



NOAA Critical Thresholds for Extreme Weather Events

CASE STUDY

# Miami, OK

Photo: Gary Crow

Miami is located in northeastern Oklahoma in Ottawa County. The region is primarily agricultural and has large tribal populations in and around the city. Miami is prone to flooding from heavy rainfall events and frequently affected by drought, winter storms, and severe thunderstorms. The City has been devoting attention to extreme weather events since major flooding occurred in 2007, though little to no discussion of climate change had occurred among city officials prior to the start of this project.



**Population:** 13,570

**Primary Climate and Weather Related Concerns:**  
Riverine Flooding, Tornadoes, Ice Storms

**ACTION TO BUILD RESILIENCE**

The City decided that the best way to increase extreme weather preparedness and build resilience for the community was through the development and teaching of an extreme weather preparedness lesson to all 8th graders. The lesson included an investigation of weather related thresholds for flooding, heat, and wind; discussion of key weather related risks for the region; assembly and instructions on using an emergency preparedness "Go-Bag"; and the distribution of programmable weather radios.



Photo: Danny Mattox

Project participants were primarily interested in flooding due to recent experiences with extreme flooding in the community. Additional concerns included ice storms, tornadoes, and extreme heat events. While the precipitation related thresholds drew the most attention, the potential tripling of hot days over 95 degrees (from 25 days/year historically to more than 75 days a year by the end of the century) is an emerging issue for the city. Figures below show projections for the future with a lower climate change scenario (RCP 4.5 - Lower Scenario) and higher climate change scenario (RCP8.5 Higher Scenario).

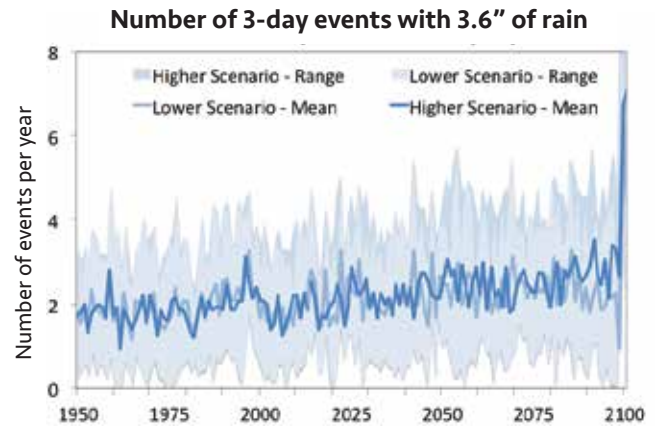
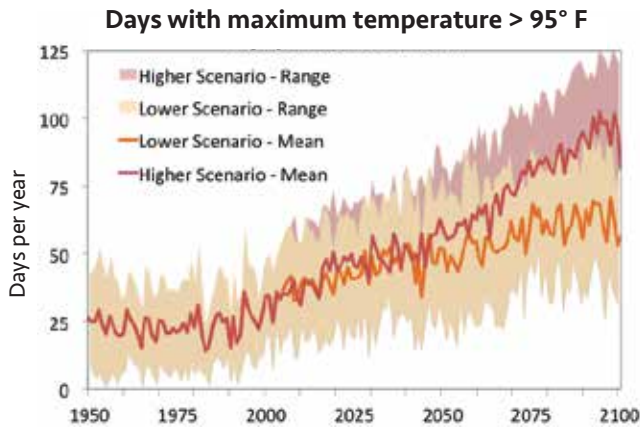


Photo: Sascha Petersen

**Having a local contact who was engaged throughout the process was critical to project success and stakeholder engagement.**

**Addressing current concerns can build climate resilience without specifically addressing climate change.** The thresholds concept was somewhat beneficial for the city, but, with the concerns raised by stakeholders in Miami, the climate science capabilities did not yet match the needs of the stakeholders. Even by the end of the project, the participants continued to focus specifically on extreme weather events and public and community education.

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