



NOAA's National Climatic Data Center

Protecting the Past... Revealing the Future

Sustainable Cities Network: Climate and Extremes Weather Session

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Climate in the Southwest

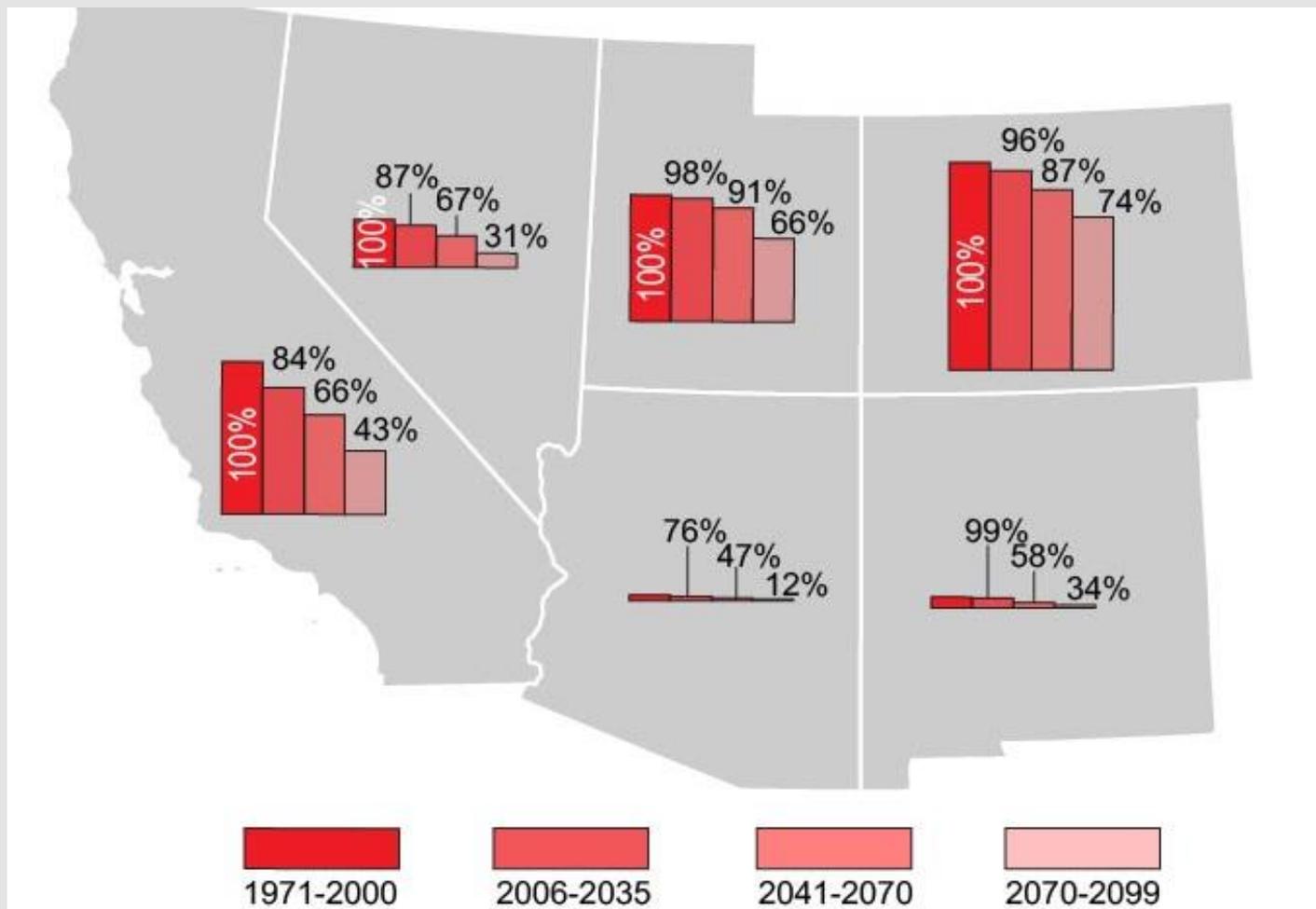
- The Southwest has been warmer in the period since 1950 than any comparably long period in at least 600 years
- 2001-2010 was the warmest decade in the 110-year instrumental record, with temperatures almost 2°F higher than historic averages, with fewer cold air outbreaks and more heat waves
- There is mounting evidence that the combination of temperature increases and recent drought has
 - influenced widespread tree mortality
 - increased fire occurrence and area burned
 - forest insect outbreaks
- Southwest annual average temperatures are projected to rise by 2.5°F to 5.5°F by 2041-2070 and by 5.5°F to 9.5°F by 2070-2099 with continued growth in global emissions, with the greatest increases in the summer and fall



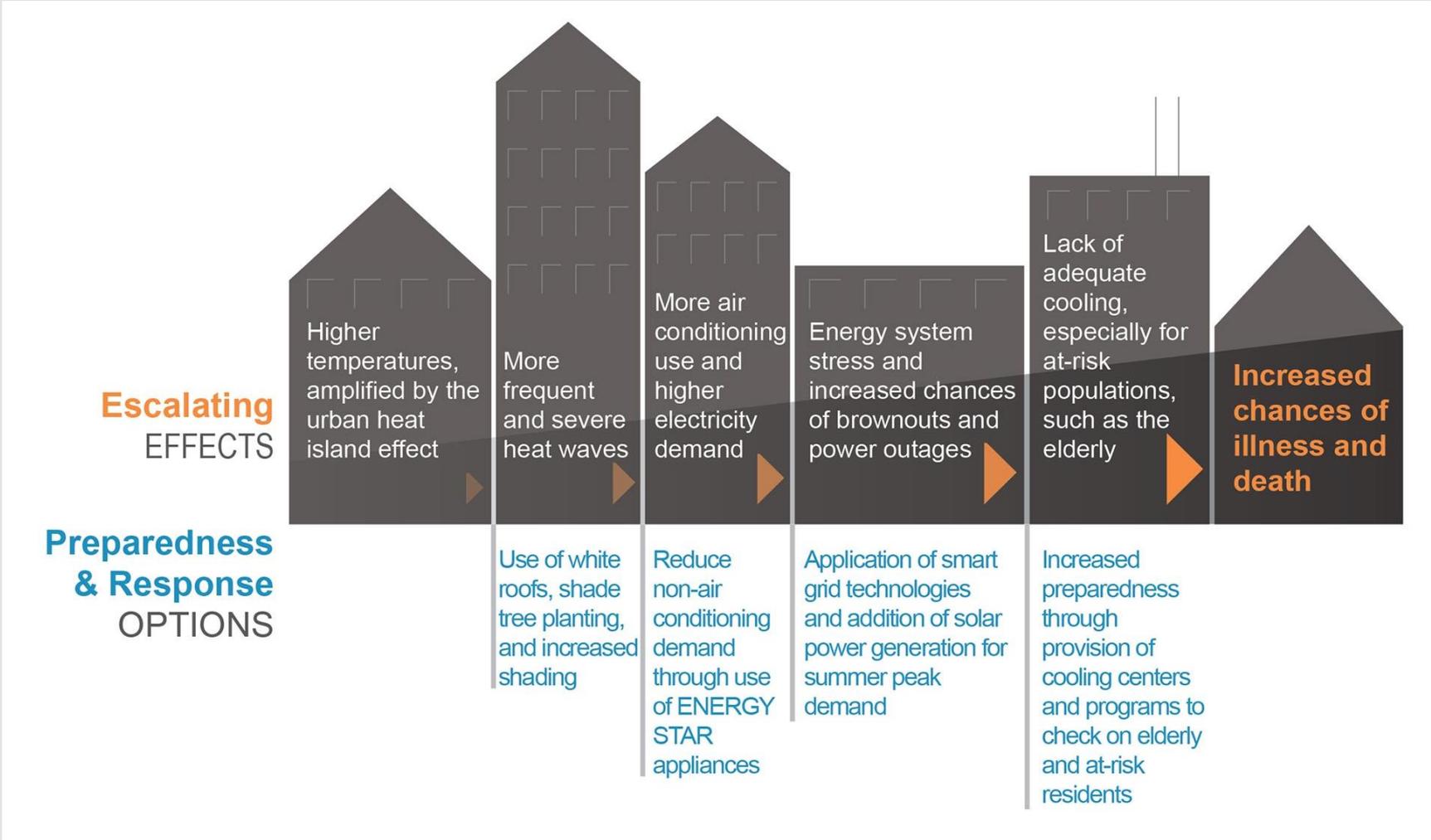
Municipal Responses

- Hotter urban environment:
 - Set goals for long-term energy efficiency, conservation, and climate resilience
 - Promote green building and landscape practices
 - Promote public health responses to heat waves
- Sustained drought:
 - Leverage state drought plan
 - Institute land cover and construction restrictions for fire risk reduction at the urban-rural interface
 - Institute land cover restrictions for water conservation everywhere
- Less frequent, but more intense snowmelt and heavy precipitation:
 - Ensure that infrastructure succession minimizes site hazards
 - Implement compact development practices for combined energy and water conservation

Projected Snow Water Equivalent in the Southwest



Urban Heat and Public Health





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Backup



About Tim Owen

Mr. Owen is Chief of Staff at the NOAA's National Climatic Data Center. Since 1990, he has been a part of NCDC projects - from urban heat-island research to the start of *drought.gov* for the National Integrated Drought Information System. He has published over a dozen peer-reviewed articles in the field of applied climatology, and has provided input to IPCC and U.S. Climate Change Impacts reports.

A graduate of UNC Asheville in Atmospheric Sciences (B.S., 1992), he also holds degrees from Penn State (M.S., Meteorology, 1995) and UNC Chapel Hill (M.R.P., City and Regional Planning, 2000), where he respectively researched remotely-sensed urban change and watershed-based environmental planning and hazards mitigation.

Mr. Owen is outgoing Chair of the AMS Committee on Applied Climatology and is on the Advisory Board for the USA-National Phenology Network.