

What Climate Change Means for LA

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Understanding climate change on a policy-relevant scale

- UCLA's Center for Climate Change Solutions fosters real-world solutions to climate change by conducting interdisciplinary climate impacts research of practical use to stakeholders.
- Detailed projections of future climate change impacts can start crucial conversations about adaptation and mitigation.
- Our best tools for projecting future climate — global climate models (GCMs) — are too low in resolution to capture what happens in a region with complex topography, such as the Los Angeles region.



Ventura

**San Fernando
Valley**

Palmdale

San Bernardino

Downtown LA

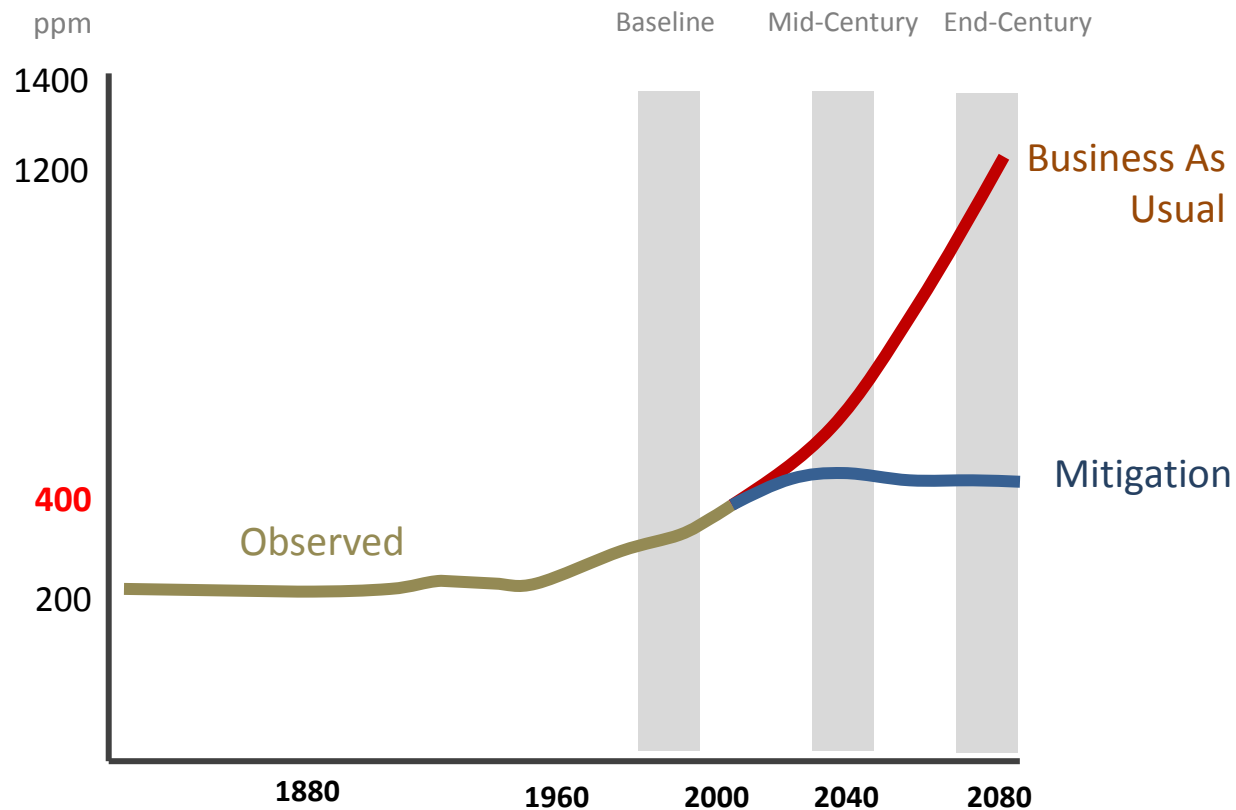
Santa Monica

Long Beach

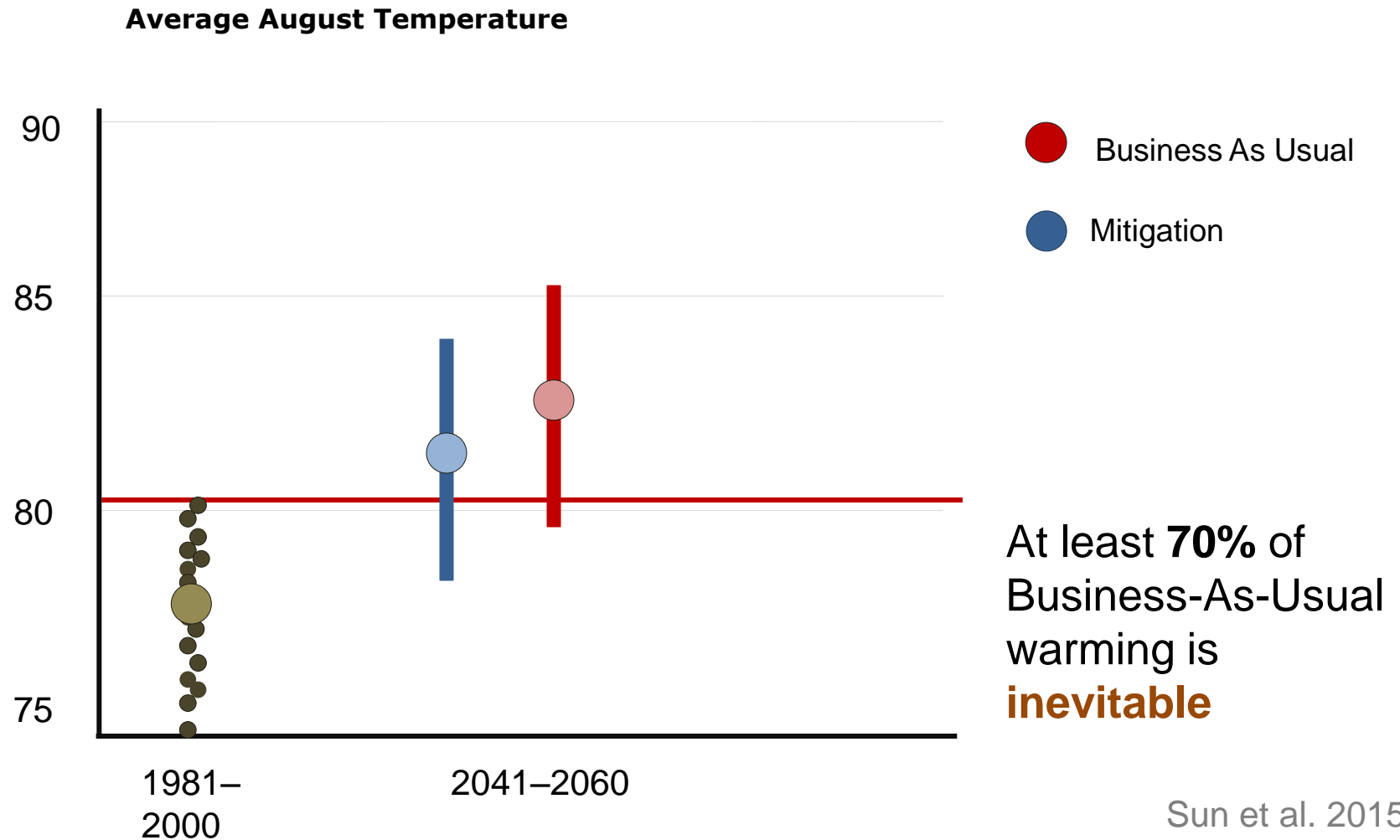


Climate Change in the Los Angeles Region Project

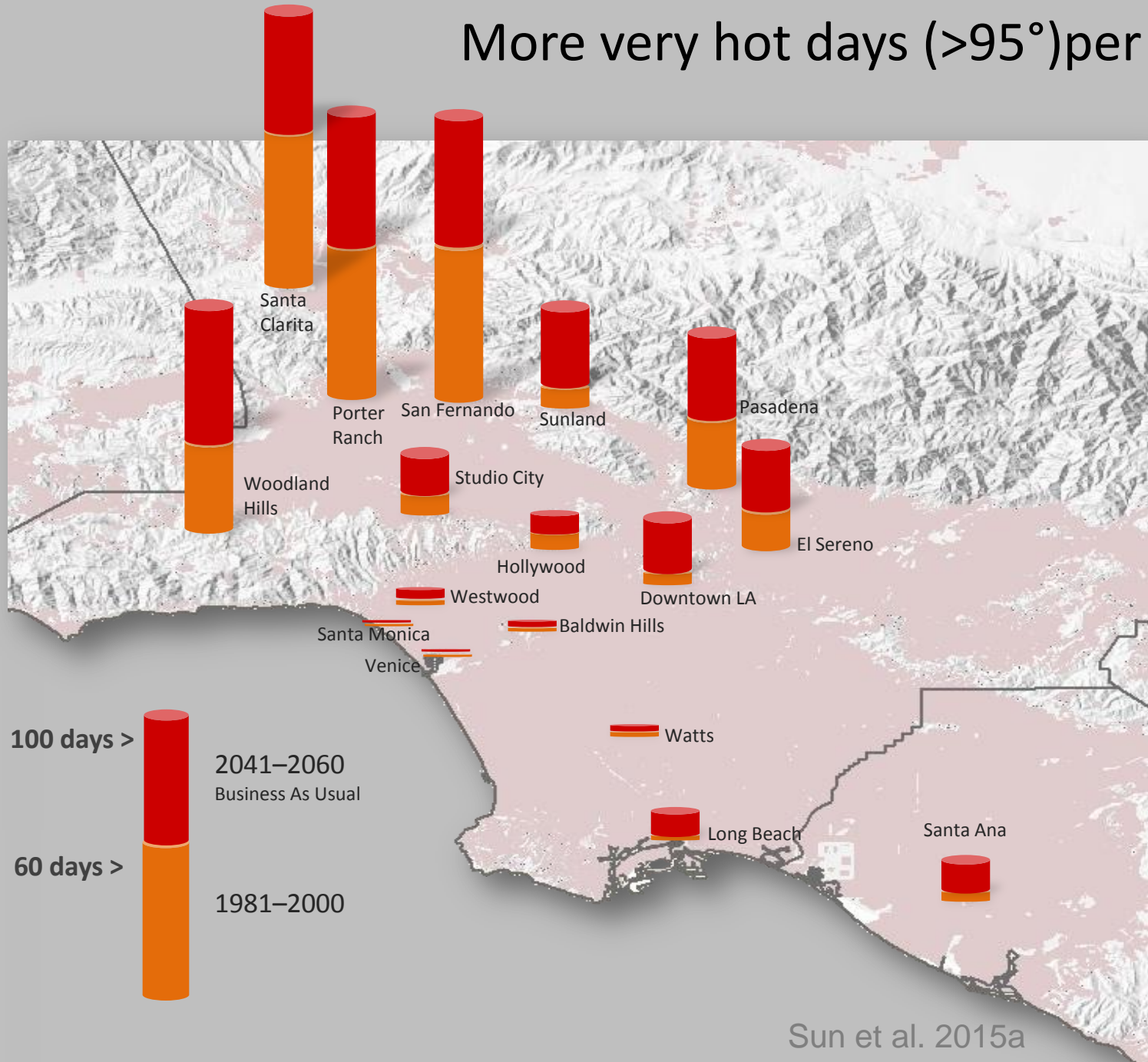
- This project was facilitated by LARC and funded by the City of LA with DOE ARRA funds. Supplemental funding came from NSF and NASA.
- We *downscaled* 30+ GCMs to project climate change impacts at 2-km resolution — a neighborhood-by-neighborhood scale.
- We looked at several aspects of climate, including temperature, precipitation, snowfall, and wildfire.
- We looked at two scenarios of greenhouse gas concentrations...
- ...and three time periods.
- The next slides focus on our temperature and wildfire findings.



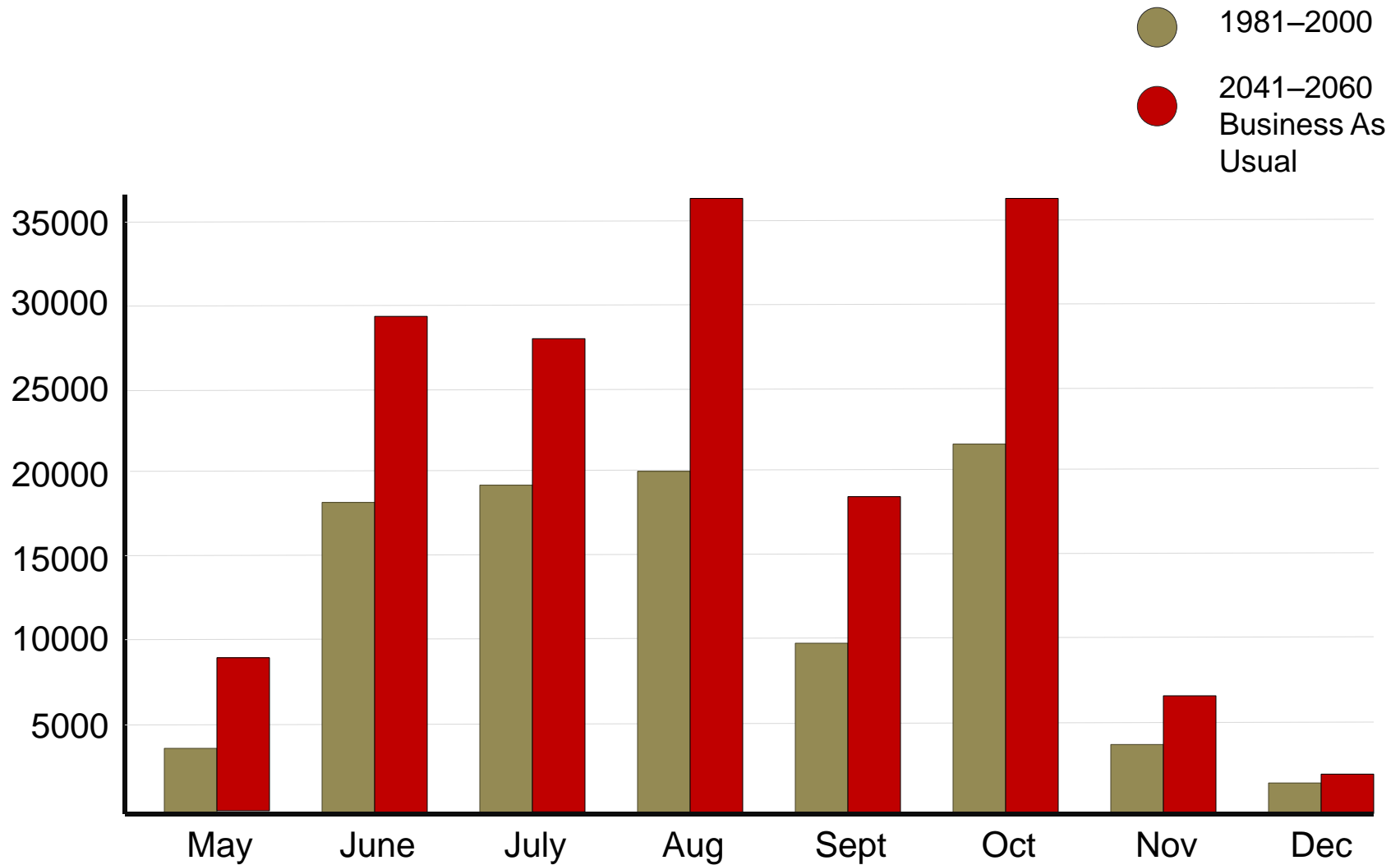
Higher average temperatures



More very hot days (>95°) per year



Acres burned by wildfires



Applications and policy outcomes

- Testimony to Little Hoover Commission included in report “Governing California through Climate Change” calling for **coordinated climate adaptation** and providing support for SB 246.
- Our findings on warming and extreme heat were an impetus for **cool roof ordinances** in LA and Pasadena to reduce urban temperatures.
- LA County MTA used our temperature data to perform a **transportation grid vulnerability analysis**.
- Study results used in workshop series by UCLA Fielding School of Public Health to engage LA County Dept. of Public Health employees in **climate action planning**.
- Data to be used in CEC-funded collaboration with between UCLA and University of Arizona to study **electric grid vulnerability** to future extreme heat.
- Wildfire data planned for use in **CA 4th Climate Assessment**.
- Findings presented at LA Mayor’s Office, CARB, State Water Control Board, South Coast AQMD.
- Communications effort with Climate Resolve led to wide reporting of study results in LA and regional media.

Challenges

- Supplying data for applied research is costly:
 - Data sets are large and complex; researchers must extract what's needed for purpose at hand
 - Education and consulting required to help non-scientists use data appropriately
- We haven't yet answered some key policy-relevant questions, such as how the character of individual precipitation events may change, or how air quality will be impacted by warming. (Low-income communities and communities of color are expected to be especially vulnerable to air quality changes.)
- Additional expertise needed to translate climate change information into impacts on human and natural systems, e.g., water resource infrastructure, economics, specific ecosystems.

The UCLA Center for Climate Change Solutions will address these issues by:

- Building an easy to use data access and education tool
- Further developing downscaling techniques
- Organizing interdisciplinary climate impacts research projects

References

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