



Indicators of Climate Change in California

June 16-17, 2015 • CalEPA Building, Sacramento



Tuesday, June 16

Sierra Hearing Room

Welcome and keynote

9:00-10:10 am

Welcome Matt Rodriquez
Secretary, California Environmental Protection Agency

Workshop goals Lauren Zeise, Ph.D.
Acting Director, Office of Environmental Health Hazard Assessment

Keynote address Chris Field, Ph.D. and Katharine Mach, Ph.D.
Co-chair and Co-director for Science, Working Group II, Intergovernmental Panel on Climate Change
Department of Global Ecology, Carnegie Institution for Science

Break

10:10-10:25 am

Drivers of climate change

10:25 am-12:05 pm

Moderator Edie Chang
Deputy Executive Officer, Air Resources Board

Speakers *Land use change as a driver of local and regional climate change*
Lara Kueppers, Ph.D.
Research Scientist, Lawrence Berkeley Laboratory

Atmospheric indicators quantify baselines and trends in California's greenhouse gas emissions
Marc Fischer, Ph.D.
Staff Scientist, Lawrence Berkeley Laboratory; Associate Researcher, Air Quality Research Center at University of California at Davis

Impact of mitigation of short-lived climate pollutants on sea level and the hydrological cycle
Veerabhadran Ramanathan, Ph.D.
Distinguished Professor, University of California at San Diego

What we know about ocean acidification on the West Coast
Simone Alin, Ph.D.
Supervisory Oceanographer, National Oceanic and Atmospheric Administration Pacific Marine Environmental Laboratory

Discussion

Lunch **12:05-1:10 pm**

Changes in climate and impacts on physical systems **1:10-3:05 pm**

Moderator Michael Anderson, Ph.D.
State Climatologist, Department of Water Resources

Speakers *Potential climate indicators for the California energy system*
Guido Franco, M.S.
Team Lead for Climate and Environmental Research, Research Division,
California Energy Commission

Pacific coastal fog: ocean, land, and sky trends = foggy results
Alicia Torregrosa, M.A.
Physical Scientist, Western Geographic Science Center, US Geological Survey

Tracking California's hydroclimatology and markers of drought
Glen M. MacDonald, Ph.D.
Distinguished Professor, Department of Geography, University of California at
Los Angeles

Sea-level Rise as a Climate Change Indicator: Now, Certain and Everywhere
Gary Griggs, Ph.D.
Distinguished Professor of Earth and Planetary Sciences and Director Institute of
Marine Sciences, University of California at Santa Cruz

*Ocean temperature, hypoxia, and acidification: detecting the fingerprint of
climate change in California's coastal ocean*
Emily Rivest, Ph.D.
Bodega Marine Laboratory, University of California at Davis

Discussion

Break **3:05-3:20 pm**

Impacts on humans **3:20-5:00 pm**

Moderator Paul English, Ph.D., M.P.H.
Senior Science Advisor for the Environmental Health Investigations Branch,
Department of Public Health

Speakers *Effects of heat on mortality and morbidity in California*
Brian Malig, M.P.H.
Research Scientist, Office of Environmental Health Hazard Assessment,
California Environmental Protection Agency

*The Color Line Reflected in Green: The racial/ethnic distribution of heat risk-
related land cover in relation to residential segregation*
Rachel Morello-Frosch, Ph.D., M.P.H.
Professor, School of Public Health & Department of Environmental Science,
Policy and Management, University of California at Berkeley

Impact of climate change on vector-borne diseases

Vicki Kramer, Ph.D.

Chief, Vector-Borne Disease Section, California Department of Public Health

Climate change and air quality in California

Michael Kleeman, Ph.D.

Professor, Department of Civil and Environmental Engineering, University of California at Davis

Discussion

Wednesday, June 17

Byron Sher Auditorium¹

Recap of Day One

9:00-9:05 am

Impacts on vegetation

9:05-10:45 am

Moderator

Chris Keithley, Ph.D.

Chief, Fire and Resource Assessment Program, Department of Forestry and Fire Protection

Speakers

Utility of strategic forest inventories for developing indicators of regional change

Jeremy S. Fried, Ph.D.

Research Forester, Resource Monitoring and Assessment Program, Pacific Northwest Research Station, US Forest Service, Portland, Oregon

Modern trends in California wildfire: amount, type, and ecological implications

David Sapsis, Ph.D. candidate

Senior Wildland Fire Scientist, Fire and Resource Assessment Program, California Department of Forestry and Fire Protection

Historical and future impacts of climate change to the vegetation of California

James Thorne, Ph.D.

Research Scientist, Department of Environmental Science and Policy, University of California at Davis

Almond and walnut phenology

Robert Hijmans, Ph.D.

Professor, Department of Environmental Science and Policy, University of California at Davis

Discussion

Break

10:45-10:55 am

¹ Please note room change.

Impacts on fish and wildlife

10:55 am-12:35 pm

Moderator Kevin Hunting
Chief Deputy Director, Department of Fish and Wildlife

Speakers *Effects of recent climate change on terrestrial vertebrate ranges in California*
Kelly Iknayan, Ph.D. candidate and Steve Beissinger, Ph.D.
Department of Environmental Science, Policy & Management and
Museum of Vertebrate Zoology, University of California at Berkeley

Freshwater climate indicators: Sierra stream invertebrates
David Herbst, Ph.D.

Research Biologist, University of California Sierra Nevada Aquatic Research
Laboratory, Mammoth Lakes, California

*Climate change effects on terrestrial and marine birds: Consequences for
reproduction*

Nadav Nur, Ph.D.
Quantitative Ecology Program Director, Point Blue Conservation Science

*California Current Integrated Ecosystem Assessment indicators of climate
change and indicators of risk*

Toby Garfield, Ph.D.
Director, Environmental Research Division, Southwest Fisheries Science Center,
National Marine Fisheries Services, National Oceanic and Atmospheric
Administration

Discussion

Lunch

12:35-1:45 pm

Integrating indicators into climate policy and action

1:45-3:25 pm

Moderator Ashley Conrad-Saydah, M.S.
Deputy Secretary for Climate Policy, California Environmental Protection Agency

Speakers *Connecting the Dots: Interdisciplinary Indicator Coordination for Effective State,
Regional, and Local Action*
Allison Joe, M.P.I., AICP
Deputy Director, Strategic Growth Council

Working with the community in communicating climate indicators
Jonathan Parfrey, Executive Director, Climate Resolve

*Indicators? What indicators? A local government perspective on climate
indicators and action*

Kif Scheuer, Ph.D.
Climate Change Program Director, Local Government Commission

Discussion

Break

3:25-3:40 pm

California's climate change indicators

3:40-4:25 pm

Moderator Carmen Milanes, M.P.H.
Office of Environmental Health Hazard Assessment

Discussion:

*What indicators of climate change should California be tracking and reporting on?
What important gaps exist?*

Closing remarks

4:25-4:30 pm

Lauren Zeise, Ph.D.
Acting Director, Office of Environmental Health Hazard Assessment