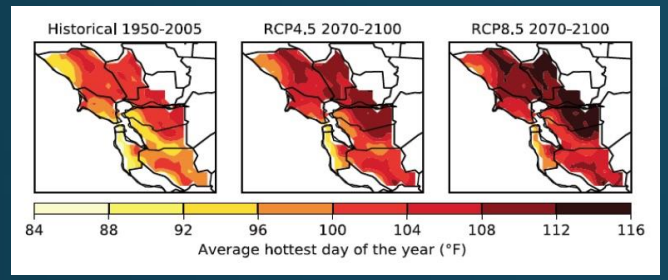


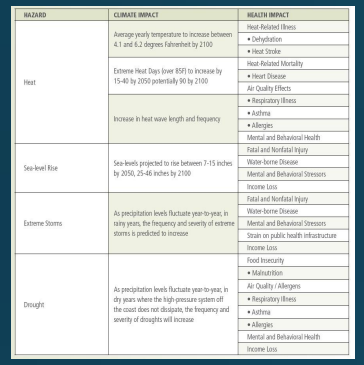






HAZARD	CLIMATE IMPACT	HEALTH IMPACT
Heat	Average yearly temperature to increase between 4.1 and 6.2 degrees Fahrenheit by 2100	Heat-Related Illness
		• Dehydration
		• Heat Stroke
	Extreme Heat Days (over 85F) to increase by 15-40 by 2050 potentially 90 by 2100	Heat-Related Mortality
		• Heart Disease
		Air Quality Effects
	Increase in heat wave length and frequency	• Respiratory Illness
		• Asthma
		• Allergies
		Mental and Behavioral Health
Sea-level Rise	Sea-levels projected to rise between 7-15 inches by 2050, 25-46 inches by 2100	Fatal and Nonfatal Injury
		Water-borne Disease
		Mental and Behavioral Stressors
		Income Loss
Extreme Storms	As precipitation levels fluctuate year-to-year, in rainy years, the frequency and severity of extreme storms is predicted to increase	Fatal and Nonfatal Injury
		Water-borne Disease
		Mental and Behavioral Stressors
		Strain on public health infrastructure
		Income Loss
Drought	As precipitation levels fluctuate year-to-year, in dry years where the high-pressure system off the coast does not dissipate, the frequency and severity of droughts will increase	Food Insecurity
		• Malnutrition
		Air Quality / Allergens
		• Respiratory Illness
		• Asthma
		• Allergies
		Mental and Behavioral Health
		Income Loss





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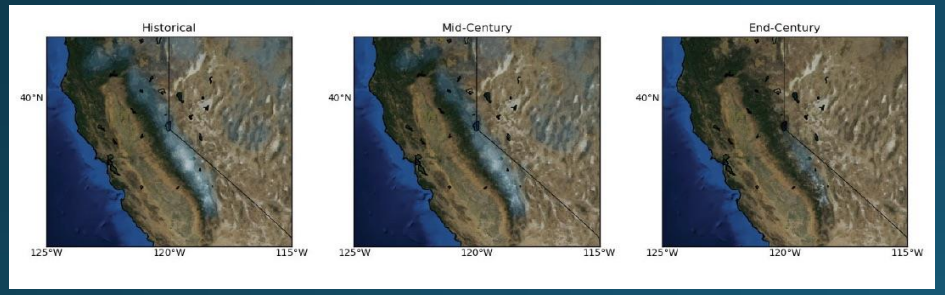

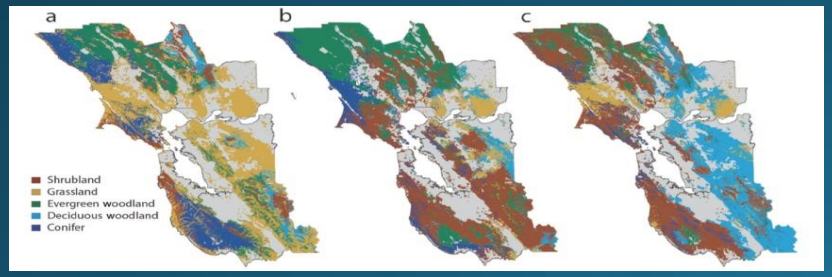

Webinars
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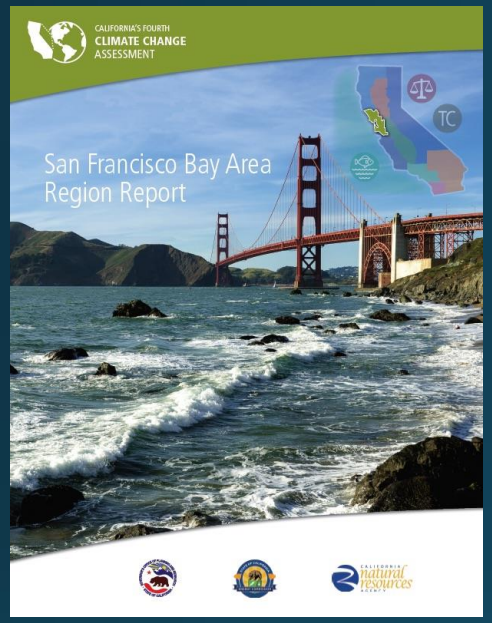

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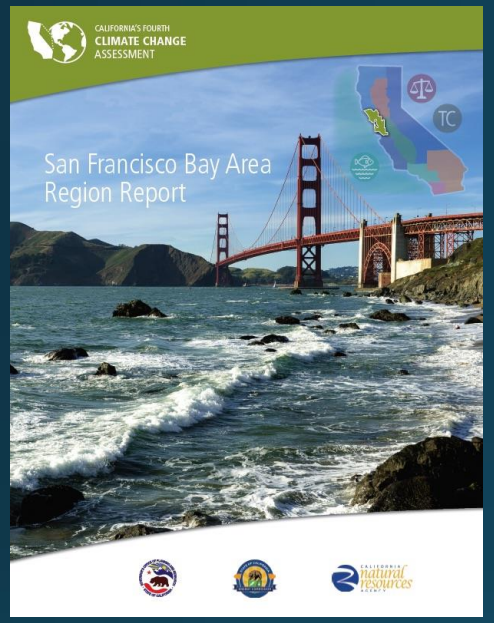
On-Going:
Guidance
"Extension"
Gap ID
Co-Production



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Funding
Governance
Regulations