

OKC Heat Analysis

2023 OKC Urban Heat Island Mapping Campaign

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SCIPP
A NOAA CAP TEAM



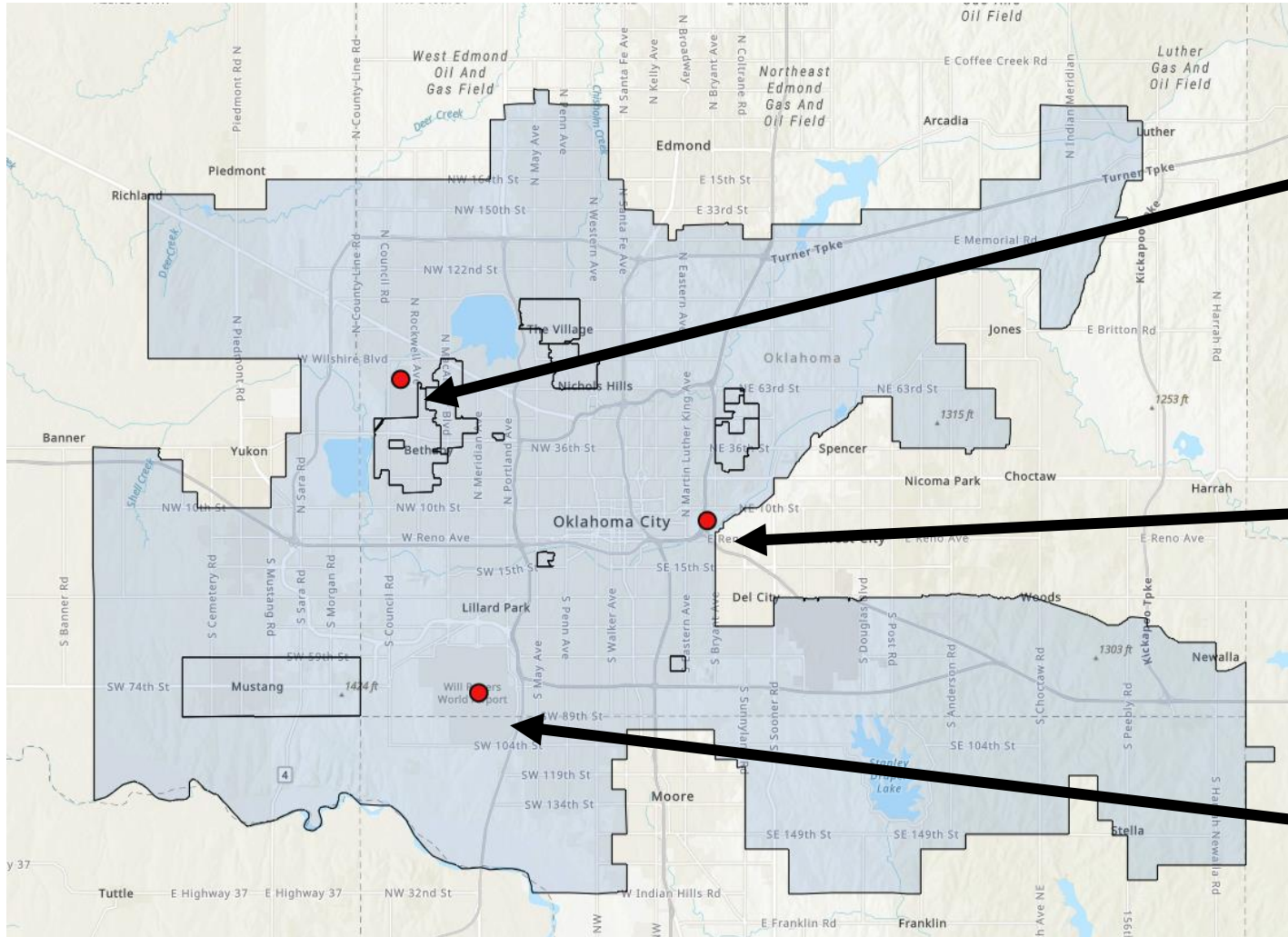
SOUTH CENTRAL
CLIMATE ADAPTATION SCIENCE CENTER

Historical Heat Climatology of Oklahoma City

Rachel Riley & Darrian Bertrand

Southern Climate Impacts Planning Program, OU

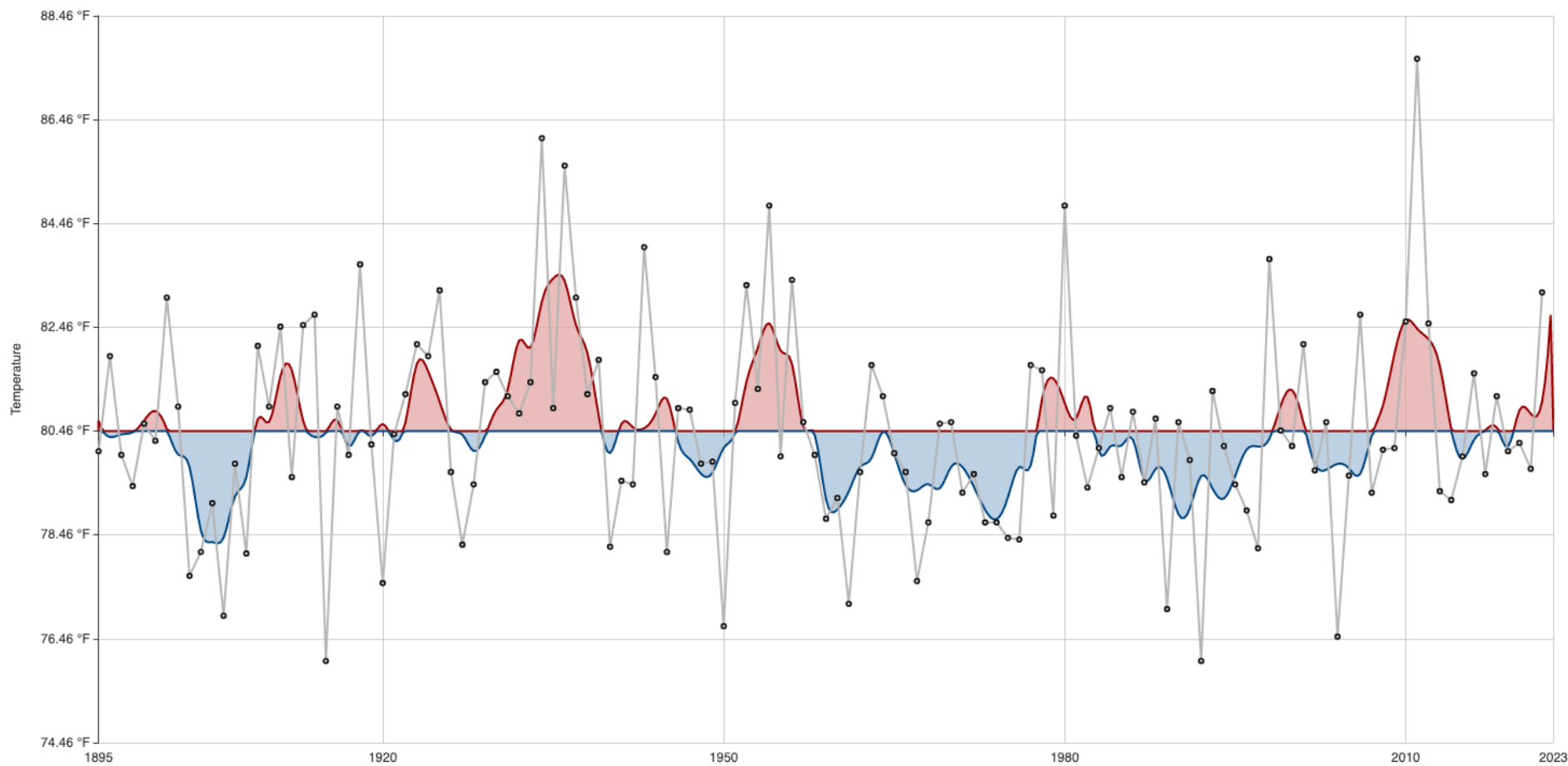
OKC Station Selection



- Wiley Post Airport:
1996-2022
- OKC East Mesonet:
2008-2022
- Will Rogers World Airport:
1948-2022

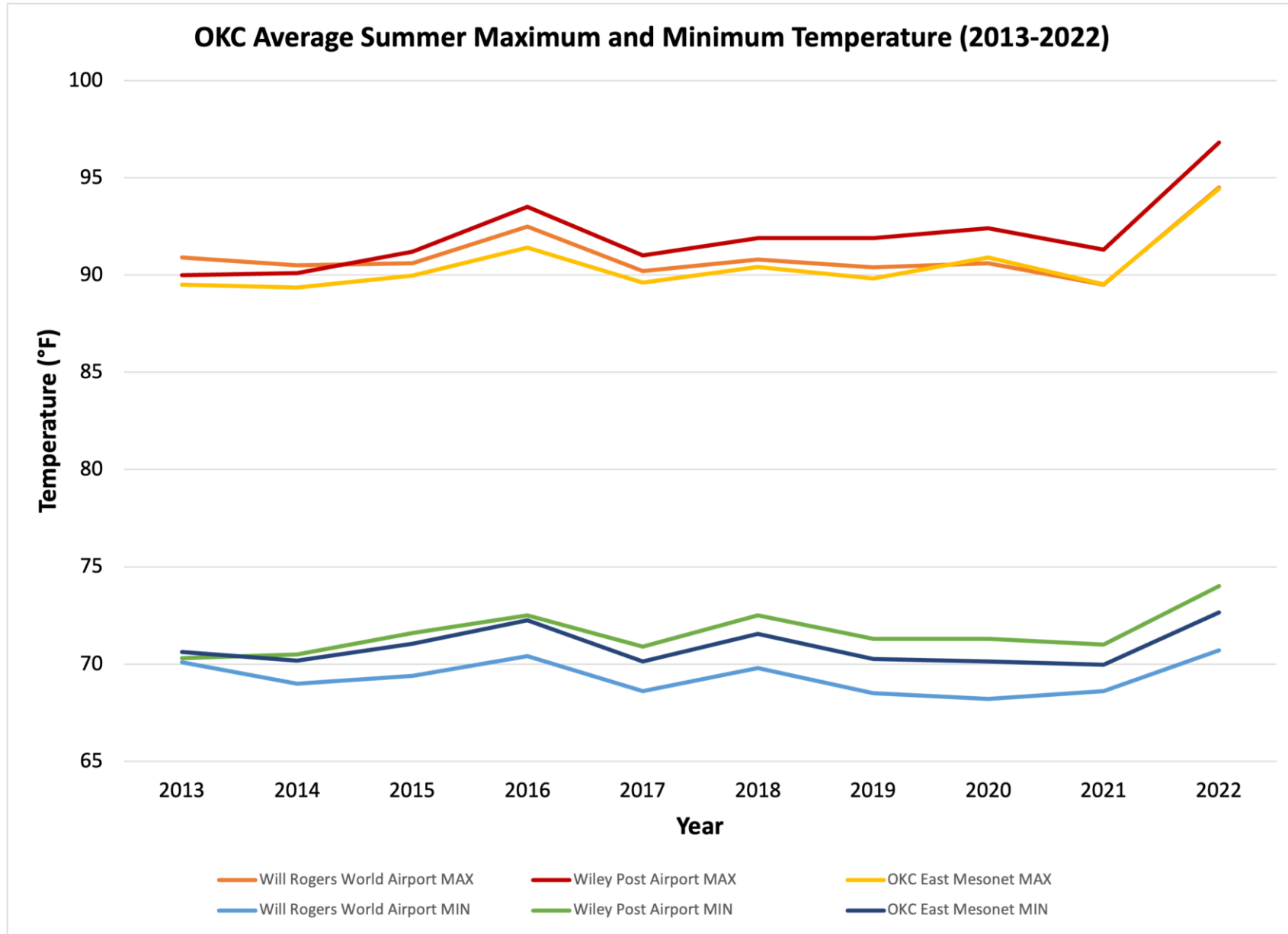
Average Summer Temperatures for Central Oklahoma

Climate Trends - State: OK, Season: Seasonal Summer



SCIPP (www.southernclimate.org)

Average Summer Temps at Weather Stations



Data source: SC ACIS, OK Mesonet

Heat Stats

Average First and Last Day to Reach 90°F, 95°F, and 100°F

Variable	Will Rogers	Wiley Post
Avg First Day \geq 90°F	May 7	May 9
Avg First Day \geq 95°F	June 14	June 7
Avg First Day \geq 100°F	July 10	July 9
Avg Last Day \geq 90°F	September 28	September 30
Avg Last Day \geq 95°F	September 8	September 8
Avg Last Day \geq 100°F	August 21	August 20

Heat Records

2011, 2012, 2022 record-breaking years

Top 3 High Temperature Records

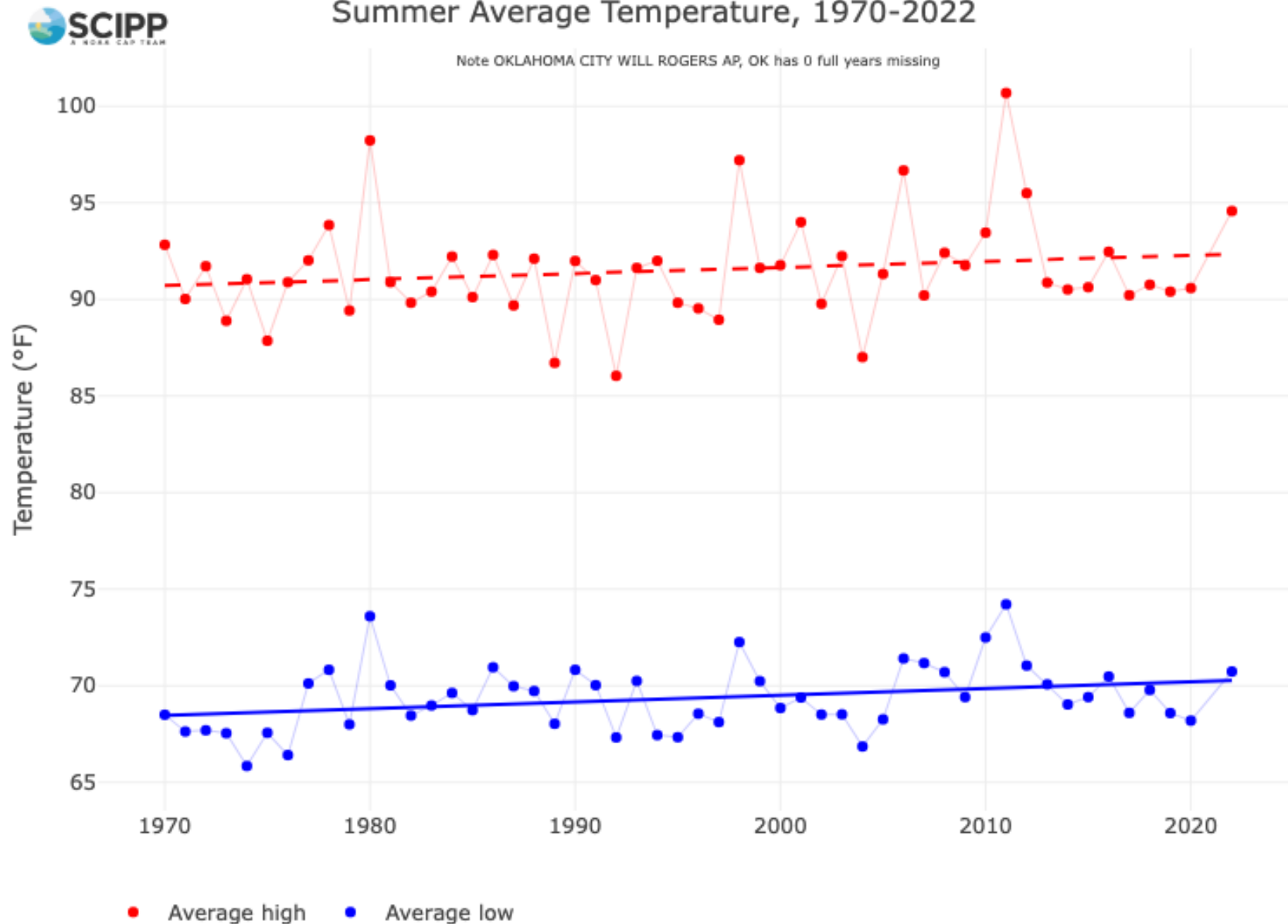
	Will Rogers		Wiley Post		OKC East	
Record	Date	Temperature	Date	Temperature	Date	Temperature
1	8/03/12	113°F	7/19/22*	112°F	8/03/12*	112°F
2	8/02/12*	112°F	8/02/12*	111°F	8/02/12	111°F
3	7/19/22*	110°F	8/05/11	110°F	7/19/22*	110°F

Top 3 Warmest Low Temperature Records

	Will Rogers		Wiley Post		OKC East	
Record	Date	Temperature	Date	Temperature	Date	Temperature
1	8/03/12	84°F	8/03/12*	85°F	8/02/12	87°F
2	7/20/22*	82°F	8/04/22*	84°F	8/05/11	86°F
3	8/06/11*	81°F	7/21/22*	83°F	8/02/11	85°F

*Shows most recent observation with the record tied across multiple dates

OKC Summer Temperature Trends

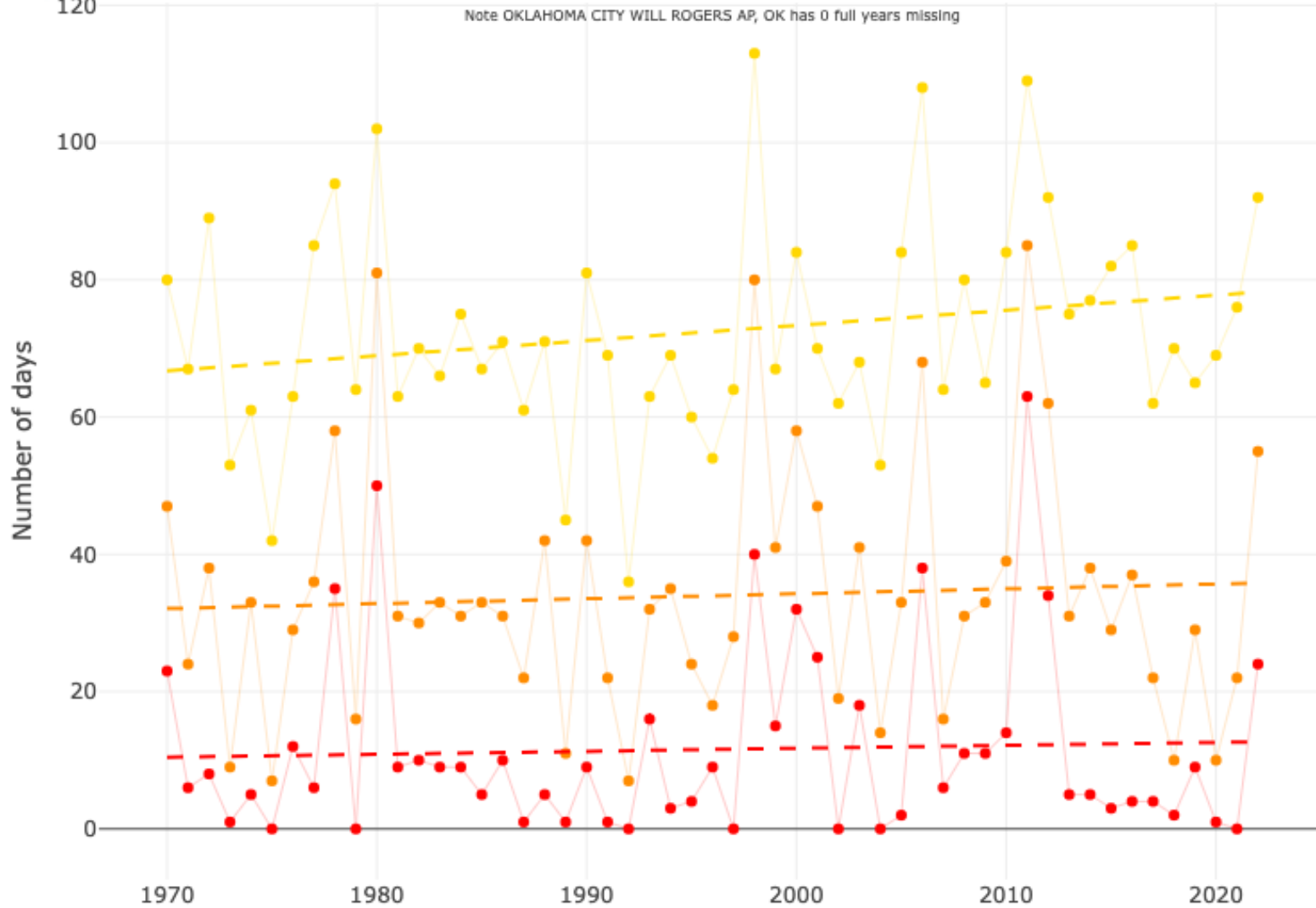


Source: www.southernclimate.org

OKC Extreme Heat Trends



Extreme Heat Days Per Year, 1970-2022

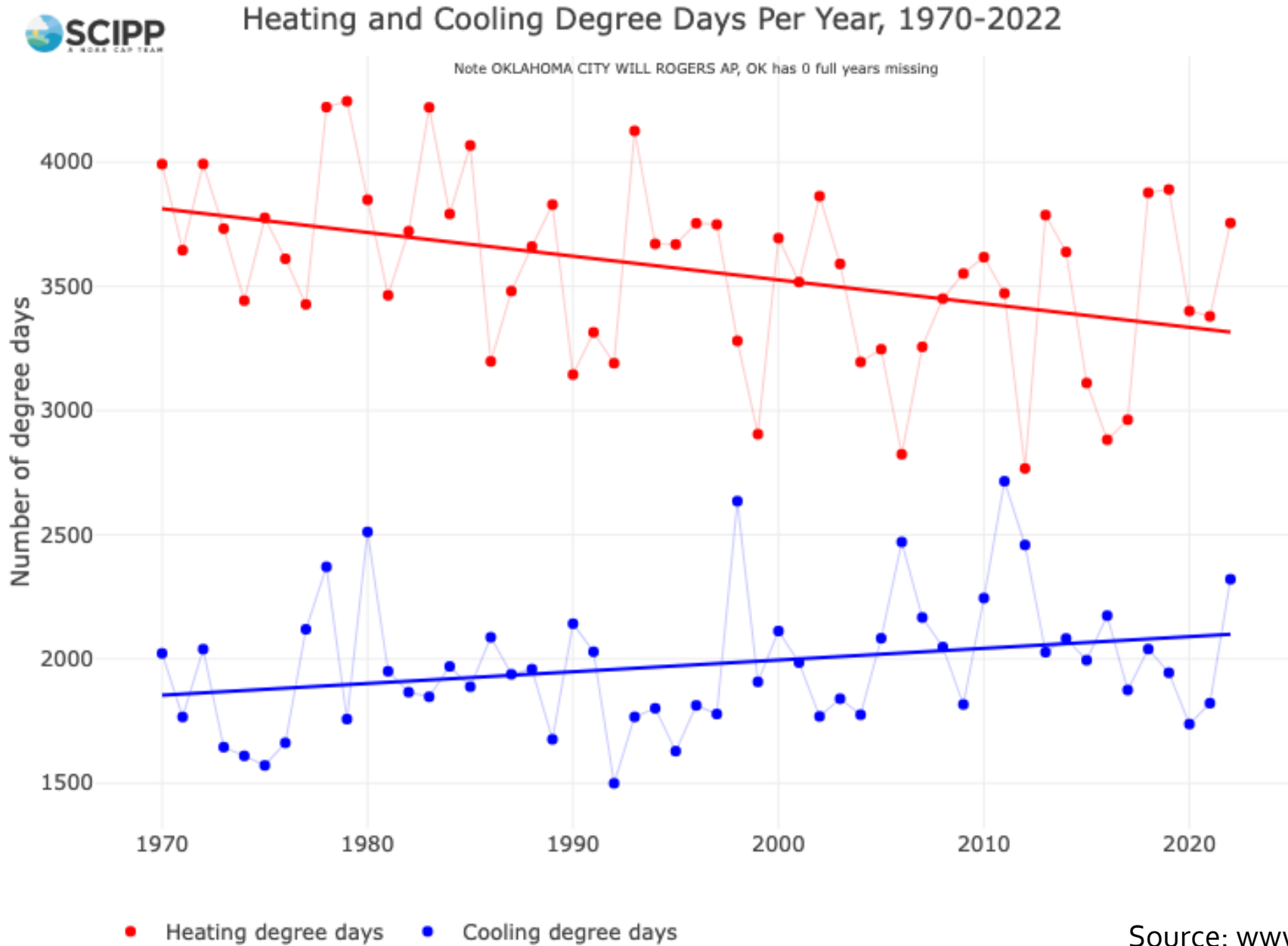


● High of 90°F or above ● High of 95°F or above ● High of 100°F or above

Source: www.southernclimate.org



OKC Heating and Cooling Degree Days



Source: www.southernclimate.org

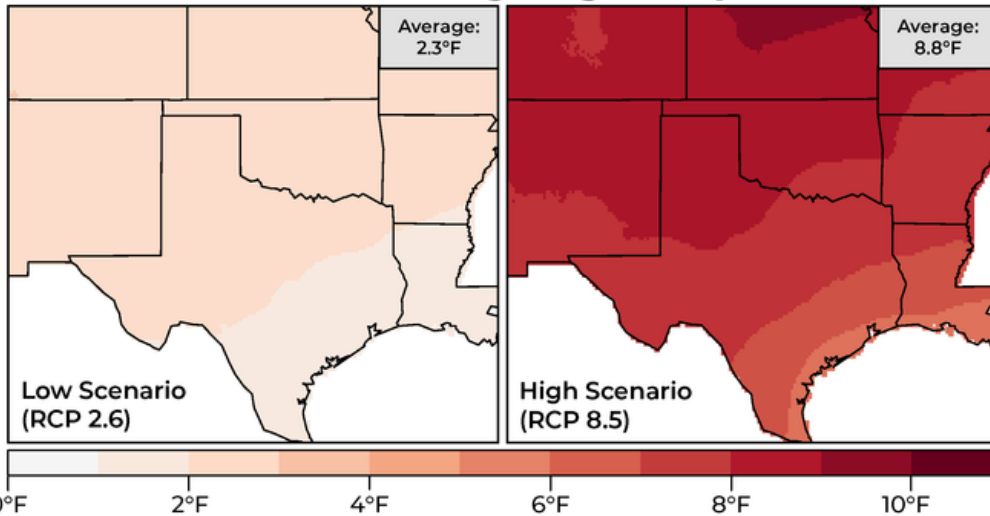
Climate Projections

Dr. Dolly Na-Yemeh – South Central Climate Adaptation
Science Center, OU

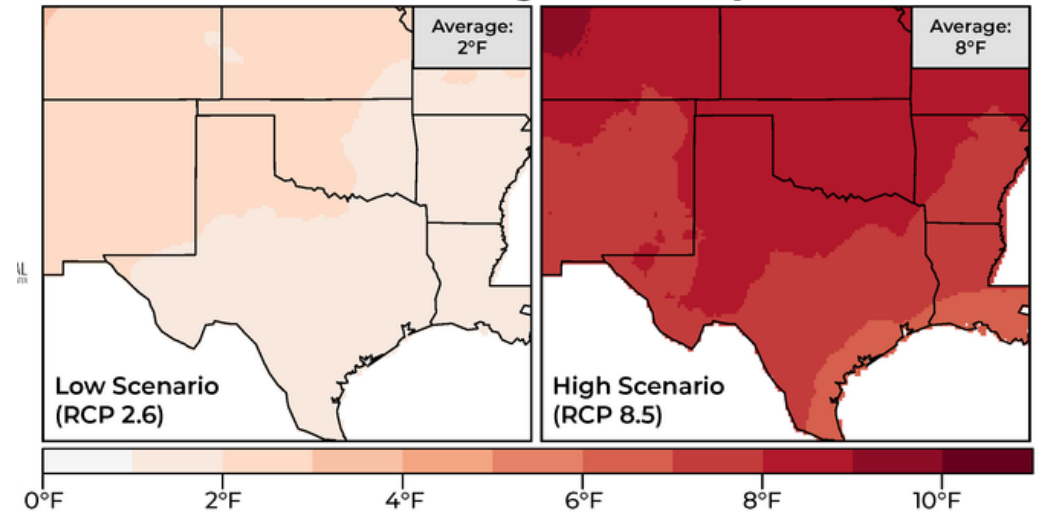
Future Changes – Temperature

Climate change is expected to lead to an increase in average temperatures as well as frequency, duration, and intensity of extreme heat events and a reduction in extreme cold events. (NCA4, Southern Great Plains Chapter)

End-of-Century Projected Change of the Annual Average **High Temperature**

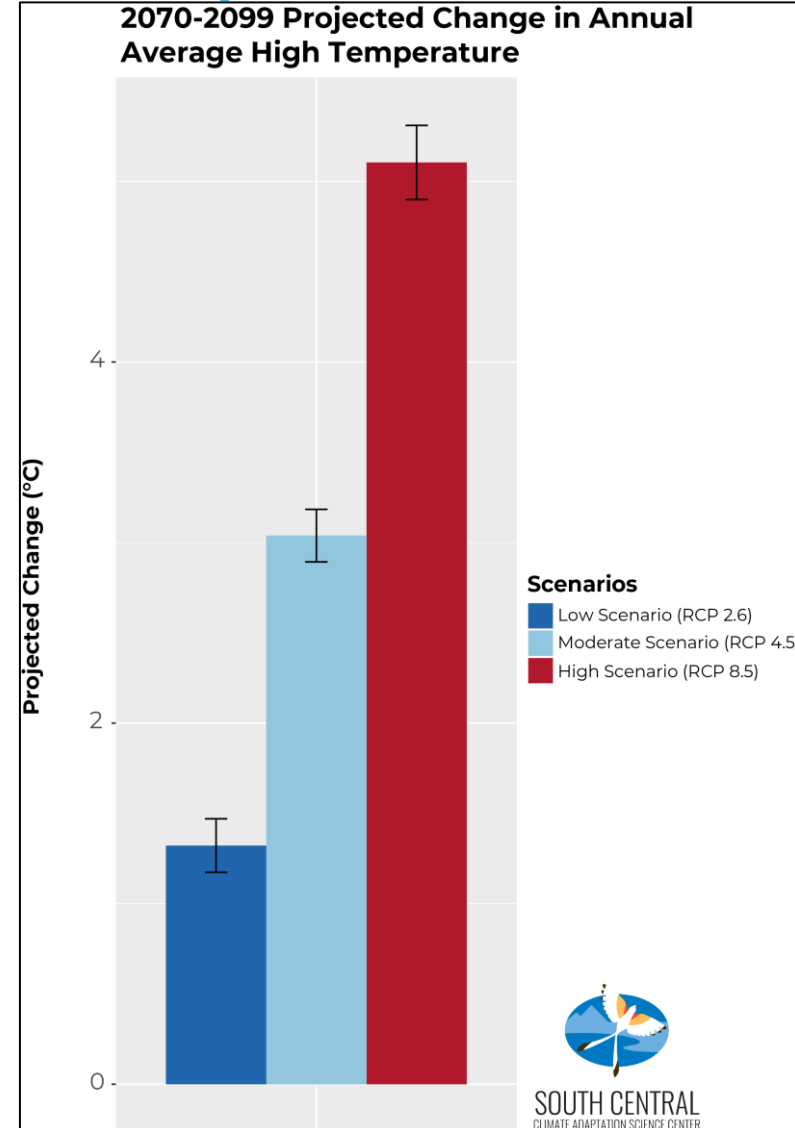
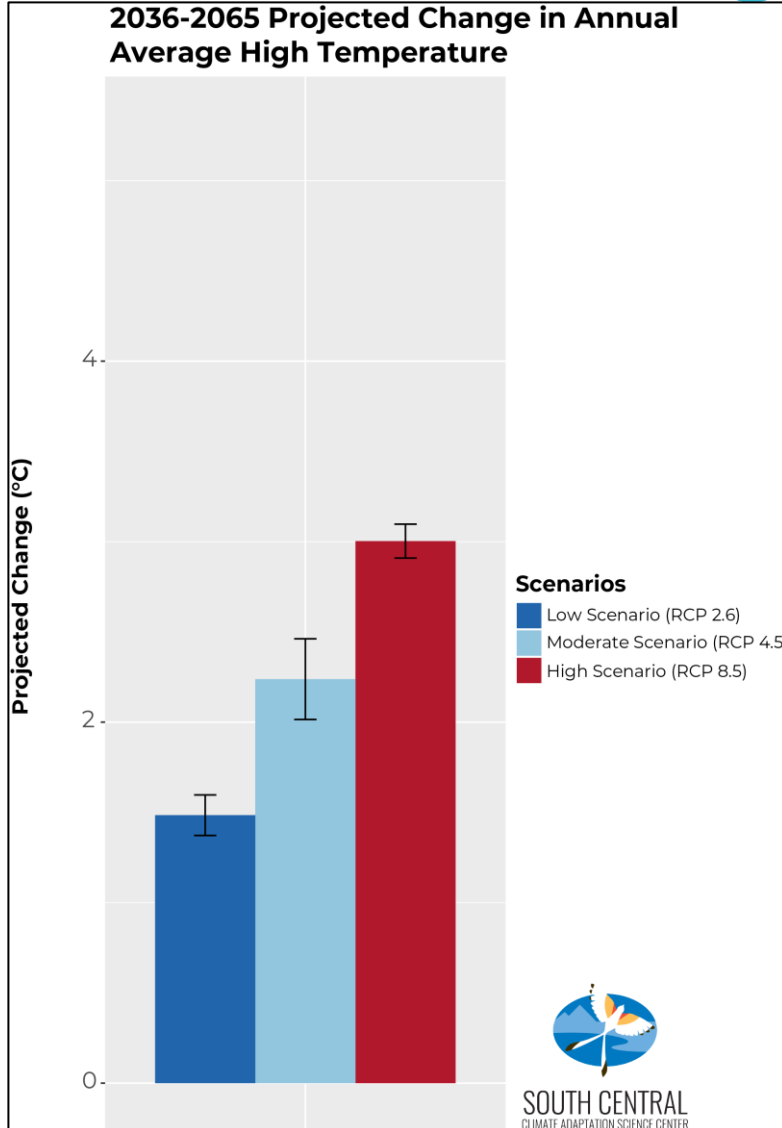


End-of-Century Projected Change of the Annual Average **Low Temperature**



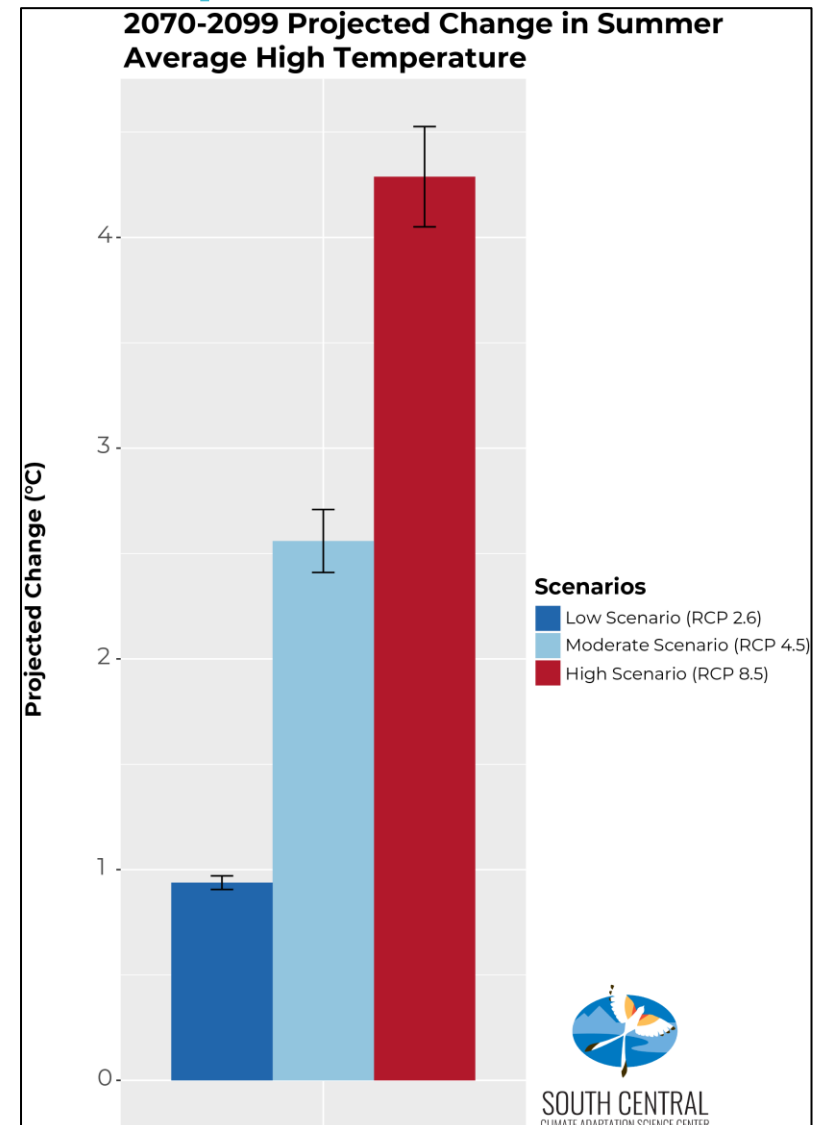
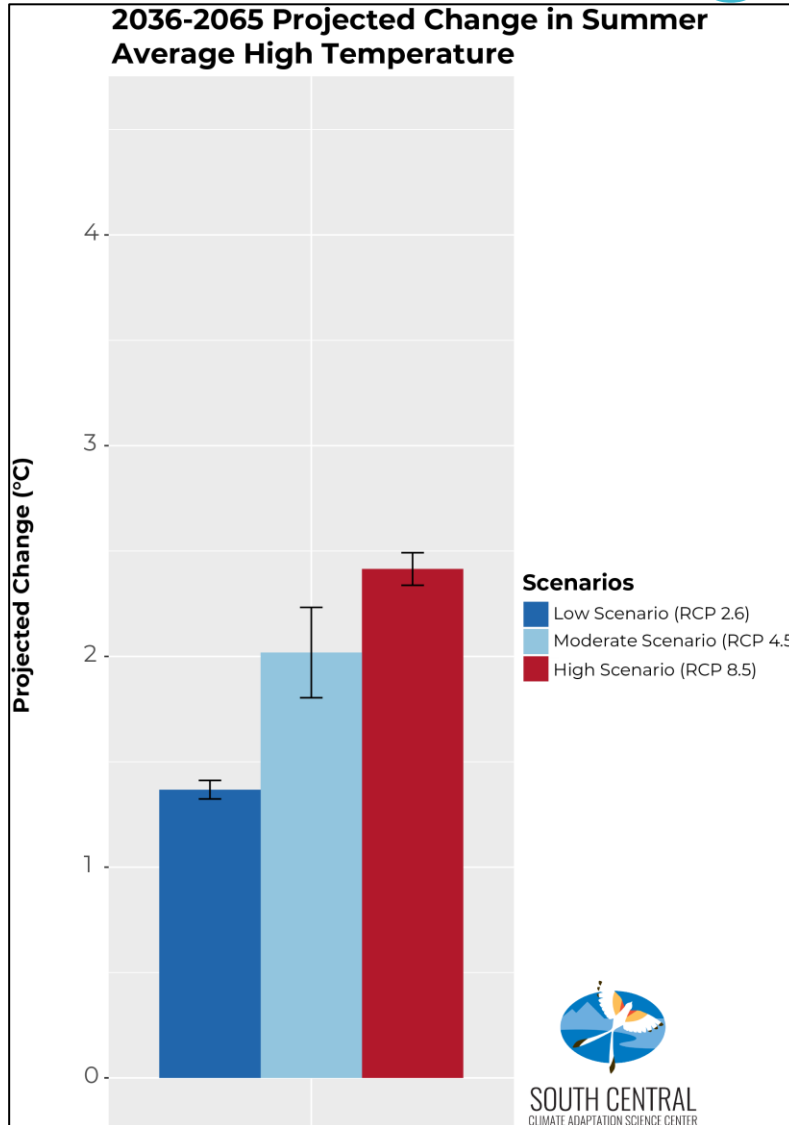
Data source: South Central Climate Projections Evaluation Project (C-PrEP)

Future Changes – Temperature



Data source: South Central Climate Projections Evaluation Project (C-PrEP)

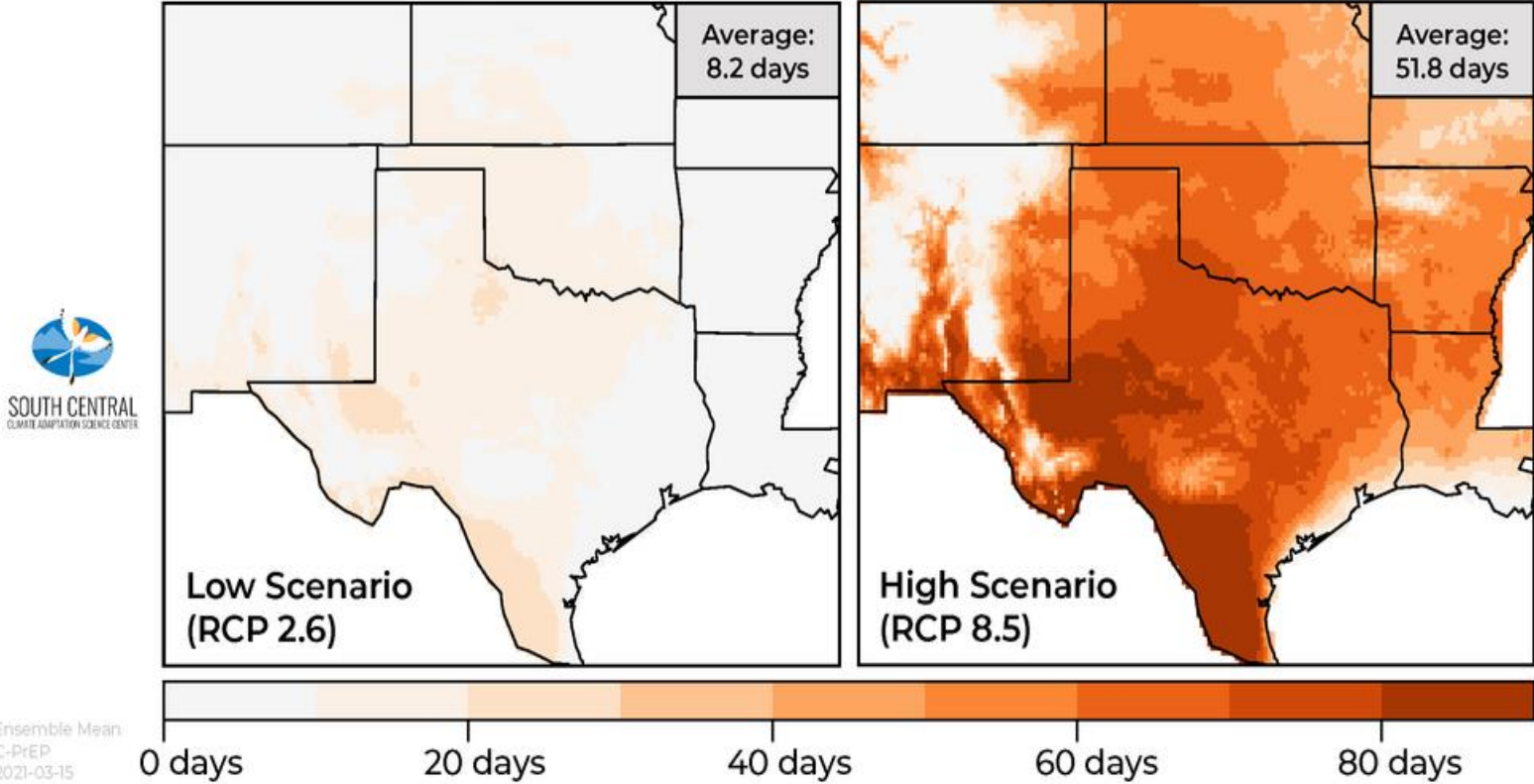
Future Changes – Temperature



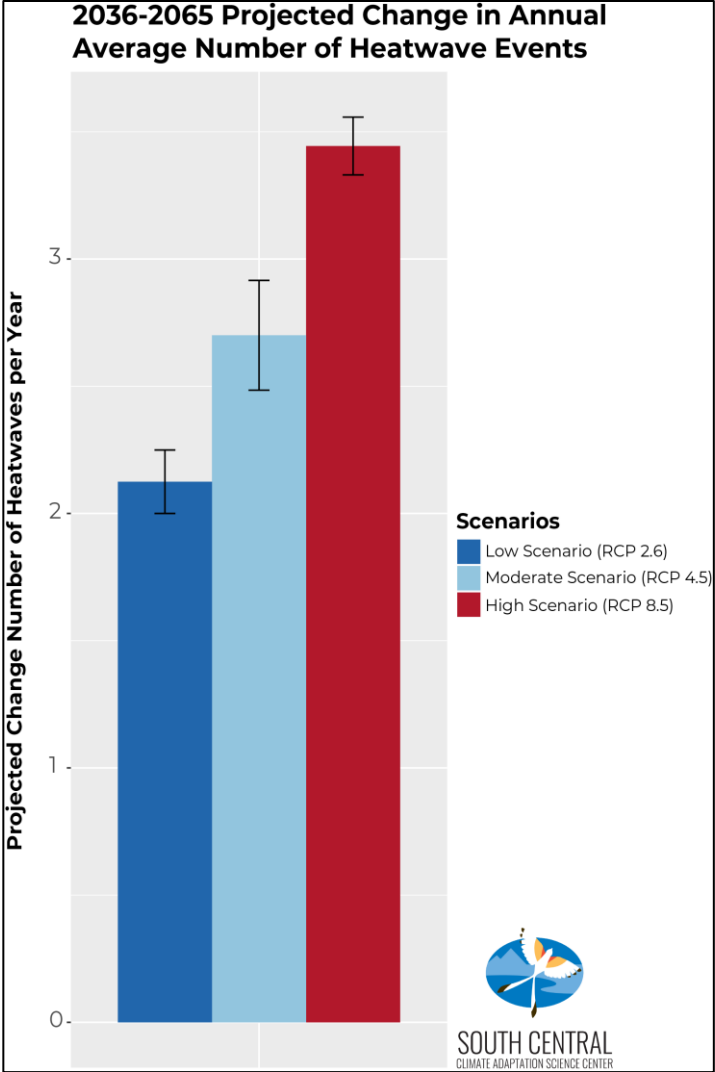
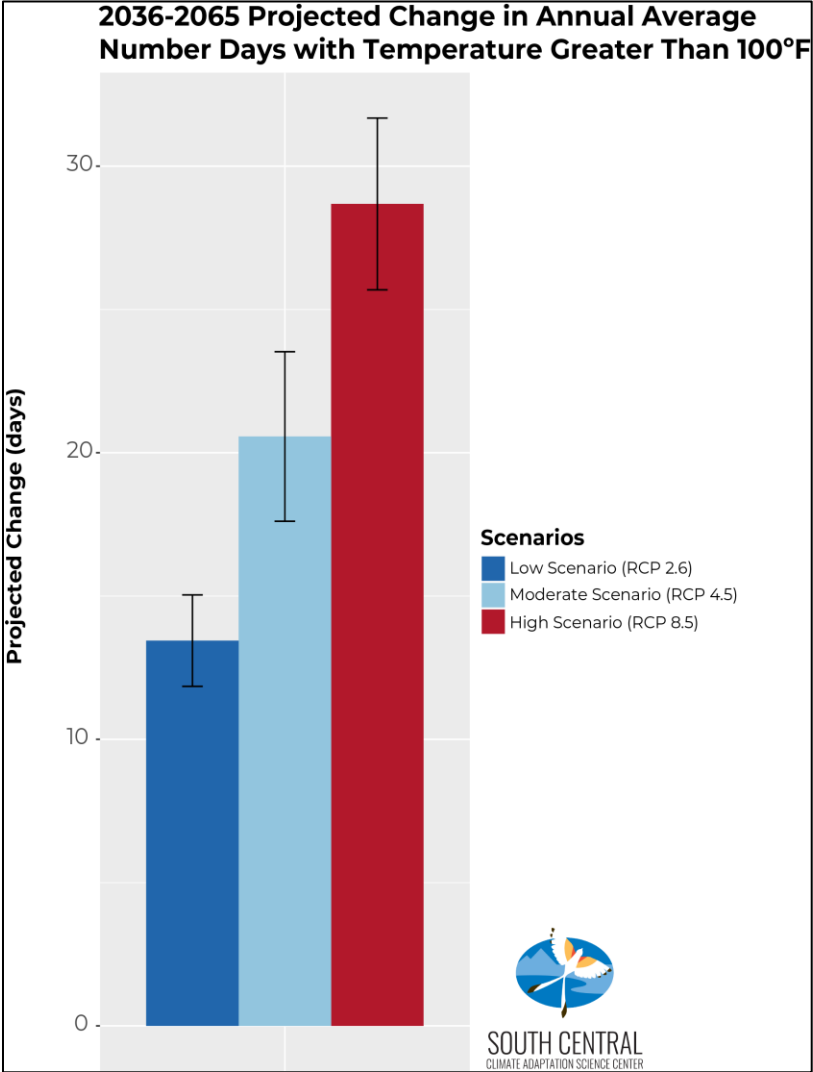
Data source: South Central Climate Projections Evaluation Project (C-PrEP)

Future Changes

End-of-Century Projected Change of the Annual Average Number of Days the High Temperature is Greater than 100°F

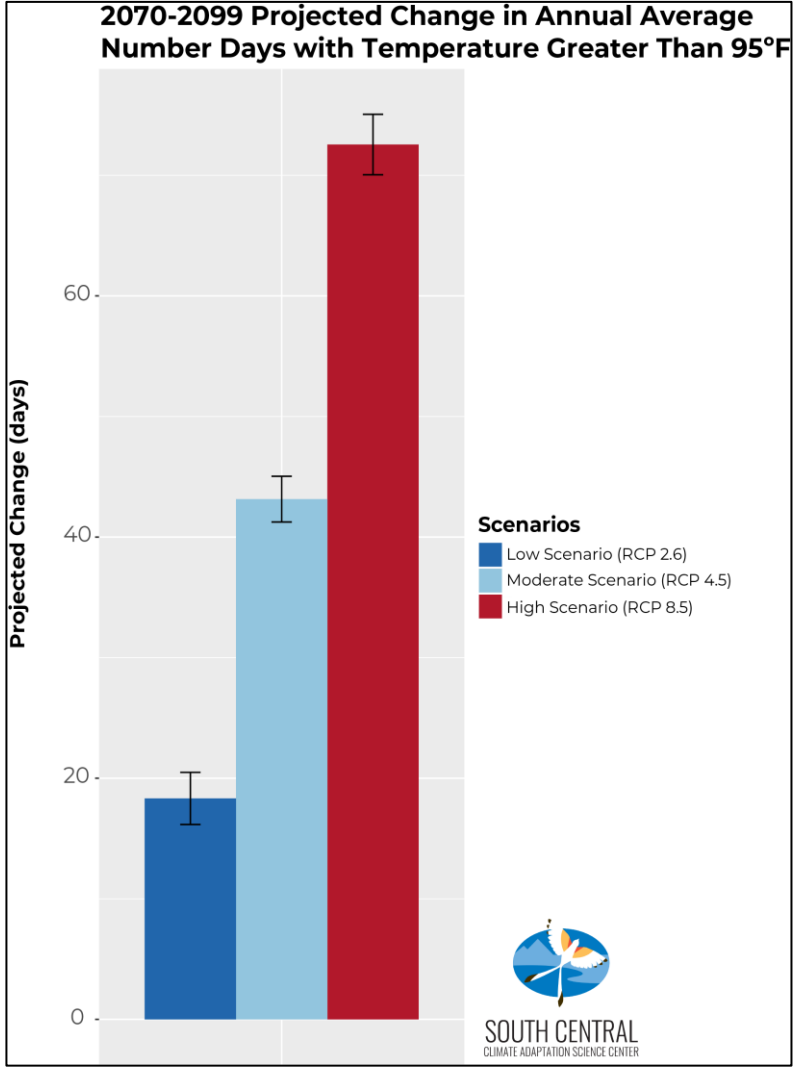
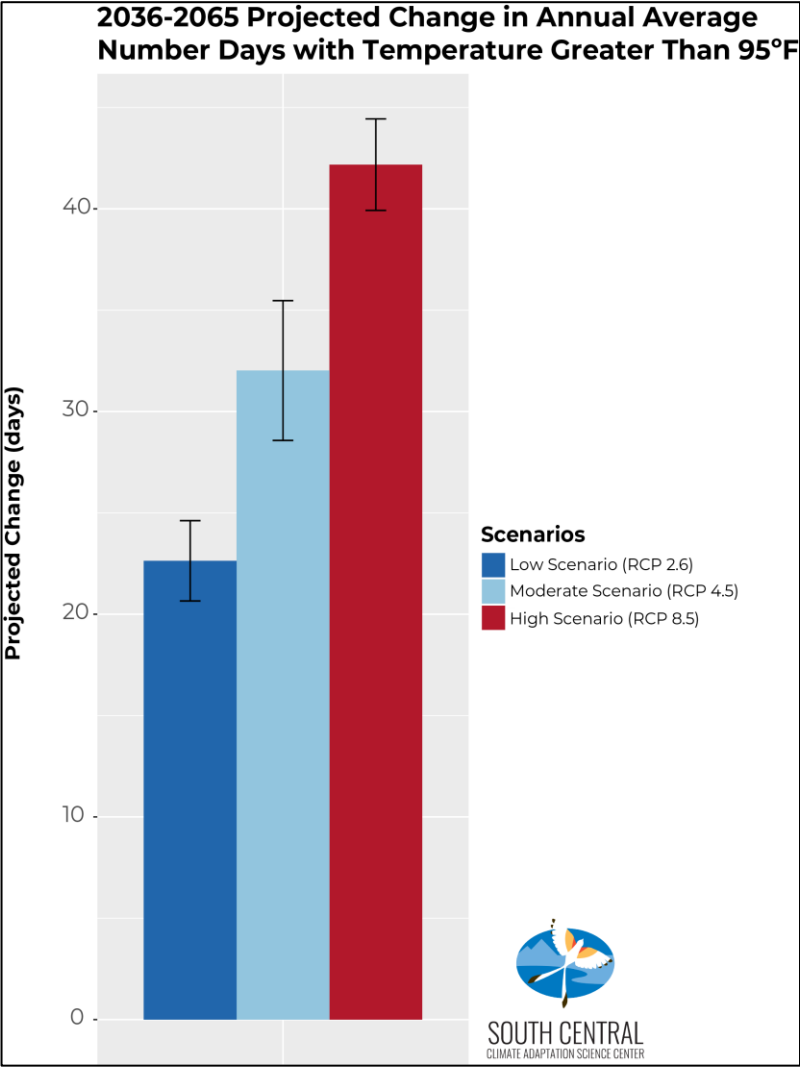


Future Changes



Data source: South Central Climate Projections Evaluation Project (C-PrEP)

Future Changes



Data source: South Central Climate Projections Evaluation Project (C-PrEP)