

PUBLIC OPINION & CLIMATE ACTION



INSIGHTS
FROM U.S.
SURVEY DATA
2010-2024

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INTRODUCTION

- Climate change is a gradual yet urgent crisis.
- Public engagement is uneven across U.S. states.
- **Policy challenge: How to mobilize the concerned but inactive, and build support where skepticism persists**
- **Goal: Identify psychological & social drivers of climate policy support**

DATASET

- **Source:** Yale Program on Climate Change Communication
- **U.S. state & county-level model estimates from national surveys (2010-2024)**
- **Unit:** State or county paired by year
- **Size:** 48,150 observations * 75 variables
- **Key variables:** worry, perceived urgency, civic responsibility, dialogue engagement, support for regulation, media exposure

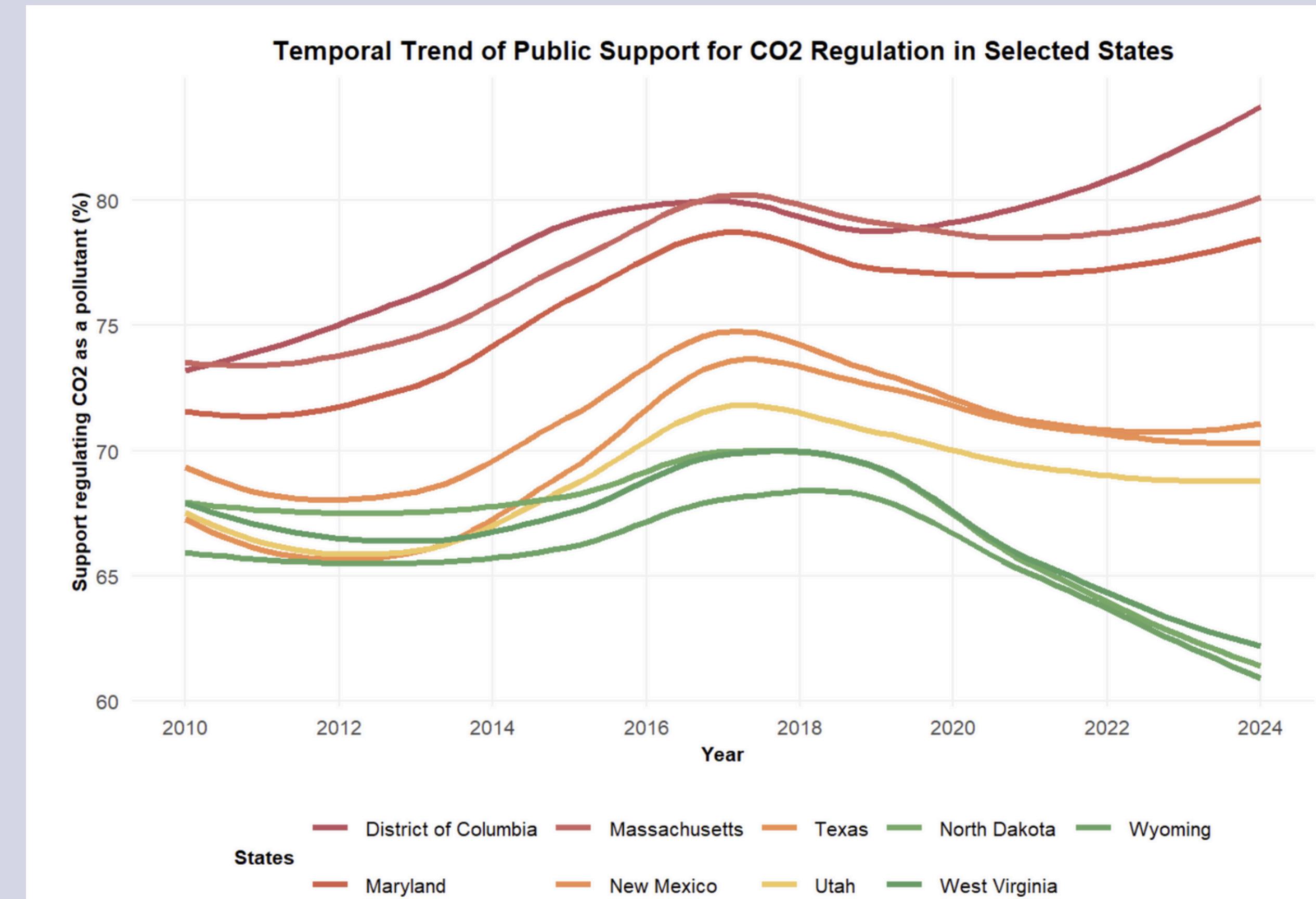
KEY VARIABLES

Variable	Description
year	Specific year in which the public opinion estimates were generated, ranging from 2010 to 2024
GeoType	U.S. state (including Washington D.C.) or county for each observation
regulate	Estimated percentage who support regulating carbon dioxide as a pollutant
worried	Estimated percentage who are worried about global warming
timing	Estimated percentage who think global warming will start to harm people in the U.S. now or within 10 years
citizens	Estimated percentage who think citizens should do more to address global warming
discuss	Estimated percentage who discuss global warming occasionally or often with friends and family
mediaweekly	Estimated percentage who hear about global warming in the media at least weekly

1. LINE CHART

- Trends in CO2 regulation support for 9 states (2010-2024)
- States grouped by civic responsibility & policy support level
- Color scale: climate worry levels

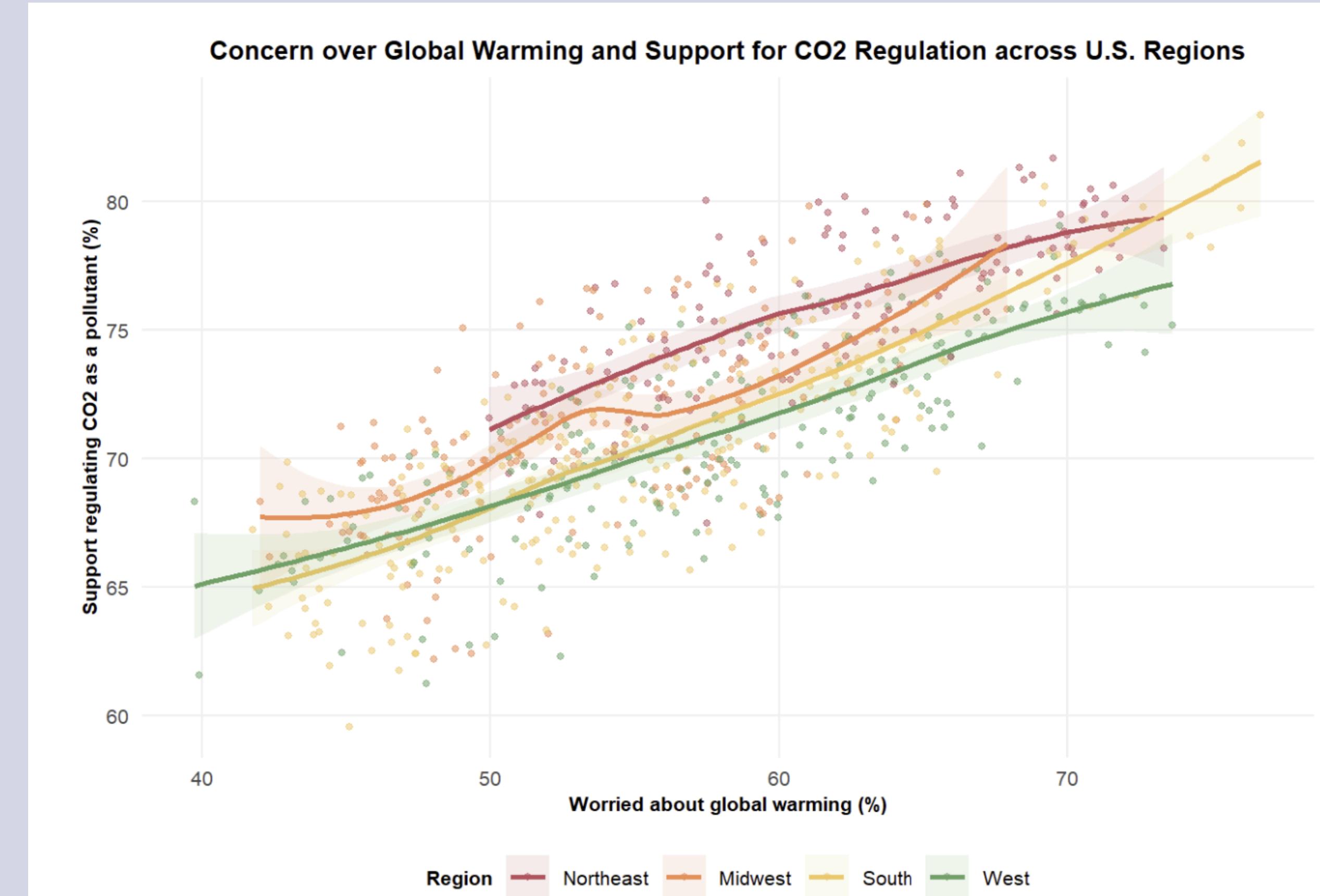
High-engagement states show steady growth, while low-engagement states plateau or decline.



2. SCATTERPLOT

- Concern versus CO2 regulation support by region
- LOESS trends for Northeast, Midwest, South, West

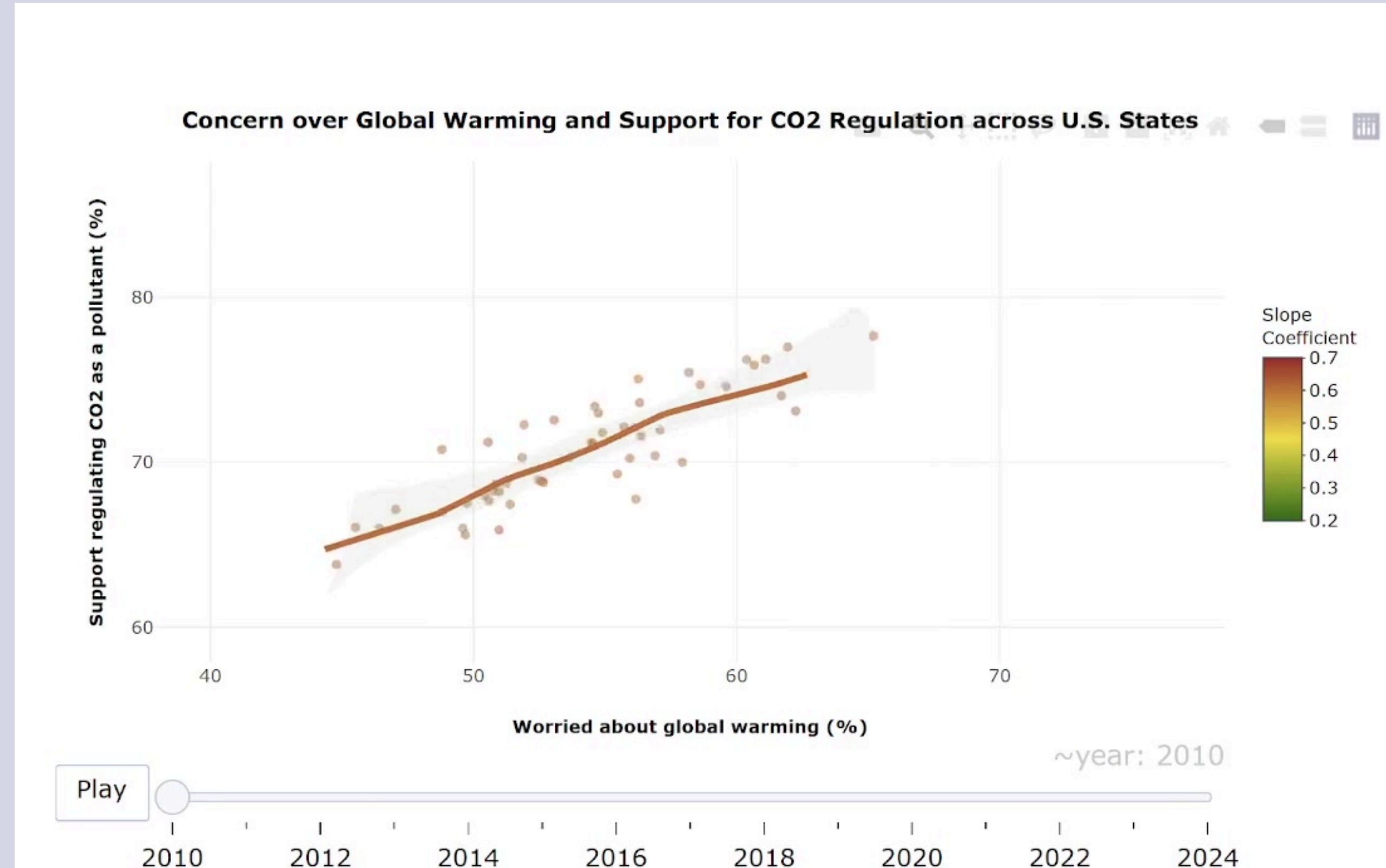
Across all regions, higher concern correlates with higher support for regulation, with varying levels.



3. ANIMATED SCATTERPLOT

- Tracks relationship over time
- Color scale: yearly slope coefficient (strength of concern-policy support relationship)

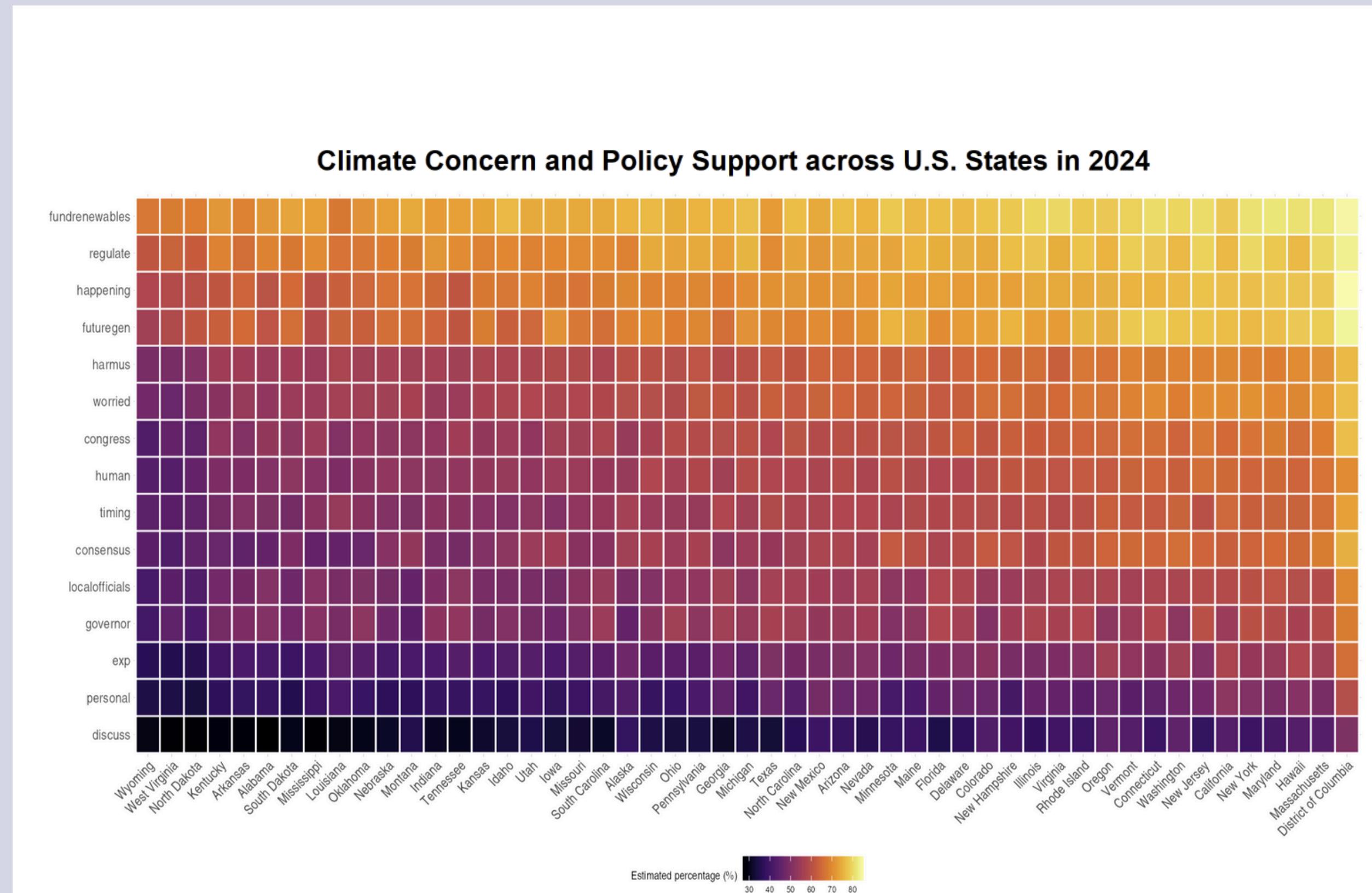
The animation reveals how the link between climate concern and policy support changes year to year.



4. HEATMAP

- State * variable, reordered by average response
 - Color set: estimated percentage (%)

The heatmap shows state-by-variable patterns in 2024. States like D.C. and Massachusetts cluster at the top, while some interior states rank consistently lower.

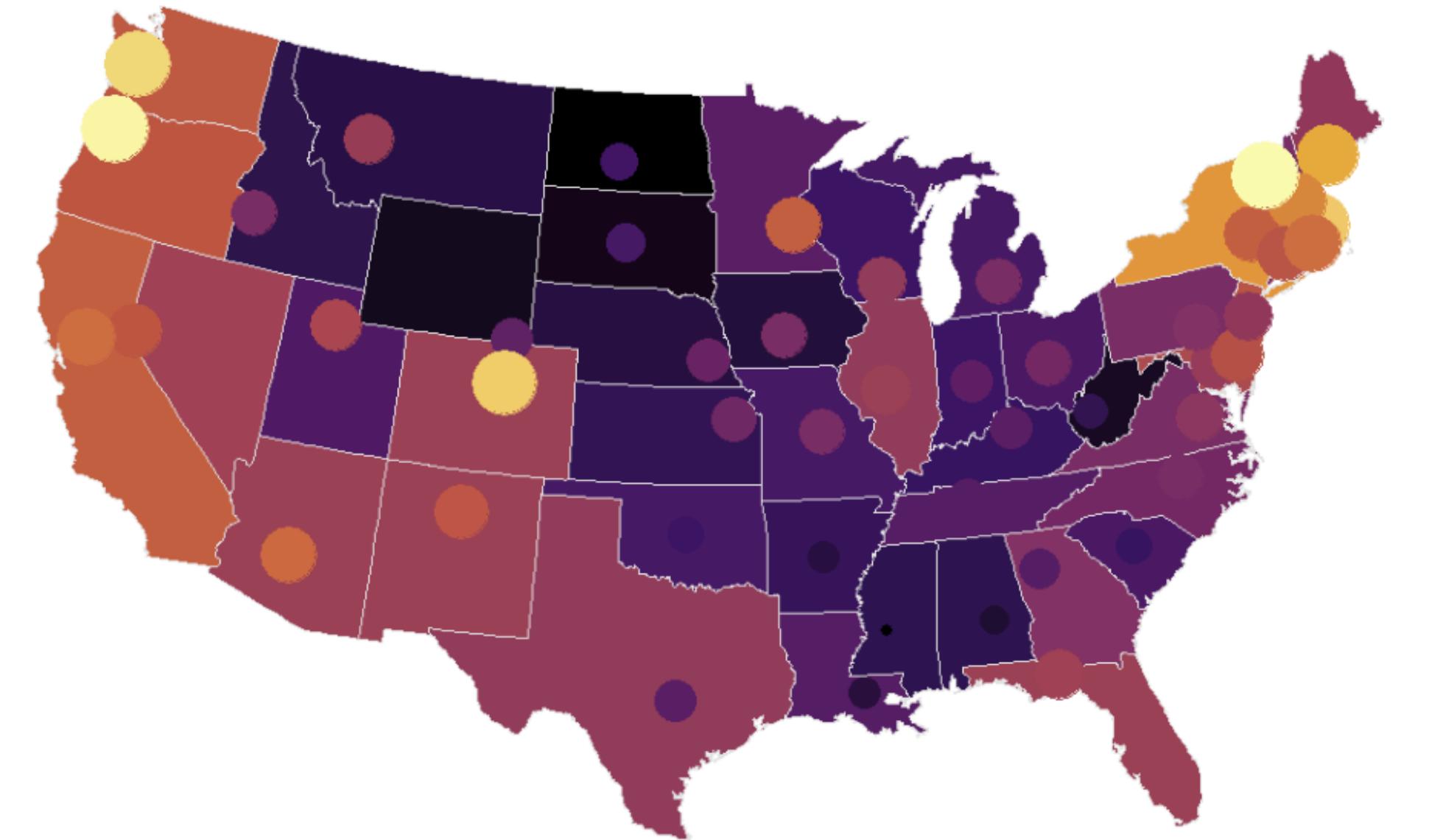


5. CHOROPLETH + BUBBLE

- Fill: importance of climate in voting
- Bubble: weekly media exposure

States with higher media exposure tend to prioritize climate in voting decisions, especially in the Northeast and West Coast.

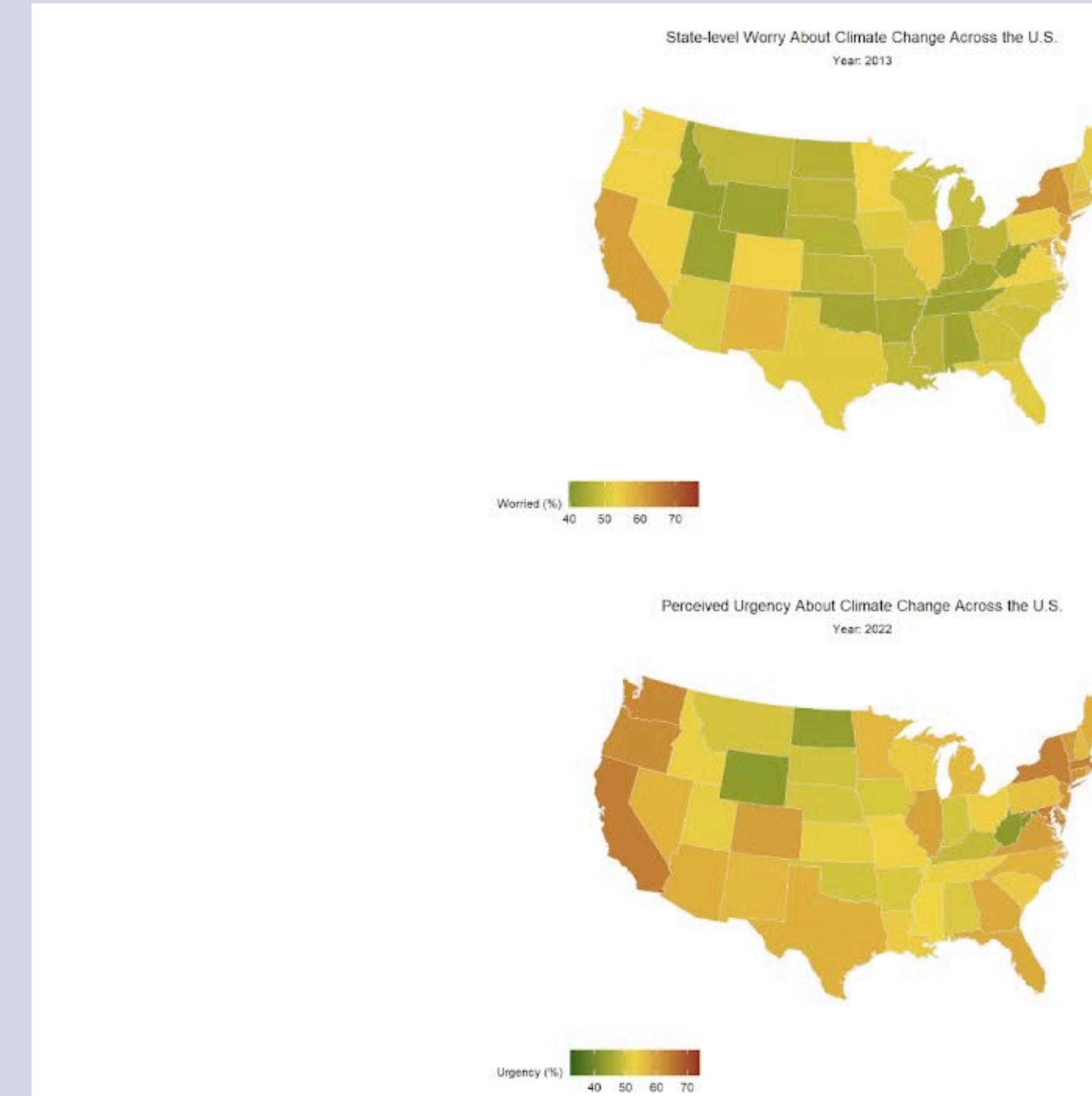
Media Exposure to Global Warming and Voting Importance by U.S. State



6. ANIMATED MAPS

- Worry (top) versus urgency (bottom)
- Clear upward trend in both, 2010-2024

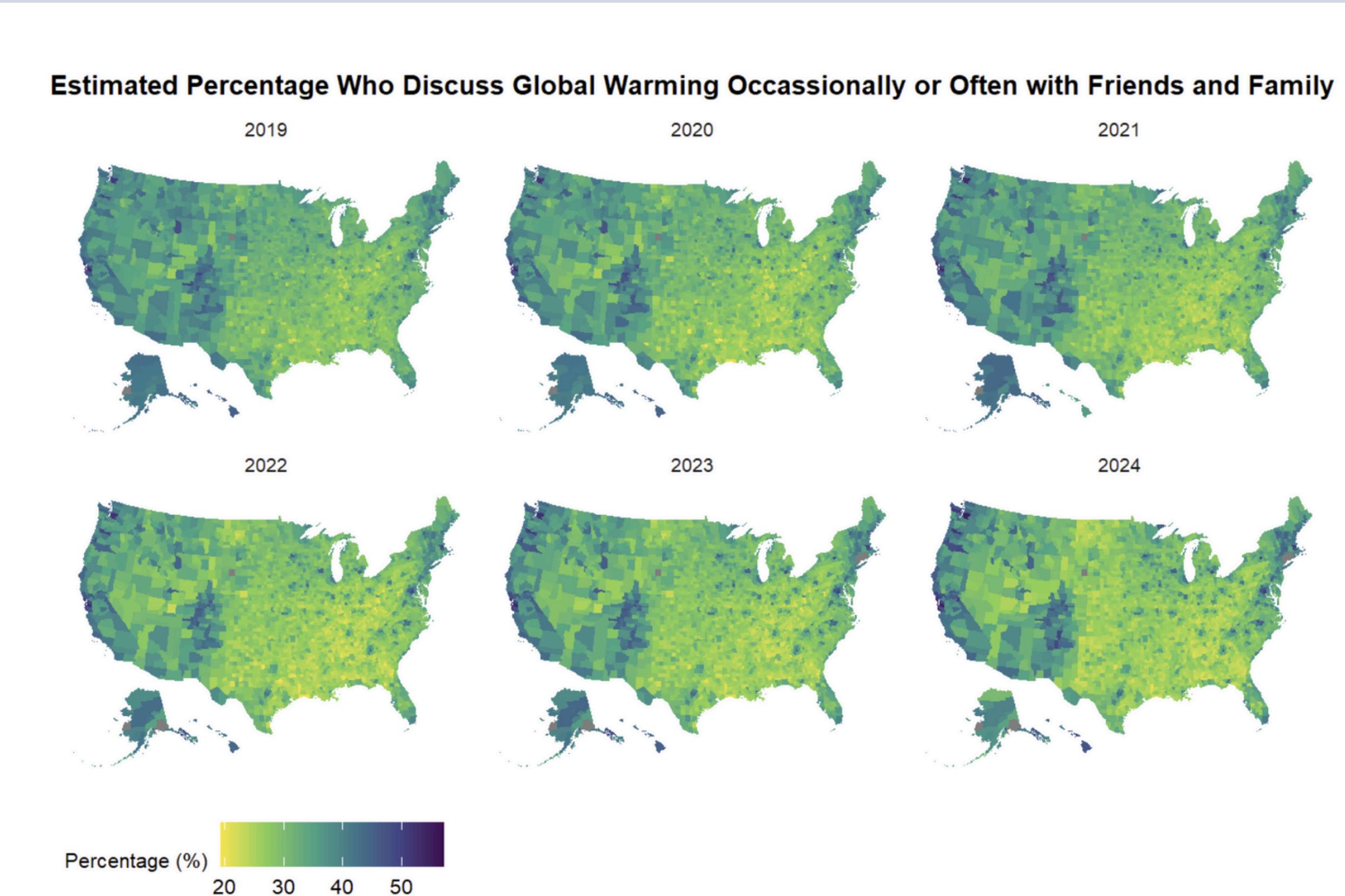
Both worry and urgency have increased over time, with urgency starting lower but catching up in recent years.



7. SMALL-MULTIPLE MAPS

- Citizens should do more versus climate discussion
- Decline in civic responsibility, stable but low discussion levels

Discussion levels have not changed much despite decline in civic responsibility, raising questions about how attitudes translate into action.



SHINYAPP DEMO

Public Opinion and Climate Action: Insights from U.S. Survey Data (2010-2024) Sujin Kim

Filter Options

Select Year

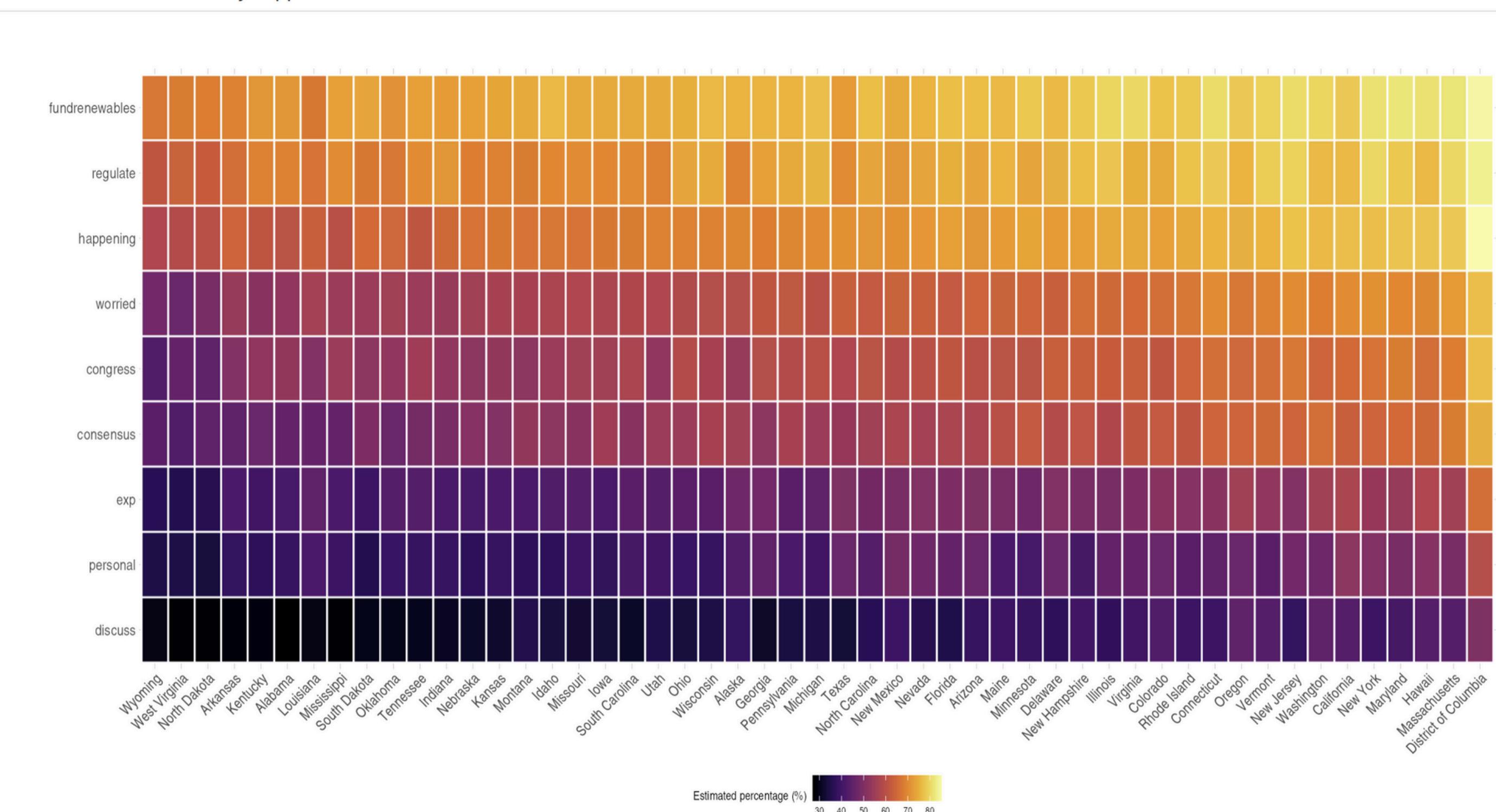


Select Variables

congress consensus
discuss exp
fundrenewables
happening personal
regulate worried

Note: The heatmap automatically reorders states and climate variables based on the selected year and variables. States on the horizontal axis are arranged from lower to higher average estimated percentages, while variables on the vertical axis are ordered the same way from bottom to top.

Climate Concern and Policy Support across U.S. States



NEXT STEPS

- Add behavioral indicators such as voting history, participation in climate-related events for civic behavior insights
- Merge with socioeconomic & environmental data
- Apply longitudinal & predictive modeling to examine sentiments preceding shifts in climate policy support over time
- Conduct targeted policy simulations to estimate potential impact of tailored communication campaigns

CONCLUSION

- Emotional concern, civic responsibility, urgency have distinct roles in shaping policy support
- Geographic patterns can guide targeted engagement
- Linking public opinion data to interventions can enhance policy impact