



Climate Change and Water Resource Interactions

Ryan Noe, Humphrey School of Public Affairs

December 3rd, 2019

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Climate change report:

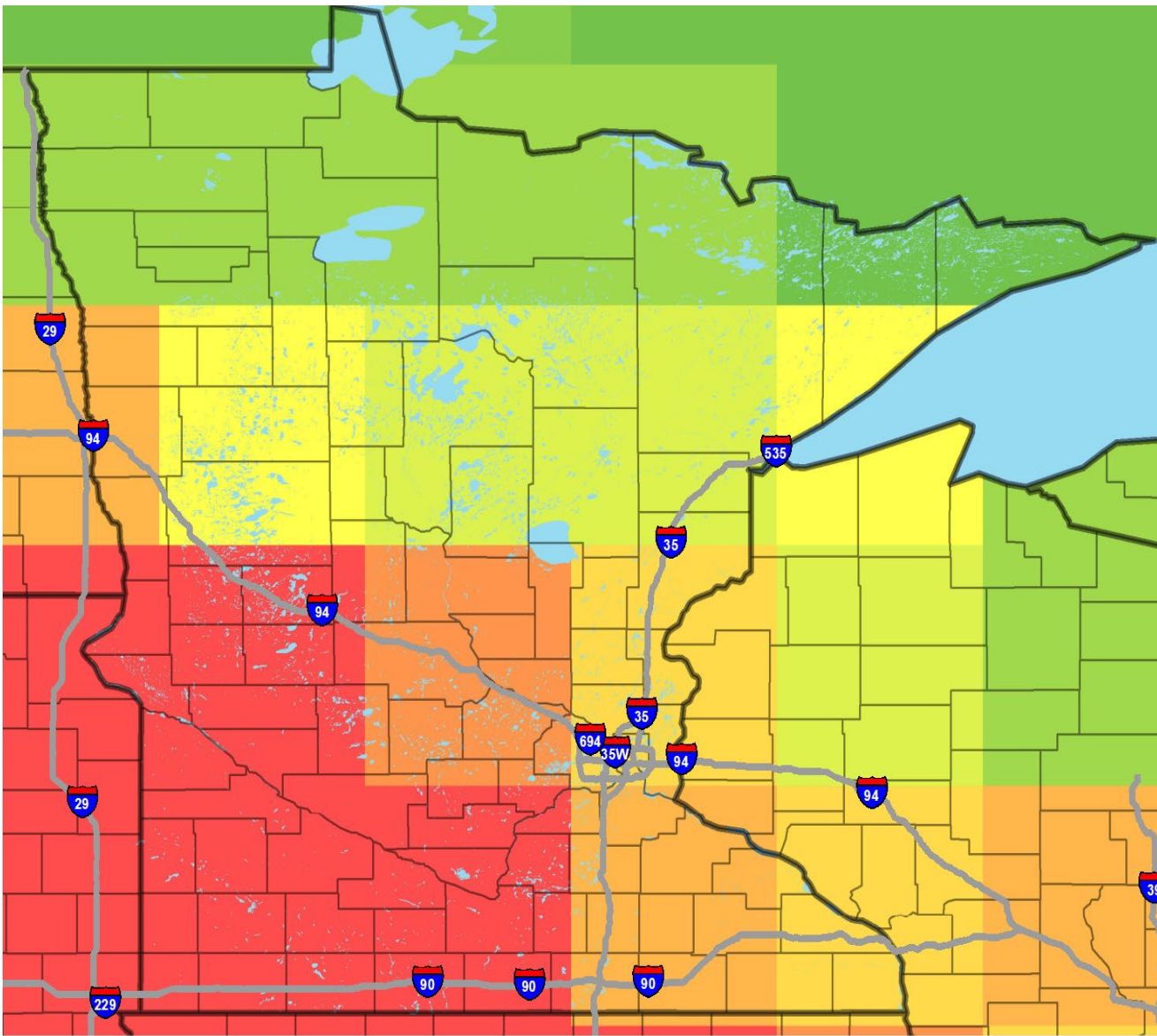
z.umn.edu/mn-climate-change-report



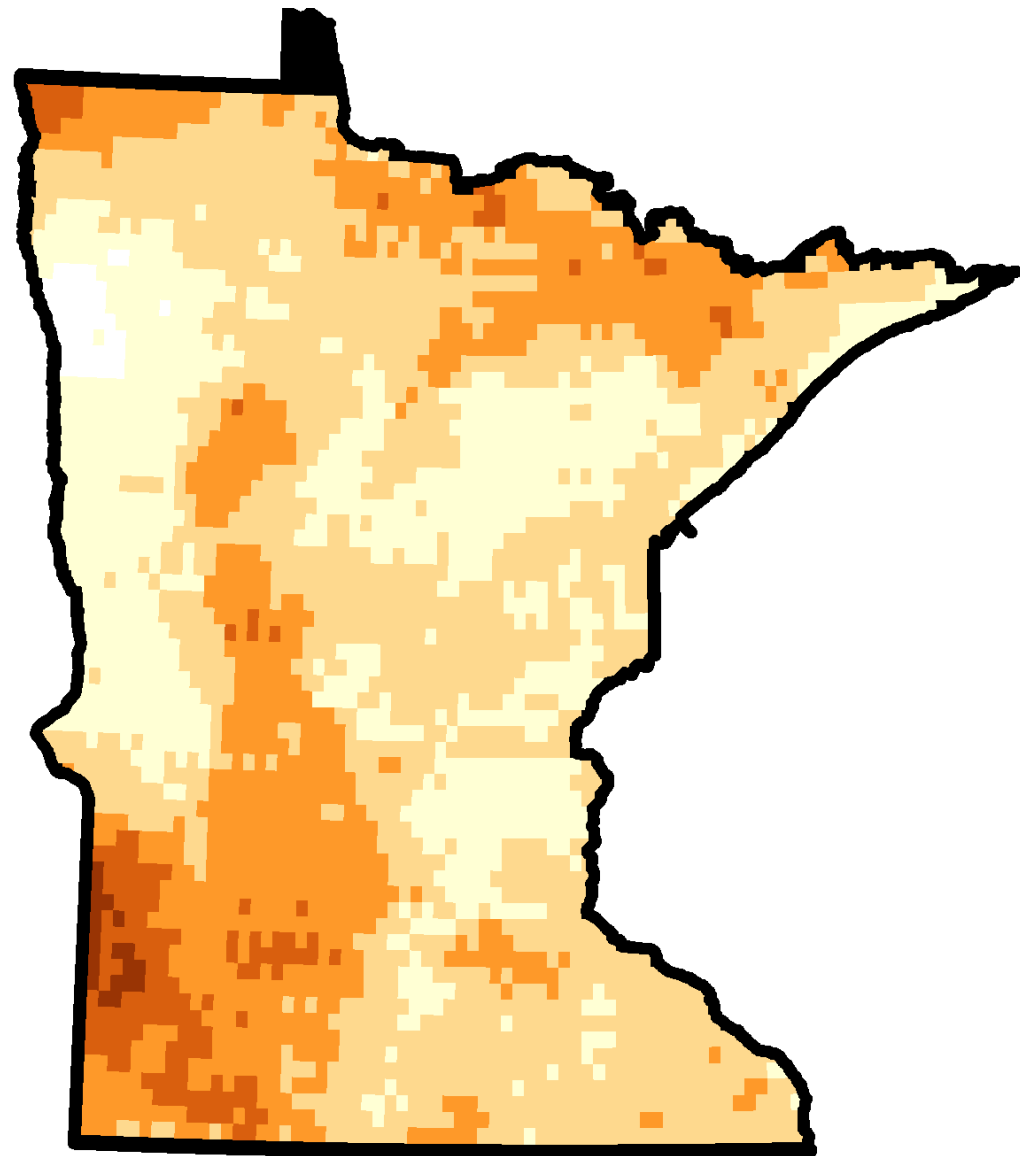
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Global scale model resolution



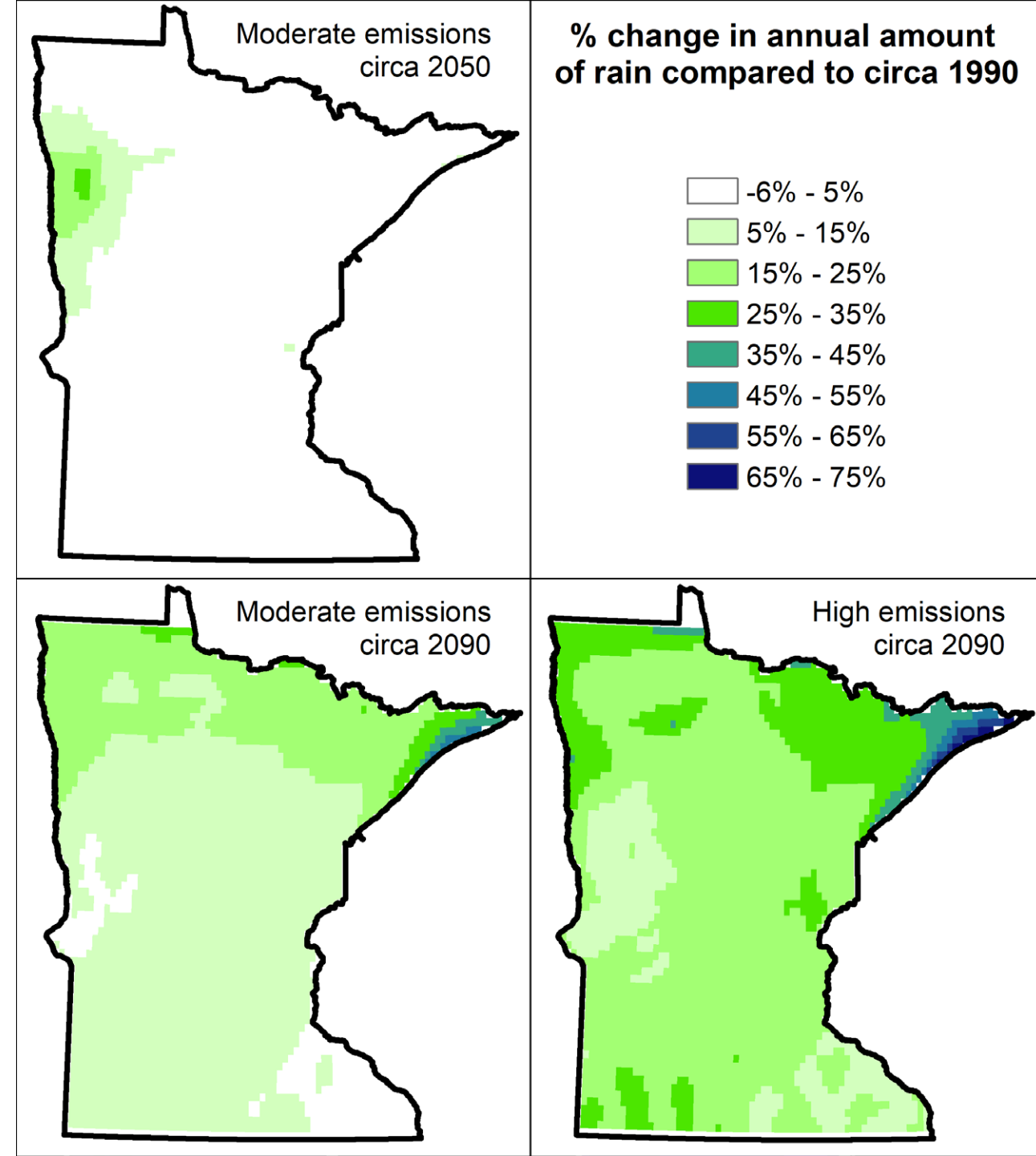
Dynamically downscaled 10km resolution



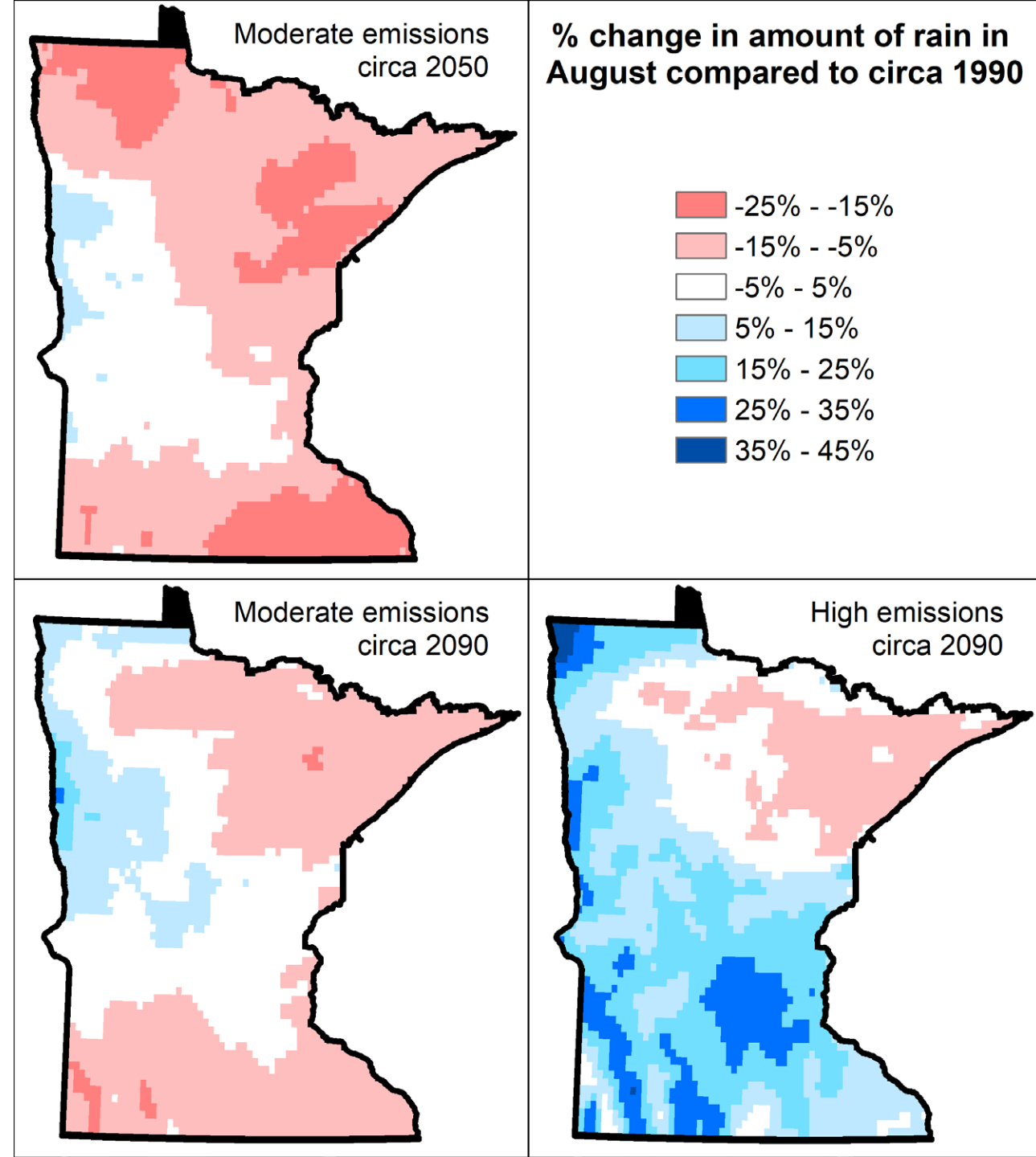
Climate Change:

Increase in precipitation

- All maps show % change from 1980-1999 average to 3 future scenarios
- All comparisons are between 20 year averages



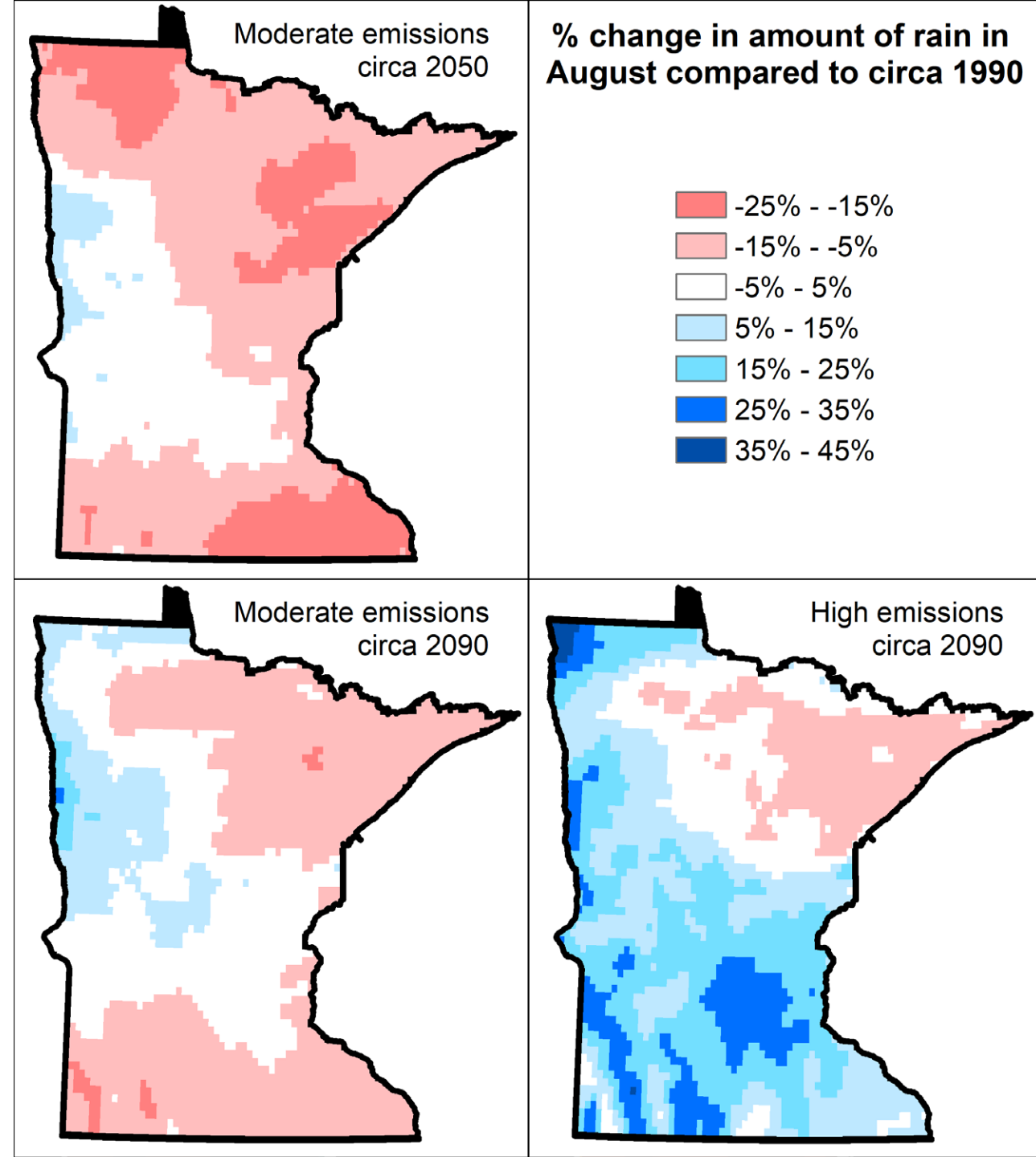
Climate Change: Drier late season



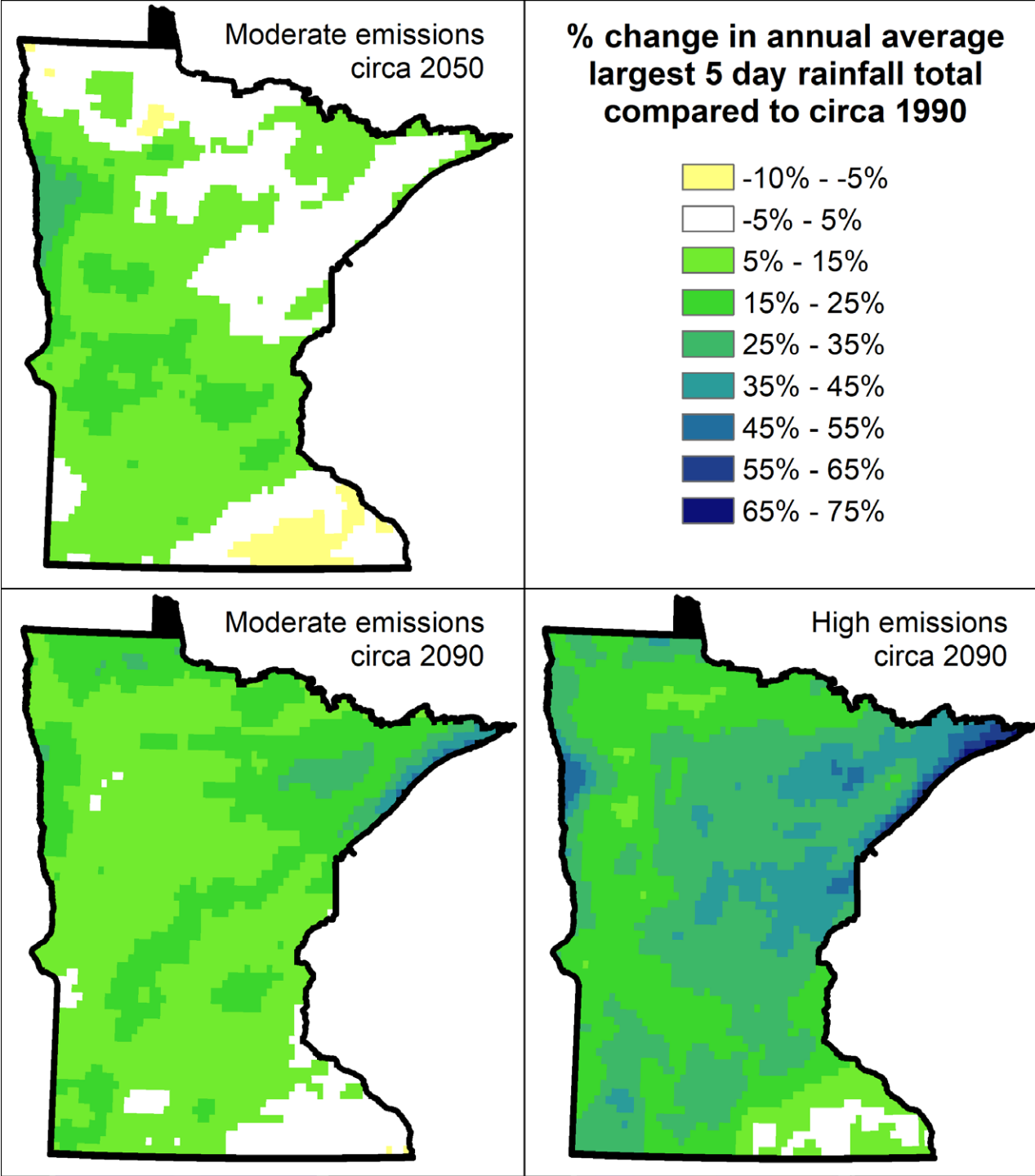
Climate Change: Drier late season

Key Impacts:

- Trout streams threatened
- Yield loss
- Groundwater demand



Climate Change: Increase in rain intensity

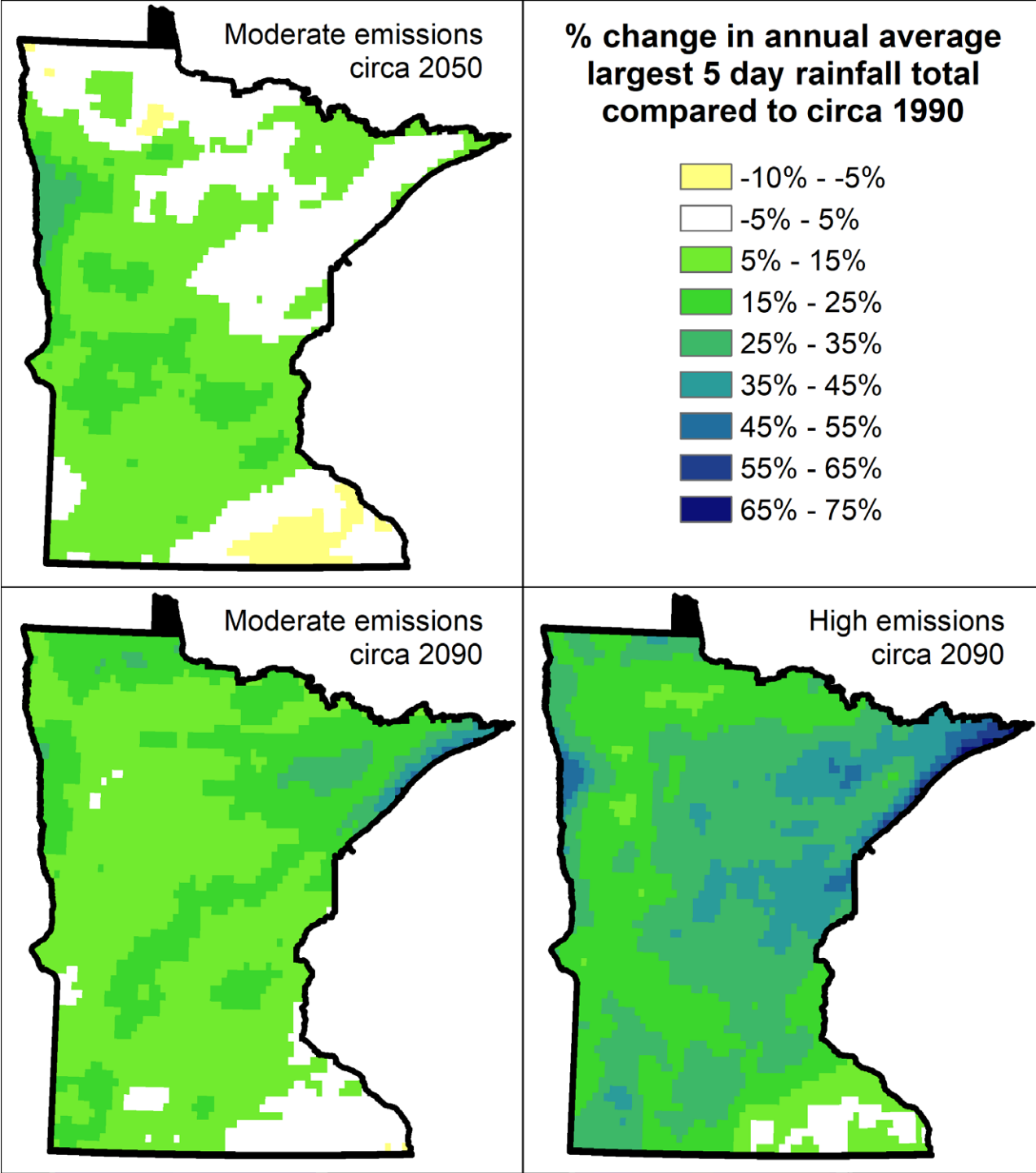


Climate Change:

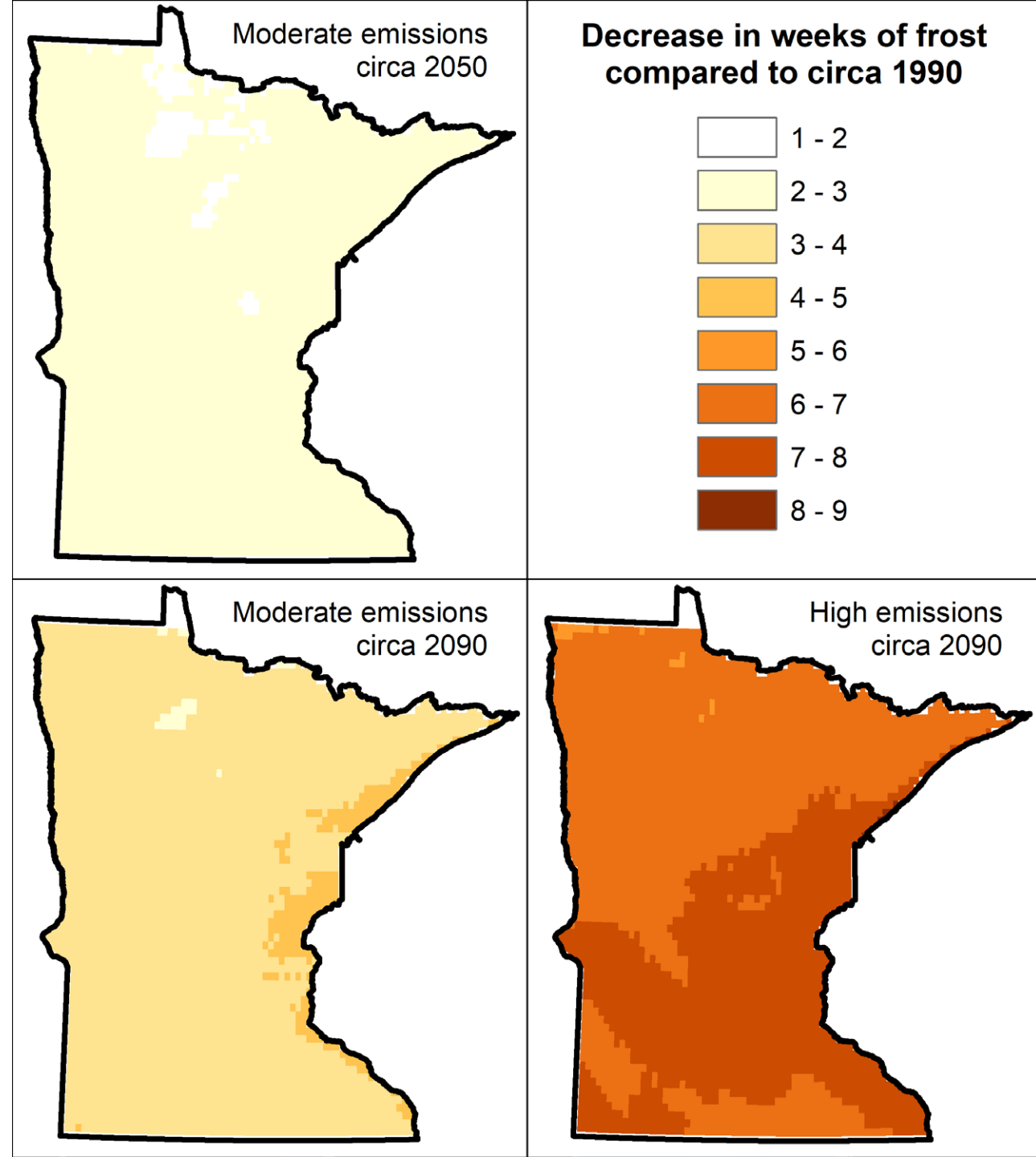
Increase in rain intensity

Key Impacts:

- Flash flooding
- Infrastructure costs
- Erosion



Climate Change: Shorter, warmer winter

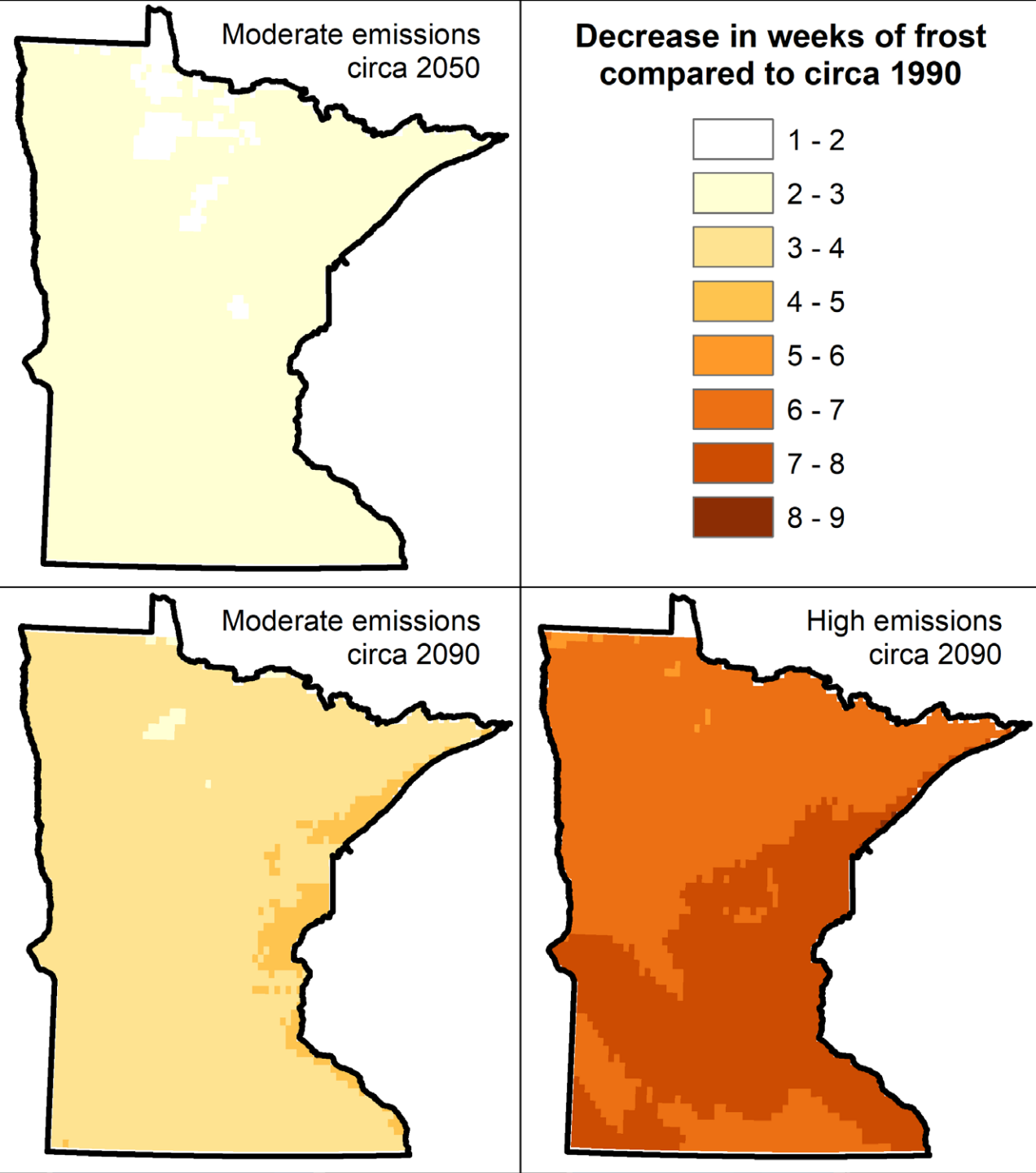


Climate Change:

Shorter, warmer winter

Key Impacts on recreation:

- >1 month less snow cover
- Shorter ice fishing season
- Warmer lakes favor bass and reduce walleye

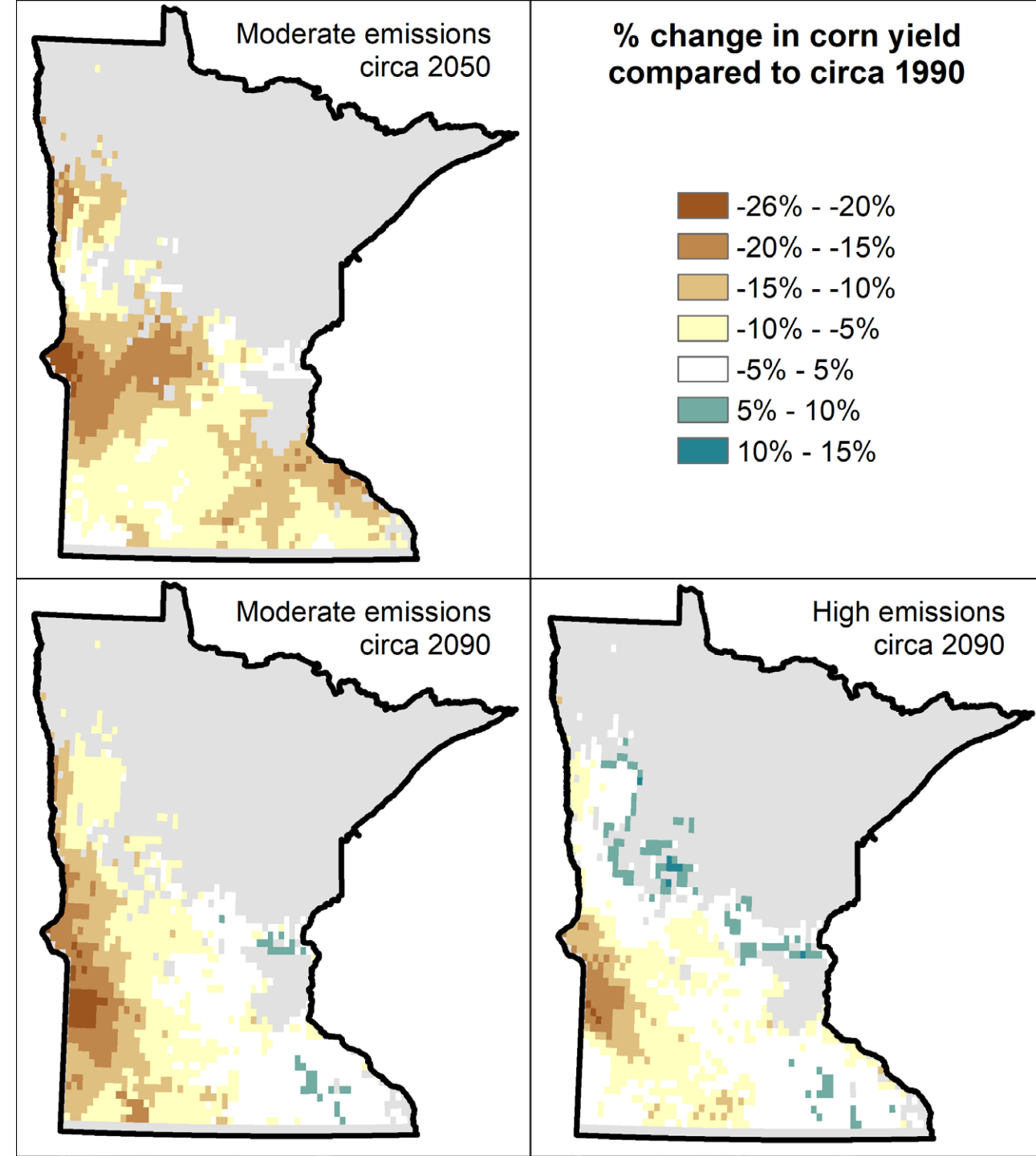


Climate Change and Crop Yields:

- Longer growing season
- More precipitation
- Precipitation variability
- Higher temperatures

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