

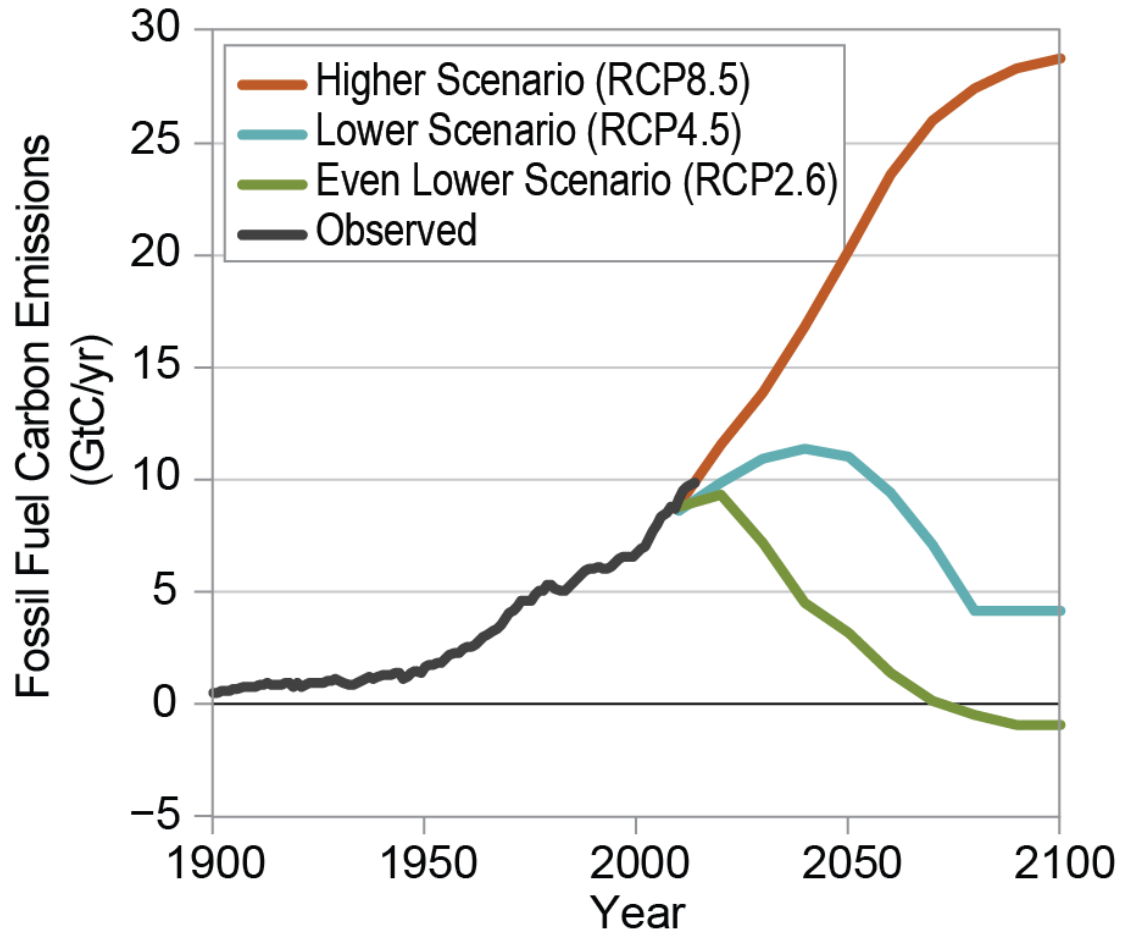


ASSESSING CLIMATE CHANGE IN ILLINOIS

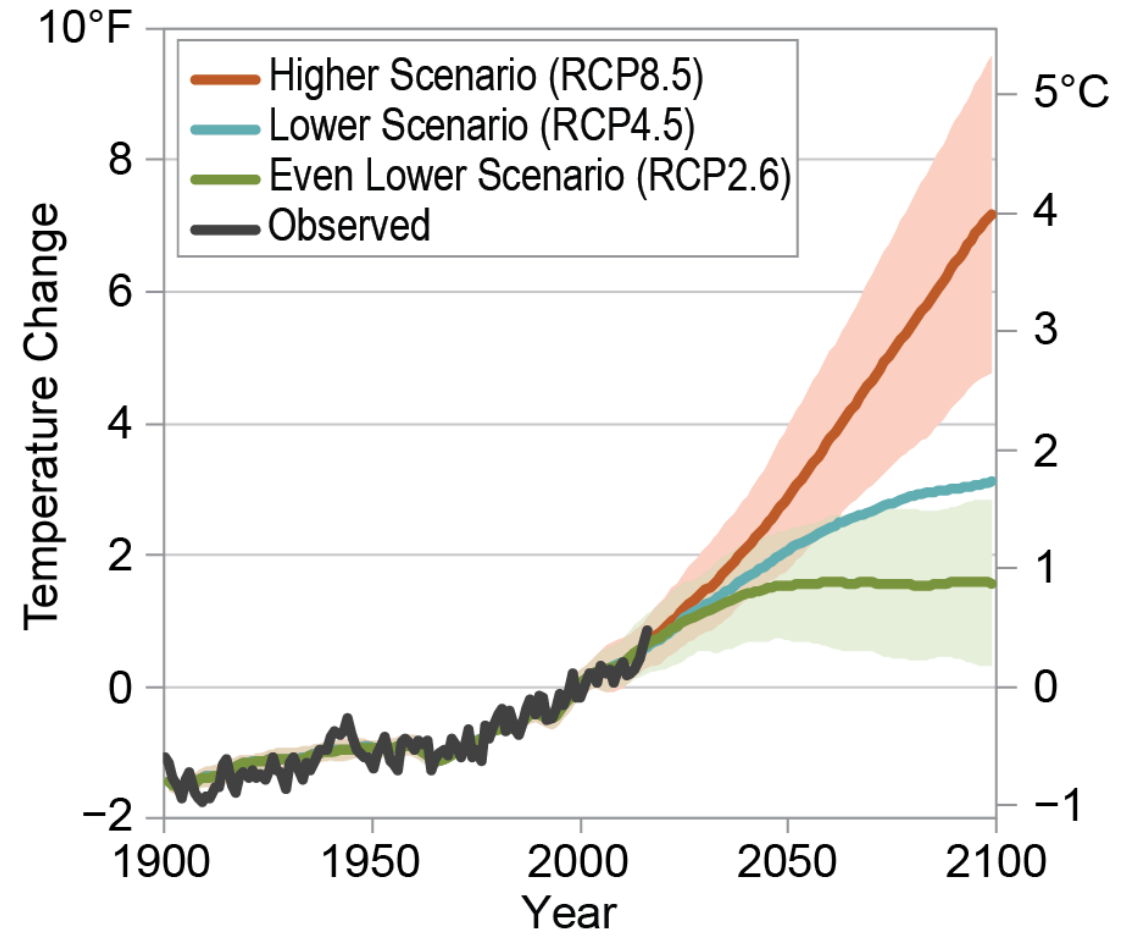
What is in the report?

- The report contains projections for how temperature, precipitation and extreme weather events are likely to change in the future.
- Climate changes are modeled for two scenarios - a higher and a lower GHG scenario – and two timeframes – mid- and late century
- The report dives deeper on four topic areas:
 - Water resources
 - Agriculture
 - Public Health
 - Ecosystems

Global Carbon Emissions



Global Average Temperature Change



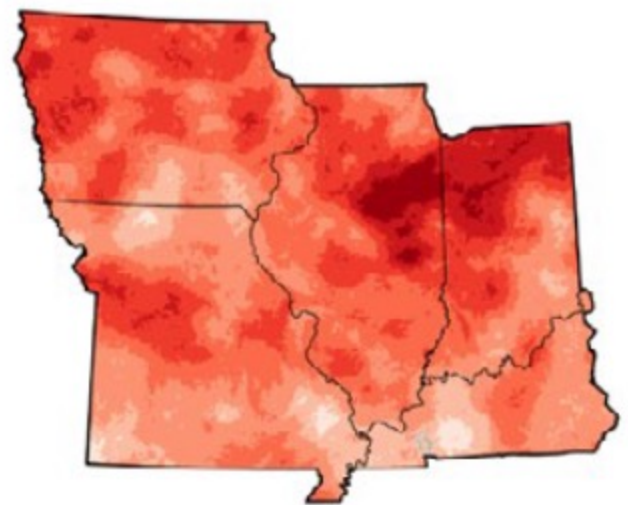
Source: Fourth National Climate Assessment (Hayhoe et al. 2018).



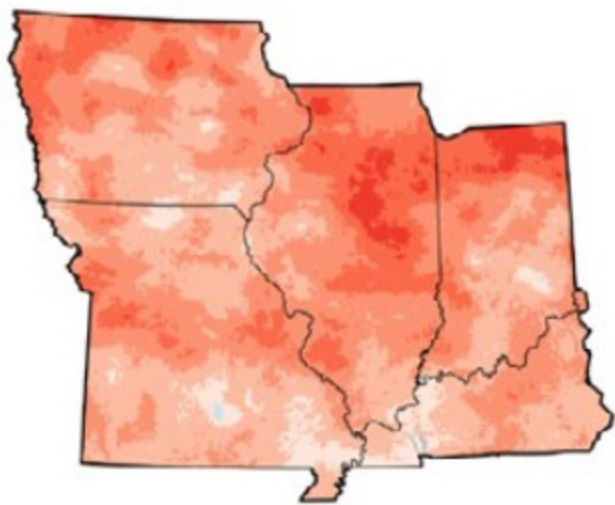
OVERVIEW OF PROJECTED CLIMATE CHANGE IMPACTS

Illinois is already warmer and wetter than it used to be.

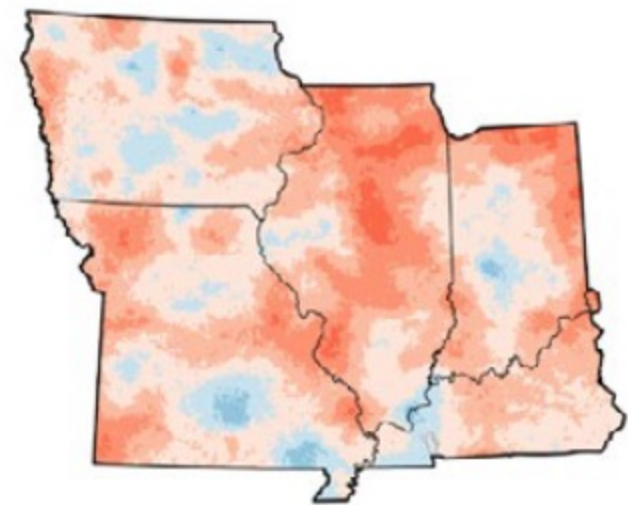
Overnight Minimum
Temperature



Average Daily
Temperature

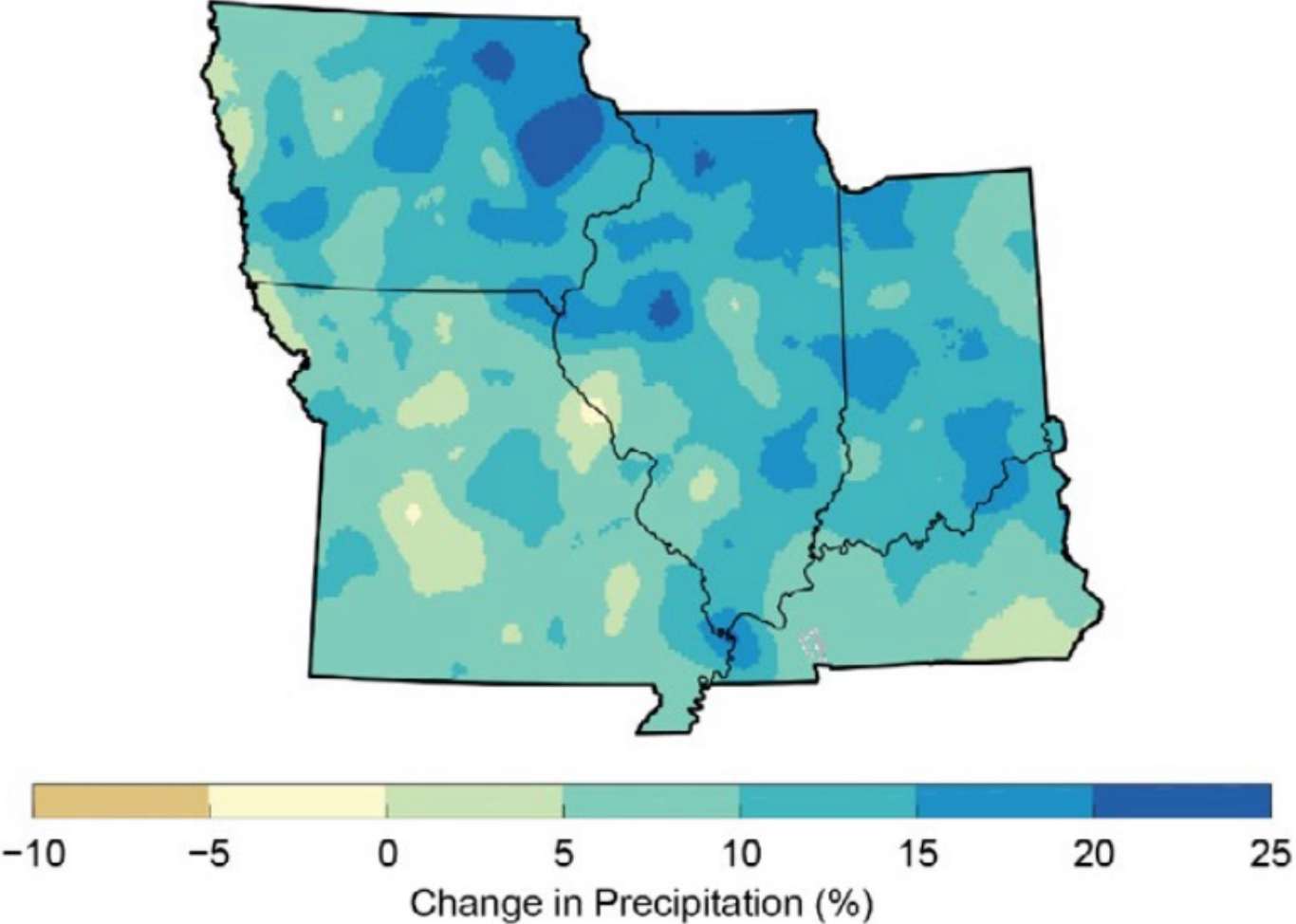


Daytime Maximum
Temperature



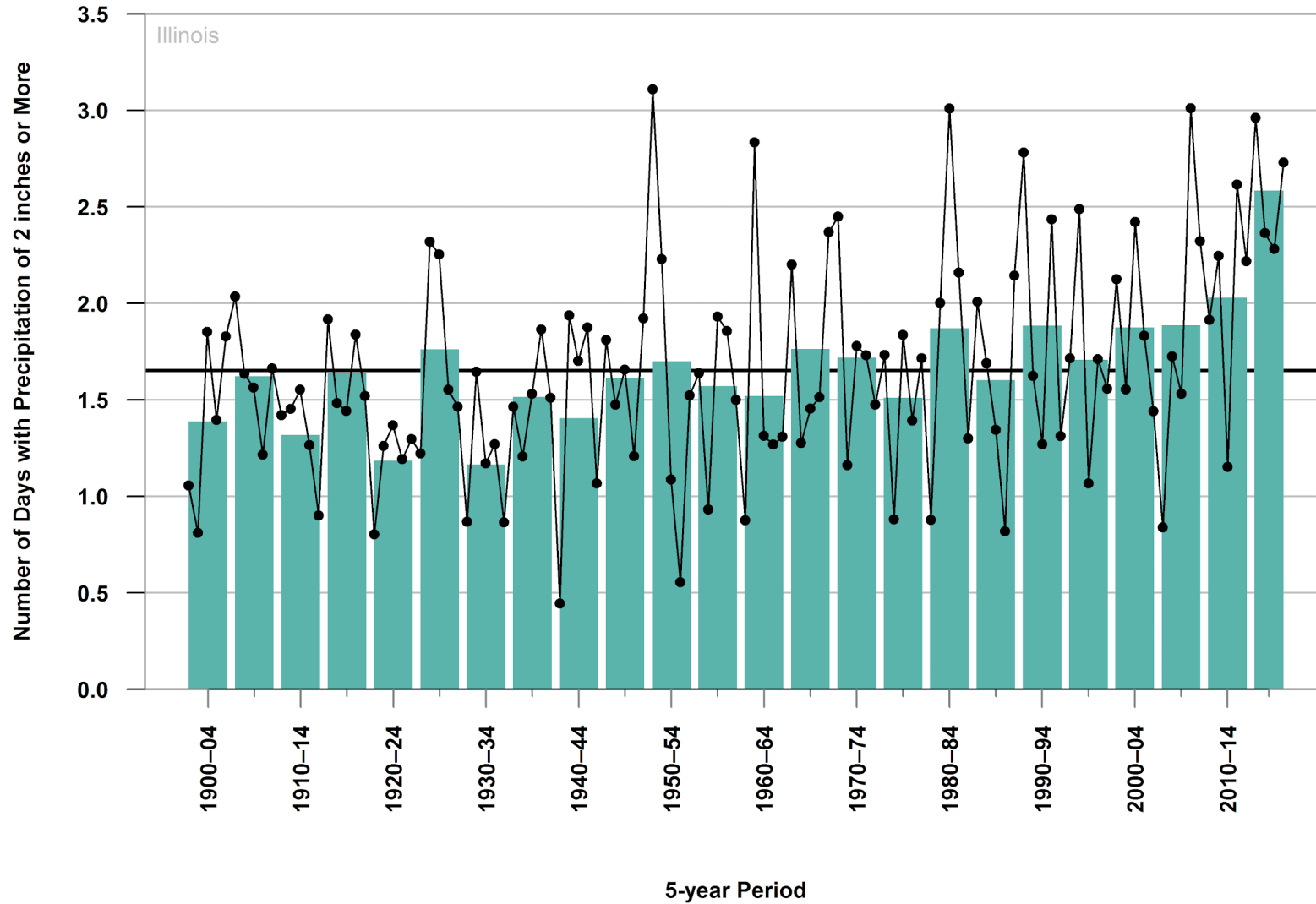
Change in Temperature (°F)

Change in Annual Total Precipitation



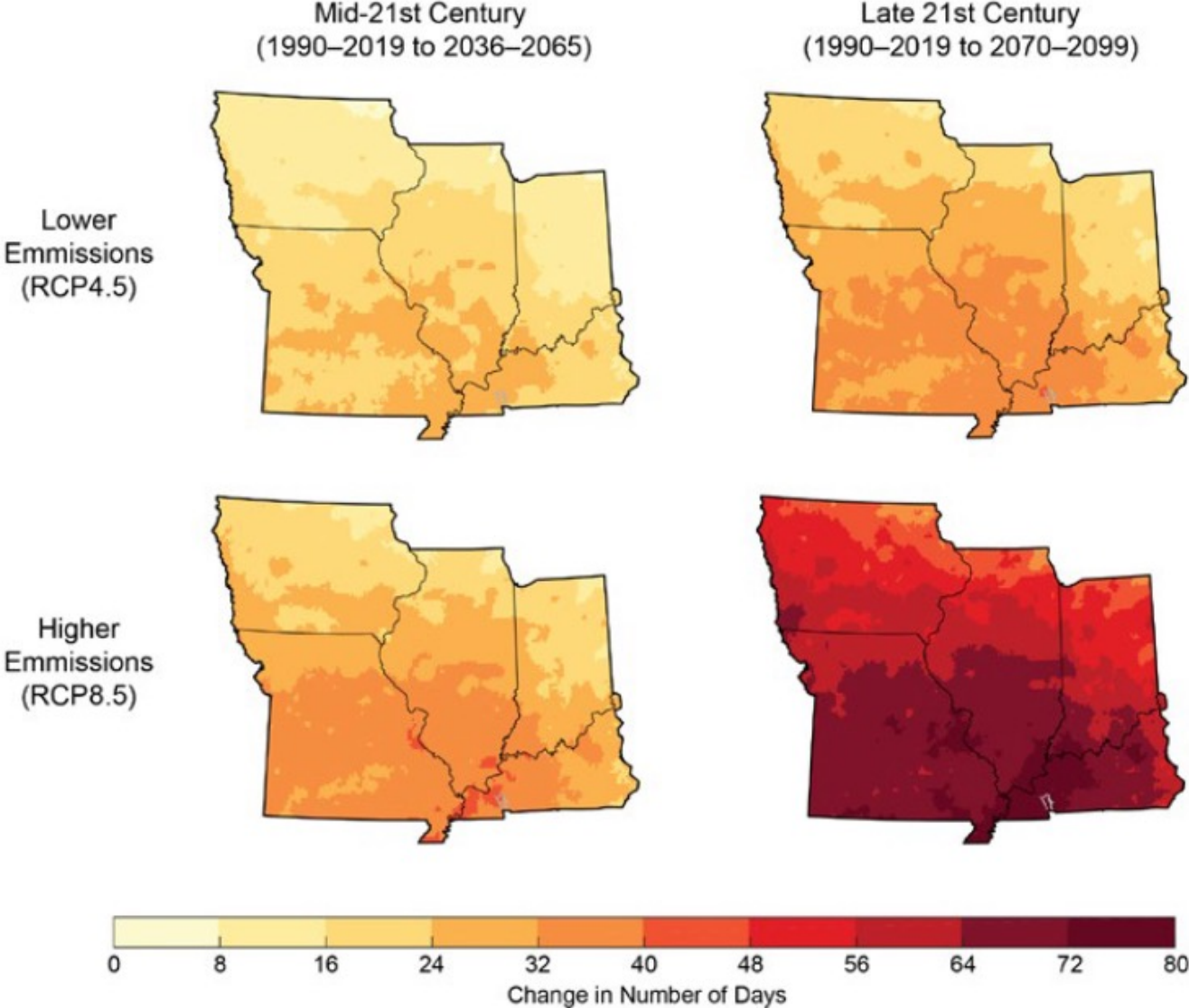
Sources: NCICS and The University of Edinburgh.

Observed Number of Extreme Precipitation Events (1900-2018)



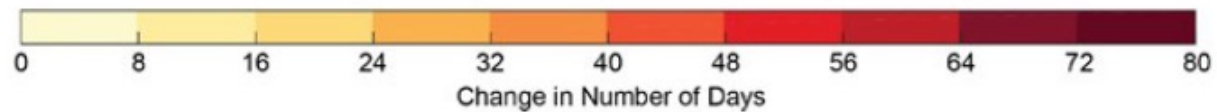
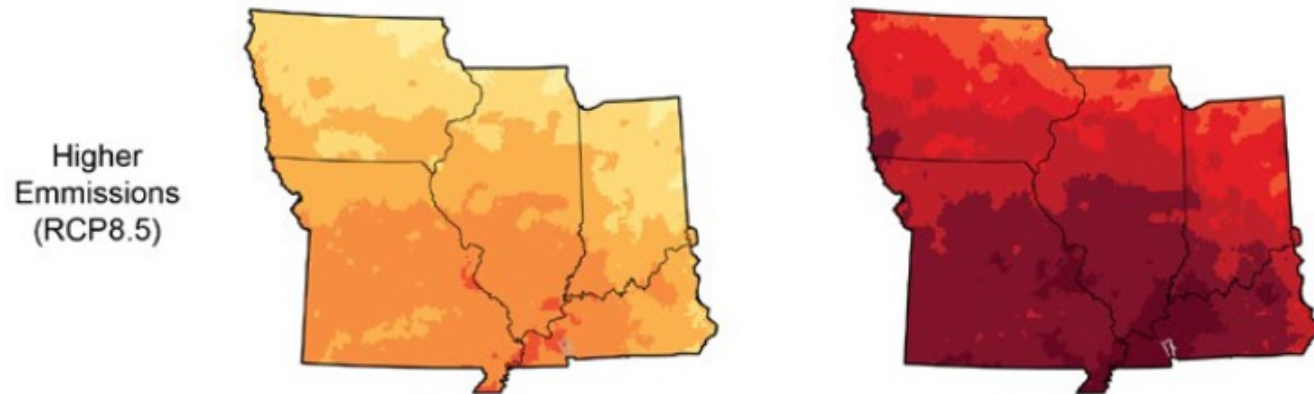
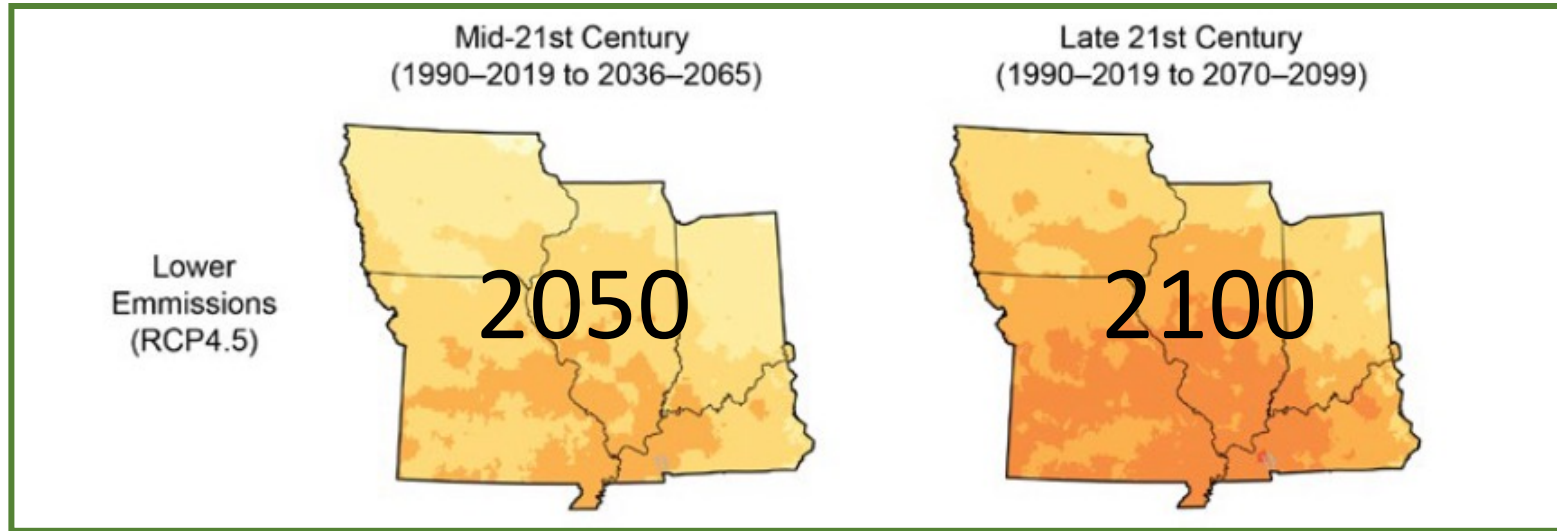
The future is even hotter and wetter,
with more extreme weather.

Change in Annual Number of Very Hot Days Daily Maximum Temperature of 95°F or Higher



Sources: NCICS and The University of Edinburgh.

Change in Annual Number of Very Hot Days
Daily Maximum Temperature of 95°F or Higher

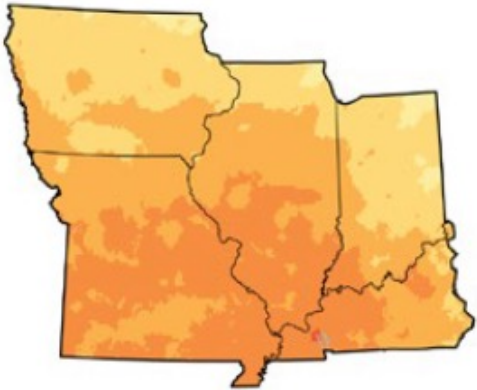
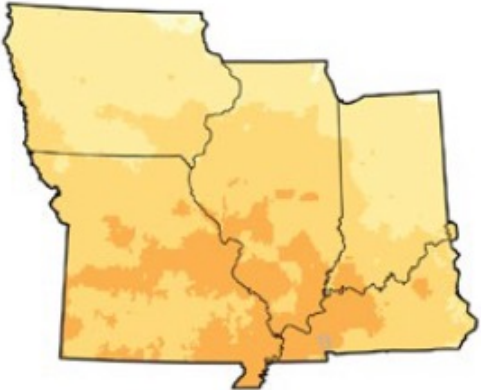


Change in Annual Number of Very Hot Days
Daily Maximum Temperature of 95°F or Higher

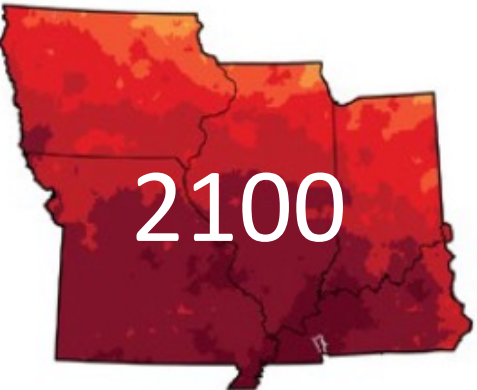
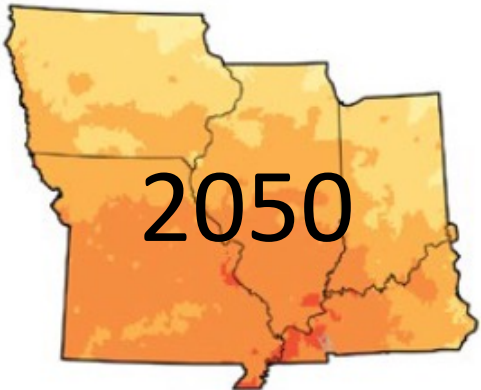
Mid-21st Century
(1990–2019 to 2036–2065)

Late 21st Century
(1990–2019 to 2070–2099)

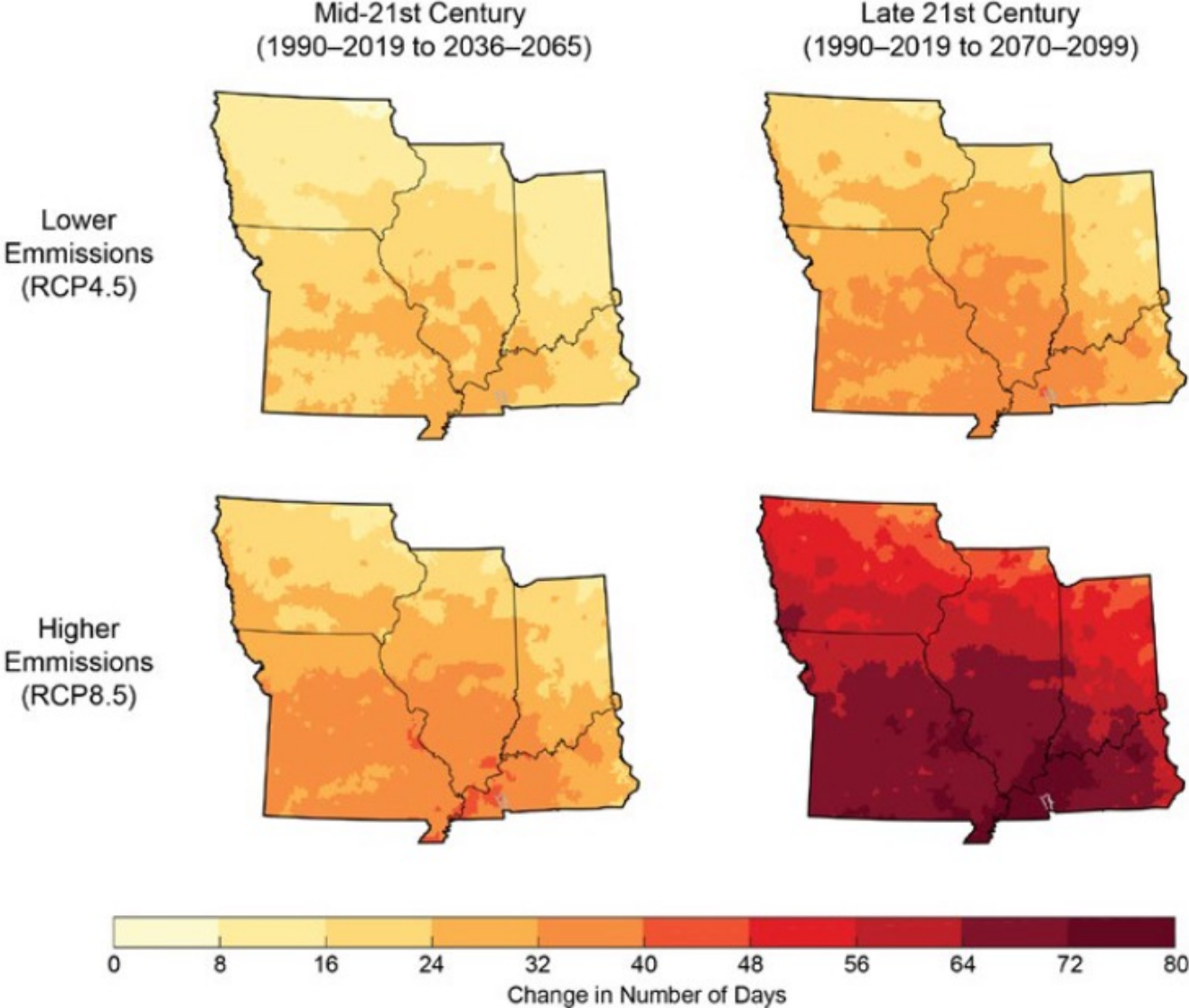
Lower
Emmissions
(RCP4.5)



Higher
Emmissions
(RCP8.5)

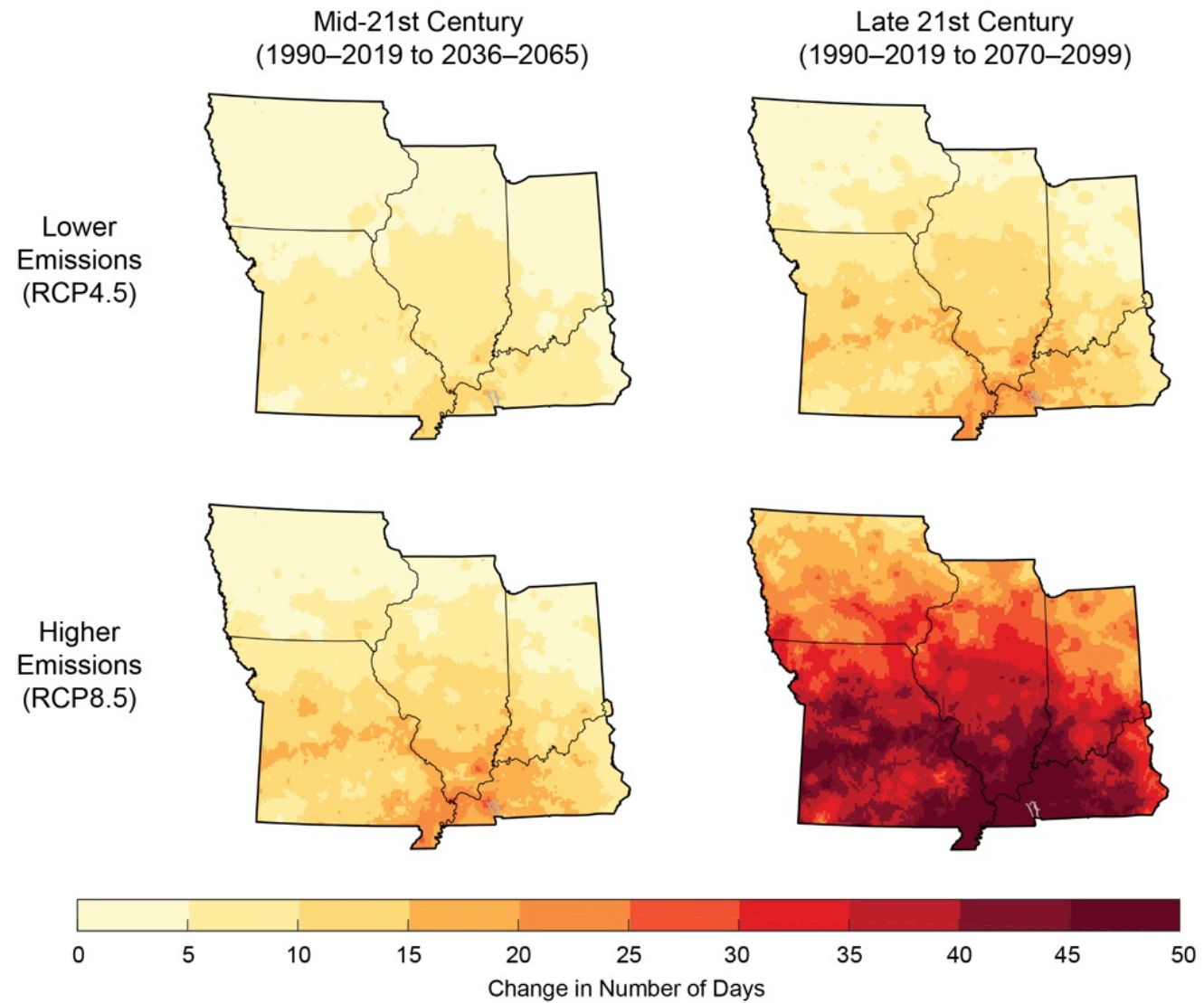


Change in Annual Number of Very Hot Days Daily Maximum Temperature of 95°F or Higher

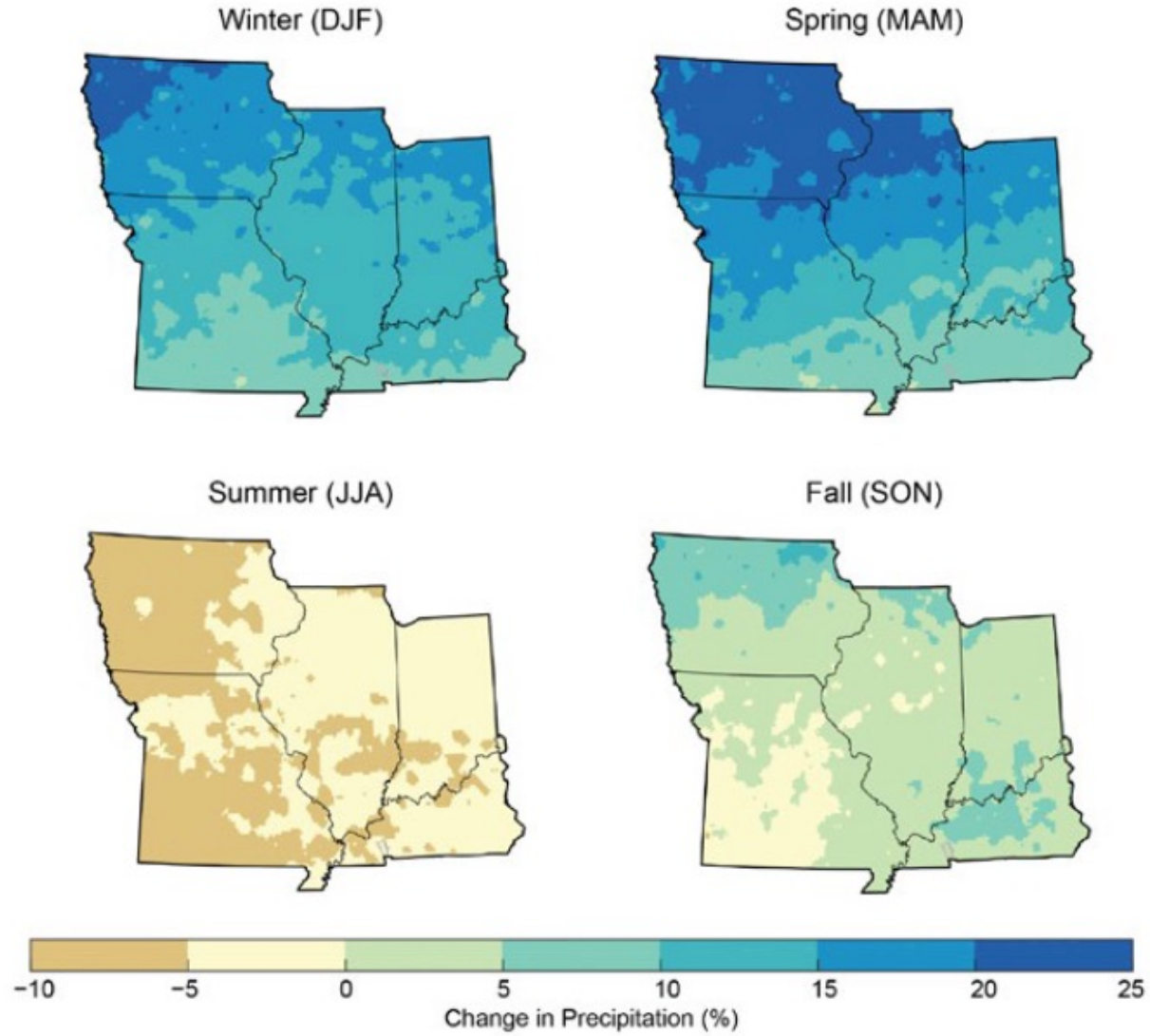


Sources: NCICS and The University of Edinburgh.

Change in Annual Number of Dangerous Heat Index Days Daily Maximum Heat Index of 110°F or Higher



Change in Seasonal Total Precipitation
Higher Emissions (RCP8.5)
Late 21st Century (1990–2019 to 2070–2099)



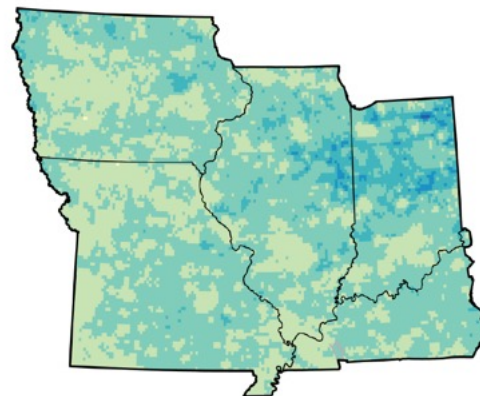
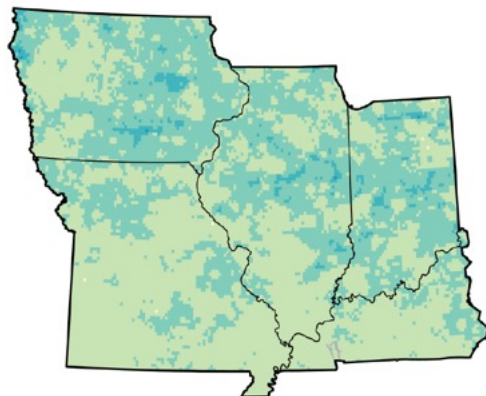
Sources: NCICS and The University of Edinburgh.

Change in Number of Days with Precipitation of 2 inches or greater

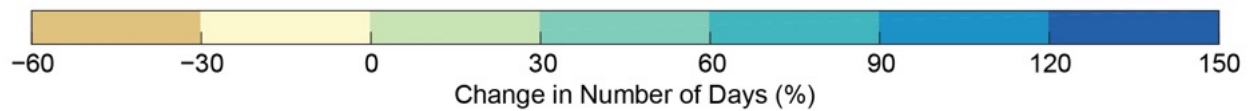
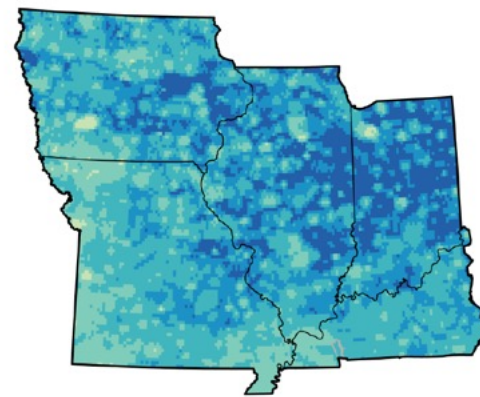
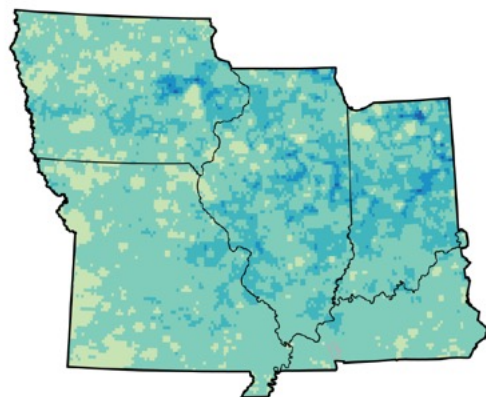
Mid-21st Century
(1990–2019 to 2036–2065)

Late 21st Century
(1990–2019 to 2070–2099)

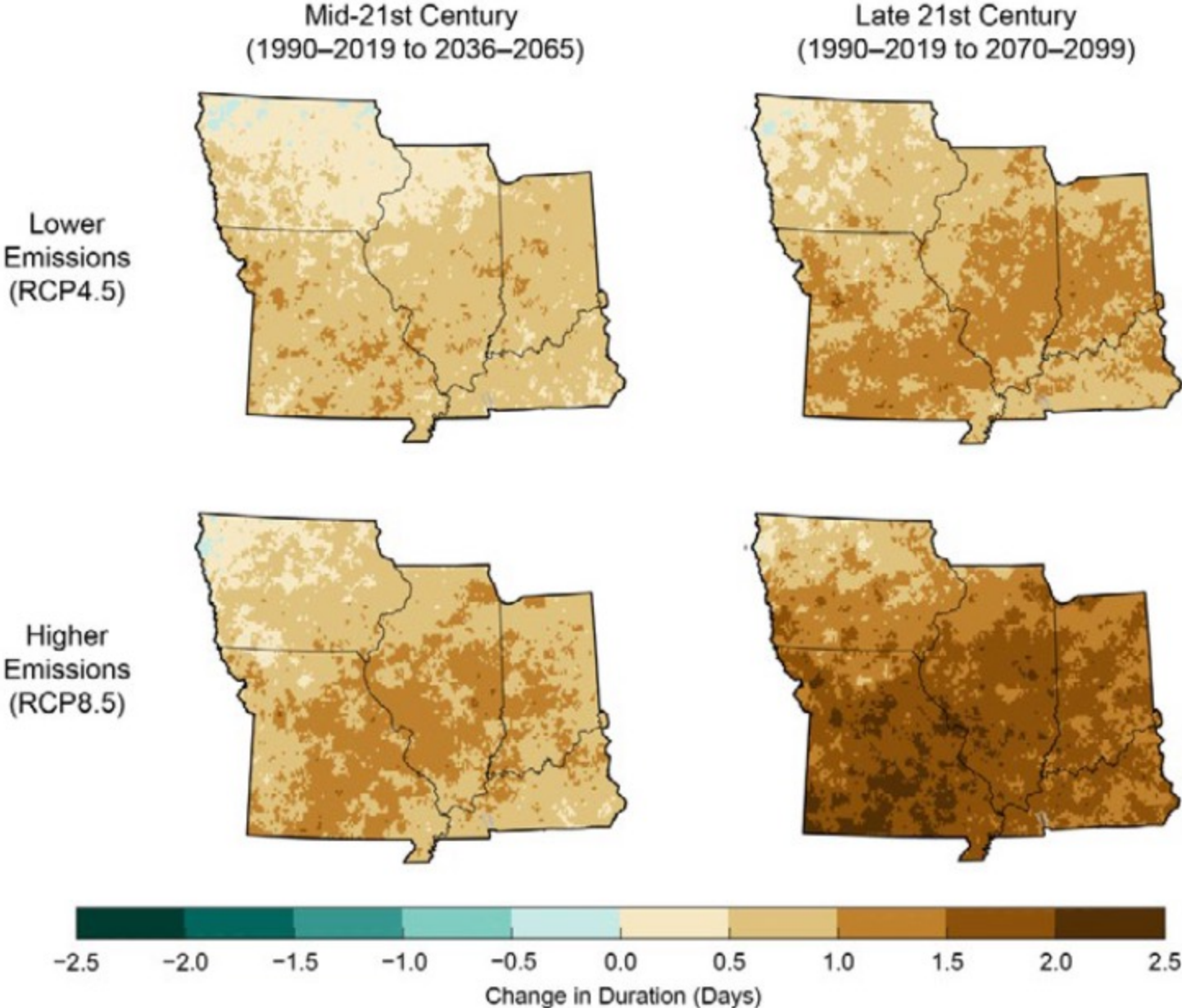
Lower
Emissions
(RCP4.5)



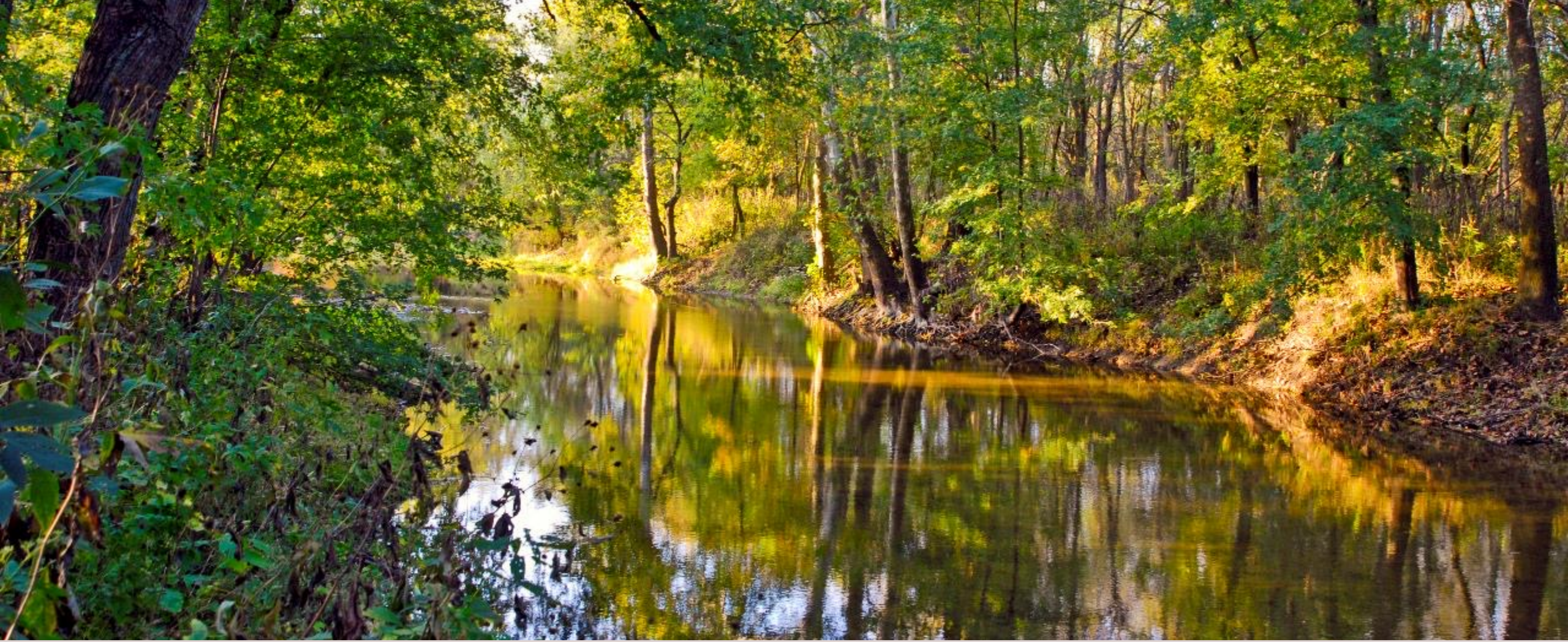
Higher
Emissions
(RCP8.5)



Change in the Annual Maximum Consecutive Dry Days



Sources: NCICS and The University of Edinburgh.



IMPACTS TO WATER RESOURCES

Chapter Contents

- Flooding
 - Urban
 - Rural
- Water quality
- Water supply



Key Messages

- Flooding and drought could both increase due to seasonal changes in precipitation.
- Aging sewer and drainage systems are not built to deal with climate change.
- Most flood maps don't account for climate change.
- Flooding increase water pollution (both from CSOs and nutrient runoff)

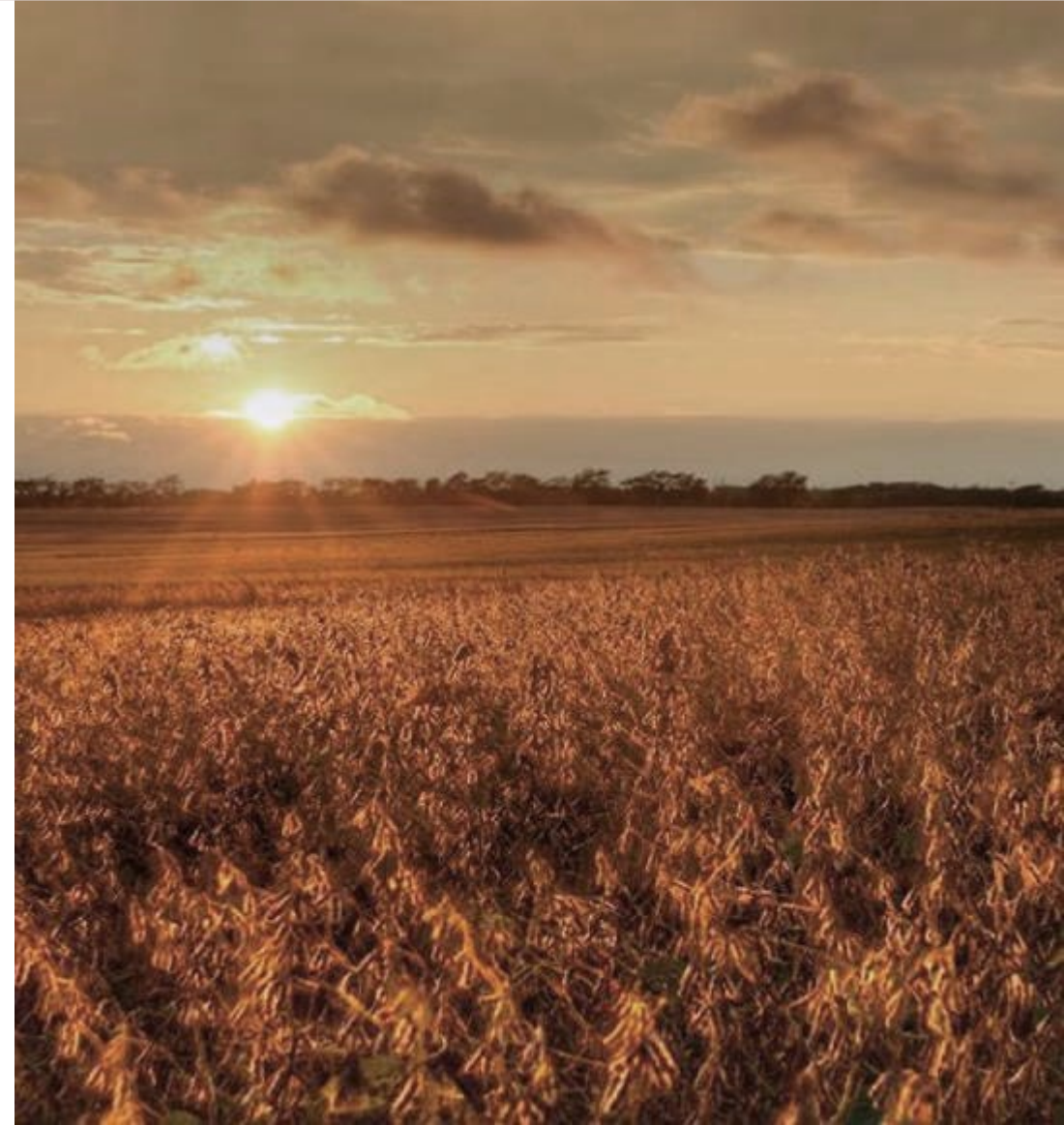




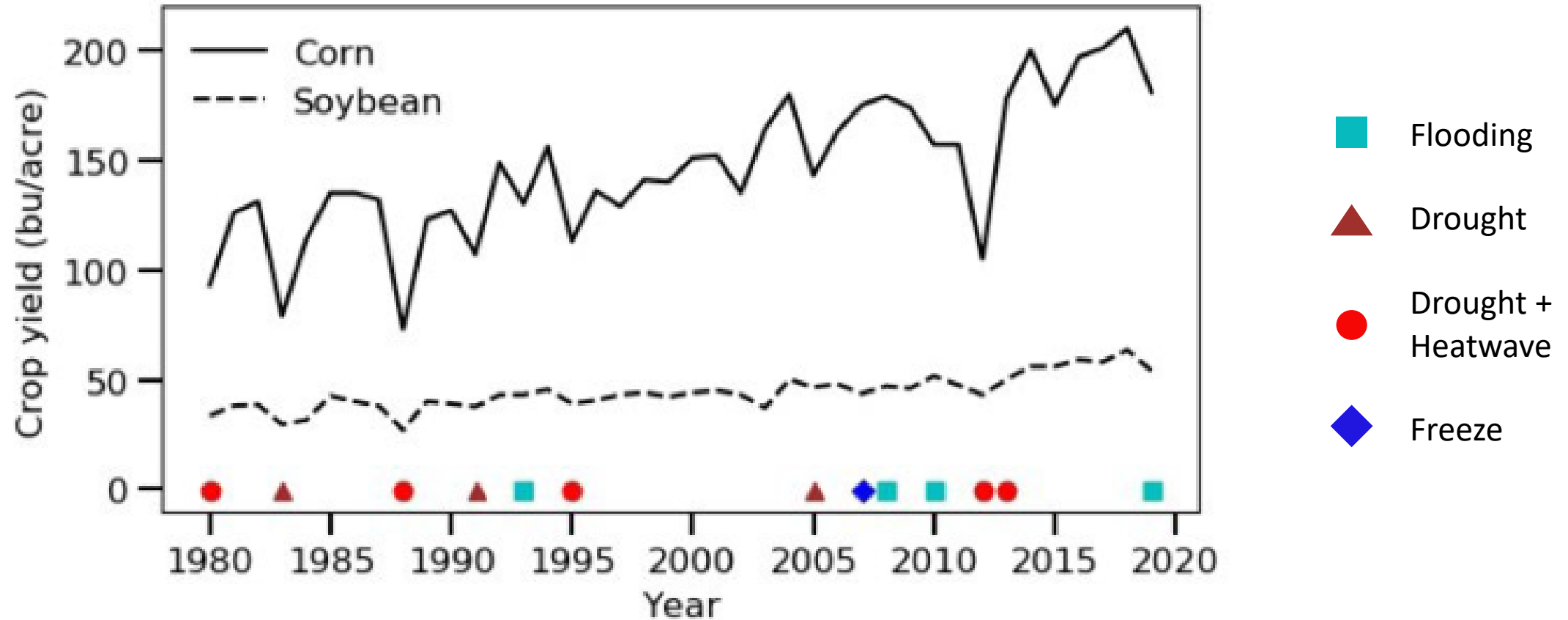
IMPACTS TO AGRICULTURE

Chapter Contents

- Corn and Soybeans
- Livestock
- Specialty Crops
- Sustainable agriculture practices
- Economic Impacts



Corn and Soybeans



Soil Health

- Increased precipitation leads to increased erosion
- Higher temperatures increase long-term soil organic matter (SOM) losses
- SOM loss reduces fertility and water-holding capacity

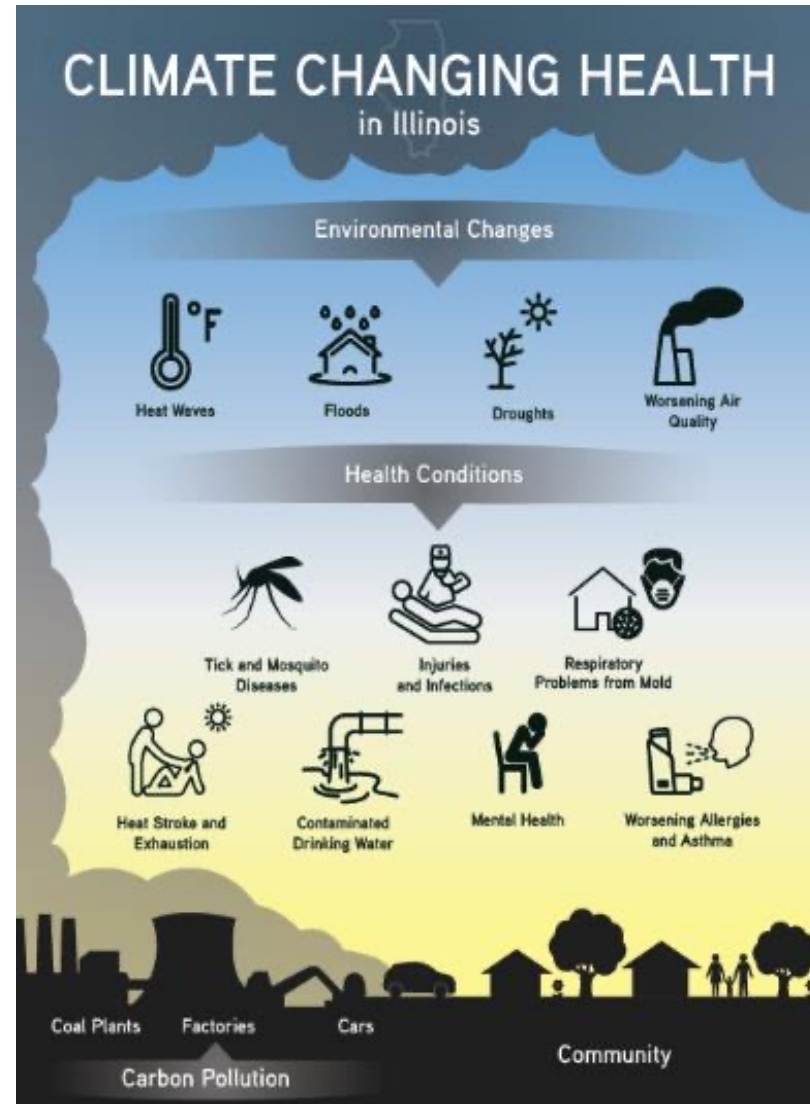




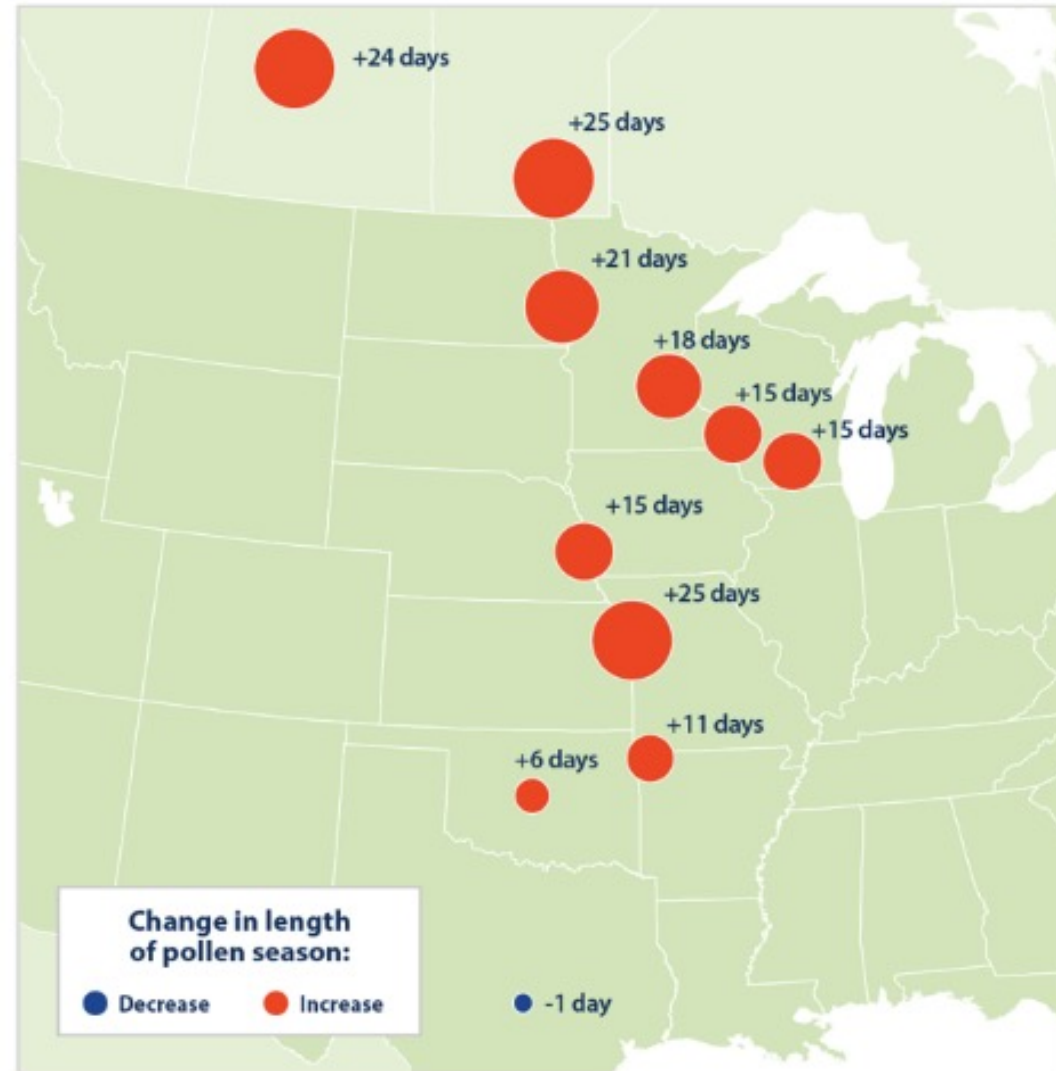
IMPACTS TO PUBLIC HEALTH

Chapter Contents

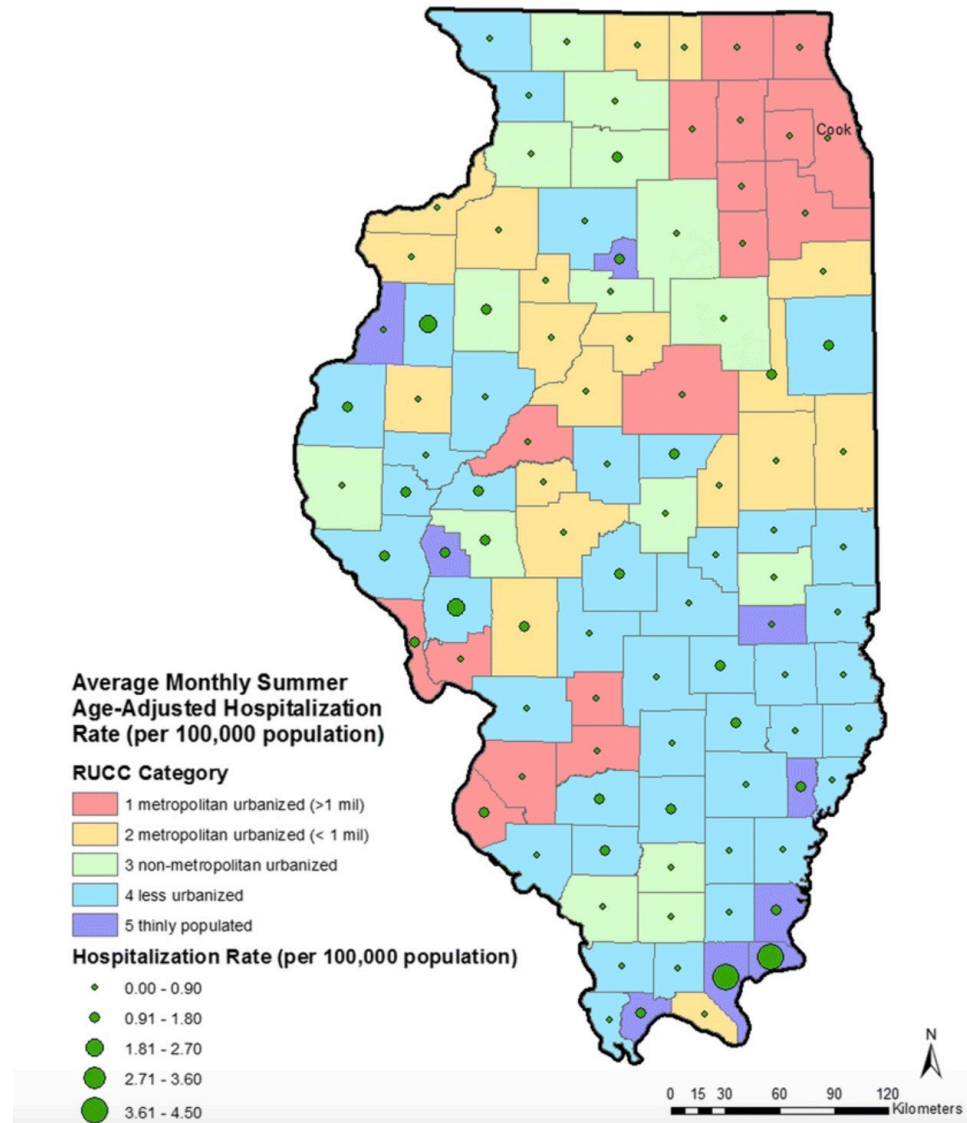
- Heat and health
- Flooding and health
- Respiratory health
- Vector borne diseases
- Mental health
- Economic impacts



Health impacts - Allergies



Health impacts - Heat





IMPACTS TO ECOSYSTEMS

Chapter Contents

- Forests
- Wetlands
- Streams, rivers, lakes, and ponds
- Lake Michigan
- Grasslands



Key Messages

- Because Illinois' ecosystems are already degraded and fragmented, they are less resilient.
- Climate change will have positive impacts on some species but negative impacts on others.
- Restoration and managing connectivity are critical to adaptation



Impacts to Trees

Table 6.4 Information on capability rankings for specific tree species by ecoregion.

Tree Species	North Central U.S. Driftless and Escarpment	Southwestern Great Lakes Morainal	Central Till Plains and Grand Prairies	Central Dissected Till Plains	Central Till Plains-Beech-Maple	Central Till Plains-Oak Hickory	Ozark Highlands	Interior Low Plateau-Shawnee Hills	White and Black River Alluvial Plains/Coastal Plains-Loess
white oak	VG	P	P	F	F	F	F	F	G
sugar maple	G	F	F	VG	F	VG	G	F	F
American elm	F	G	F	F	G	G	G	VG	VG
yellow-poplar	NH+	NH	P	NH*	F	P	F	F	F
black oak	G	F	P	P	P	F	F	F	F
pignut hickory	NH+	NH#	P	P	VP	P	P	P	P
boxelder	F	F	F	G	G	F	G	VG	VG
silver maple	G	G	G	G	G	G	VG	F	G
green ash	G	F	G	G	G	G	G	G	G
black cherry	P	VP	VP	P	VP	P	F	G	F
hackberry	VG	G	G	VG	G	F	VG	VG	G
black walnut	P	P	P	G	G	F	G	F	P
northern red oak	VG	G	P	F	F	P	F	G	VG
sweetgum	-	NH	G	NH*	G	G	VG	VG	VG
sassafras	NH+	NH#	P	P	P	P	P	F	F

Impacts to Birds

- Extreme weather events
- Early spring onset
- Changing habitats
- Range expansion



THANK YOU

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