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Climate Change Action in the Miami Valley

MVRPC Technical Advisory Committee

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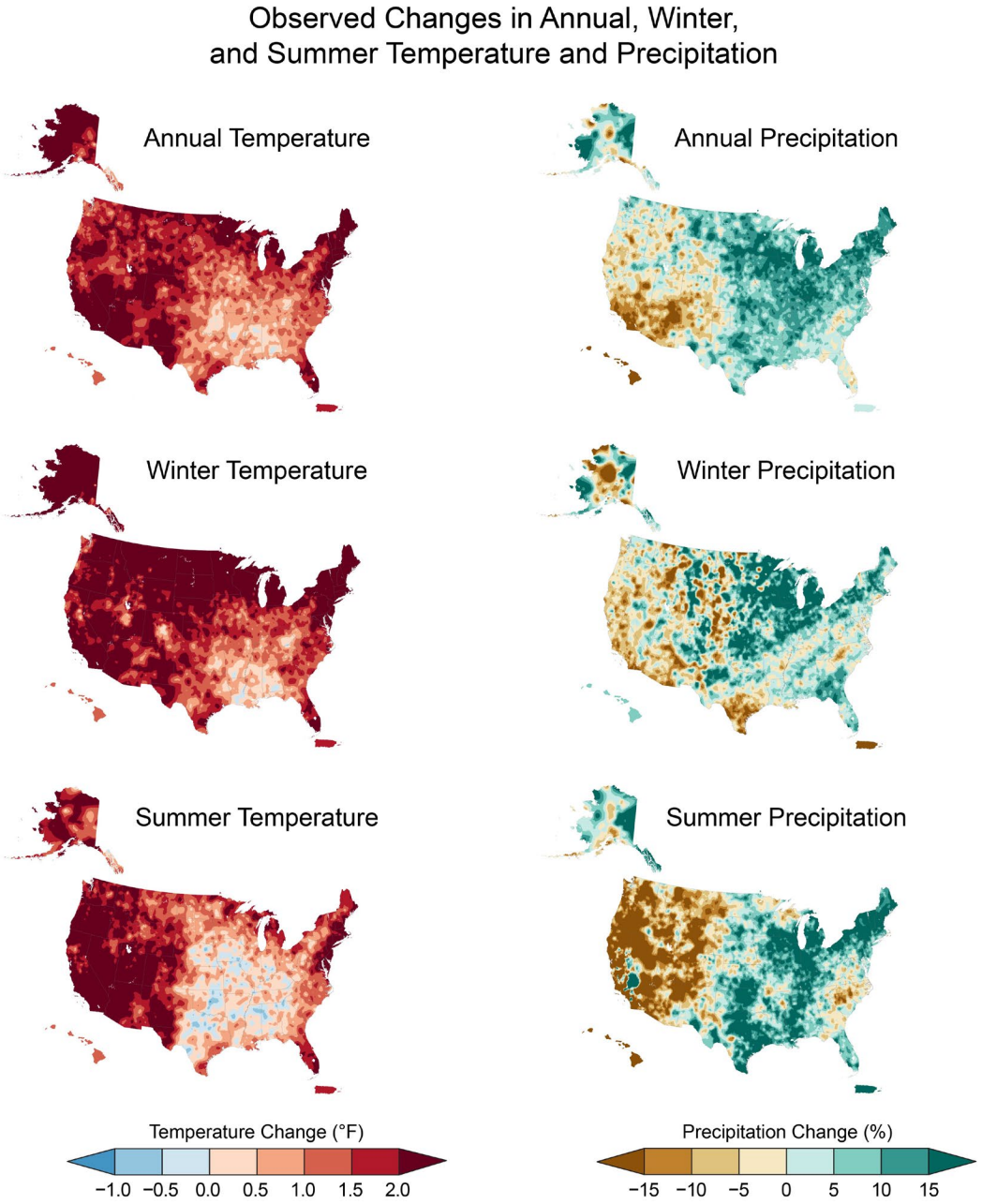
THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

5th National Climate Assessment

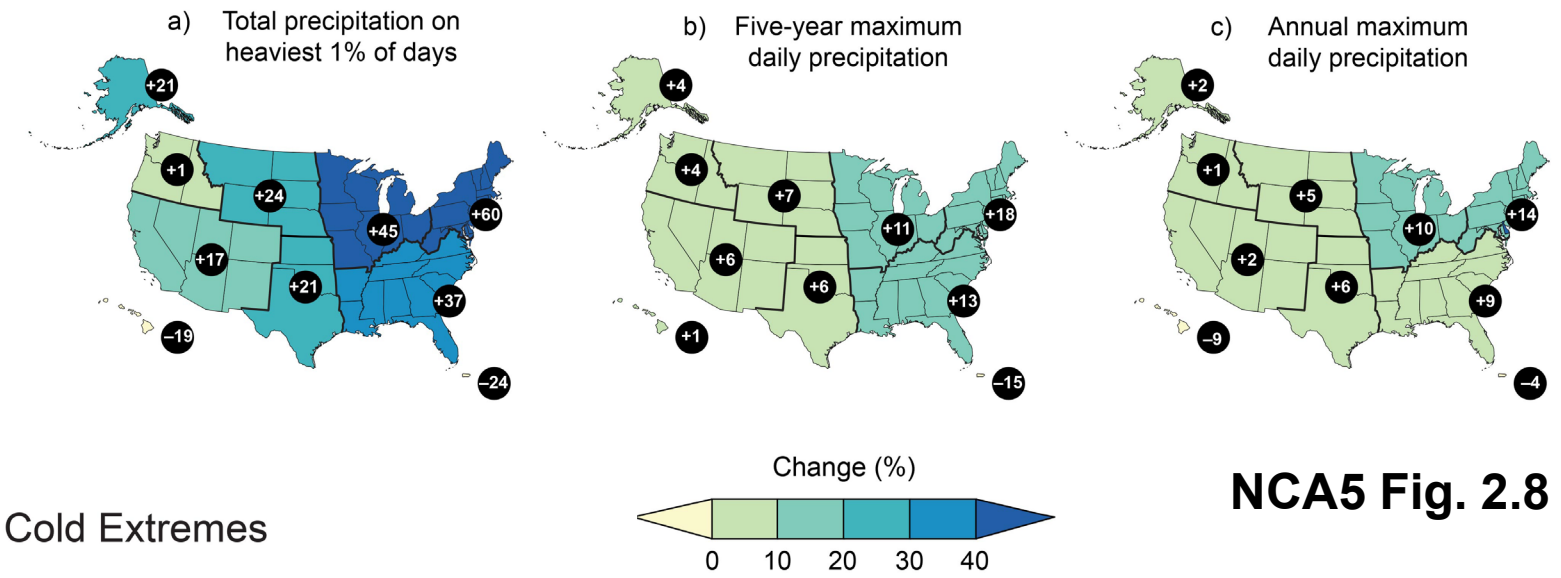
- Annual average temperatures have increased; 0.5°F-2.0°F
- Amplification of warming toward Great Lakes and northern latitudes
- Seasonal differences – strong winter warming
- More recent Summer/Fall "warming hole" (Partridge et al. https://doi.org/10.1002/2017gl076463)



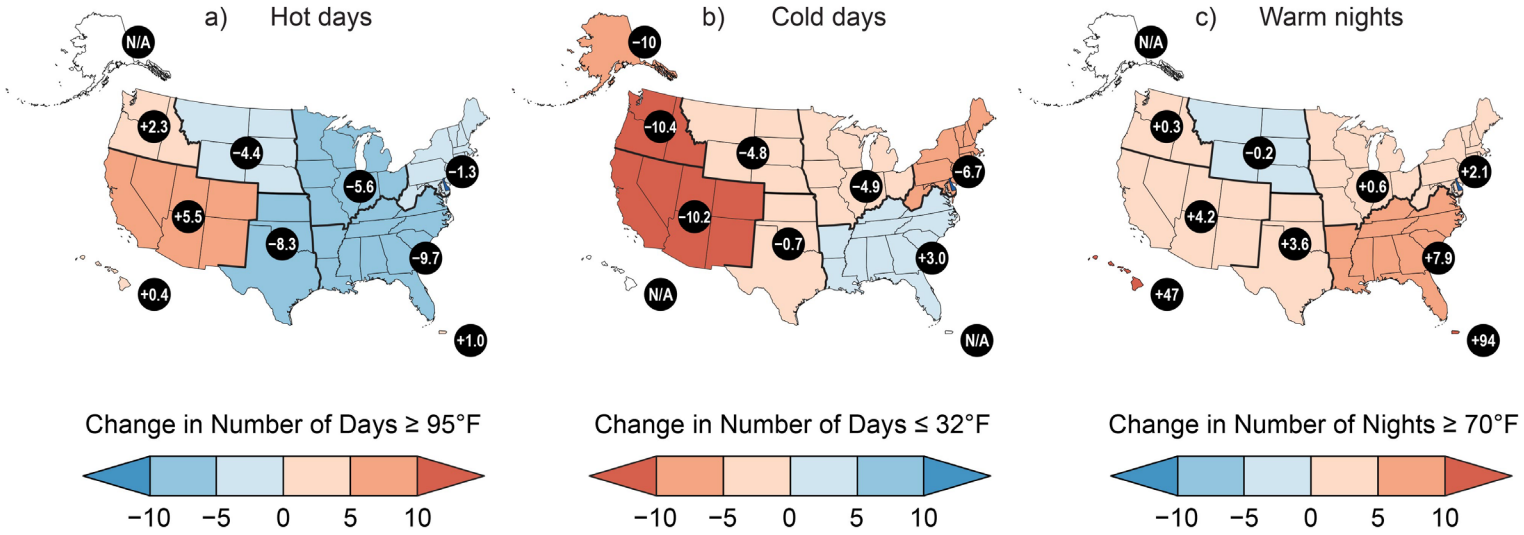
NCA5 Fig. 2.4

5th National Climate Assessment: https://nca2023.globalchange.gov/chapter/2/

Observed Changes in Extremes



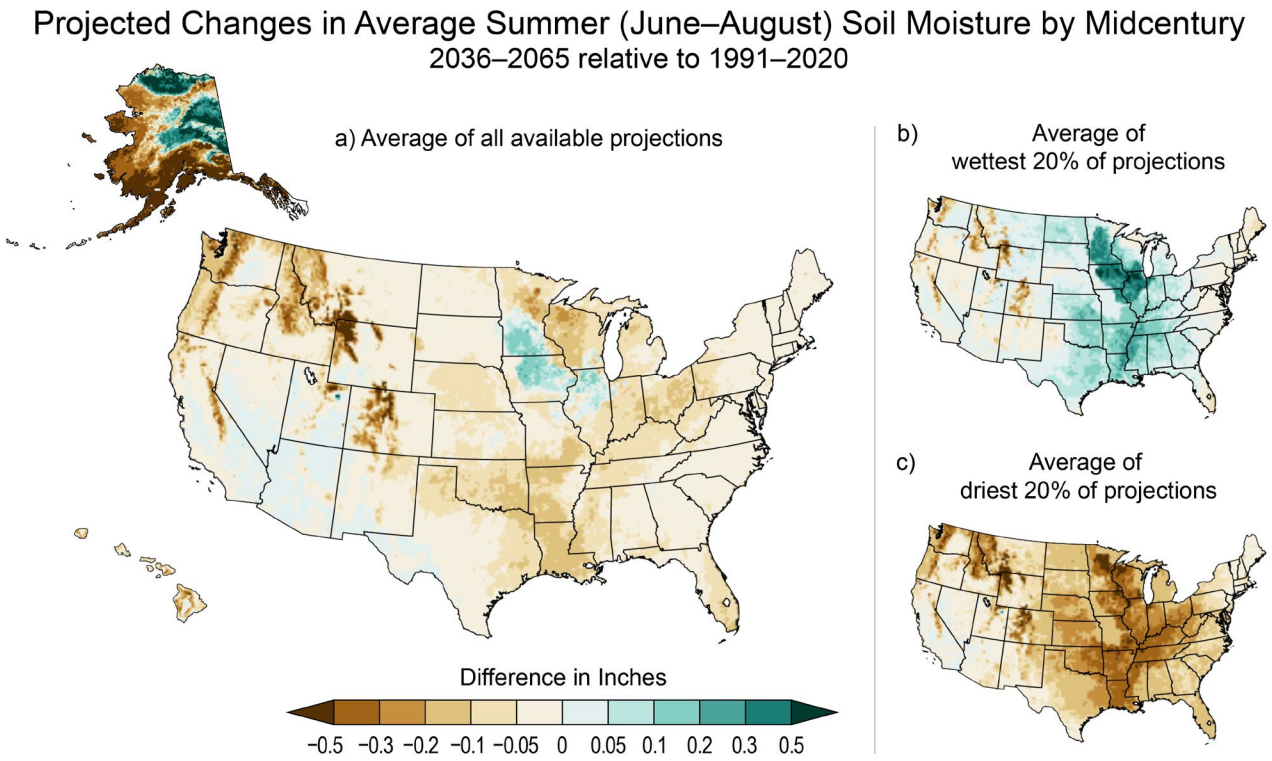
NCA5 Fig. 2.8



NCA5 Fig. 2.7

5th National Climate Assessment: https://nca2023.globalchange.gov/chapter/2/

Midwest Key Message 5



NCA5 Fig. 4.6: Projected Changes in Average Summer (June–August) Soil Moisture by Midcentury

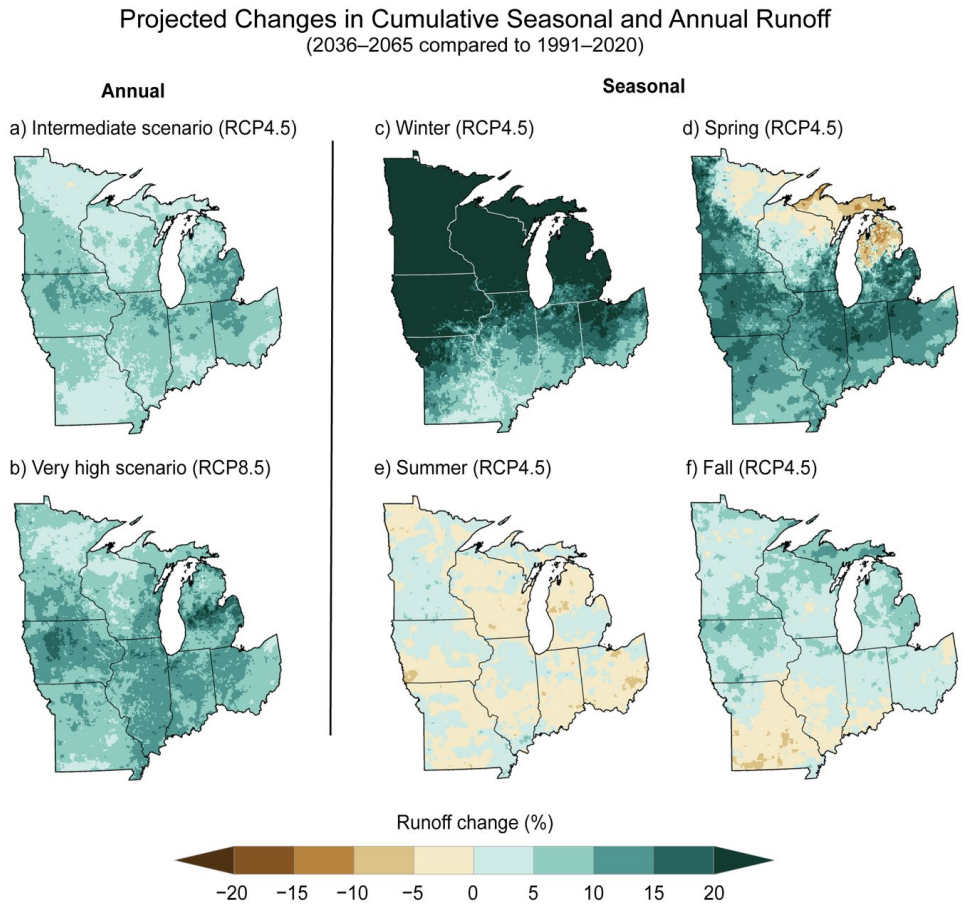
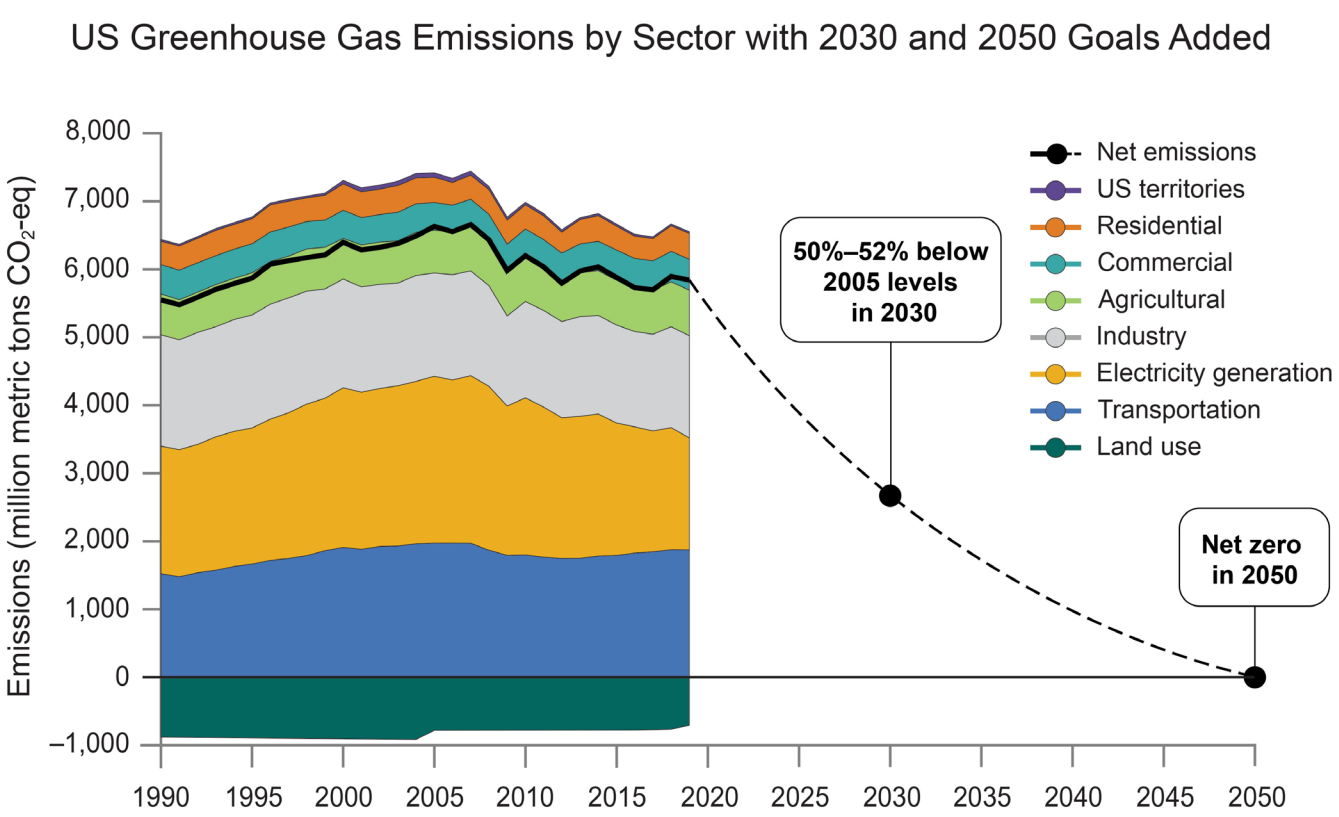


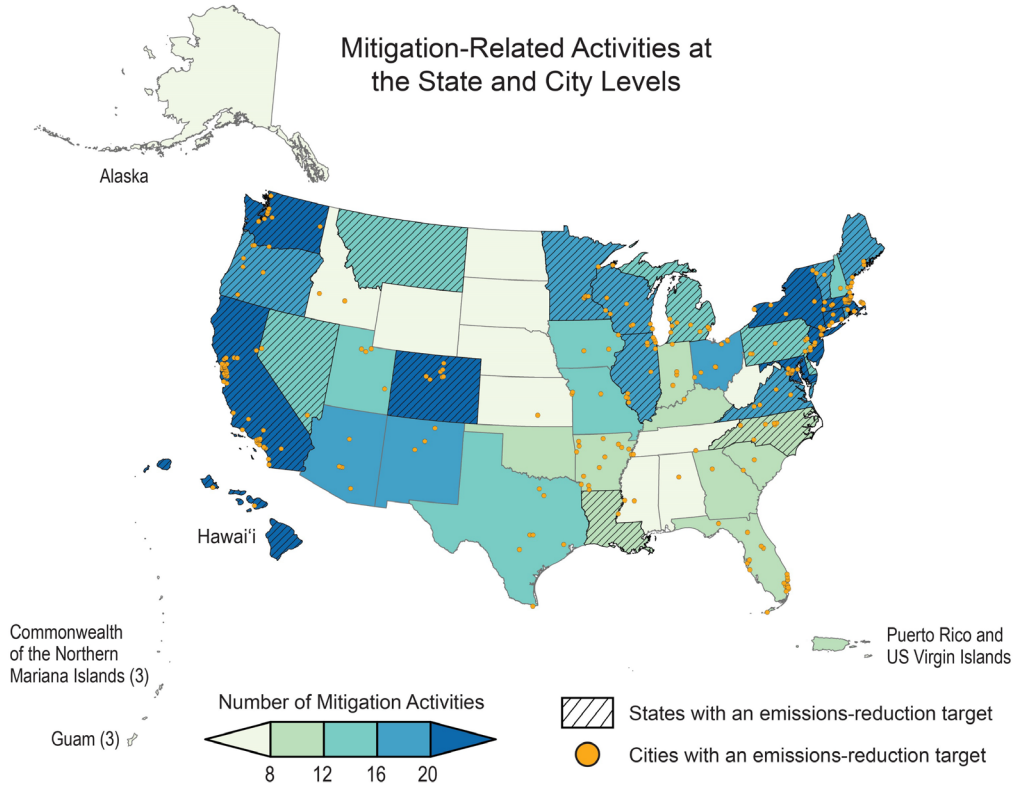
Figure 24.11. Projected changes in cumulative local runoff will lead to increased flooding susceptibility in winter and spring with, increased flash drought potential in summer.

Emission Reduction Targets

5th National Climate Assessment: https://nca2023.globalchange.gov/chapter/32/



NCA5 Fig. 32.1



NCA5 Fig. 32.20

Why Should the Miami Valley Take Action?

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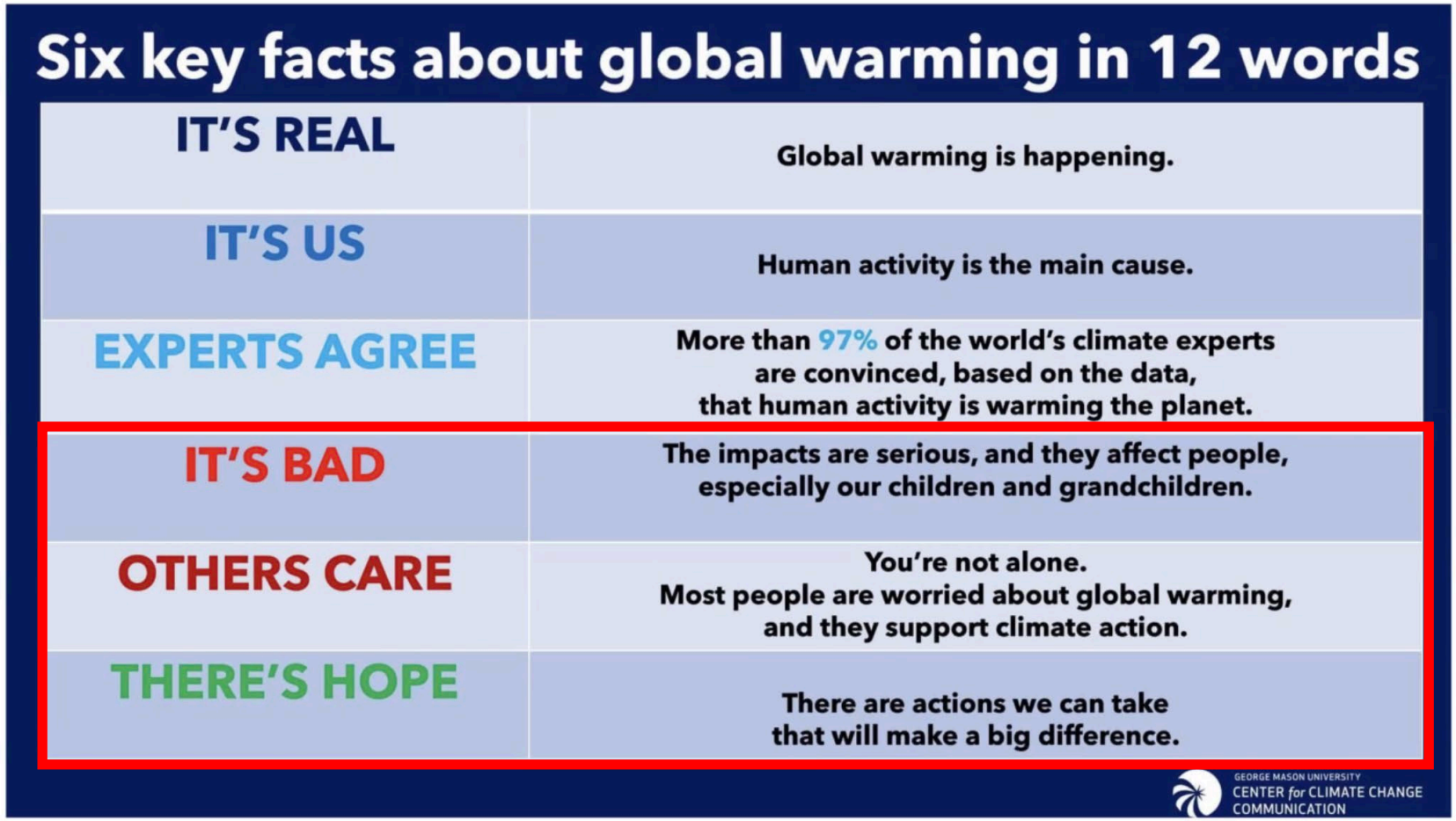
COSTS

CO-BENEFITS



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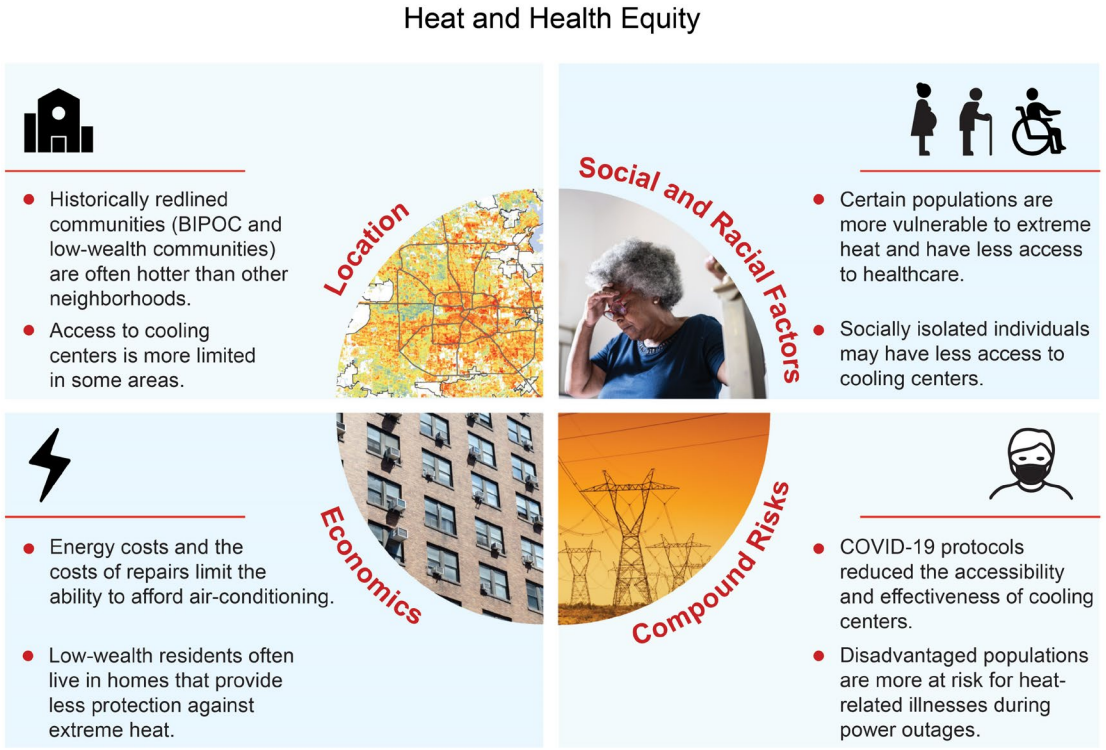
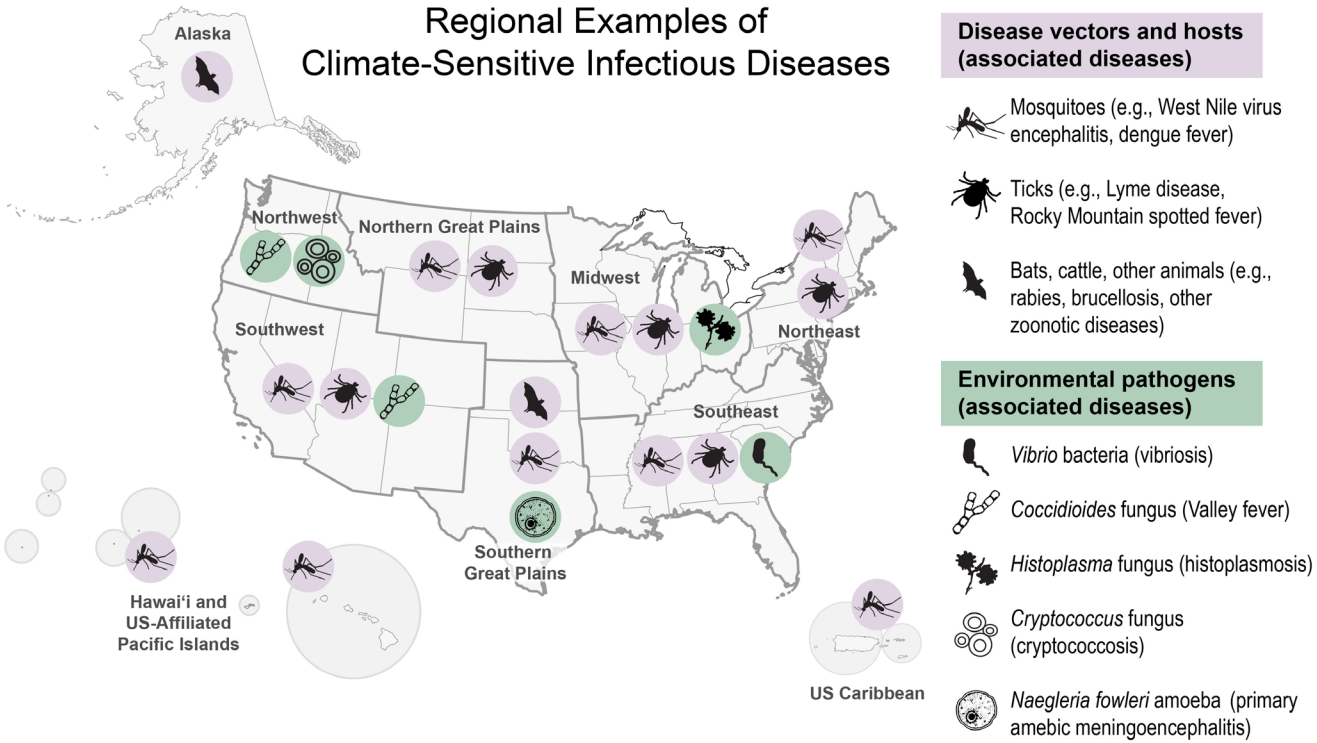
Broad Health Concerns

5th National Climate Assessment: https://nca2023.globalchange.gov/chapter/15/



NCA5 Fig. 15.1



NCA5 Fig. 15.2

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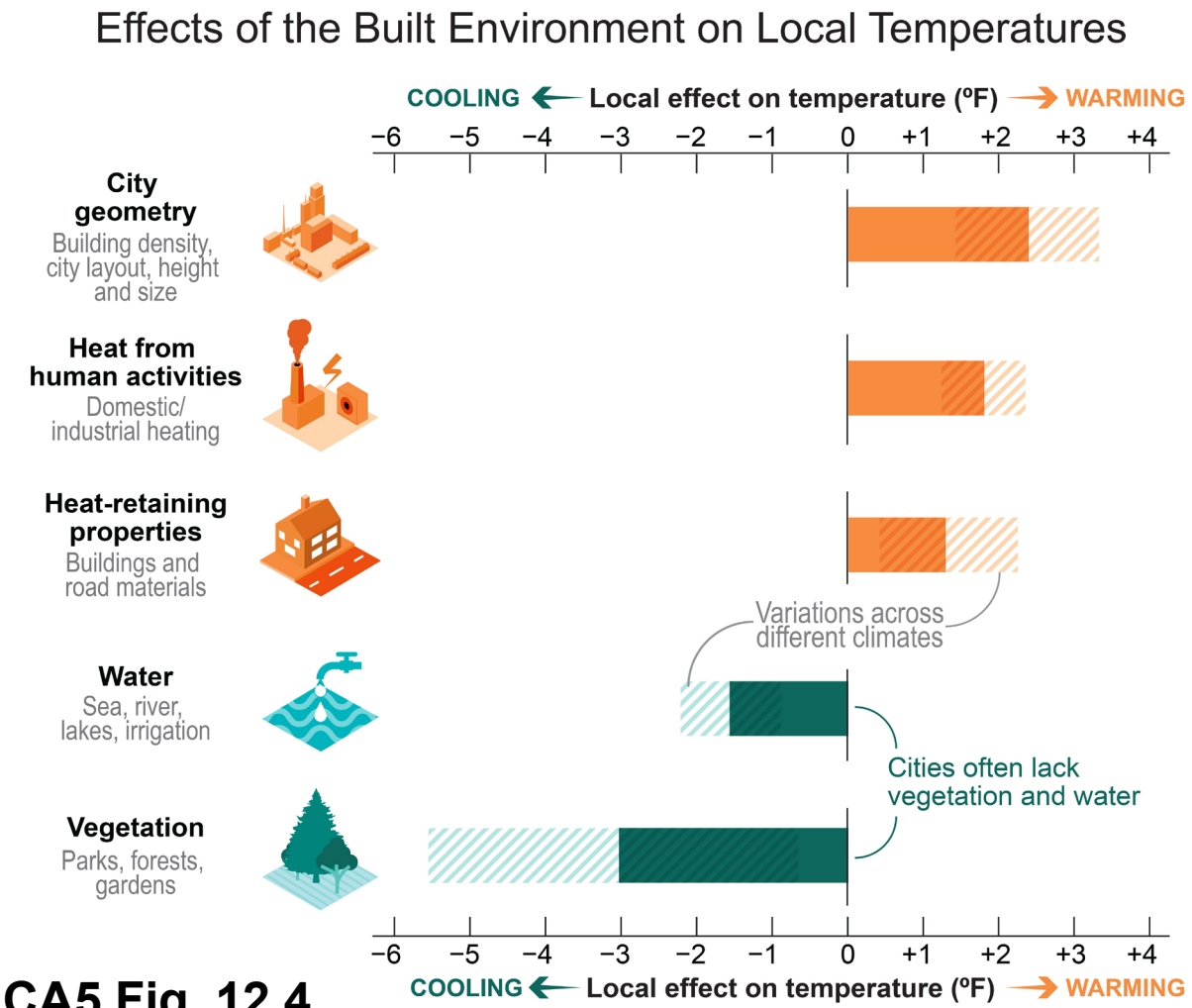
Impacts on Community Conditions



NCA5 Fig. 12.4

5th National Climate Assessment:
https://nca2023.globalchange.gov/chapter/12/

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Extreme Rainfall/Cultural Identity

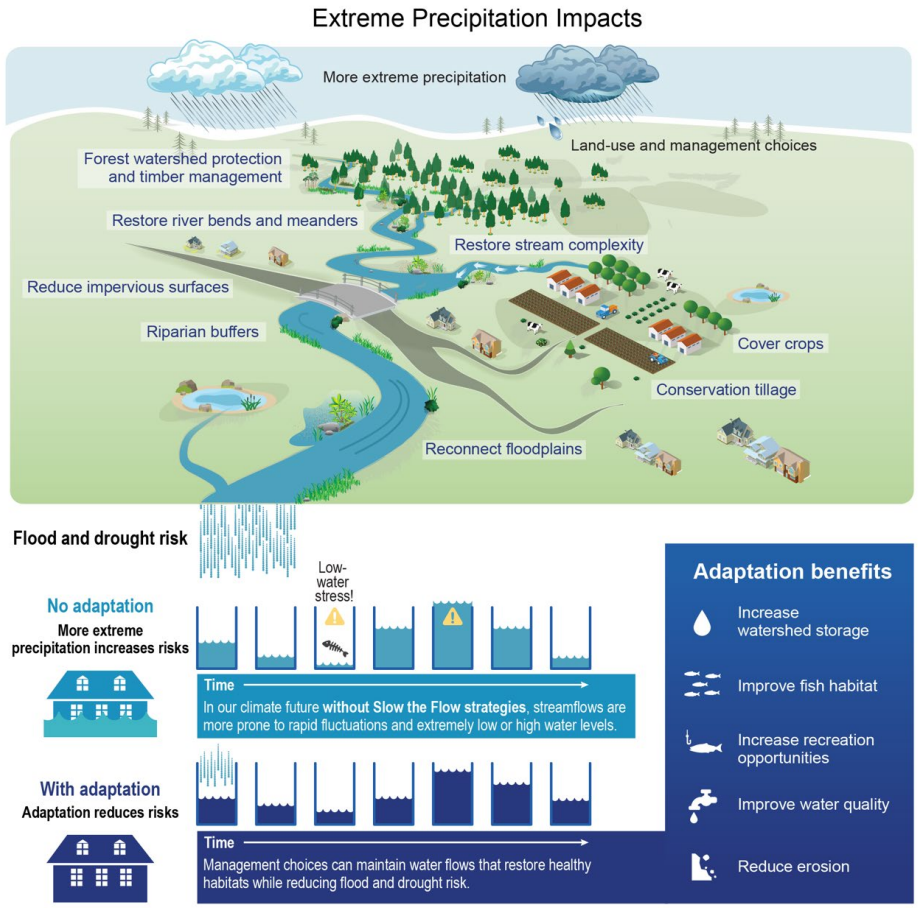

Figure 24.5. Extreme precipitation events have adverse impacts on aquatic and terrestrial ecosystems, human health, infrastructure, and economies. Conservation and management strategies can help moderate these impacts.

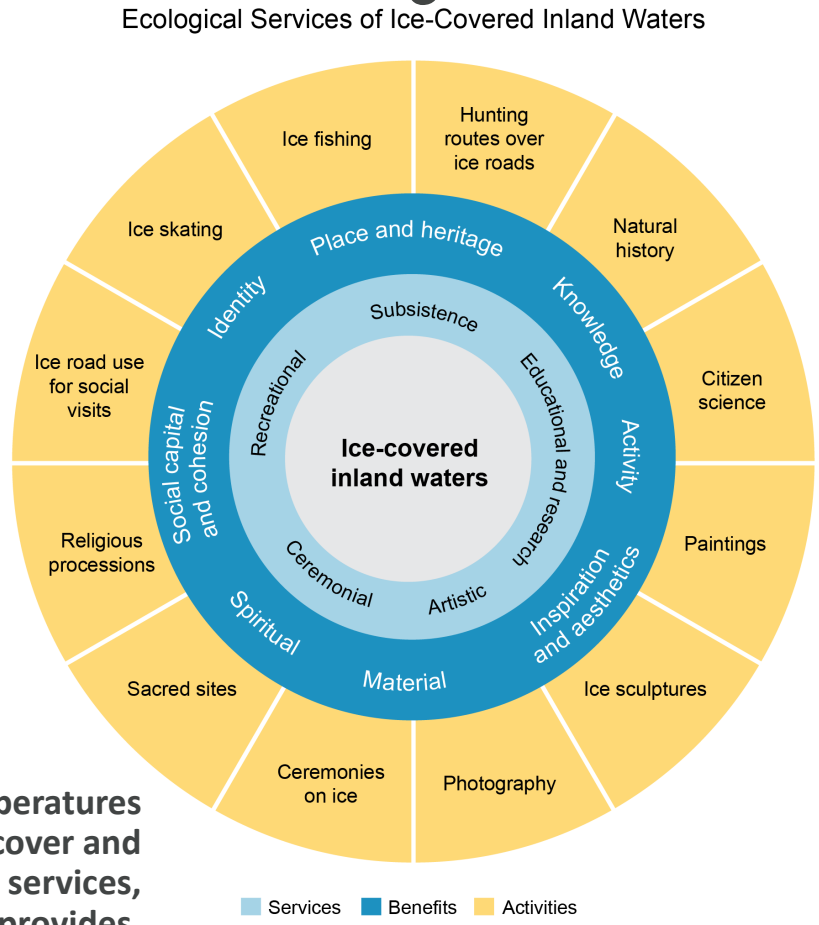

Figure 24.6. Rising winter temperatures are decreasing inland lake ice cover and the associated ecosystem services, benefits, and activities it provides.

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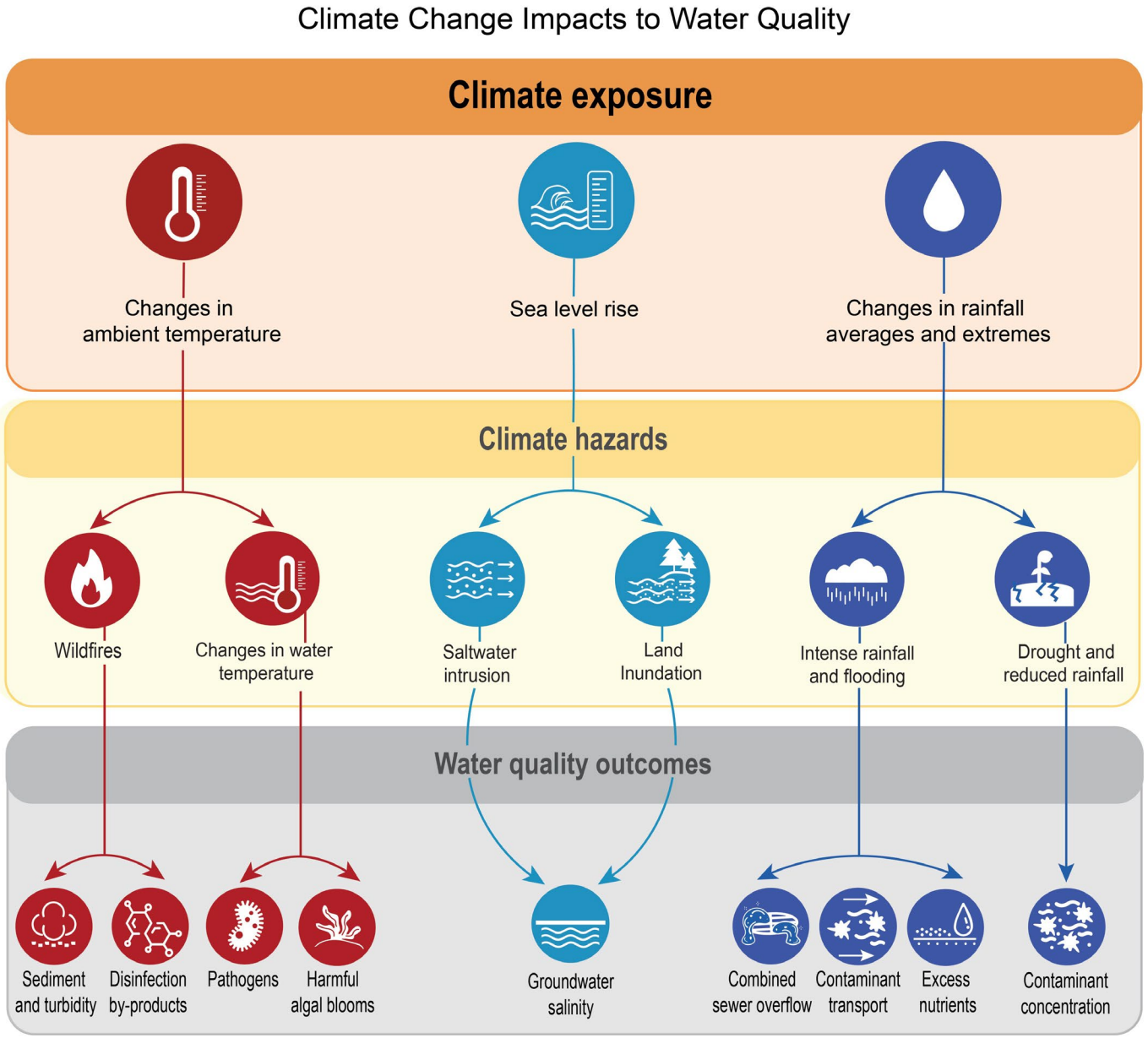
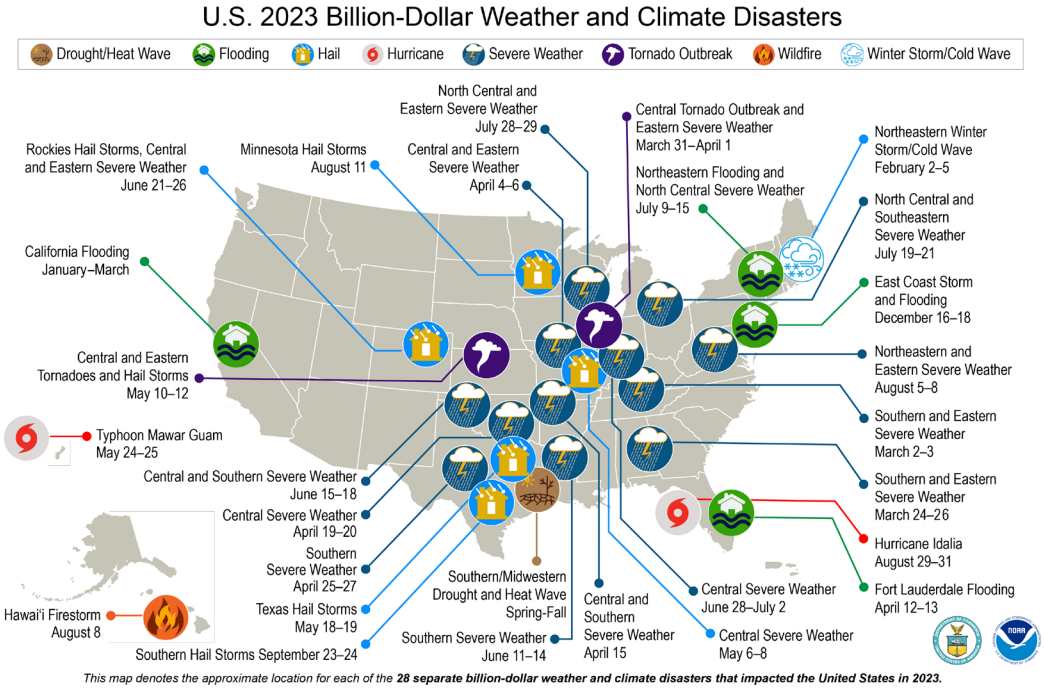
Climate Change Impacts to Water Quality

https://nca2023.globalchange.gov/chapter/4/

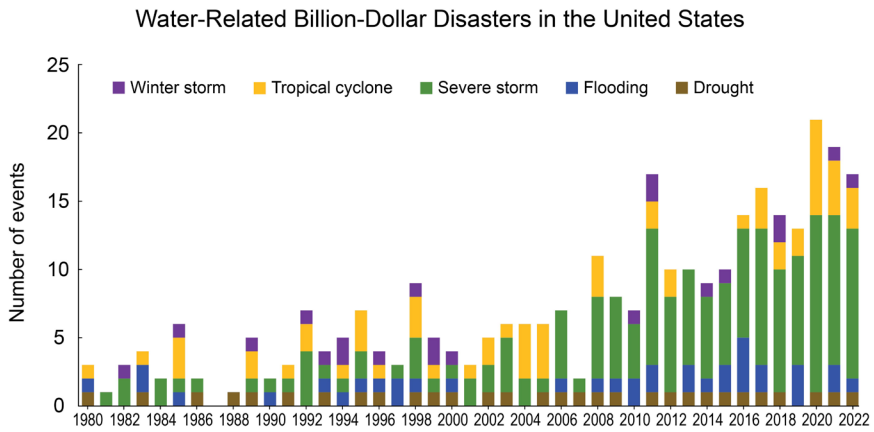


COSTS

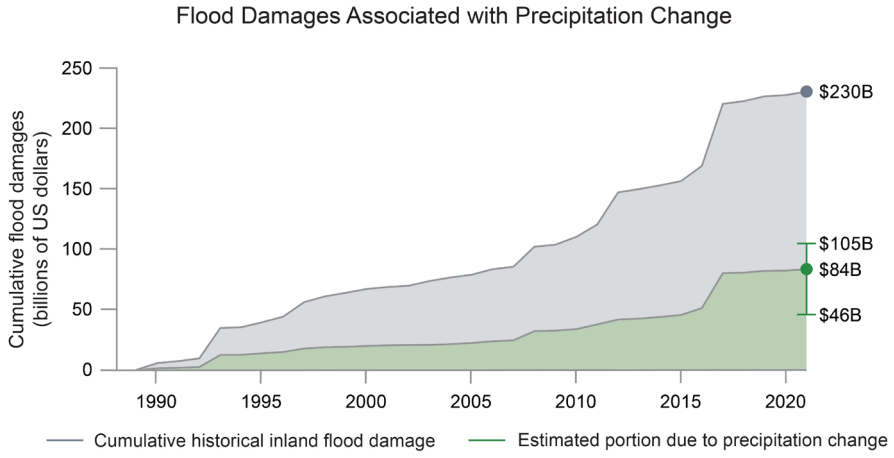
Billion Dollar Disasters & Floods



NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2023). https://www.ncei.noaa.gov/access/billions/



https://nca2023.globalchange.gov/chapter/4/



"Climate change–driven changes in precipitation amount and duration, snowpack/snowmelt, and soil moisture have combined with land-cover change and increasing property values to increase overall economic damages from floods."

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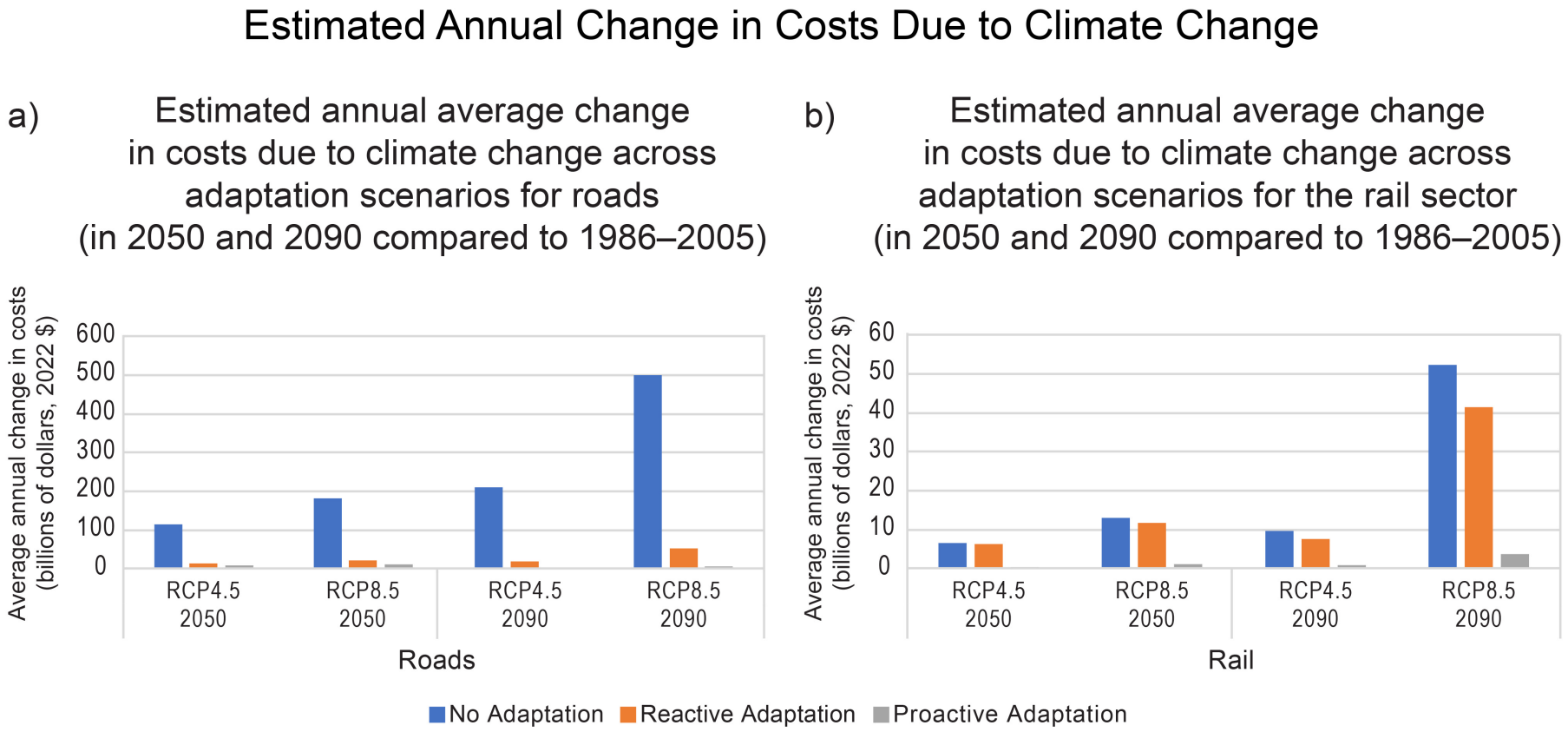
Road and Rail Adaptation



https://nca2023.globalchange.gov/chapter/31/

CO-BENEFITS

Urban Adaptation and Mitigation

- Green roofs for stormwater runoff retention
- Investments in design, construction, and long-term maintenance
- Done in just and equitable ways

https://nca2023.globalchange.gov/chapter/12/

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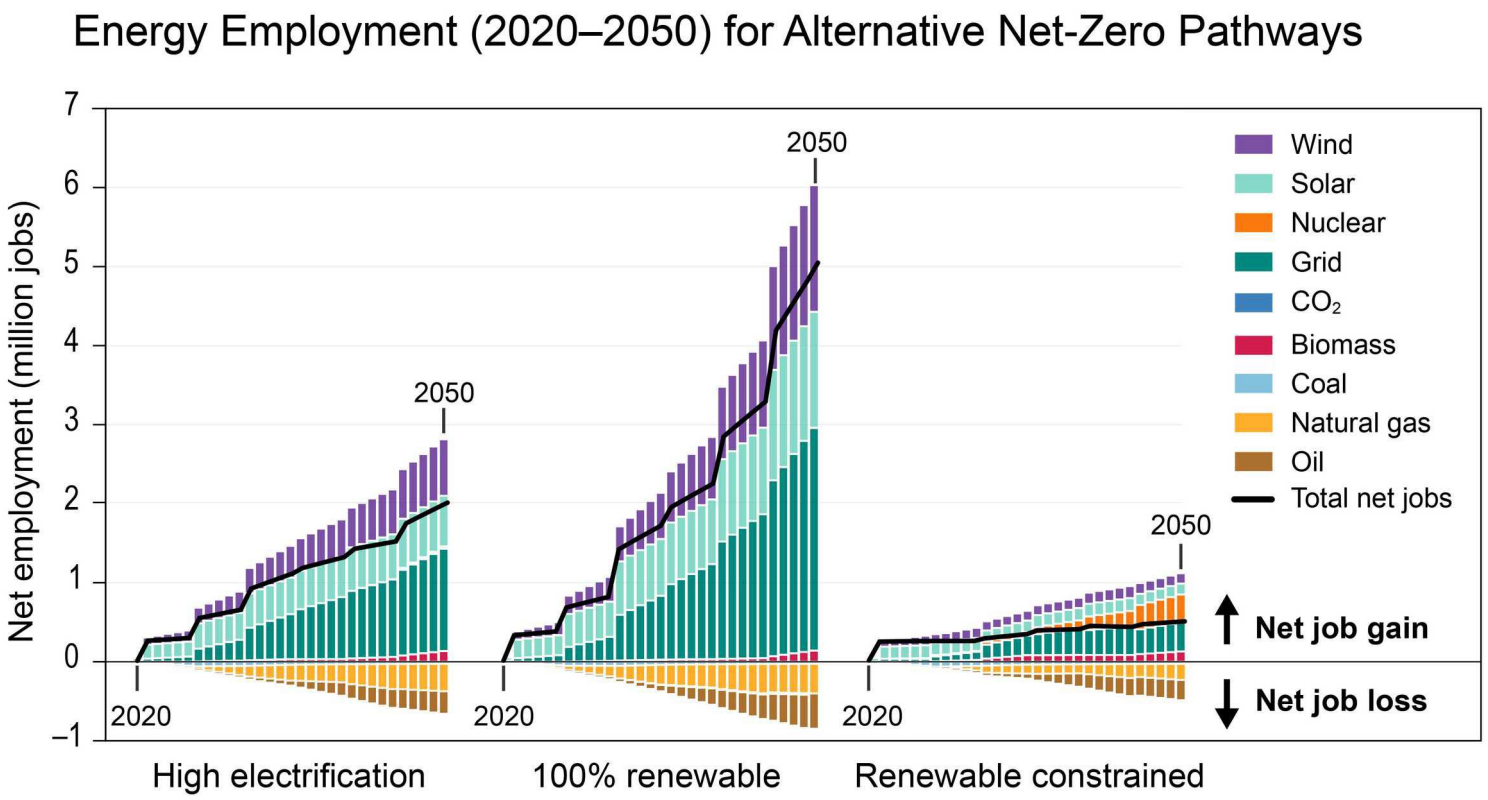
Potential Job Creation



"A shift toward renewables is projected to increase the total number of jobs in the energy sector."

https://nca2023.globalchange.gov/chapter/32/

Thank You!

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