PCCRC

Purdue Climate Change Research Center

Indiana's Changing Climate

Melissa Widhalm
Purdue Climate Change Research Center

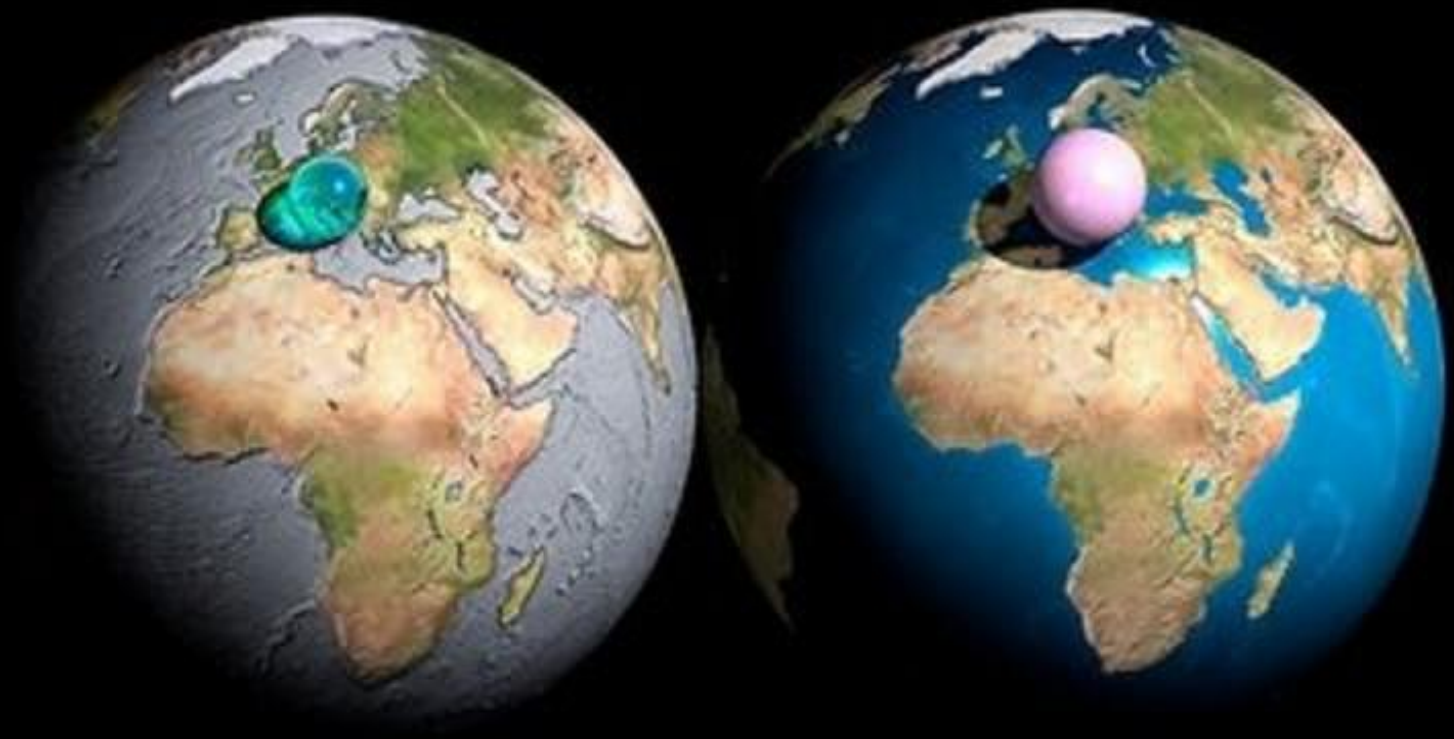
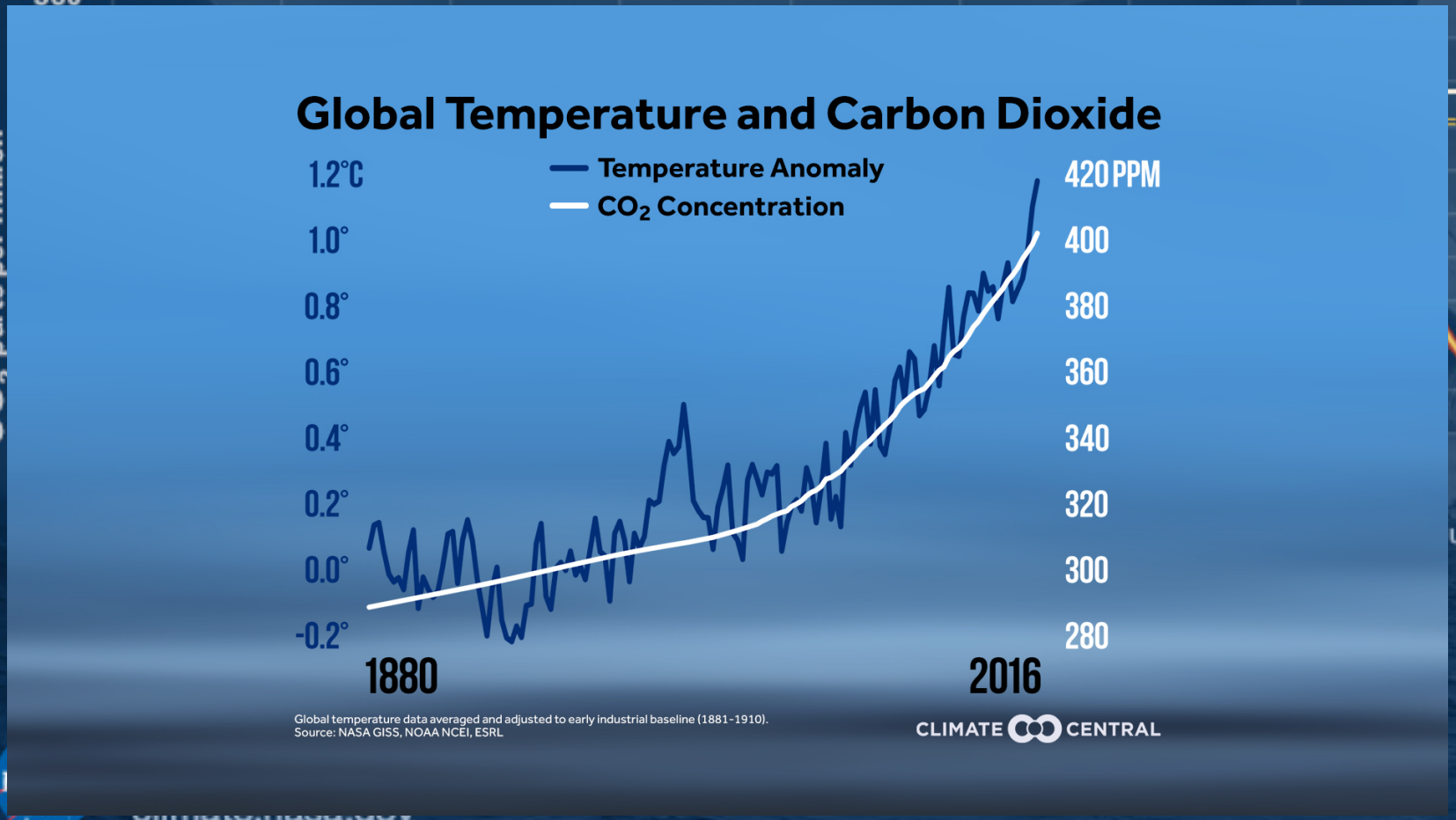
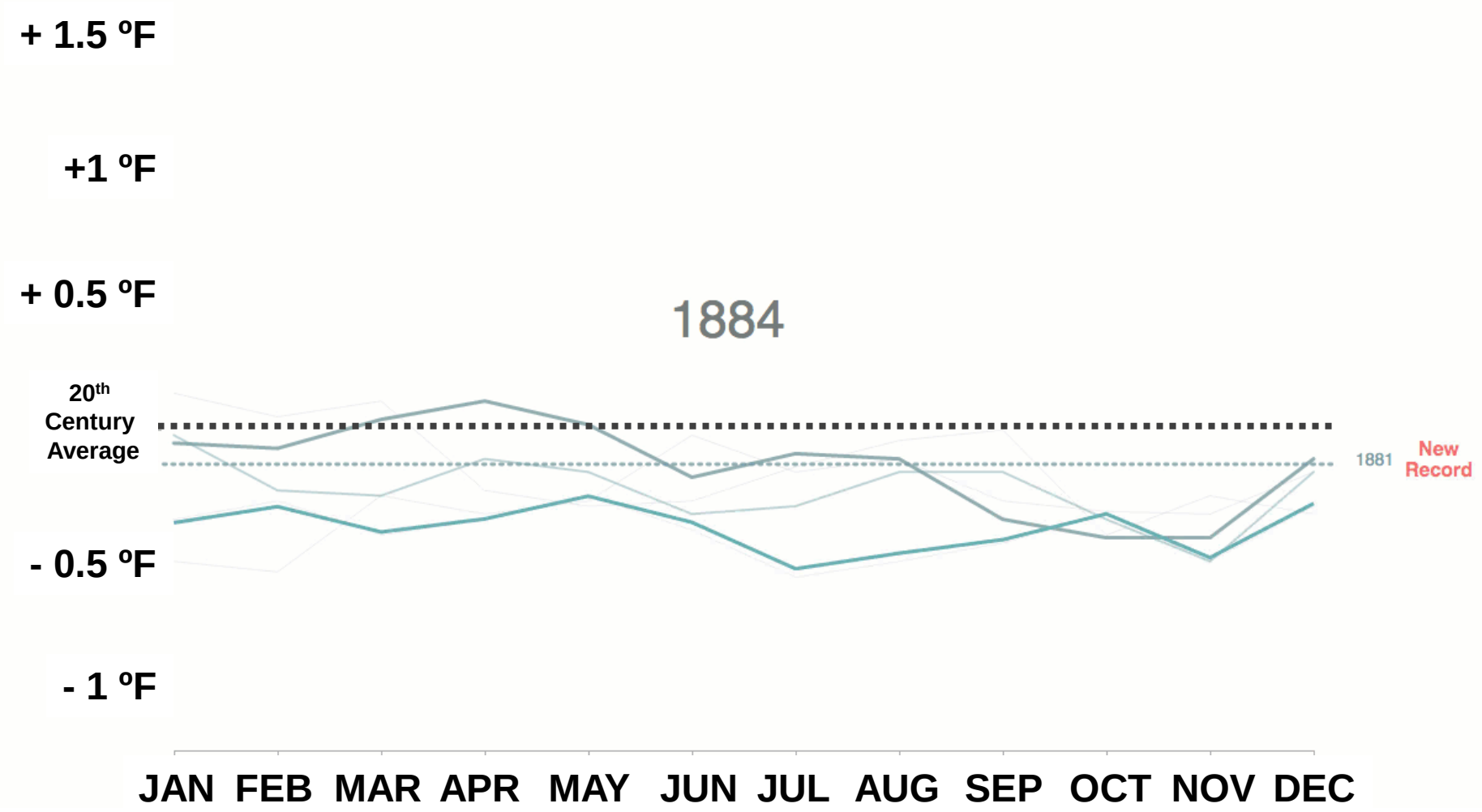


Image by Adam Nieman

Human activities are adding heat-trapping gases to the atmosphere

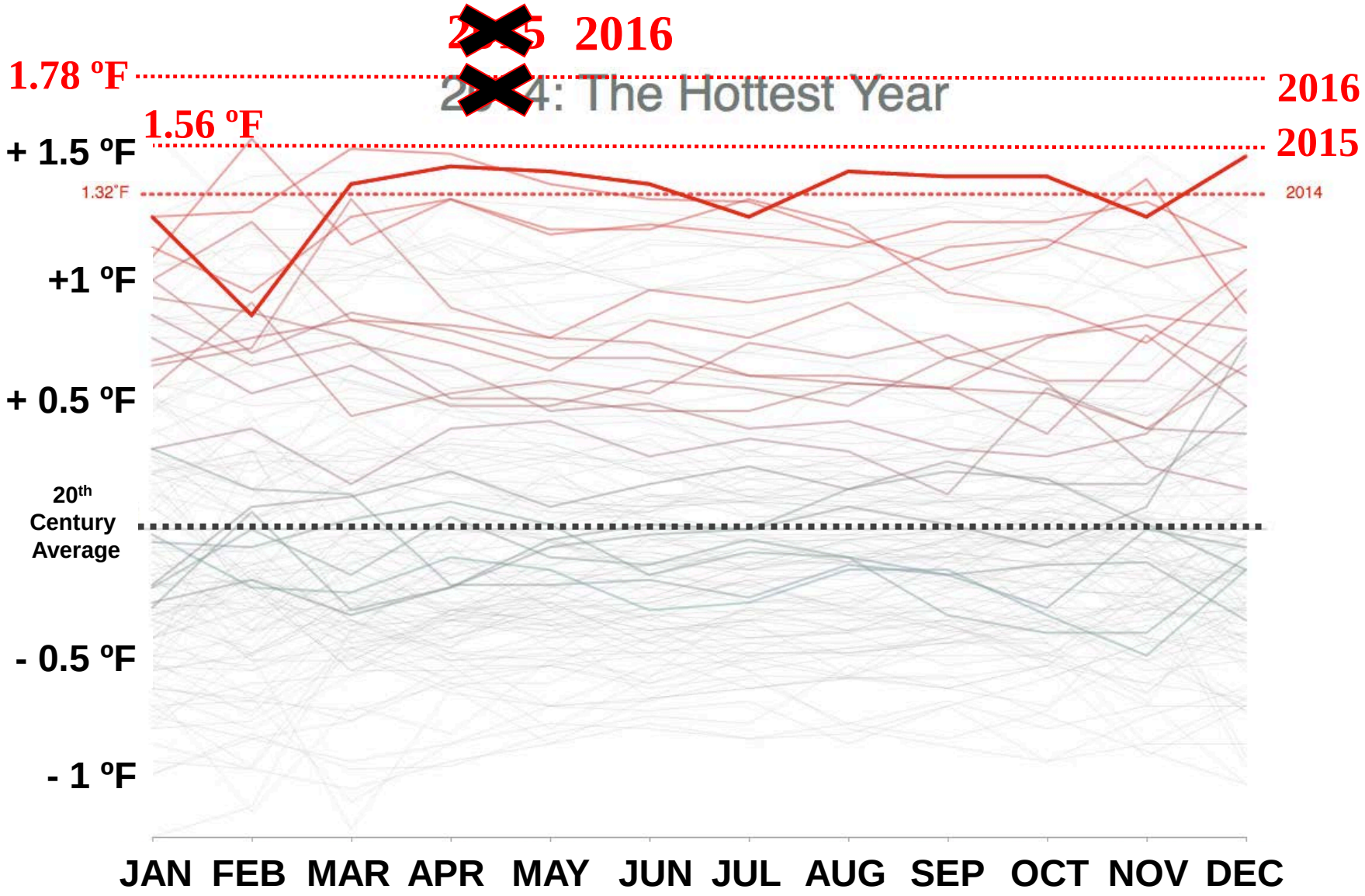




Global Average Temperature

Bloomberg

SOURCE: GHCN-M & ICOADS Data Sets Provided by NOAA

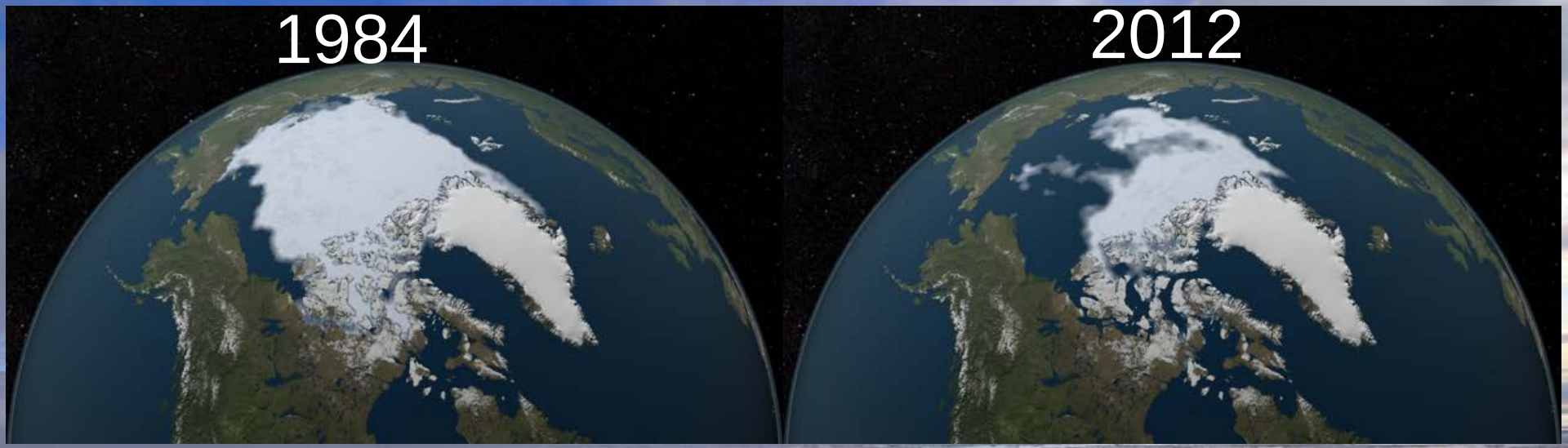


Global Average Temperature

Bloomberg

SOURCE: GHCN-M & ICOADS Data Sets Provided by NOAA

Arctic Sea Ice Extent



Columbus, IN - June 2008

What will climate change mean in INDIANA?

PURDUE CLIMATE CHANGE RESEARCH CENTER

Mission: understand the causes and impacts of climate change, improve predictive models to project future climate conditions, and pursue novel ideas for mitigation and adaptation.

ESTABLISHED IN 2004

INTERDISCIPLINARY

NON-PARTISAN

COLLABORATIVE

PURDUE UNIVERSITY
Discovery Park

Purdue Climate Change Research Center

IN CCIA

Indiana Climate Change Impacts Assessment

Agriculture

Climate

Ecosystems

Energy

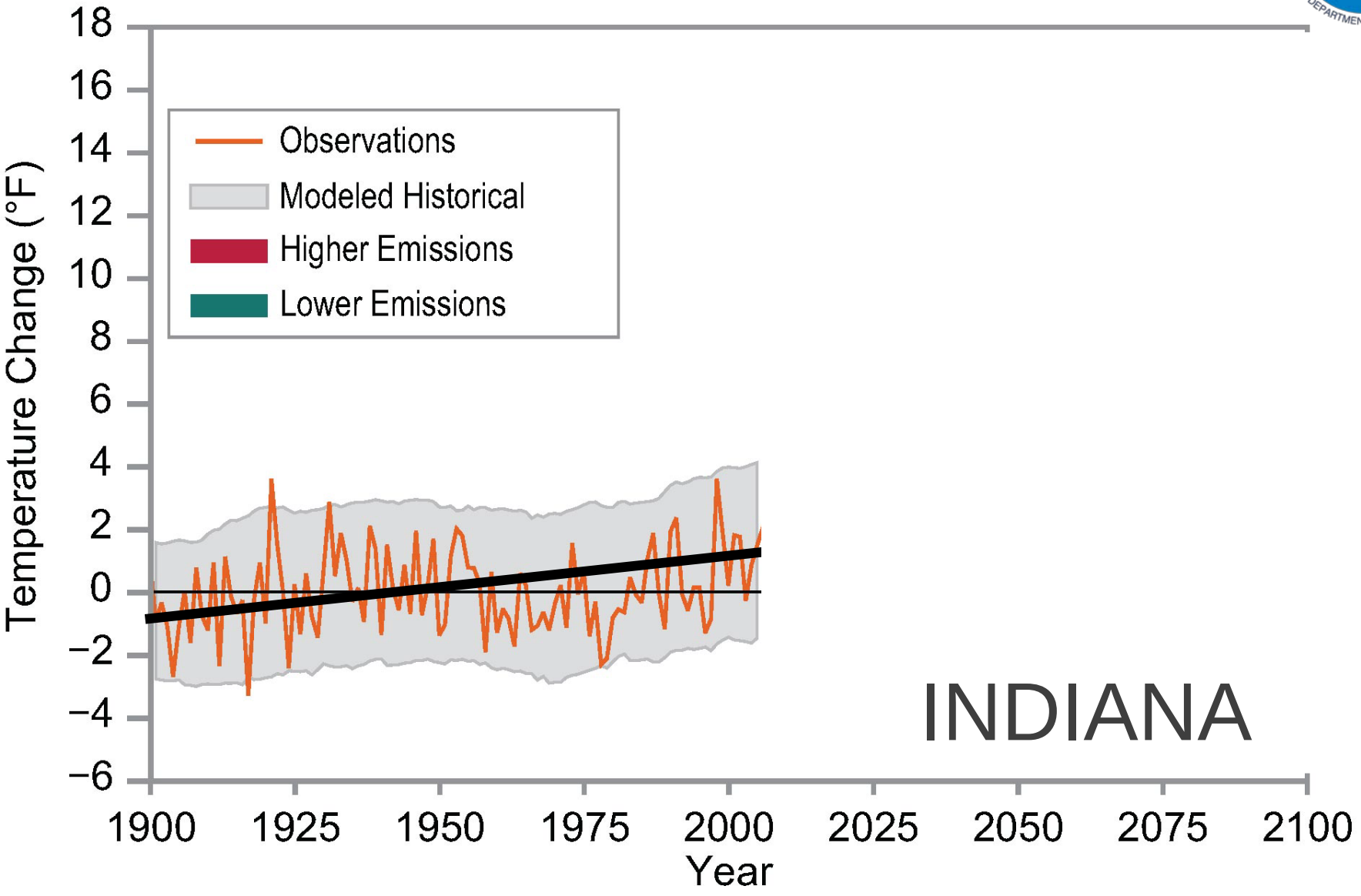
Health

Infrastructure

Tourism & Recreation

Water Resources

Annual Statewide Average Temperature



2050s

Based on seasonal average temperature

Days Above 90 ºF

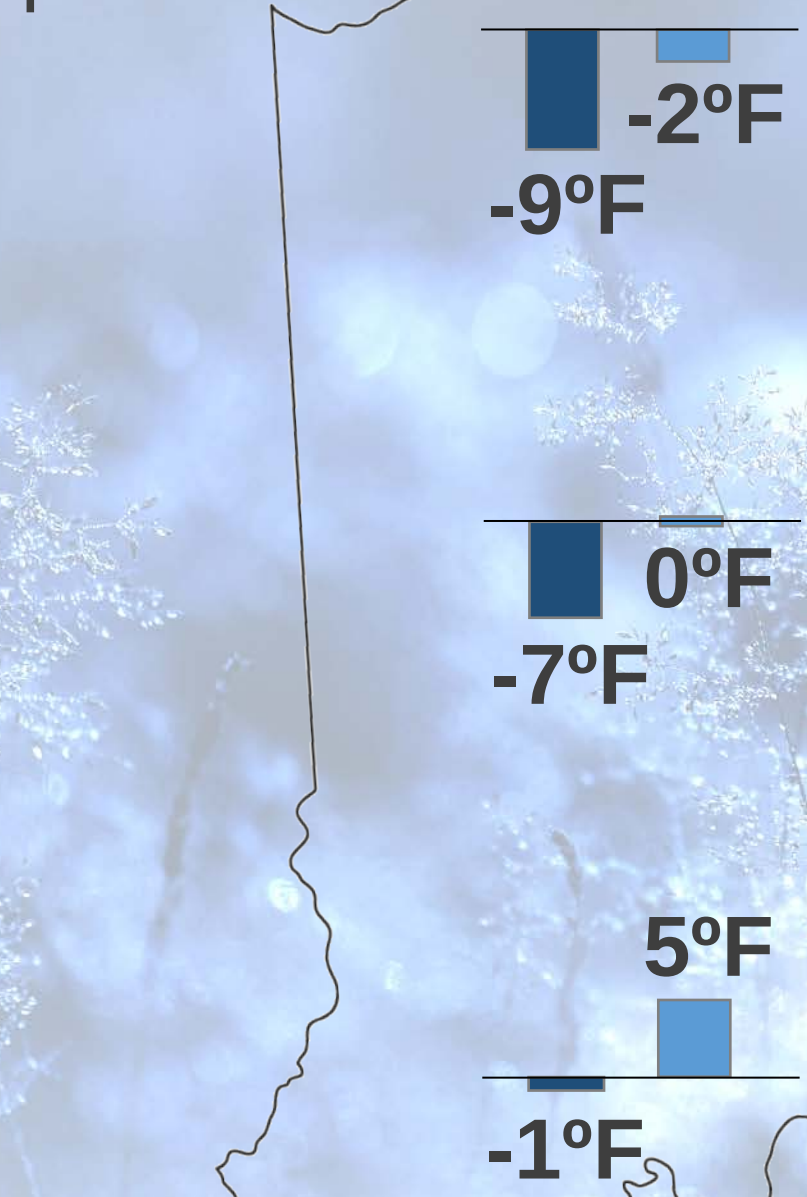
Annual Count

Hamilton County, Indiana

Future data based on high emissions scenario

Preliminary Data

Lowest Temperature of the Year



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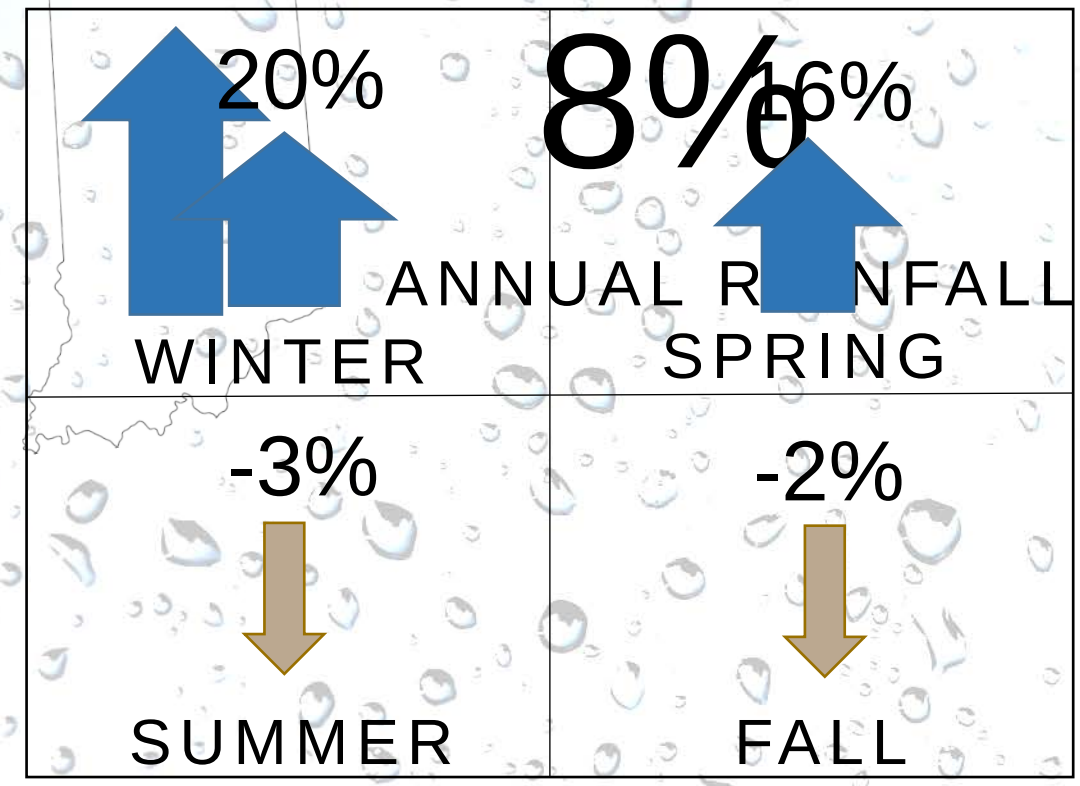
PRELIMINARY DATA
Based on high emissions scenario for 2050s

2050



Statewide Average
Preliminary Data

Future data based on high emissions scenario, 2050

Rain or Snow?

Fraction of Nov-Mar precipitation falling as snow

IN CCIA

Days with Snow Cover

INDIANA - 2050s

Annual Change **- 40%**

PRELIMINARY DATA

Based on high emissions scenario for 2050s

More Water Entering Our Rivers in 2050s

Change in runoff

Annual Change

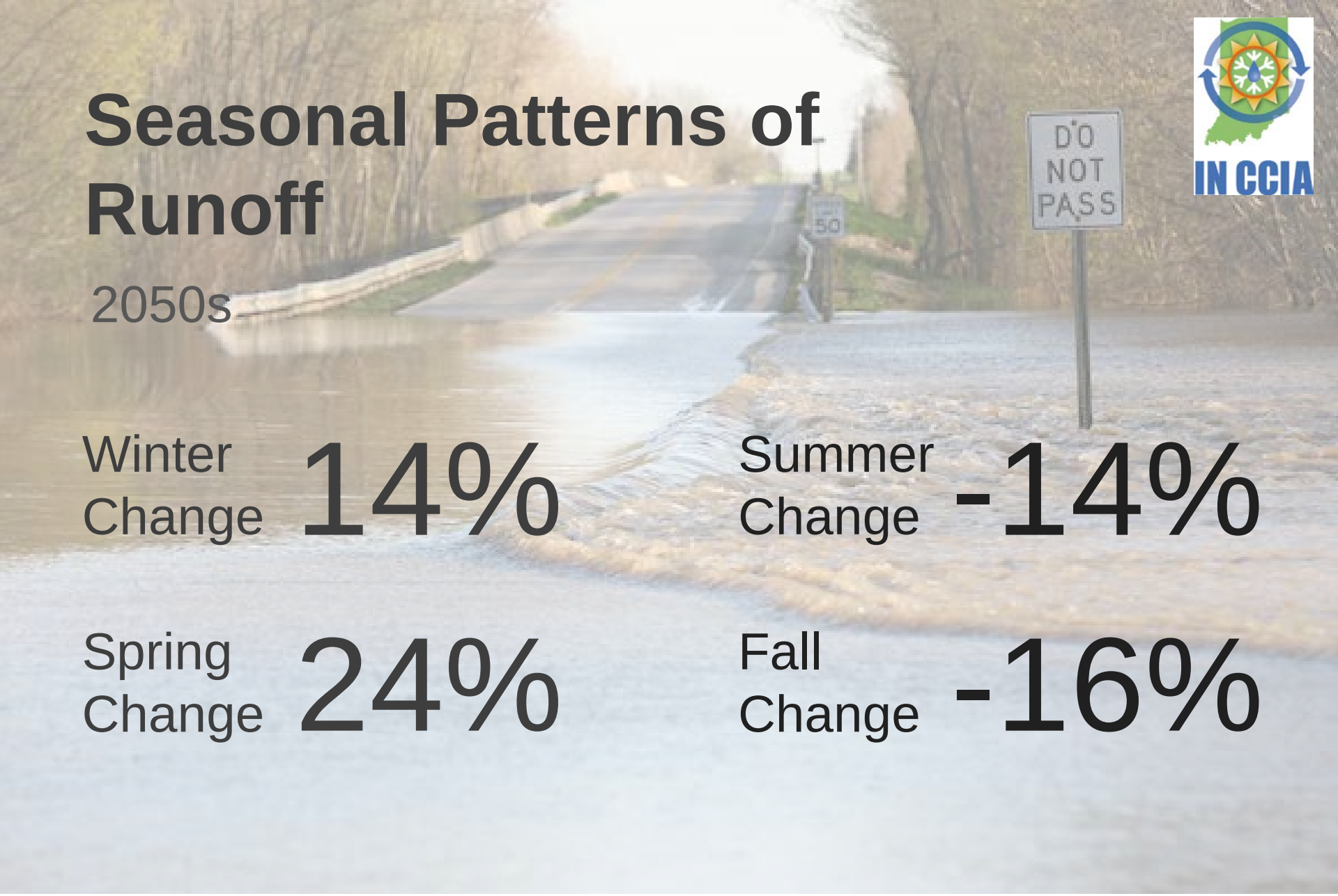
+10%

Future data based on high emissions scenario;
Percent change is relative to 1915-2013 average
PRELIMINARY DATA

Central Indiana Average

Seasonal Patterns of Runoff

2050s



Winter Change **14%**

Summer Change **-14%**

Spring Change **24%**

Fall Change **-16%**

Future data based on high emissions scenario;
Percent change is relative to 1915-2013 average
PRELIMINARY DATA

Central Indiana Average

Water resource management will be critical

- Indiana is getting warmer and wetter
- Extreme heat & heavy rainfall will challenge us
- Seasonal changes are critical to managing risks

Stay informed, stay connected

http://IndianaClimate.org

https://tinyurl.com/IN-Climate-News

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