



Office of Environmental Health Hazard Assessment

CALEPA TRIBAL ADVISORY COMMITTEE MEETING

DECEMBER 13, 2017

AMY DUNN, OEHA'S TRIBAL LIAISON

Today's Topics

- ❖ OEHHA organization and operation

- ❖ Some OEHHA programs of interest

 - Guest presenters

 - Criteria Air Pollutants
 - Climate Change – Carmen Milanes
 - Ecotoxicology Database
 - Harmful Algal Blooms – Rebecca Stanton
 - Proposition 65 – Julian Leichty
 - Biomonitoring California

- ❖ In-depth look at:

 - CalEnviroScreen
– Laura August

 - Fish Advisories
– Lori Chumney

OEHHA's Mission

Protect and enhance
public health and the environment
by scientific evaluation of risks
posed by hazardous substances



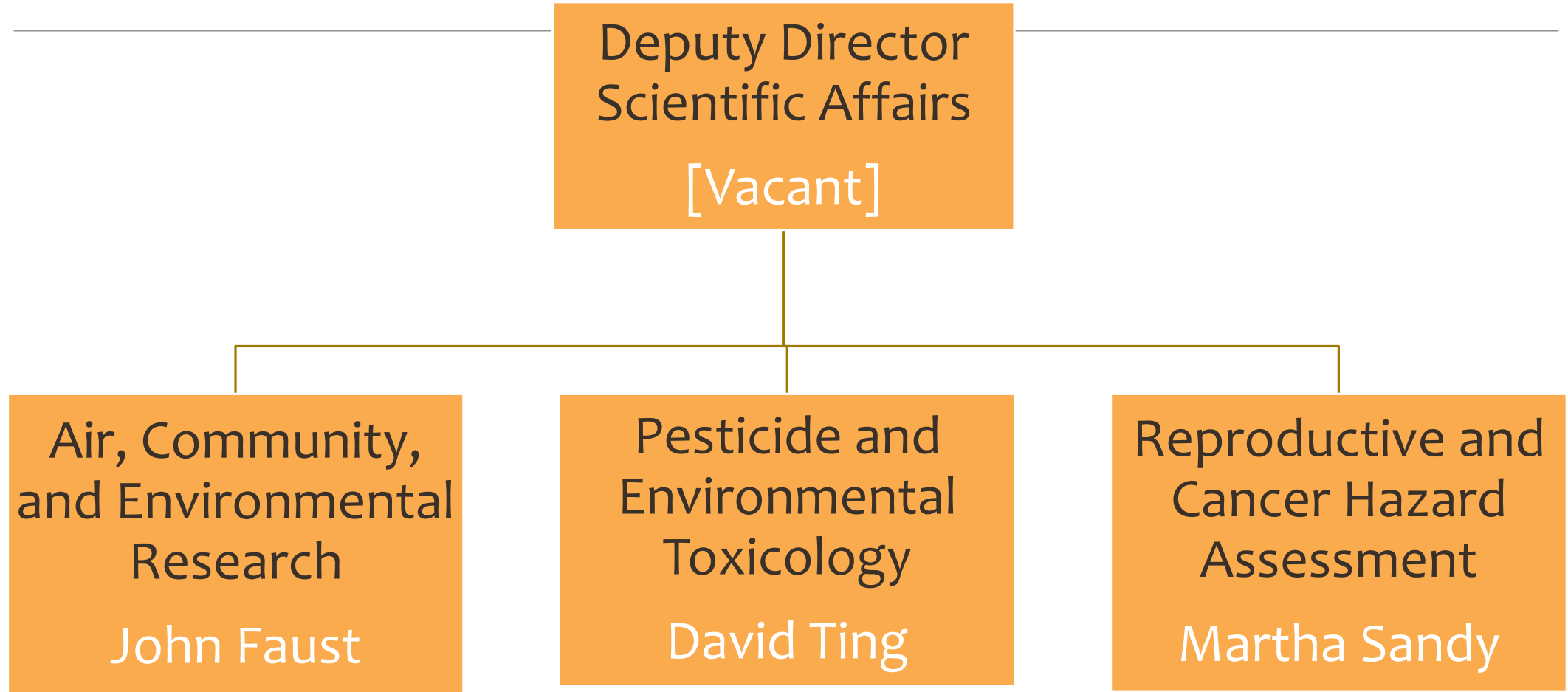
Director
Lauren Zeise



Chief Counsel
Carol Monahan
Cummings

Chief Deputy
Director
Allan Hirsch

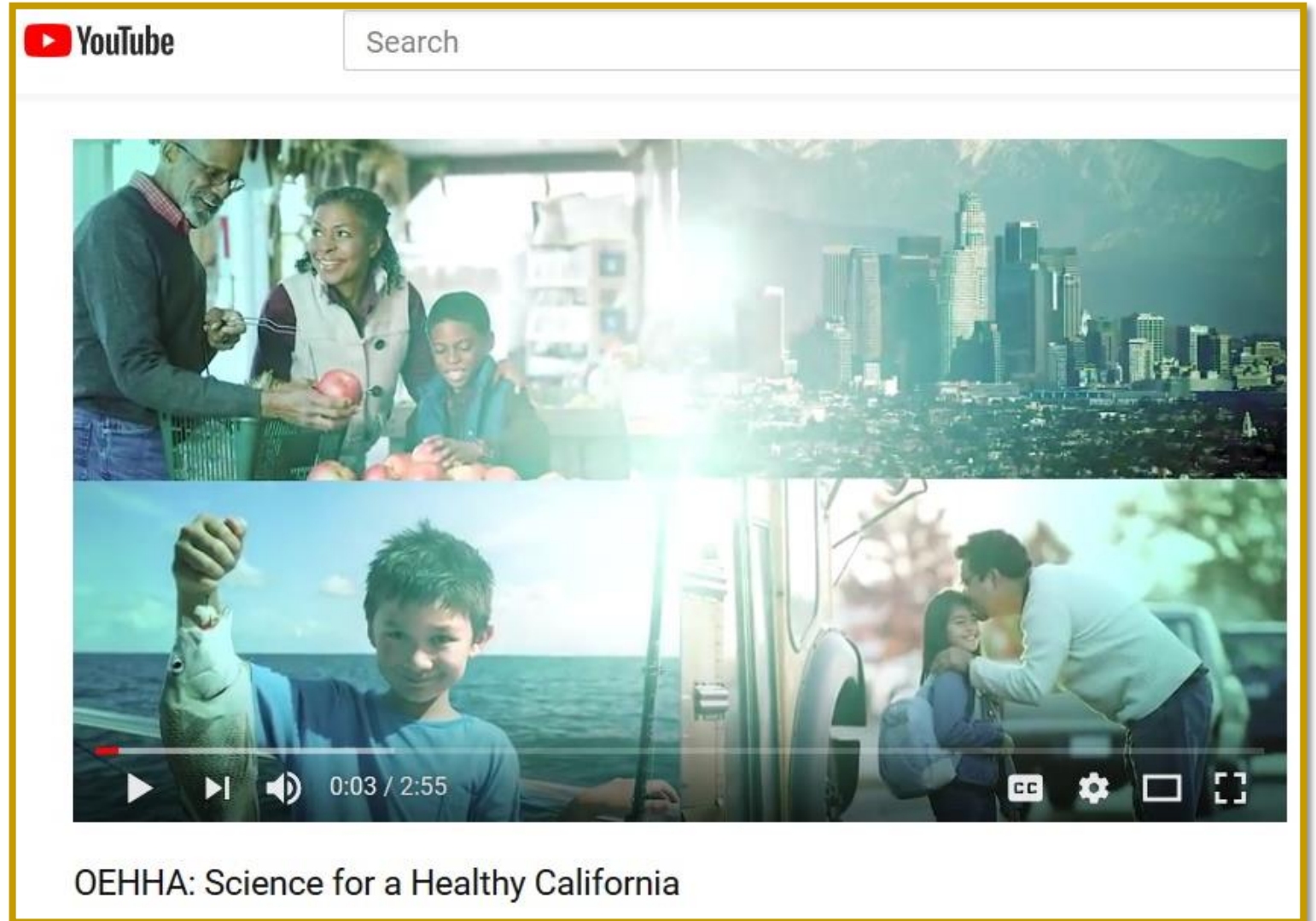
Scientific Branches within OEHHA



Science for a Healthy California

Video about OEHHA

3 minutes



The image shows a YouTube video player interface. At the top left is the YouTube logo, and at the top right is a search bar. The video content is split into two horizontal panels. The top panel shows a family of three (a man, a woman, and a child) in a grocery store, looking at produce. The bottom panel shows a young boy holding up a fish on a boat, and a man kissing a woman on the cheek. Below the video is a progress bar showing 0:03 / 2:55, and standard video controls like play, volume, and full screen. The video title 'OEHHA: Science for a Healthy California' is displayed at the bottom of the player.

<https://www.youtube.com/watch?v=u3VL3p1lc7M>

Air, Community, and Environmental Research

John Faust

Air and Climate
Epidemiology

Criteria air pollutant
assessments

Integrated
Risk
Assessment
and Research

Indicators of climate
change

Air Toxicology
& Risk
Assessment

Community
Assessment &
Research

CalEnviroScreen

Criteria Air Pollutant Assessments



Review and make recommendations for health-based ambient air quality standards (AAQS)

- Inform the Air Resources Board of issues that could necessitate change
 - Examples: New pollutants, vulnerable populations

Criteria air pollutants

Ozone, Particulate Matter, Carbon Monoxide, Nitrogen Oxides, Sulfur Dioxide, Lead

Studies of Human Health, Air Pollutants and Climate

Health effects of criteria pollutants

- Enhance the quality of our recommendations
 - Identify who is most vulnerable
 - *Example: Children's respiratory health and school sites near freeways with heavy traffic*

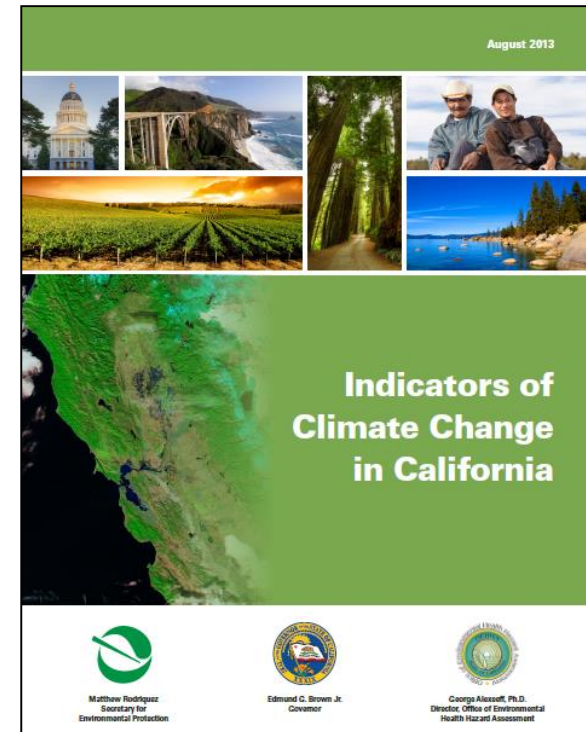
Impacts of increasing temperature

- Help identify who is most vulnerable to heat-related illness and mortality
 - *Example: infants have limited ability to regulate body temperature in response to heat stress*



Climate Change Indicators

- Purpose
 - Track the impact of climate change in California
 - Communicate complex information in a simple format
 - Provide context for mitigation and adaptation
- Report is a collaborative effort, relies on monitoring and research in state and federal government, universities and other research institutions
- “Indicators of Climate Change in California” (2009, 2013; update in progress, expected release early 2018)



<https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>

The Indicators

- Climate change drivers
- Changes in climate
- Impacts on physical systems
- Impacts on biological systems (humans, vegetation, wildlife)



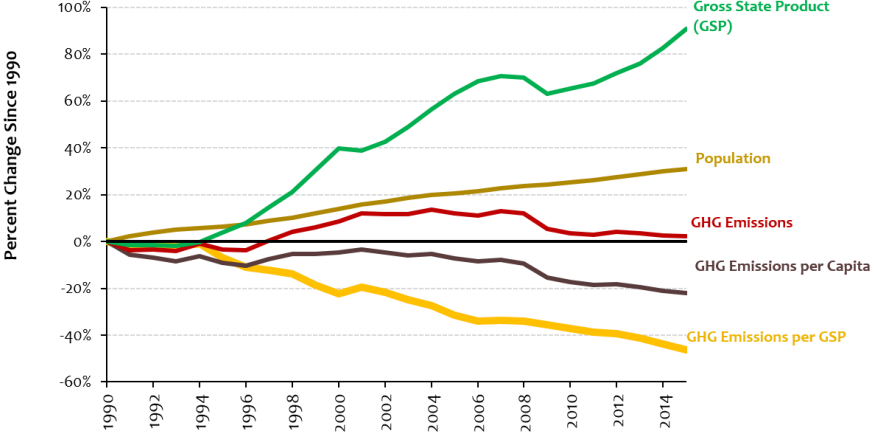
CLIMATE CHANGE DRIVERS	
Greenhouse gas emissions	Atmospheric black carbon concentrations
Atmospheric greenhouse gas concentrations	Acidification of coastal waters **
CHANGES IN CLIMATE	
Annual air temperature	Freezing level elevation
Extreme heat events	Annual precipitation
Winter chill	
IMPACTS OF CLIMATE CHANGE	
On physical systems	On humans
Annual Sierra Nevada snowmelt runoff	Mosquito-borne diseases*
Snow-water content	Heat-related mortality and morbidity*
Glacier change	Exposure to urban heat islands*
Sea level rise	
Lake water temperature	On animals
Delta water temperature	Migratory bird arrivals
Coastal ocean temperature	Small mammal range shifts
Oxygen concentrations in the California Current*	Spring flight of Central Valley butterflies
	Effects of ocean acidification on marine organisms*
	Copepod populations
On vegetation	Sacramento fall run Chinook salmon abundance
Tree mortality	Cassin's auklet populations
Large wildfires	Shearwater and auklet populations off Southern California
Forest vegetation patterns	Sea lion pup mortality and coastal strandings
Subalpine forest density	
Vegetation distribution shifts	
Alpine and subalpine plant changes*	
Wine grape bloom*	
* No trend data available	

<https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>

Climate Change Indicators



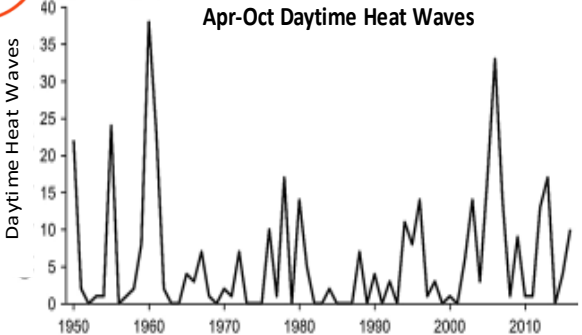
Trends in California's Population, Economy, and Greenhouse Gas (GHG) Emissions Since 1990



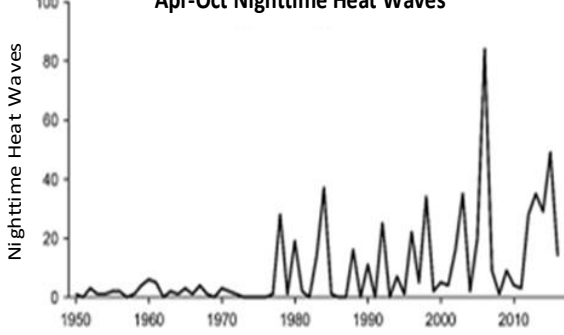
Source: CARB, 2017



Apr-Oct Daytime Heat Waves



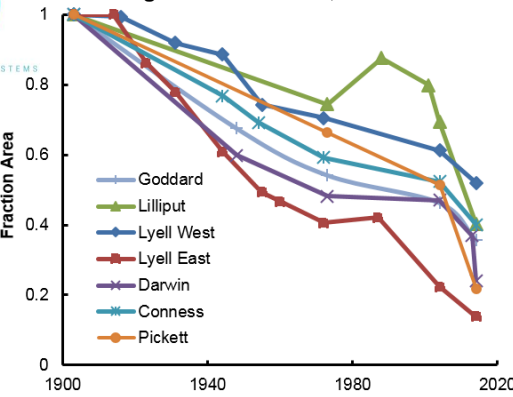
Apr-Oct Nighttime Heat Waves



Source: Western Regional Climate Center, 2017



Change in Surface Area, Sierra Nevada Glaciers



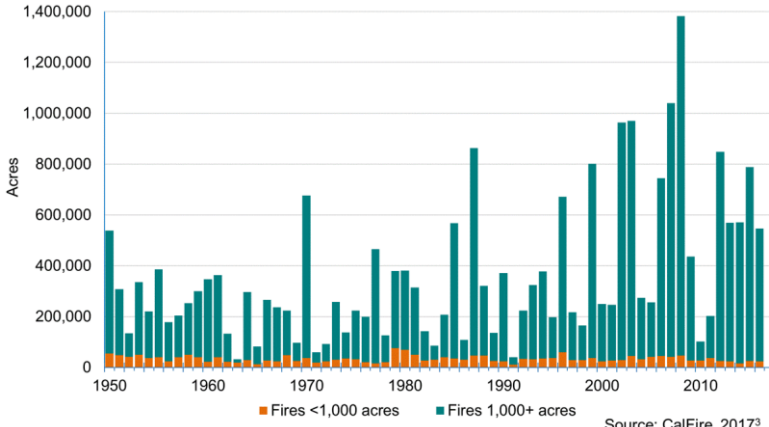
Source: Basagic, 2017

Dana Glacier



Source: USGS (left) Basagic, 2017 (right)

Statewide Annual Acres Burned

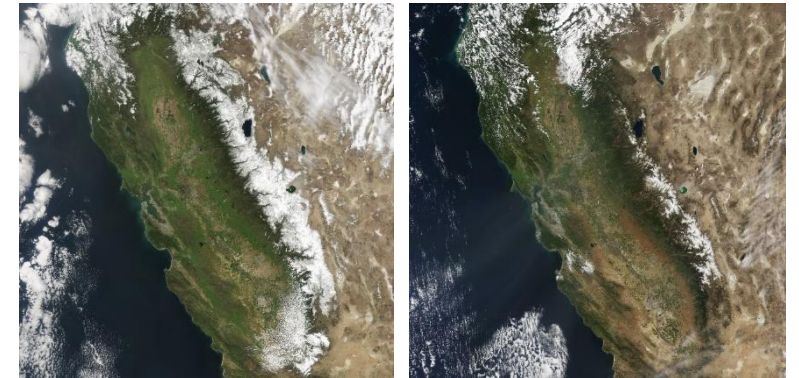


Source: CalFire, 2017³

Climate Change Indicators

Summary

- California's climate is warming, resulting in significant, measurable impacts.
- Warming has impacted snowmelt, glaciers, lakes and the Pacific Ocean; changes are consistent with global observations.
- Observed biological responses include changes in:
 - Timing of life cycle events
 - Distribution of plants and animals
 - Reproductive success and abundance
- The changes underscore the need for action to address impacts.



<https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>



CalEnviroScreen

Focused presentation coming later this morning

Pesticide and Environmental Toxicology
David Ting

Pesticide & Food Toxicology

Pesticide Epidemiology

Fish, Ecotoxicology, & Water

Water Toxicology

Special Investigations

Harmful Algal Booms

Ecotox Database

Fish Advisories

Ecotoxicology

CalEcotox Database

California Wildlife Biology, Exposure Factor and Toxicity Database

- Collates species-specific information
- 28 exposure factors commonly used to estimate exposure to contaminants
 - E.g., body weights, ingestion rates, seasonal activities and population dynamics
- Patterned after US EPA Wildlife Exposure Factor Handbook
 - Includes information for 62 California mammal, bird, reptile and amphibian species
- Exposure and effects information, as well as toxicity reports

Currently being updated and rebuilt

- New version expected in July 2018





OEHHA's Involvement in Freshwater Harmful Algal Blooms (HABs)

Recreational waters and HABs response

- 2016 CA Cyanobacteria & HABs (CCHAB) Statewide Guidance document incorporates 2012 OEHHA advisory levels
- OEHHA participates in subcommittee

Domestic animals

- OEHHA and CA Dept. Public Health (CDPH) developed [veterinary fact sheet](#)

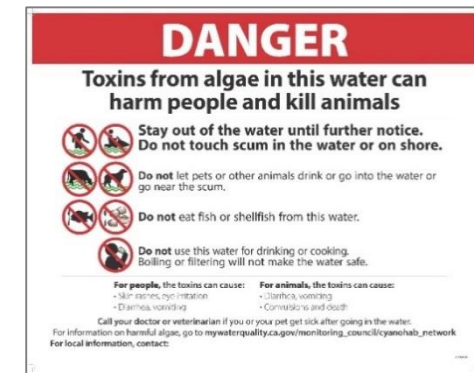
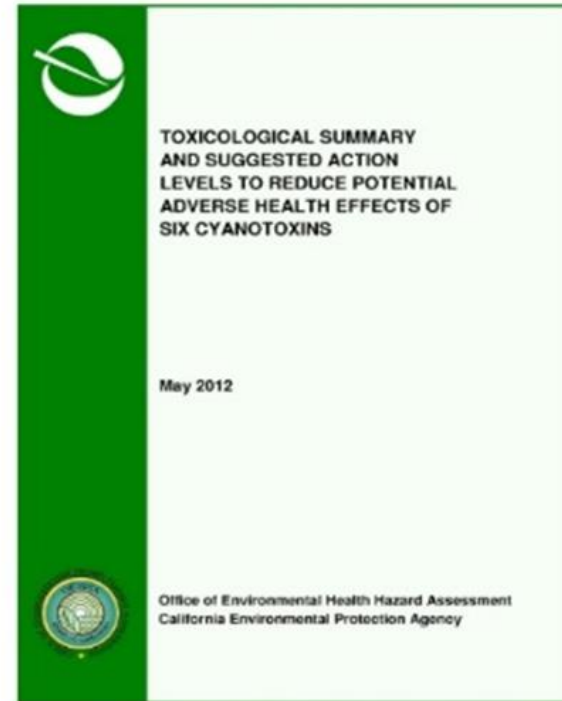
Wildlife

- Ongoing OEHHA and CA Dept. Of Fish & Wildlife (CDFW) assessment of impacts

Fish consumption

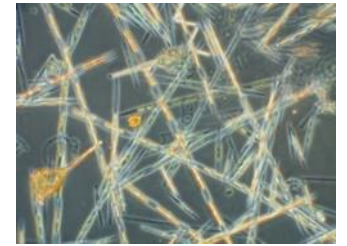
- 2012 OEHHA action levels for fish tissue
- OEHHA working on risk assessment protocol

[MyWaterQuality Harmful Algal Bloom portal](#)



[CA CyanoHAB Network](#)

Marine HABs and Domoic Acid



CDPH and OEHHA consider potential human health impacts from consuming fish and shellfish with elevated domoic acid levels



CDPH monitors shellfish and phytoplankton

CDPH and OEHHA evaluate results and OEHHA, in consultation with CDPH, recommends closures, delays in opening, and re-opening of fisheries to protect human health

CDFW implements closures, delays in opening, and re-openings

Health Advisories/Closures for Marine Fisheries

- Domoic Acid Fishery Closure Information Line: (831) 649-2883
- <https://www.wildlife.ca.gov/fishing/ocean/health-advisories>



DOMOIC ACID FREQUENTLY ASKED QUESTIONS

- 1.) What is domoic acid?**

Domoic acid is a naturally occurring toxin that is related to a "bloom" of a particular single-celled plant called *Pseudo-nitzschia*. The conditions that support the growth of *Pseudo-nitzschia* are impossible to predict. Crustaceans, fish and shellfish are capable of accumulating elevated levels of domoic acid without apparent ill effects on the animals.
- 2.) How do elevated levels of domoic acid in crustaceans, fish and shellfish affect those who consume them?**

Elevated levels of domoic acid in crustaceans, fish and shellfish pose a significant risk to the public if these adulterated products are consumed. Domoic acid can be fatal to people if consumed in high doses.

Razor Clam Fishery Closure

- As of April 27, 2016 the recreational take and possession of razor clam is **prohibited from Humboldt and Del Norte county beaches until further notice**.
- Check this web page frequently, or call the Domoic Acid Fishery Closure Information Line at (831) 649-2883 for the most up-to-date information.
 - 📄 [Read the CDFW Declaration of Fisheries Closure Due to a Public Health Threat Caused by Elevated Levels of Domoic Acid in Razor Clams \(1/30/2017\)](#)
 - 📄 [See the latest information on domoic acid levels in razor clams in Del Norte and Humboldt counties.](#)

Questions?

Becky Stanton

- Rebecca.Stanton@oehha.ca.gov
- 916-327-7319

Reggie Linville

- regina.Linville@oehha.ca.gov
- 916-327-7336

<https://oehha.ca.gov/risk-assessment/harmful-algal-blooms-habs>

Report a bloom or HABs-related illness?

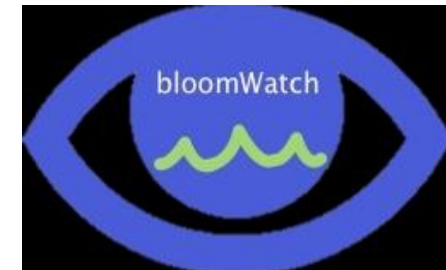
[Freshwater Bloom Incident Form](#)

- Including a related animal or human illness
- ## [bloomWatch App](#)
- Available as a free download ([Android](#), iOS)

[Report a red tide or other unusual marine sighting](#)

Bloom reporting and information

- Call: 1 (916) 341-5357
- Call toll free: 1 (844) 729-6466
- Email: CyanoHAB.Reports@waterboards.ca.gov





Focused presentation coming later this morning

Reproductive and Cancer Hazard Assessment

Martha Sandy

Reproductive
Toxicology &
Epidemiology

Prop 65 assessments

Cancer
Toxicology &
Epidemiology

Prop 65 assessments

Safer Alternatives
Assessment &
Biomonitoring

Biomonitoring California

External &
Legislative Affairs
Sam Delson

Proposition 65
Implementation
Julian Leichty



Proposition 65

What does it mean?



If a warning is placed on a product label or posted or distributed, the business issuing the warning is aware or believes that it is exposing individuals to one or more listed chemicals.

A warning must be given unless the exposure is low enough to pose no significant risk of cancer or is significantly below levels observed to cause birth defects or other reproductive harm.

<https://www.p65warnings.ca.gov/about/frequently-asked-questions>

Proposition 65 – Background

List of chemicals known to cause cancer or reproductive harm

- Includes more than 900 chemicals (cancer, 603; reproductive harm, 309)
- Updated at least once a year

Warning must be provided before exposure occurs

- Requirement to provide warnings takes effect 1 year after chemical is listed
 - Examples: Label on a consumer product; posted signs at a workplace

Discharging or releasing a listed chemical into a source of drinking water is prohibited

Enforcement by State Attorney General, district attorneys & lawsuits brought by private citizens

Learn more:
<https://oehha.ca.gov/proposition-65/about-proposition-65>

Proposition 65 – Scientific Assessments

Chemicals for possible listing

- OEHHA evaluates data and develops summary documents
- Any listing (or de-listing) activity includes:
 - Public notice that a chemical is under consideration for listing
 - A public comment period
 - Review of comments received
 - Notice of the final decision



Safe Harbor Levels and Safe Use Determinations (SUD)

- **Safe Harbor Levels** - Exposure levels and discharges to drinking water sources that are below the safe harbor levels are exempt from requirements
- **SUD** - Determines if the exposure or discharge is at or below the Safe Harbor Level

Prop 65 Warnings and Impacts

Improved Warnings and Information for Consumers

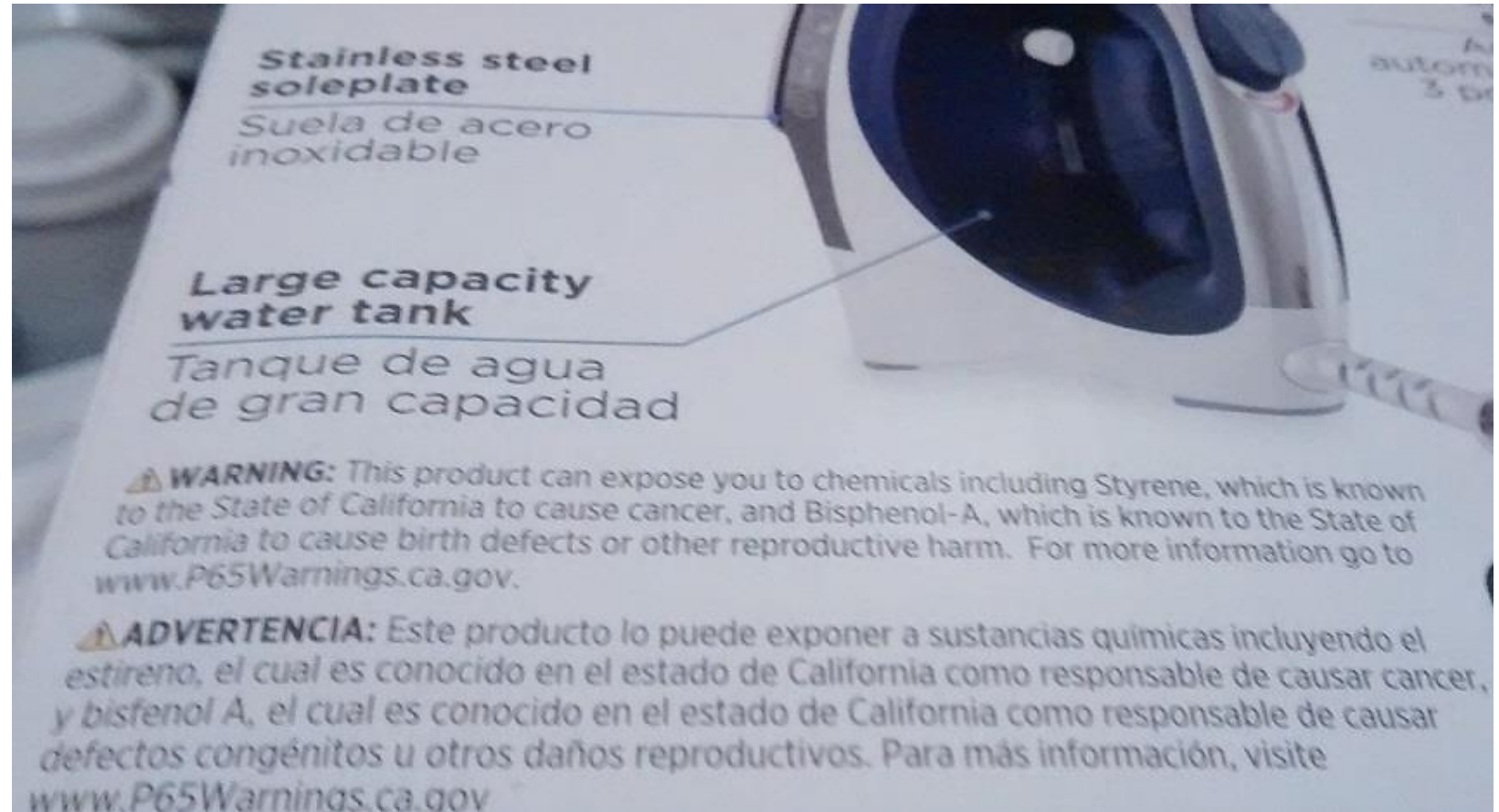
- Coming soon (Aug 2018) - New warnings will include the name of one or more chemicals and direct people to www.p65warnings.ca.gov
- Website (www.p65warnings.ca.gov) includes info on how to reduce exposures
- Examples – See next slide

Impacts - Reducing Californians' Exposures

- To avoid providing warnings or in response to enforcement lawsuits, businesses sometimes reformulate their products

Proposition 65 – Examples of New Warnings

 **WARNING:** BREATHING THE AIR IN THIS SMOKING AREA CAN EXPOSE YOU TO CHEMICALS INCLUDING TOBACCO SMOKE AND NICOTINE, WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. DO NOT STAY IN THIS AREA LONGER THAN NECESSARY. FOR MORE INFORMATION GO TO www.P65Warnings.ca.gov/smoking-areas



Biomonitoring California

Purpose of the program

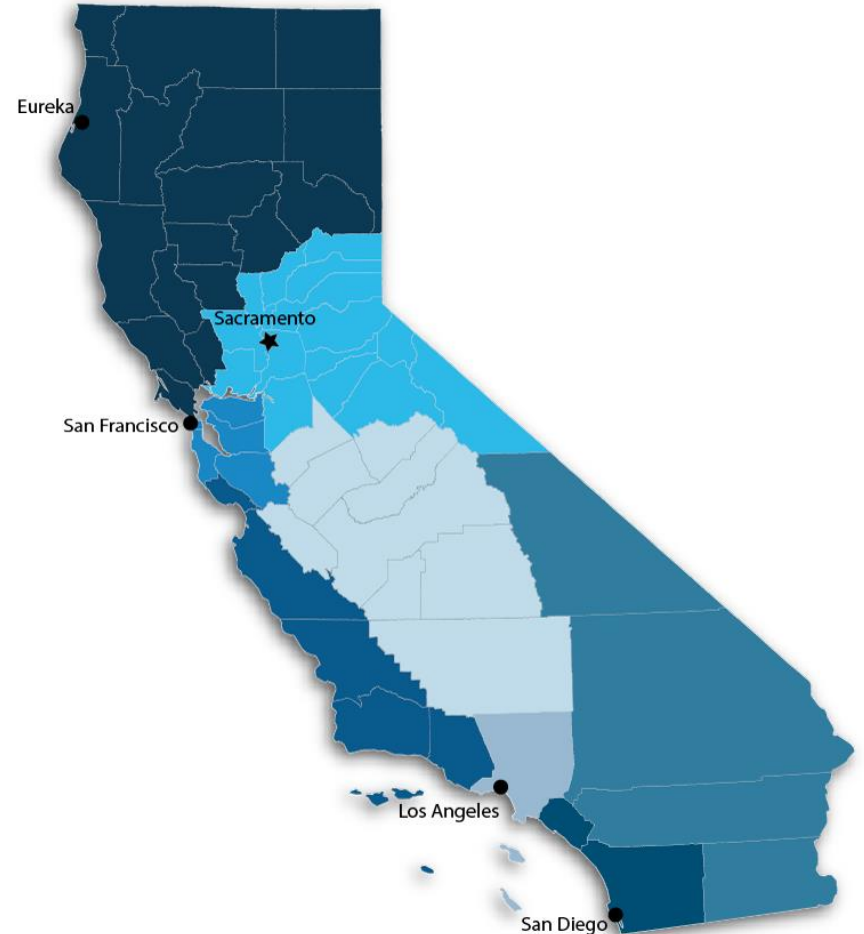
- Determine levels of environmental chemicals in a representative sample of Californians
- Establish trends in the levels of these chemicals over time
- Help assess the effectiveness of public health efforts and regulatory programs to decrease exposures to specific chemicals



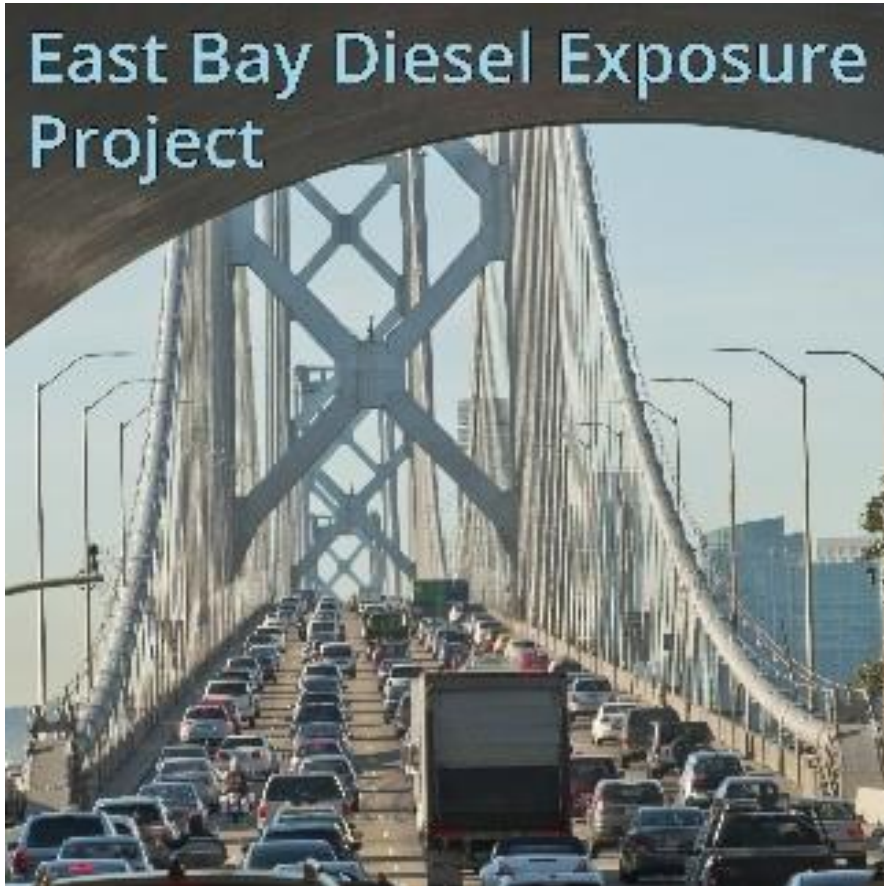
Biomonitoring California

California Regional Exposure Study

- Eight regions, based on geography & population
- Measure metals and PFASs
 - Arsenic, cadmium, lead, mercury, uranium & more
 - Perfluoroalkyl and polyfluoroalkyl substances
 - May add other chemicals
- 300-500 adults per region
- One region at a time
 - 2018 - Beginning in Los Angeles County
 - 2019 - Second region recruitment begins
 - Collaborating with local groups to recruit participants



Biomonitoring California



- Measure a marker of diesel exhaust in urine
 - 1-Nitropyrene
- 50 child-parent pairs (child age 3 - 6)
- Winter 2017 and Spring 2018
 - Samples from the same people
- Compare results within a household, between communities, and by season
 - Oakland, Richmond, San Pablo
- Companion study will measure diesel-related chemicals in dust and indoor air

Summary results from completed studies
<https://biomonitoring.ca.gov/results/explore>



CalEnviroScreen

Focused presentation – Separate slide set



Focused presentation – Separate slide set



Questions and Discussion