

# History of California's Climate Assessments and Overview of the Fourth Assessment

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Making Climate Assessments Work:  
Learning from California and Other Subnational Climate Assessments  
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# Context: No Time to Wait

“For many scientists, this is the year they started living climate change rather than just studying it.”

*Source: New York Times, August 9, 2018*



*Source: The Economist, August 2, 2018*



# California Climate Change Assessments: Science to Action

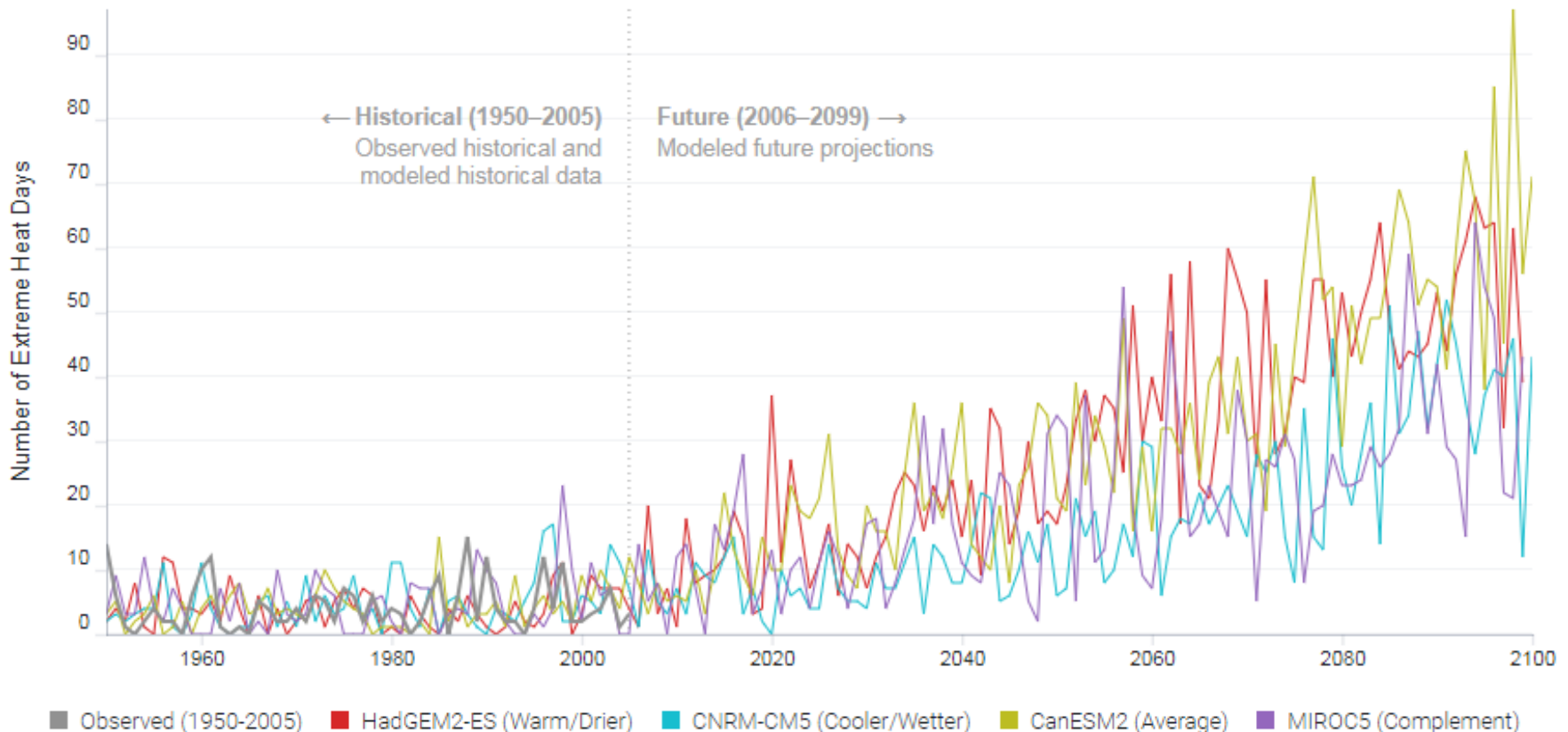
|             | FIRST CALIFORNIA CLIMATE ASSESSMENT   | Second California Climate Assessment   | THIRD CALIFORNIA CLIMATE ASSESSMENT  | FOURTH CALIFORNIA CLIMATE ASSESSMENT   |
|-------------|---|--|--|--|
| YEAR        | 2006  | 2009   | 2012   | 2018   |
| DESCRIPTION | Understanding climate impacts in California. Developed to provide support for undertaking greenhouse gas emission reductions. | Understanding how climate change will affect specific sectors. Made the case that adaptation could reduce costs. | Increased understanding of vulnerability in natural and human systems, and generated two pilot regional assessments. | Technical and regional reports designed to support adaptation actions at the state, regional, and local level.   |
| DRIVER      | Executive Order S-3-05  | Policymakers' desire to know if adaptation was needed  | 2009 Climate Adaptation Strategy   | 2015 Climate Change Research Plan  |
| OUTCOME     | Assembly Bill (AB) 32   | 2009 Climate Adaptation Strategy   | Supported passage of new climate adaptation laws   | Informing the implementation of AB 2800, which requires a report on how engineering standards should be changed to consider climate change. Other outcomes to be determined. |

Source: California's Fourth Climate Change Assessment, Statewide Summary Report. 2018



# California Climate Change Impacts: Greater Variability and Higher Extremes

Days per year when maximum temperature in Sacramento is projected to be above 103.8 °F under the RCP 8.5 scenario (emissions rise strongly through 2050 and plateau around 2100).

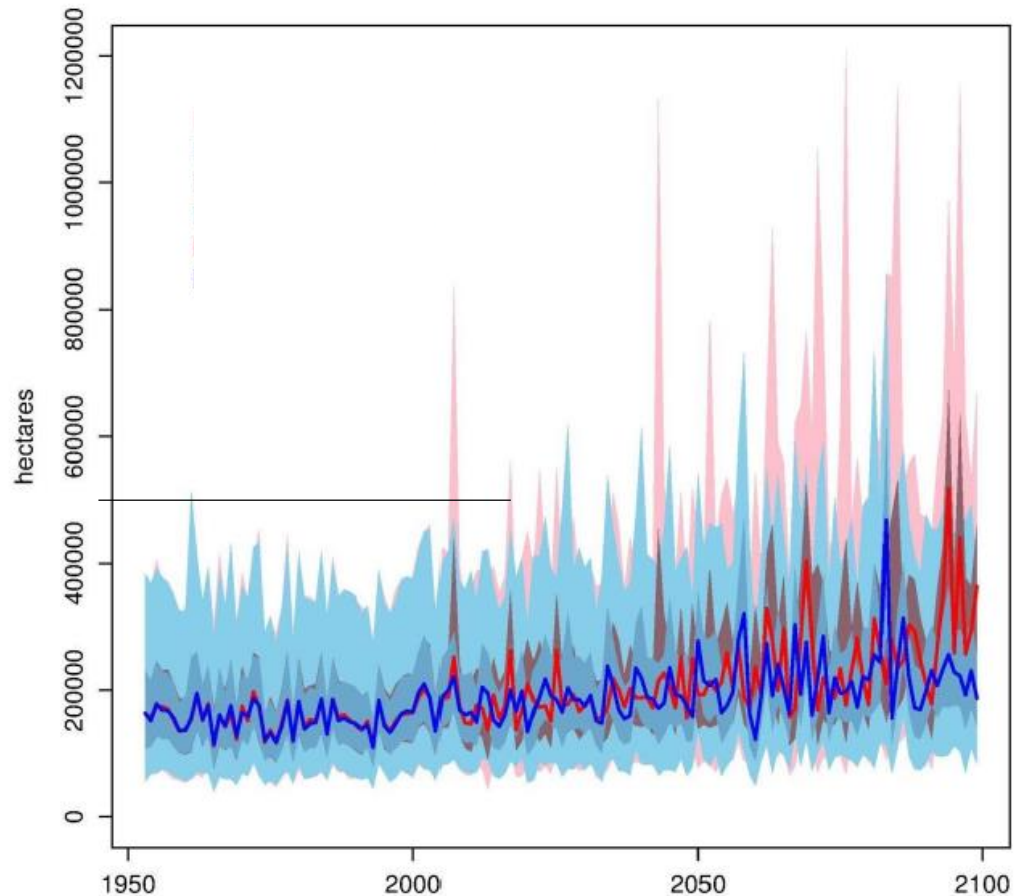


Source: Cal-Adapt. Data: LOCA Downscaled Climate Projections (Scripps Institution of Oceanography), Gridded Historical Observed Meteorological and Hydrological Data (University of Colorado, Boulder).



# California Climate Change Impacts: Extreme Wildfires Expected to Increase

- In 2017, California wildfires burned about 500,000 hectares (horizontal black line)
- RCP4.5 (blue) vs 8.5 (brown, red, pink): median, 50 percentile, and 95 percentile



Source: Westerling (2018). *Wildfire Simulations for the Fourth California Climate Assessment: Projecting Changes in Extreme Wildfire Events with a Warming Climate*



# State and Local Governments Need to Accelerate Adaptation Efforts

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- California Wildfire:
  - In 2017 wildfires destroyed almost as many structures as were burned in all wildfires between 2000-2016.
  - Mendocino Complex Fire, July 2018, is largest California wildfire to date.
- California Sea-Level Rise Guidance (2018 Update):
  - “High confidence in projections of sea-level rise over the next three decades can inform preparedness efforts, adaptation actions and hazard mitigation undertaken today, and prevent much greater losses than will occur if action is not taken.”