

Understanding Republican Voting Behavior on Climate Change Legislation in the
116th Congress

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Abstract

Climate change in the 21st century has become an increasingly pressing issue, yet little has been done to effectively mitigate and combat it. The polarized nature of American politics today has resulted in a stark difference in opinion between Republicans and Democrats on climate change with nearly all Democratic members of Congress voting in support of climate change mitigation bills. Yet not every Republican votes the same way on climate change, making the variance of such voting behaviors worthy of research. In this study, a climate scoring tool is created and applied to House Republicans of the 116th Congress. The resulting scores for each member are then placed in context with various political and environmental variables, to analyze influence on such voting behavior. The voting behavior on climate change legislation of House Republicans in the 116th Congress is largely driven by ideology, with increasing levels of conservatism strongly correlating with lower support for climate change legislation. Beyond ideology, the climate scoring tool highlights compounding effects of coastal vulnerability and age on Republican voting behavior.

Introduction

On April 22nd, 2021, Republican Representative Scott Perry (PA-10) introduced a bill in the House entitled “To provide for the withdrawal of the United States from the United Nations Framework Convention on Climate Change, and for other purposes.” The bill, H.R. 2798¹, called for two initiatives. The first initiative was for the President to withdraw the United States from

¹ H.R. 2798 did not advance past introduction in the House.

the United Nations Framework Convention on Climate Change (UNFCCC). The second initiative was to prohibit use of funds from any other program towards UNFCCC efforts. April 22nd, the day of Perry's proposal, also happens to be the national holiday of Earth Day, which is dedicated to supporting efforts for environmental protection. Perry has expressed skepticism regarding scientific consensus on climate change and "how exactly humans contribute" to the earth's changing climate.² Other Republicans in the House of Representatives, such as Representative Kevin Hern (OK-1) and Jodey Arrington (TX-19), have expressed similar sentiments.³ In March of 2021, Center for American Progress (CAP), a policy research and advocacy organization, published a list of 139 elected officials in the 117th Congress that the group deemed as "climate deniers." Attached to each "denier" in the CAP data was a written quote and supporting hyperlink that demonstrated their skepticism of the scientific consensus surrounding climate change.⁴ The list was comprised entirely of Republican officials.

In contrast, two months after Perry's proposal, a group of 50+ House Republicans moved to create the Conservative Climate Caucus, with aims to "educate fellow Republicans" on climate change and advance "market-based policies" as part of the solution to combat it.⁵ Utah Representative John Curtis (R, UT-3) hailed the caucus's efforts, proclaiming that "those

² Charles Thompson. "Climate change: Here's how Congressional candidates Scott Perry and George Scott differ on the issue." Penn Live, Advance Local Media, October 25 2018, https://www.pennlive.com/politics/2018/10/where_they_stand_a_look_at_the.html.

³ Ellen Cranley. "These are the 130 current members of Congress who have doubted or denied climate change." Insider, Insider Inc., April 29, 2019. <https://www.businessinsider.com/climate-change-and-republicans-congress-global-warming-2019-2#texas-32>.

⁴ Ari Drennen and Sally Hardin. "Climate Deniers in the 117th Congress." Center for American Progress, Center for American Progress, March 30 2021, <https://www.americanprogress.org/article/climate-deniers-117th-congress/>.

⁵ Matthew Daly. "In break with Trump, House GOP forms group on climate change." AP News, The Associated Press, June 23 2021, <https://apnews.com/article/donald-trump-business-climate-climate-change-e1f0f572a7b5841bb6141456776bafec>.

who watch this caucus will see Republicans do care about this Earth—deeply.”⁶ In September 2019, two years prior, Florida Representative Francis Rooney (R, FL-19) wrote a passionate POLITICO article about the threat of climate change and called for Republicans to act immediately alongside him. Rooney described Florida as “ground zero” for climate change effects and even detailed a letter that he and Representative Matt Gaetz (R, FL-1) wrote to Republican President Trump to permanently ban oil drilling in the eastern part of the Gulf of Mexico for the sake of protecting the earth’s climate.⁷

The issue of climate change as a political issue is unique in that it is a scientific problem that requires political solutions, but Republicans have not been able to unite on adequate action despite the scientific community’s increasing warnings. As calls continue for Congress to enact sweeping legislation on climate change, the polarized nature of modern-day US politics has further led to Democrats and Republicans largely on opposite sides of the aisle.⁸ Since the 1980s, Climate change has been a highly polarized issue in the U.S. Democrats have largely driven the recent increase in the belief in climate change and recognition of the need for climate action.⁹

On May 2, 2019, the House of Representatives passed the Climate Action Now Act, which directed the President of the U.S. to develop a plan that implemented the initiatives of the Paris Climate Agreement. The Paris Climate Agreement was developed by the UNFCCC to

⁶ *ibid*

⁷ Rep. Francis Rooney, “I’m a conservative Republican. Climate change is real.” Politico, Politico LLC, September 11 2019, <https://www.politico.com/agenda/story/2019/09/11/climate-change-conservative-republicans-000955/>.

⁸ Riley E Dunlap., Aaron M. McCright, and Jerrod H. Yarosh, “The Political Divide on Climate Change: Partisan Polarization Widens in the U.S,” *Environment: Science and policy for sustainable development* 58, no. 5 (2016): 4–23.

⁹ Ehret, Phillip. “Reaching Republicans on Climate Change.” *Nature climate change* 11, no. 7 (2021): 560–561. Accessed March 5, 2022. <https://www.nature.com/articles/s41558-021-01071-0>

“strengthen the global response to the threat of climate change.”¹⁰ On this bill, 228 Democrats voted in favor, and 0 were opposed. Contrarily, 3 Republicans voted in favor of the Climate Action Now Act, and 190 were opposed.¹¹ In March of 2018, one year prior, the House passed the SENSE Act, which relaxed hazardous air pollutant limits for coal-fired power plants. Only 5 Democrats voted for the SENSE Act, going against the 175 Democratic members who opposed it. As for the Republicans, 14 Republican members opposed the Act, going against the 210 Republicans who voted in favor of it.¹² In both cases, more Republicans voted against their party’s majority than their Democratic counterparts. The Climate Action Now Act and SENSE Act demonstrate the legislative unity of Democrats on climate change, while some Republicans vote against the grain of their party. Representative Perry and Rooney are not the only pair of Republicans who find themselves in the same party but on different sides of the climate change debate. While most Republicans tend to oppose such climate change legislation, I am interested in the Republican members who do support climate change legislation.

My aim is to understand why Republicans specifically fail to unite on climate change, and what factors influence the minority of Republicans that are ready for climate action. Climate change action has become associated with the Democratic party platform, rather than an issue that spans both sides of the spectrum, as the parties have grown increasingly divided.¹³ A 2022 study by PEW Research Center found that, on average, the ideological distance between

¹⁰ Congress.gov. Text – H.R. 9 – 116th Congress (2019-2020): Climate Action Now Act.” May 7, 2019.
<https://www.congress.gov/bill/116th-congress/house-bill/9/text?r=4&s=3>

¹¹ *ibid*

¹² Congress.gov. “H.R. 1119 – 115th Congress (2017-2018): SENSE Act.” March 8, 2018.
<https://www.congress.gov/bill/115th-congress/house-bill/1119>

¹³ Riley E Dunlap., Aaron M. McCright, and Jerrod H. Yarosh, “The Political Divide on Climate Change: Partisan Polarization Widens in the U.S,” *Environment: Science and policy for sustainable development* 58, no. 5 (2016): 4–23.

Republicans and Democrats is wider today than at any point in the last half-century.¹⁴ Since the 1970s, lawmakers of both parties have moved away from the moderate center and into separate, ideologically cohesive, bodies. Republican legislators today are much more conservative while Democrats are only slightly more liberal on average. This demonstrates asymmetrical polarization between the parties.¹⁵ Republicans are more ideologically based, and the Republican party serves as a mode of expression of conservative values. This asymmetry explains why Republicans have become more conservative over time while Democrats have not seen as dramatic of an increase in ideological extremism. Since Democrats are less ideologically based as a party, their legislative goals are based on interest groups' goals. Democrats thus focus on policy initiatives to solve social problems, while Republicans view these efforts as "manifestations of a broader fight over the scope of government power."¹⁶

Unless action is taken by both parties, the volatility of the earth's climate will become more extreme. Human activity, particularly the release of greenhouse gases via fossil fuel burning, has been confirmed to be the primary cause of global warming, a symptom of the larger phenomenon of climate change.¹⁷ Still, Congress has failed to act. In thinking about a legislative response to the climate crisis, it is imperative to understand the factors that

¹⁴ Drew Desilver. "The polarization in today's Congress has roots that go back decades." PEW Research, PEW Research Center, March 10 2022, <https://www.pewresearch.org/fact-tank/2022/03/10/the-polarization-in-todays-congress-has-roots-that-go-back-decades/>.

¹⁵ *ibid*

¹⁶ David A. Hopkins, and Matt Grossman. *Asymmetric Politics: Ideological Republicans and Group Interest Democrats*. (New York: Oxford University Press, 2016), 251.

¹⁷ "NASA Finds 2012 Sustained Long-Term Climate Warming Trend," NASA, January 15, 2013. <https://www.nasa.gov/topics/earth/features/2012-temps.html#:~:text=The%20average%20temperature%20in%202012,according%20to%20the%20new%20analysis.>

influence Republican decision making on climate change-related legislation in Congress so that they can protect the planet and their constituents' futures.

To understand Republican voting behavior, I create a metric for determining legislative responsiveness to climate change for each Republican member of Congress. This metric is what I call a "climate scoring system," made up of numerous bills that advance climate action in the 116th Congress. I then compare various political and environmental factors to determine drivers of Republican voting behavior on climate change legislation. The statistical significance of each variable, in a full model context, is then interpreted to understand what influences—and does not influence—such behavior.

Literature Review

Climate Change and Science

To give context for my research, I first provide an overview of climate science throughout the last several decades. The earth's climate is a complex system of different elements, landscapes, and ecosystems of living creatures. The atmosphere is a part of this system, which characterizes the earth's climate through weather patterns and conditions. One of the major foundations of climate change is the phenomenon of global warming: the gradual increase in the temperature of the Earth's atmosphere. This heating is attributed to the greenhouse effect, in which gases released from human activity trap the sun's warmth in the atmosphere instead of allowing it to be reflected into space. Global warming can cause increased storm intensity, due to a thinning temperature difference between the equator and the poles of the earth. More water vapor is evaporating into the atmosphere because of global

warming, which fuels such storms. Due to this, hurricane and tropical storm averages increased significantly from 1970 to 1995.¹⁸

Climate change research began to ramp up in the 1970s and continued into the 21st century. In the late 1970s, the National Academy of Sciences and Department of Energy produced reports that warned global warming trends would have serious consequences: sea-level rise, more frequent and severe droughts, and intense storms, among other dire threats.¹⁹ In 1988, NASA climatologist James Hansen testified to the Senate that the year was projected to be the warmest on record, reflecting a warming trend with 99 percent certainty.²⁰ The Energy Department at the time even stated that “carbon dioxide from the unrestrained combustion of fossil fuels is potentially the most important environmental issue facing mankind.”²¹ These warnings proved to be true: 2012 report released by Climate Central, a nonprofit organization that reports on science news, concluded that the majority, if not all, of sea level rise is caused by global warming.²² The planet has warmed by more than 1 degree Fahrenheit over the last century, which rises faster as humans burn fossil fuels and send heat-trapping gases into the air.²³ In the same year, NASA confirmed that human-produced greenhouse gases are the

¹⁸ Kaufui Vincent Wong. *Climate Change*. (New York: Momentum Press, 2016), 68.

¹⁹ Nicola Nierenberg, Walter R. Tschinkel, and Victoria J. Tschinkel, “Early Climate Change Consensus at the National Academy: The Origins and Making of Changing Climate.” *Historical studies in the natural sciences* 40, no. 3 (2010): 318–349.

²⁰ Richard N. Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*, (New Haven: Yale University Press, 1999).

²¹ Phillip Shabecoff, “Increase of Carbon Dioxide in Air Alarms Scientists,” *New York Times*, June 9 1979.

²² “Surging Seas,” *Climate Central*, March 14 2012. <https://sealevel.climatecentral.org/research/reports/surging-seas>

²³ “Climate change widespread, rapid, and intensifying – IPCC,” *IPCC*, August 9 2021. <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/>

primary force driving global warming.²⁴ Further warnings may continue to become reality, as they did in the past, if adequate action is not pursued by a unified front of lawmakers.

Conservative Values: The Ideological Shift

Two notable shifts concerning environmental policy occurred within the Republican party over the last few decades: the first being ideological and the second being legislative. In this section, I first describe the ideological shift. Conservatism was once linked to conservationist ideals that advanced environmental protection. But in the 1980s, this link broke, and conservatism molded into an anti-climate change movement. Access to natural resources was a tenet of the Republican party—a party that valued the outdoors as an expression of true American culture.²⁵ Mass production, typified as “Fordism” to reflect the impact that Ford Motor Company had on American industrialization, is often associated with conservatism. When understanding the intersection of environment-related beliefs and conservatism, the industrialist and utilitarian values that are embedded in mass production rise to the surface.²⁶ Conservative values appreciated the environment for the benefits its resources provide to us—not necessarily its inherent worth. This is suggested to be concurrent with the traditional “American Dream,” that upholds conservative values in this way.²⁷ Utilitarianism and expansionism, which jointly promote Fordism, are thus compatible with industrialization

²⁴ “NASA Finds 2012 Sustained Long-Term Climate Warming Trend,” NASA, January 15, 2013.

<https://www.nasa.gov/topics/earth/features/2012-temps.html#:~:text=The%20average%20temperature%20in%202012,according%20to%20the%20new%20analysis>

²⁵ Angela Mertig, *Cultural Dynamics of Climate Change and the Environment in Northern America* (Boston: Brill, 2015), 55-76.

²⁶ *ibid*

²⁷ *ibid*

because it gives man the freewill to use natural resources to one's maximum benefit. The environment, in turn, becomes a "functional part of human disposal," and perpetuates a culture within conservative ideology that takes from the environment and does not give back.²⁸

Conservatism does not willingly accept anti-industry and anti-capitalist solutions from becoming reality because they go against conservative values.²⁹ Conservative values were paramount to the American appeal of the wilderness and conservationism.³⁰ But, such values appear now to be "incompatible" with the lifestyle changes that a low-carbon society, to combat climate change, would require.³¹ Now, studies have shown conservative ideology as a potential motivator to dismiss global climate change.³² Climate skepticism in the US has been argued to harbor a foundation of the "climate change denial countermovement," in which politicians, industry organizations, conservative media outlets, and thinktanks see climate action as threatening to their ideological goals of small government and free enterprise.³³ This new conservative movement has accused scientists of practicing "junk science," which undermines efforts deemed "antithetical" to conservative ideology, particularly as it relates to economic theory: free market neoliberalism and religious conservatism "against...climate change and evolution."³⁴ As free market values and expansionism are called into question by climate action goals such as the Green New Deal and other extreme measures of environmental

²⁸ *ibid*

²⁹ *ibid*

³⁰ *ibid*

³¹ Giuseppe Carrus, Angelo Panno, and Luigi Leone, "The Moderating Role of Interest in Politics on the Relations Between Conservative Political Orientation and Denial of Climate Change," *Society & natural resources* 31, no. 10 (2018): 1103-1117, accessed March 1 2022.

³² *ibid*

³³ Kristin Haltinner and Dilshani Sarathchandra, "The nature and nuance of climate change skepticism in the United States," *Rural Sociology* 86, no. 4 (2021): 673-702, accessed April 21 2022.

³⁴ Dylan Bugden, "Denial and Distrust: Explaining the Partisan Climate Gap," *Climatic change* 170, no. 3-4 (2022): accessed March 3 2022.

regulation and mitigation, environmentalism has now become a sort of antithesis to conservatism. As we have seen this shift ideologically, it parallels a similar shift in the legislative behavior of Republicans surrounding environmental protection as well.

Republicans and Environmental Policy: The Legislative Shift

In this section, I describe the legislative shift of the Republican party on environmental policy. It is important for us to remember that, just like conservative ideology and environmentalism shifted, the partisan split on environmental legislation has only occurred in recent decades. Republicans were responsible for a large part of environmental policies in the early and mid-20th century. President Grant and Theodore Roosevelt were key players in establishing our national parks and national forests. These efforts stemmed from a patriotic approach to environmental protection. Since access to natural resources was a tenet of conservatism, Republicans hailed this effort. By creating access to such resources of “America the Beautiful”, patriotic sentiments were thus reinforced.³⁵

In the 1970s, nearly 100 years after Grant and 60 years after Roosevelt, Republican President Nixon played an important role in establishing federal environmental regulations, which had large bipartisan support. The National Environmental Policy Act (NEPA), enacted in 1970 by Nixon, mandated assessments of environmental impacts prior to federal projects.³⁶ In the same year, President Nixon created the Environmental Protection Agency (EPA) via

³⁵ Giuseppe Carrus, Angelo Panno, and Luigi Leone, “The Moderating Role of Interest in Politics on the Relations Between Conservative Political Orientation and Denial of Climate Change,” *Society & natural resources* 31, no. 10 (2018): 1103-1117, accessed March 1 2022.

³⁶ Jean-Daniel Collomb, “A Worthy Heir: Donald Trump, the Republican Party and Climate Change.” *LISA* 16, no. 2 (2018): accessed April 3 2022.

executive order, and the Clean Air Act was passed. Two years later, the Clean Water Act was enacted which imposed additional environmental regulations. These motions set environmental regulations by which US businesses and government agencies had to abide.³⁷ While there was success in the 1970s in enacting natural resource management policies and pollution control policies, the government failed to enact legislation that targeted greenhouse gases and, ultimately, climate change.³⁸ But, just like the ideals of conservatism shifted from a “pro-environment” to an “anti-climate change” stance, the legislative actions of Republicans on environmental protection shifted as well.

The following decade, the 1980s, was pivotal for Republicans and the environment. The departure of the Republican party from pro-environmental legislation begins in this time, where the U.S. begins to see signs of political polarization. Conservatives as a political bloc have consistently pushed back against climate change mitigation efforts throughout the last 30 years, with intensifying efforts in recent decades. Conservative and libertarian thinktanks financed by foundations willing to “invest in ideology” produced organized backlash to the regulations that early environmental legislation had established.³⁹ As environmental protection became more about climate change resulting from industrial production, the conservative values of the free market and capitalist industrialization took precedence, and all efforts to mitigate climate change were largely stunted. The “threat” of environmental regulations on an

³⁷ *ibid*

³⁸ Richard N. Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*, (New Haven: Yale University Press, 1999).

³⁹ Jean-Daniel Collomb, “A Worthy Heir: Donald Trump, the Republican Party and Climate Change.” *LISA* 16, no. 2 (2018): accessed April 3 2022.

international level has been suggested to be a “turning point” for American conservatives and Congressional Republicans, resulting in a sharp decline in support for such measures.⁴⁰

President Reagan’s presidency brought a focus on decentralization of the federal government: a concept antithetical to the federal environmental regulation that constrains industrialization, and therefore capitalism.⁴¹ This began the attempt to undo the environmental policymaking that Nixon had put forward. The 1980 election of Ronald Reagan shifted the presidency and Senate to a more conservative Republican base, who sought to ease government authority in energy policymaking: energy policies that would have been good for the planet.⁴² Instead, the Reagan administration continued to promote fossil fuel use—particularly coal and domestic oil production.⁴³ President Reagan proposed to cut energy research and development programs, reduce federal environmental regulations on fossil and nuclear fuel production, and to end government mandates and incentives for energy conservation.⁴⁴ Even further, Reagan proposed to abolish the Department of Energy, rationalizing that the agency represented a big-government approach and therefore defied conservative values.⁴⁵

Concurrently in the late 1980s, near the end of Reagan’s presidency, the issue of climate change moved to the forefront of the environmentalist movement. When environmentalist and 350.org founder Bill McKibben wrote “The End of Nature” in 1989, his purpose was to call the

⁴⁰ Richard J. McAlexander and Johannes Urpelainen, “Elections and Policy Responsiveness: Evidence from Environmental Voting in the U.S. Congress,” *The Review of Policy Research* 37, no. 1 (2020): 39-63.

⁴¹ *ibid*

⁴² *ibid*

⁴³ *ibid*

⁴⁴ *ibid*

⁴⁵ *ibid*

American people to action on the climate crisis. According to McKibben, nature as we know it has ceased to exist because humanity has altered it so heavily beyond its original form.⁴⁶ McKibben, along with many other prominent environmental writers, focused on the relationship that the American individual had with the environment and attempted to motivate such individuals to care about the climate crisis. One decade prior, environmentalists were more concerned with pollution as an isolated issue rather than contributing to a larger phenomenon of global warming and climate change.⁴⁷ Over the following two decades, more environmental groups became increasingly focused on climate change as the primary issue.⁴⁸ So, while Reagan wanted federal environmental legislation to be decentralized, the environmentalist movement was pushing for even more to be done beyond Nixon's policies because climate change as an issue started to dominate the conversation. With these two things at play, Republicans and Democrats start to disagree more heavily with each other in the 1980s into the 1990s on environmental protection. Oil, gas, and coal production, and carbon emissions from major corporations, were now at the focus of the environmentalist movement, which meant the climate agenda now included altering entire industries, ways of life, and economic systems. Targeting such a broad scope of basic foundations to existence as we know it was bound to receive pushback.

Nearly 15 years later, Democratic President Clinton attempted to initiate federal climate change legislation as the focus intensified.⁴⁹ But increasing polarization within the U.S. political

⁴⁶ Bill McKibben, *The End of Nature* (New York: Random House, 1989).

⁴⁷ Glen Sussman and Byron W. Daynes, *US Politics and Climate Change: Science Confronts Policy* (Boulder: Lynne Rienner Publishers, 2013).

⁴⁸ *ibid*

⁴⁹ Richard N. L. Andrews. *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*. (New Haven: Yale University Press, 2020).

system pushed back against these efforts. A conservative bloc of Republican politicians led by Senator Newt Gingrich moved aggressively to block President Clinton's climate initiatives and many Energy Policy Act programs.^{50 51} One of the biggest moments for US environmental policy in the late 20th century was the Kyoto Protocol, a global alliance to mitigate and reduce human impacts on climate change. Congress refused to ratify it despite President Clinton's signature. Considering Congressional inaction, Clinton continued to press greenhouse gas reduction through executive actions. Clinton proposed the Climate Change Technology Initiative, which would provide subsidies and tax incentives for energy efficiency. Additionally, the EPA under the Clinton administration elevated enforcement of the Clean Air Act requirements against coal-fueled power plants.⁵² Still, these efforts were not enough.

By 2009, the impact of human activity on global climate change had become widely recognized as a growing danger, but the US was also concurrently experiencing its most severe economic disaster since the 1930s.⁵³ Republican hostility to climate action deepened during the Obama administration, which contributed to Congress's failure to pass a cap-and-trade bill that would have incentivized the reduction of greenhouse gas emissions.⁵⁴ President Obama's efforts to mitigate climate change, like President Clinton, were met with fierce opposition. His EPA attempted to pave the way for climate change action under the Clean Air Act. Yet,

⁵⁰ Aaron M. McCright and Riley E. Dunlap, "Defeating Kyoto: The Conservative Movement's Impact on US Climate Change Policy," *Social Problems* 50, no. 3, 2003: 361.

⁵¹ Jean-Daniel Collomb, "A Worthy Heir: Donald Trump, the Republican Party and Climate Change." *LISA* 16, no. 2 (2018): accessed April 3 2022.

⁵² Richard J. McAlexander and Johannes Urpelainen, "Elections and Policy Responsiveness: Evidence from Environmental Voting in the U.S. Congress," *The Review of Policy Research* 37, no. 1 (2020): 39-63.

⁵³ *ibid*

⁵⁴ Jean-Daniel Collomb, "A Worthy Heir: Donald Trump, the Republican Party and Climate Change." *LISA* 16, no. 2 (2018): accessed April 3 2022.

immediate protest by conservative and libertarian thinktanks called for a reversal of the decision.⁵⁵ In response to continuously failing federal legislation on climate change, state governments began to create their own initiatives. Between 2001 and 2008, over two-thirds of the states adopted “renewable portfolio standards” (RPSs) which required utilities to generate a percentage of their electricity from renewable sources or to purchase offsets.⁵⁶ Many also enacted tax incentives for renewable energy projects, stronger energy efficiency codes for buildings, and other measures.⁵⁷

Following Obama’s Democratic presidency and climate initiatives, Republican President Donald Trump took steps to reverse such efforts. When he took office in 2017, President Trump pulled the United States from the Paris Climate Accord, an international agreement to track policy efforts towards fighting climate change.⁵⁸ This move was a significant demonstration of the United States’ stance on climate change: blatant inaction and refusal to collaborate internationally. President Trump’s rejection of the Paris Climate Accord prompted a coalition of businesses and state and government officials to create the “We Are Still In” pledge for continued implementation of the Paris Agreement’s initiatives on a state level. The coalition consisted of 10 states, 280 cities, and counties, and more than 2,000 businesses and investors by the end of 2018.⁵⁹ This reaction echoed a similar sentiment of state frustration that was seen during the Clinton administration. With presidential climate policies that do not stick and

⁵⁵ *ibid*

⁵⁶ Richard N. L. Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*, (New Haven: Yale University Press, 2020).

⁵⁷ *ibid*

⁵⁸ Jean-Daniel Collomb, “A Worthy Heir: Donald Trump, the Republican Party and Climate Change.” *LISA* 16, no. 2 (2018): accessed April 3 2022.

⁵⁹ Richard N. L. Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*, (New Haven: Yale University Press, 2020).

are easily reversed, it is clear that effective climate policies must come through Congress. Such legislation carries more weight than that of an executive order.⁶⁰ The importance, then, of Congress as an actor in climate policymaking is why research on Republican voting behavior matters. We are now at a point where the issues can no longer just be about compartmentalized issues such as air quality in a specific area or certain toxic substances in the water. It is imperative for Congress to enact sweeping climate change legislation to effectuate real change. Additionally, while states may express frustration at Congressional inaction and implement their own climate change policies, this piecemeal approach is still too weak. Climate change has no borders, and therefore requires a federal—not state—approach. While isolated environmental issues like pollution are still certainly a challenge we face in the present day, the concern has now turned to an overwhelming, global, intense heating of the planet and changing of the climate with various effects on our daily lives. This projected catastrophe, which scientists have consistently reported, calls for federal policy response from Congress.

It is important to understand some of the literature regarding influences on Congressional decision-making, particularly in the realm of roll call analyses, after which I model my own study. Past scholarship that utilizes roll call analyses have shown that party membership has a strong association with pro-environmental voting, with Republicans voting in an anti-environment direction and Democrats voting the opposite way.⁶¹ Furthermore, in making general decisions, some scholarship has complicated the notion that financial interests

⁶⁰ Richard E. Neustadt. *Presidential power and the modern president: the politics of leadership from Roosevelt to Reagan*, (New York: Free Press, 1990), 91.

⁶¹ Riley E. Dunlap and Michael Patrick Allen, "Partisan Differences on Environmental Issues: A Congressional Roll-Call Analysis," *The Western Political Quarterly* 29, no. 3 (1976): 384–97.

have compelling effect on Congressman's voting decisions; financial contributions of interest groups will help mobilize decisions of those who are already predisposed to the political aims and opinions of such groups, while contributions from the same group will not influence those who are opposed.⁶² However, the interest group network has simultaneously expanded and fragmented over time, which means that the importance of swaying Congressmembers financially might become less relevant.⁶³

Constituency also can play a part in voting behavior. Through roll call analyses, it has been suggested that politicians are held accountable for their voting behavior if it is out of line with their constituents' wishes.⁶⁴ High-profile issues are where voting behavior counts most for Congressmembers because scholarship has demonstrated that they will face the threat of being voted out of office if they vote out of line with their constituents.⁶⁵ In narrow contexts such as defense spending, public opinion has in fact been shown to have influence on policymaking.⁶⁶ Constituent opinion, additionally, is usually reflected in the kind of person a constituency elects: ideology of constituencies heavily correlates with the ideology of their respective representative.⁶⁷ Given this, legislators generally respond accordingly to their constituencies' political stances.⁶⁸ But with climate change becoming increasingly prevalent threat, the

⁶² Richard L. Hall, and Frank W. Wayman, "Buying time: Moneyed interests and the mobilization of bias in congressional committees," *American political science review* 84, no. 3 (1990): 797-820.

⁶³ Steven S. Smith, Jason M. Roberts, and Ryan J. Vander Wielen, *The American Congress*, (Lanham: Rowman & Littlefield, 2020)

⁶⁴ Brandice Canes-Wrone, David W. Brady, and John F. Cogan, "Out of Step, Out of Office: Electoral Accountability and House Members' Voting," *American Political Science Review* 96 no. 1 (2002): 127-40).

⁶⁵ Steven S. Smith, Jason M. Roberts, and Ryan J. Vander Wielen, *The American Congress*, (Lanham: Rowman & Littlefield, 2020)

⁶⁶ Larry M. Bartels, "Constituency Opinion and Congressional Policy Making: The Reagan Defense Build Up," *The American Political Science Review* 85, no. 2 (1991): 457-74.

⁶⁷ Steven S. Smith, Jason M. Roberts, and Ryan J. Vander Wielen, *The American Congress*, (Lanham: Rowman & Littlefield, 2020)

⁶⁸ *ibid*

definition of “constituency response” might have a different meaning. The scientific nature of climate change as a political issue puts lawmakers in a difficult spot. Constituent response might now mean responding to scientific evidence that indicates human life at risk.

Methodology

In this paper, I analyze the voting behavior of Republican members in the 116th Congress. The 116th Congress was in session from January 2019 to January 2021 and represents the most recent session from which we have complete data regarding roll call voting behavior, and thus gives us greatest understanding of what current Republican voting behavior looks like regarding climate change. To understand the influences on Republican voting behavior as it pertains to climate change, I created my own metric of “climate scoring.” Given that Democrats are unified on climate change while Republicans remain divided, I seek to understand the factors that affect the voting behavior of the House Republicans of a modern Congress. With a concrete metric applied to voting behavior, the understanding of Republicans and climate change becomes practical.

The scoring system is comprised of 14 bills within the 116th Congress that advance climate action efforts. All bills selected were passed in the House by a roll call vote. Scores for 206 Republican representatives were adjusted to be a percentage score out of 100. These bills do not provide a sweeping federal initiative for climate action, but rather include provisions or piecemeal initiatives that advance aspects of climate mitigation or adaptation. The bills were chosen because they fit one of the four categories of climate action: pollution regulation and remediation, environmental protection, environmental preservation and/or conservation

efforts, funding of environmentally-conscious programs and research, and increasing awareness surrounding climate change as an important issue. These categories of legislation achieve at least one of the following: mitigates the impact of human activity on the natural environment and natural resources, which would in turn reduce the contribution that humans make to climate change, and/or increases public trust in science by encouraging awareness and recognizing climate change as fact.

Seven of the bills were chosen using research on environmental advocacy groups and their media pages. For each environmental organization, I utilized the media tab on their website. The tab was used to search through all postings between January 2019 to January 2021 and find specific mentions of bills that were being considered in Congress at the time. The environmental organizations that I chose to use in my research are the following: Citizens Climate Lobby, Environmental Defense Fund, Earthjustice, Natural Resources Defense Council, and Union of Concerned Scientists. These organizations had the most available media regarding legislation and are among the top environmental advocacy groups in the US. Headquartered in New York City, National Resources Defense Council has both domestic and international offices, and focuses mainly on clean air, global warming, transportation, energy efficiency, renewable energy, electric-industry restructuring.⁶⁹ Earthjustice, headquartered in San Francisco, focuses on environmental litigation in various areas: such as restoring clean air and water, discouraging dependence on fossil fuels, and clean energy.⁷⁰ Environmental Defense Fund, headquartered in New York City, is an organization of over two million employees that work on issues related to

⁶⁹ "About Us," National Resources Defense Council, accessed April 30, 2022, <https://www.nrdc.org/>.

⁷⁰ "About Us," Earthjustice, accessed April 30, 2022, <https://earthjustice.org/>.

global warming, ecosystem restoration, oceans, and human health.⁷¹ Citizen’s Climate Lobby is a grassroots international organization that engages directly with politicians to advance a carbon-free future.⁷² Finally, Union of Concerned Scientists is a national non-profit organization formed by scientists and students at Massachusetts Institute of Technology that focuses on decreasing reliance on fossil fuels and supporting clean energy initiatives.⁷³

The other seven bills were determined using relevant terms that I entered into www.congress.gov and filtered by the following selections: legislation, 116th Congress, and passed/failed passage in the House. The results were sorted and chosen by relevancy once these filters were all applied. Four bills were found using the term “climate” in the search function and applying the appropriate filters. The remaining three bills were found using the term “oil” in the search function. Though coal and fossil fuels are also relevant sources of human impact on climate change, the terms “fossil fuel” and “coal” did not generate results of bills that were intended for the purpose of climate action-related efforts. Aside from coal, oil production releases about a third of the world’s total carbon emissions, in addition to the devastating impact of oil spills on the oceanic ecosystem.³³ So, I decided to use the term “oil” instead since that is the most specific term that I can use that is relevant to climate change impacts. In Table 1, I provide an overview of the 14 pieces of legislation selected for my climate scoring system. For each bill, I collected data on the bill code, the source by which I found the

⁷¹ Wagisha Ja, “Top 20 Global Nonprofits Protecting the Environment,” last updated March 4 2022, <https://donorbox.org/nonprofit-blog/20-global-nonprofits-environment>.

⁷² “Citizen’s Climate Lobby,” Columbia University, accessed April 30 2022, <https://csas.earth.columbia.edu/our-work/public-awareness-and-policy-solutions/citizens-climate-lobby>

⁷³ “About,” Union of Concerned Scientists, accessed April 30 2022, <https://www.ucsusa.org/>.

bill, the category (of 4 available) that I sorted the bill into, and the number of Republicans that voted in favor of the bill.

Table 1.

<u>Name of Bill</u>	<u>Code</u>	<u>Category**</u>	<u>Source</u>	<u># Of GOP Votes</u>
Moving Forward Act	HR2	1	Environmental group website	3
Clean Economy Jobs and Innovation Act	HR4447	1	Environmental group website	7
Consolidated Appropriations Act, 2021	HR133	1	Environmental group website	128
Great American Outdoors Act	HR1957	1	Environmental group website	81
Coastal Marine Economies Protection Act	HR1941	1	Congress.gov: "climate"	12
The PFAS Action Act	HR535	2	Environmental group website	24
Arctic Cultural and Coastal Plain Protection Act	HR1146	2	Congress.gov: "oil"	4
Protecting and Securing Florida's Coastline Act of 2019	HR205	2	Congress.gov: "oil"	22
Coastal and Great Lakes Communities Enhancement Act	HR729	3	Environmental group website	1
Climate Action Now Act	HR9	3	Environmental group website	3
National Defense Authorization Act for Fiscal year 2020	HR2500	3	Congress.gov: "climate"	0
Protect and Restore America's Estuaries Act	HR4044	3	Congress.gov: "climate"	132
Ocean Acidification Innovation Act of 2019	HR1921	4	Congress.gov: "climate"	168
Providing amounts for the expenses of the Select Committee on the Climate Crisis and the Select Committee on the Modernization of Congress	HRES86	4	Congress.gov: "climate"	0

Category 1: Established funds that support practices that decentralize fossil fuel production, Category 2: Regulate and/or limit substances that contribute to climate change, Category 3: Fund climate resiliency and adaptation programs and planning, Category 4: Support research and awareness surrounding climate change as an urgent issue

For every vote in favor of the 14 bills, a member received one point. A NAY/NO vote results in a score of 0 given to the representative for that bill. A YEA/YES vote results in a score of 1 given to the representative for that bill. The representatives' cumulative climate scores were

determined using a denominator of the bills they were present for. All scores were adjusted to reflect a percentage out of 100, with 100% meaning they voted in favor of all pro-climate bills for which they were present. For example, Representative Jacobs (R, NY-27) was only present for voting on 7 of the 14 bills and voted in favor of 1. So, Rep. Jacobs' score is 1/7, adjusted to be 14.3%. Such weighted scoring gives an accurate representation of conscious decision-making on the behalf of each Congressman; by only calculating the score comprised of the votes for which each member was present, the scores reflect an active expression of support or disapproval of such legislation. As seen from the GOP Votes column, the number of Republicans that voted in favor of each bill varies widely—some bills had 0 GOP votes, and some had 100+ GOP votes. By using bills of this variety in my climate scoring system, the resulting scores can then be tested for correlation with potential influences on voting behavior to highlight where influence matters.

UNIVARIATE RESULTS AND DISCUSSION

Before considering how each variable influences Republican voting behavior, I first precede such analysis with discussion of univariate findings. Table 2 shows the variables that I considered in my statistical analysis of influences on Republican climate voting behavior, in which I collected data on each variable and measured its correlation with the climate scores for each Republican member. The variables I collected data on are the following: Climate Score (the dependent variable, the collection for which I explained in my methodology), NOMINATE Score, Oil/Gas Contributions, Hazardous Weather Deaths per 100,000 people (by state),

Representative Age, Median District Age, Public Opinion (% of adults in each Republican representative's district who believe global warming is happening), and Coastal Location. In discussion of Table 2, I will go through each variable that I have selected and explain my reasoning for choosing the variable to be included in my study—aside from coastal location, which will be discussed later in this section. I will also include distribution graphs for each respective variable concurrently with discussion of the variable's importance to my research.

Table 2.

<u>Variable</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>	<u>Median</u>	<u>Range</u>	<u>Observations</u>
NOMINATE Score	0.166 (Rep. Brian Fitzpatrick, PA-1)	0.883 (Rep. Andrew Biggs, AZ-5)	0.502	0.510	0.717	206
Oil/Gas Contributions	\$1,000	\$475,050	\$58,097	\$35,575	\$474,050	198
Hazardous Weather Deaths per 100,000 people	0.00 (DE, HI, RI, NJ)	2.71(Arizona)	0.35	0.25	2.71	50
Representative Age	33 (Rep. William Timmons, SC-4)	85 (Rep. Don Young, AK-at-large)	56	56	52	206
Median District Age	28.7 (Rep. John Curtis, UT-3)	56.0 (Rep. Daniel Webster, FL-11)	39.7	39.3	27.3	206
Public Opinion (% of adults who believe climate change is already happening)	51%, (Rep. Scott Desjarlais, TN-4)	77% (Rep. Brian Fitzpatrick, PA-1)	62%	62%	26%	206
Climate Score	0%	89%	23%	21%	89%	206

I will first begin with discussion of the dependent variable that this study hinges on: climate score. Figure 1 depicts the distribution of all 206 Climate Scores, adjusted as percentages out of 100, for the Republicans of the 116th Congress. These scores serve as the dependent variable in

my analyses, both bivariate and multivariate. The distribution is skewed right, with most scores in the 0 to 36% range. The range here is quite wide, though, which prompts interest in Republicans as a political bloc in Congress. This reflects the variance we saw earlier between Perry and Rooney as a paired example of divided Republicans on climate change.

Figure 1.

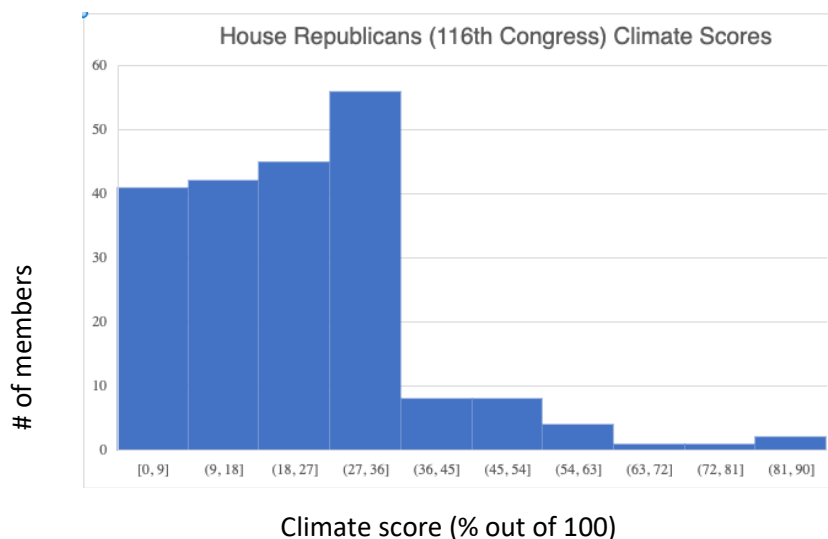


Figure 2 demonstrates the ideological spread of House Republicans of the 116th Congress. The measurement used for this data is NOMINATE score: a metric designed to show comparative levels of extremism within and between political parties.⁷⁴ NOMINATE scoring is on a scale of 0 to 1, with 0 being very moderate and 1 being very conservative in the context of the Republican party. This variable demonstrates the role that ideology plays in influencing Republican voting behavior, since scholarship has shown that conservatism, especially in the context of polarization, has resulted in pushback to climate mitigation efforts.⁷⁵ The NOMINATE scores

⁷⁴ Lewis, Jeffrey B., Keith Poole, Howard Rosenthal, Adam Boche, Aaron Rudkin, and Luke Sonnet (2022). *Voteview: Congressional Roll-Call Votes Database*. <https://voteview.com/>

⁷⁵ Riley E. Dunlap and Michael Patrick Allen, "Partisan Differences on Environmental Issues: A Congressional Roll-Call Analysis," *The Western Political Quarterly* 29, no. 3 (1976): 384–97.

show a normal distribution which depicts Republicans of the 116th Congress. This scoring method has been used to show American political polarization and theories on responsible party government.^{76 77} Additionally, NOMINATE scoring has been used by popular political media such as the New York Times and FiveThirtyEight to examine topics such as budget politics and electability of candidates.^{78 79}

Figure 2.

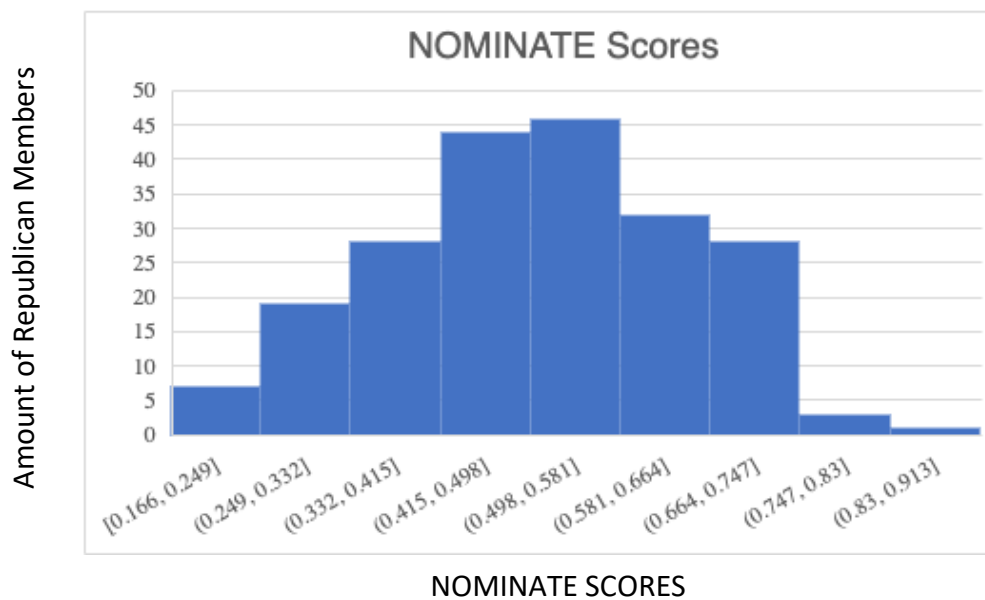


Figure 3 shows hazardous weather deaths per 100,000 people increasing by state for the years 2019 and 2020 combined. Though data on Hazardous Weather Deaths per 100,000 people in each state was collected, but this was only available on a state level and not a district

⁷⁶ Keith T. Poole and Howard Rosenthal, "The Polarization of American Politics," *Journal of Politics* 46, no. 4 (1984): 1061-79.

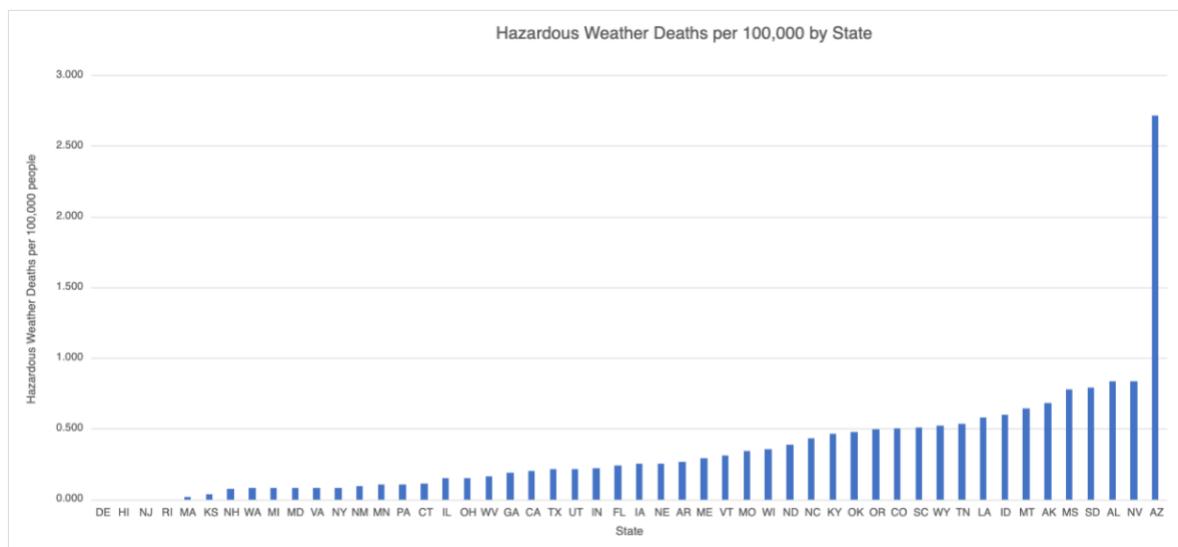
⁷⁷ Gary W. Cox and Matthew D. McCubbins, *Setting the Agenda: Responsible Party Government in the U.S. House of Representatives*, (New York: Cambridge University Press, 2005).

⁷⁸ Nate Silver, "An Imbalanced Budget Deal?" last modified April 10 2011, <https://fivethirtyeight.blogs.nytimes.com/2011/04/10/an-imbalanced-budget-deal/>

⁷⁹ Julia Azari, "Are Sanders and Crus Really Less 'Electable'?" last modified April 4 2016, <https://fivethirtyeight.com/features/are-sanders-and-cruz-really-less-electable/>

level, so it was not able to be included in the full statistical model. Hazardous weather deaths as an environmental variable were chosen due to its direct effect on human life, which can be quantified and analyzed against the climate scores that were calculated for each Republican representative. As scientific research has shown climate change effects as becoming more imminent in current weather patterns and weather events, I felt it was appropriate to use a measure that connected human life with immediate climate change impact. This data was collected using the National Weather Service’s annual reports from 2019 and 2020 (combined) on hazardous weather fatalities per state.⁸⁰ The reports from 2019 and 2020 were chosen as sources for this data to match the same timeframe in which the Republicans of the 116th Congress were making their voting decisions: from January 2019 to January 2021.

Figure 3.



** Arizona is a significant outlier due to a record number of heat-related deaths in the year of 2020.

⁸⁰ “Weather Related Fatality and Injury Statistics,” *National Weather Service*, 2019 & 2020, <https://www.weather.gov/hazstat/>

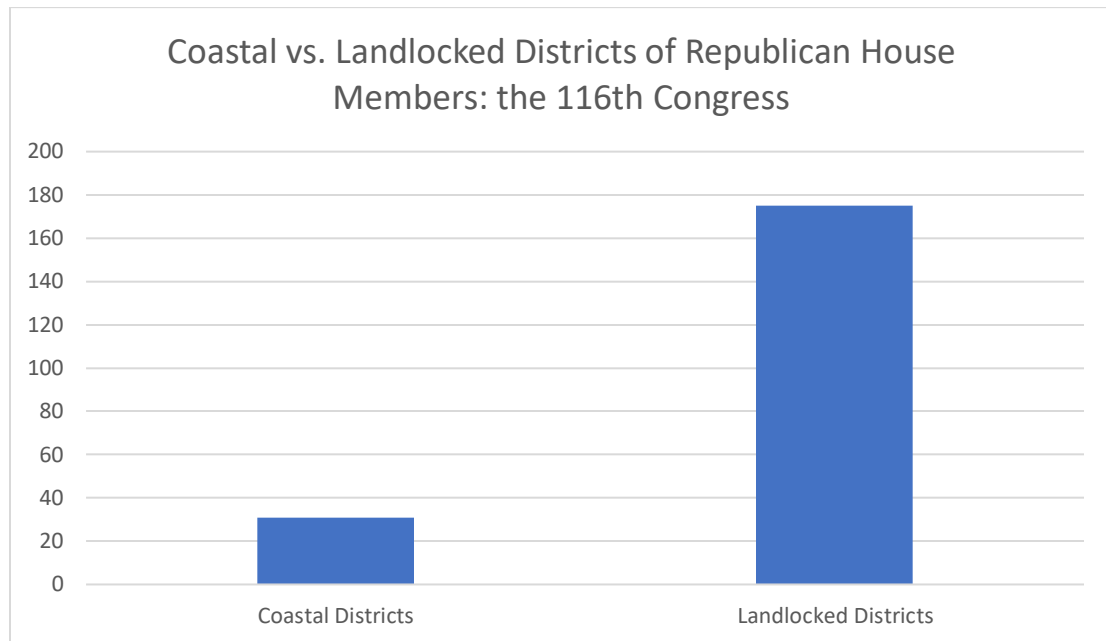
One of the dire consequences of the continued warming of the planet is melting of ice sheets. This symptom of climate change has a direct effect on American states. The largest American population at risk of sea level rise is concentrated in the Atlantic Coast, with the most vulnerable state being the state of Florida.⁸¹ About 60-90% of fisheries in Florida depend on estuaries for survival.⁸² Climate change-induced sea level rise squeezes these estuaries, which contributes to dying vegetation and oyster reefs as a result of changing water chemistry.⁸³ Given the vulnerability of Florida and coastal states nationwide, I am intrigued in how coastal location affects voting behavior. The purpose of coastal district location as a variable was to incorporate a district-level based measure that reflected climate change impact and vulnerability, that was able to be quantified in relation to each individual member of Congress. Data collection for coastal location as a variable was carried out via a simple tally of the total coastal districts in the 116th Congress. Qualification for coastal district location was solely on a district basis, not a state basis. Though some states, like Florida or California, are considered to be coastal states entirely, I only counted the districts of those respective states that actually have at least one side of their border exposed to sea. There were far fewer coastal districts than non-coastal districts, with only 31 out of 206 being located on the coast (see Figure 4).

⁸¹ Vivien Gornitz, *Rising Seas: Past, Present, Future*, (New York: Columbia University Press, 2013).

⁸² Karin Limburg, Randy Brown, Rachel Johnson, Bill Pine, Roger Rulifson, David Secor, Kelly Timchak, Ben Walther, and Karen Wilson, "Round-the-Coast: Snapshots of Estuarine Climate Change Effects," *Fisheries* 41, no. 7 (2016): 392–394.

⁸³ *ibid*

Figure 4.



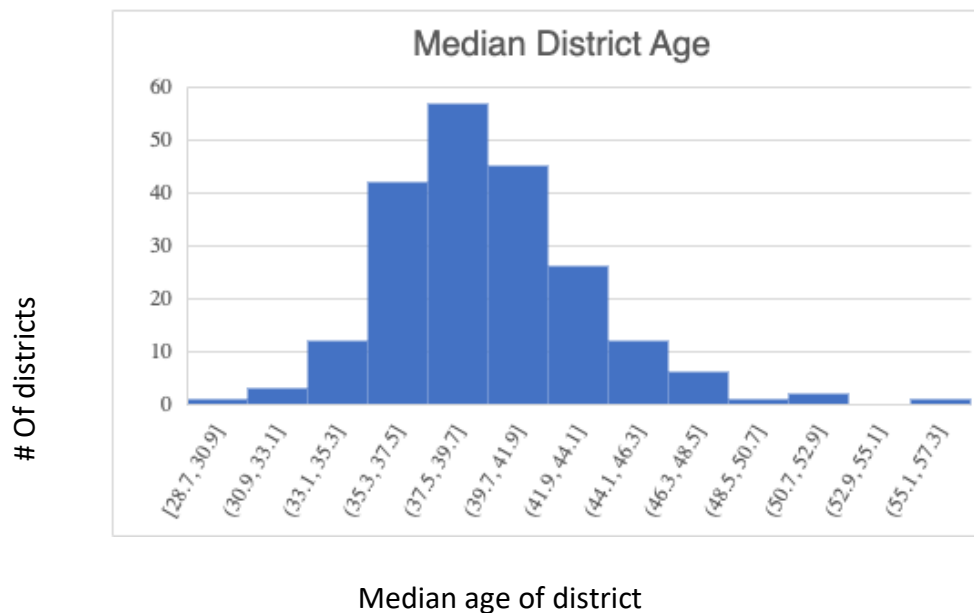
To understand voting behavior of Republicans, I also included their age and the median age of their districts as a point of interest for my study. Millennials (ages 18-39) have shown consistently higher favorability of renewable energy and higher belief in the notion that humans are changing the climate compared to older groups.⁸⁴ Younger generations within the Republican party are also statistically more likely to accept global warming as fact and worry about its consequences.⁸⁵ To see if these findings ring true for the 116th Congress, I decided to include two aspects of age as variables in analyzing the voting behavior of House Republicans. Both representative age and median district age (Figures 5 and 6) show normal distributions. However, the range of representative age is wider than median district age, ranging from 33 to

⁸⁴ Lawrence C. Hamilton, Joel Hartter, and Erin Bell, "Generation Gaps in US Public Opinion on Renewable Energy and Climate Change," *PloS one* 14, no. 7 (2019).

⁸⁵ M. Ballew and J. Marlon, *Do younger generations care more about global warming?* (New Haven, CT: Yale Program on Climate Change Communication, 2019)

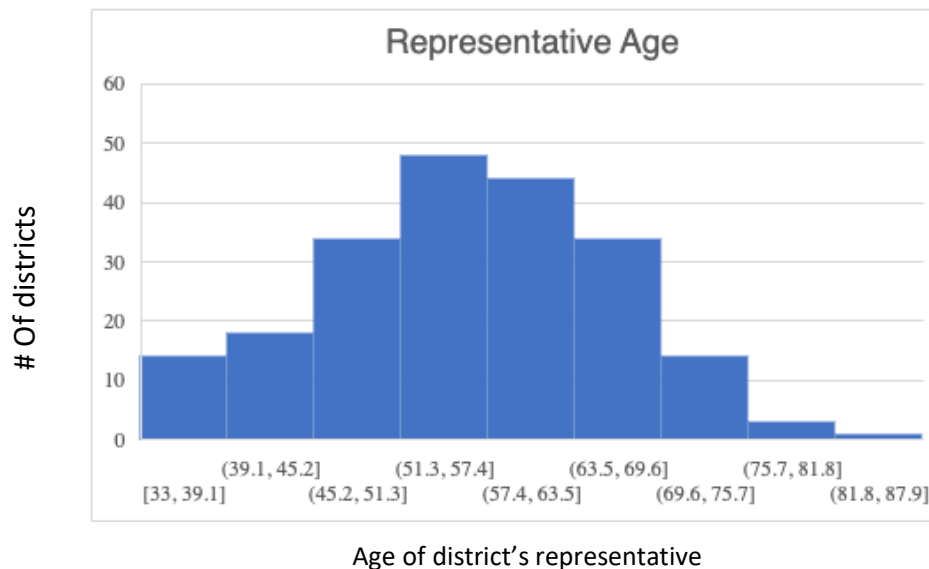
85 years. Median district age only ranges from 28.7 to 57.3 years. Representative age was collected using a simple search, and reflects the age that the representative was on January 3, 2019, the date of the first day of the 116th Congress. The second, median district age, was collected through the United States Census Bureau, using data from the 2019 American Community Survey.⁸⁶

Figure 5.



⁸⁶ United States Census Bureau, (American Community Survey, 2019)
https://data.census.gov/cedsci/table?t=Age%20and%20Sex&g=0100000US%245000000_500X00US0101&y=2019&tid=ACST1Y2019.S0101

Figure 6.



Finally, Public Opinion represents is the % of adults in a member's district who believe that global warming is already happening, which would mean a subsequent belief in the occurrence of climate change. This data was collected using the Yale Climate Opinion Maps through 2021.⁸⁷ In all districts represented by Republicans, at least half of the citizenry believes global warming is already happening. However, I felt it was necessary to include this data as a result of literature surrounding polarization on climate change.⁸⁸ Democrats have been shown to be much more likely to support climate change policies than Republicans.⁸⁹ A 2019 study showed a 53-point gap in opinions on climate change and renewable energy between liberals and conservatives, with liberals being more concerned about climate change and considering

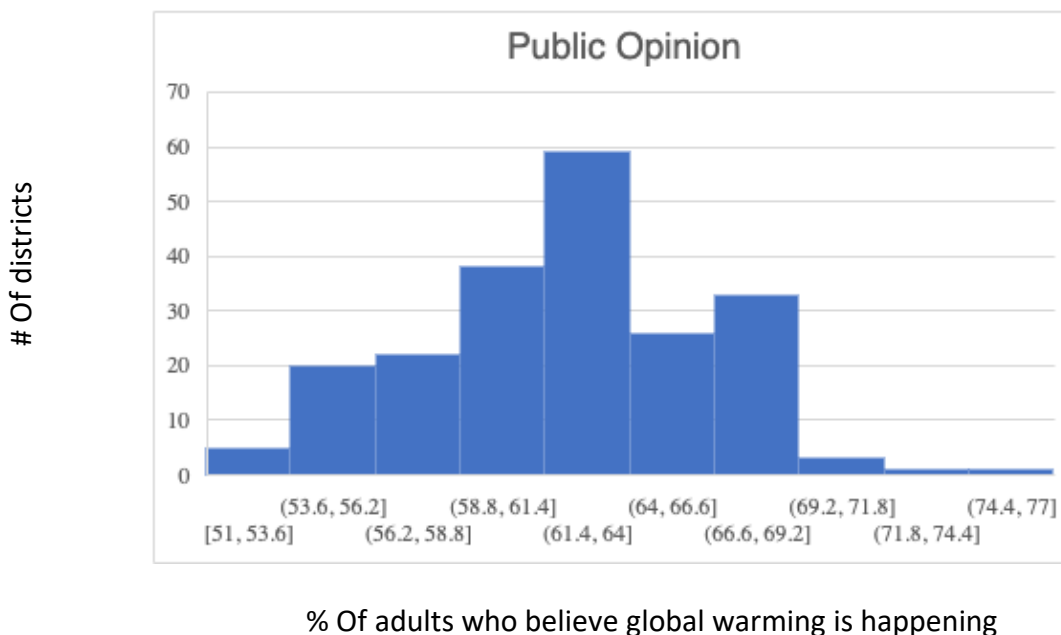
⁸⁷ Jennifer Marlon, Liz Neyens, Martial Jefferson, Peter Howe, Matto Mildenberger, and Anthony Leiserowitz, "Yale Climate Opinion Maps 2021," Yale Program on Climate Change Communication, Yale University, February 23, 2022, <https://climatecommunication.yale.edu/visualizations-data/ycom-us/>

⁸⁸ Riley E. Dunlap and Aaron M. McCright, "A Widening Gap: Republican and Democratic Views on Climate Change," *Environment: science and policy for sustainable development* 50, no. 5 (2008): 26-35.

⁸⁹ *ibid*

renewable energy initiatives to be high priority.⁹⁰ PEW Research has also contributed to these observed patterns, with various studies showing a division in concern over climate change between Republicans and Democrats.⁹¹ These studies show a steady increase in unity among Democrats regarding belief and concern over climate change, while Republicans remained steadily unchanged. Given this variation, public opinion is worthy of measure. I wish to see if districts with higher belief in global warming will then influence their respective representative's voting behavior on climate change. Figure 7 shows the % of adults who believe global warming is already happening also shows a normal distribution, but with a narrower range from 51% to 77%.

Figure 7.



⁹⁰ Dylan Bugden, "Denial and Distrust: Explaining the Partisan Climate Gap," *Climatic change* 170, no. 3-4 (2022): accessed March 3 2022.

⁹¹ Brian Kennedy, "U.S. concern about climate change is rising, but mainly among Democrats," PEW Research Center, PEW Research, April 16 2020, <https://www.pewresearch.org/fact-tank/2020/04/16/u-s-concern-about-climate-change-is-rising-but-mainly-among-democrats/>

The final variable is Oil and Gas contributions from interest groups. This data was gathered using Open Secrets' available data on the 2018 cycle of Oil and Gas contributions to politicians in the Energy and Natural Resources sector.⁹² I chose 2018 as the appropriate cycle year for collecting data on Oil and Gas contributions because it was the cycle year that preceded the election of the 116th Congress. To measure effectiveness of such contributions, it would make most sense to measure contributions that occurred prior to their election and compare the effect of those contributions on the members' subsequent voting decisions once they were elected. 2020 as a cycle year was too far into the 116th Congress to accurately measure effect of financial influence. Figure 8 shows a skewed distribution, with most members accepting small amounts of money from the oil/gas interest groups. The observation number for this variable is 198, as opposed to 206 like the rest, because 8 members did not have data available. The fossil fuel industry in particular has been shown to financially influence campaigns to challenge climate science throughout history.⁹³ Given the general concern over money in politics and elitist politicians (on both sides), conventional wisdom is that the fossil fuel industry has an influence on climate action at the federal level.⁹⁴ Warnings of global warming effects in the 1980s began to put pressure on industrial societies, such as the United States, to reconsider their reliance on fossil fuels and to look towards development of alternative energy sources.⁹⁵ But, when it comes to climate change politics, the scholarship

⁹² "Money to Congress," Open Secrets, Jun 10 2019, <https://www.opensecrets.org/industries/summary.php?cycle=2018&ind=E>

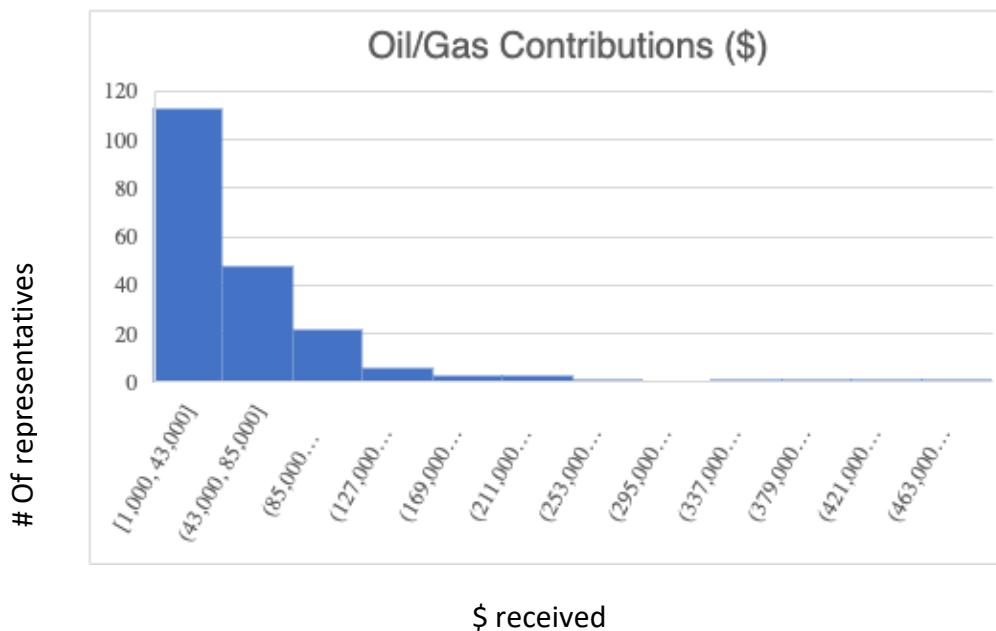
⁹³ Matthew H. Goldberg, Jennifer R. Marlon, Xinran Wang, and Anthony Leiserowitz, "Oil and gas companies invest in legislators that vote against the environment," *Proceedings of the National Academy of Sciences - PNAS* 117, no. 10 (2020): 5111–5112.

⁹⁴ *ibid*

⁹⁵ G. MacDonald, *Long term impact of atmospheric carbon dioxide on climate*. (Arlington: SRI International, 1979).

surrounding the fossil fuel industry and its role in such has produced “mixed results”: some find a negative relationship, and some find no relationship at all.⁹⁶ This raises important questions for the role that the fossil fuel industry might play in the voting behavior of Republicans on climate change legislation. Some scholars have suggested that political opposition to environmental protection, which in the modern day includes climate change mitigation, stems from the agenda of fossil fuel-related interest groups and not necessarily a general public opinion.⁹⁷ The mixed nature of the scholarship thus prompted me to collect data on both public opinion and fossil fuel contributions.

Figure 8.



⁹⁶ Coan, Travis G., and Mirya R. Holman. “Voting Green.” *Social Science Quarterly* 89, no. 5 (2008): 1121–35. <http://www.jstor.org/stable/42956366>.

⁹⁷ Richard J McAlexander, and Johannes Urpelainen. “Elections and Policy Responsiveness: Evidence from Environmental Voting in the U.S. Congress.” *The Review of Policy Research* 37, no. 1 (2020): 39–63.

BIVARIATE RESULTS AND DISCUSSION

In this section, I will discuss the bivariate relationship between the dependent variable (climate score) and each independent variable. Table 3 demonstrates the statistical values for each independent variable in the context of a bivariate, linear regression with climate score.

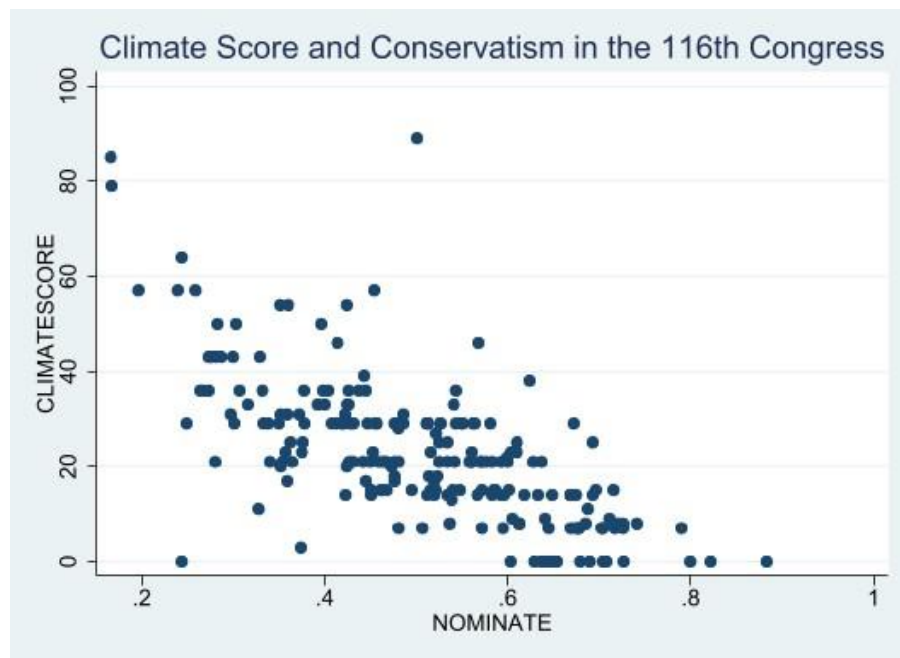
Table 3.

Variables	Coefficient	Standard Error	P Value	R2 Value
Climate Score X NOMINATE Score	-74.59	5.58	0.00	0.46
Climate Score X Public Opinion	0.88	0.23	0.00	0.07
Climate Score X Representative Age	-0.06	0.10	0.50	0.00
Climate Score X Median District Age	0.88	0.28	0.00	0.04
Climate Score X Coastal District	13.39	2.85	0.00	0.09
Climate Score X Oil/Gas Contributions	9.35e-06	0.00	0.55	0.00

The strongest independent indicator of how a member will vote is their NOMINATE score, or level of conservatism. NOMINATE score has an r2 value of 0.46 and P value of 0.00, which indicates strong significance in influencing climate score. As you can see from Figure 9, there is a strong negative correlation, signaling that the more conservative a member is, the less climate change legislation they vote for. In a bivariate context, we see multiple variables that appear significant: NOMINATE, Public Opinion, Median District Age, and Coastal District. The p values for these variables are all 0.00. The variable with a the highest r2 value is NOMINATE score, which also has the highest coefficient. In a bivariate relationship, an increase in NOMINATE score from 0 to 1, which covers the entire scale of the metric, would decrease a member's climate score by over 74%. Coastal location is also particularly significant, with a p value of 0.00 and a coefficient of 13.39. This coefficient means that, independently, a

Republican member who represents a coastal district will have a climate score that is 13.39% higher than a Republican member who represents a landlocked district.

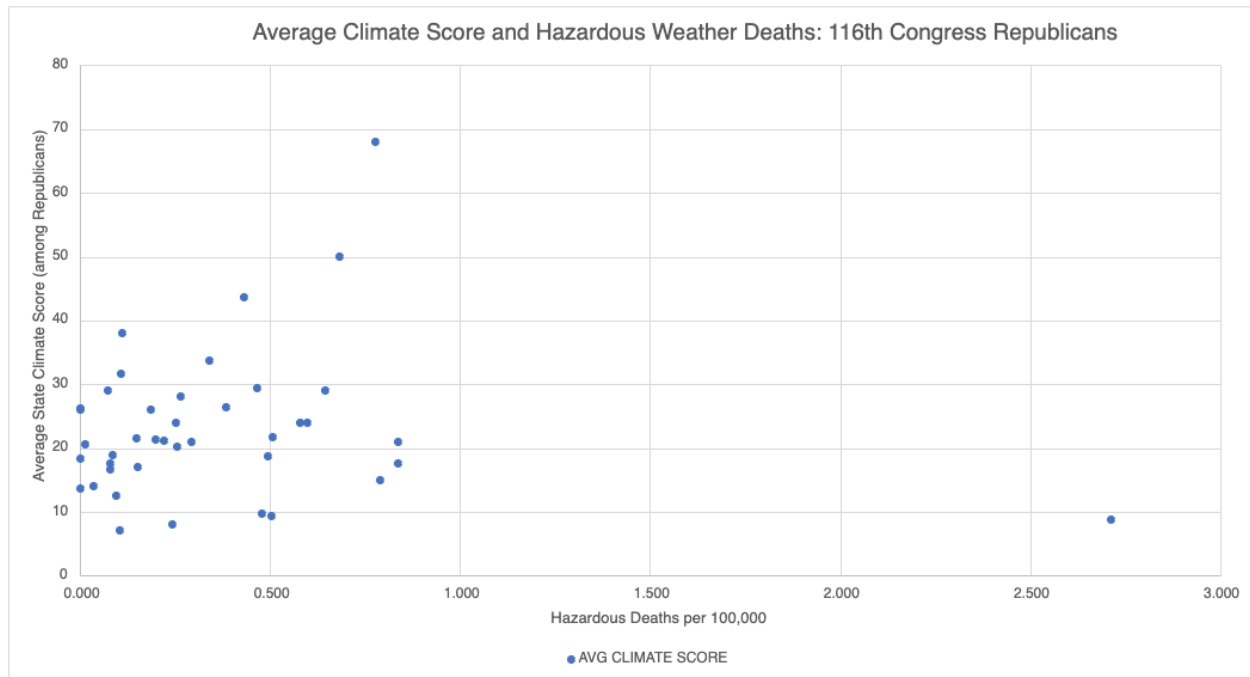
Figure 9.



One particularly interesting finding is the lack of relationship between oil/gas contributions and climate score. The p value of oil/gas contributions is 0.55, which is well above the standard of significance at 0.05. With oil/gas contributions showing no relationship, it is suggested that other factors may outweigh money influence on Republican voting behavior when it comes to climate change legislation. Though it has been suggested that that money and industry can be the driving factor of voting behavior on climate change, this does not appear to be the case in my study of the 116th Congress.⁹⁸

⁹⁸ Matthew H. Goldberg, Jennifer R. Marlon, Xinran Wang, and Anthony Leiserowitz, "Oil and gas companies invest in legislators that vote against the environment," *Proceedings of the National Academy of Sciences - PNAS* 117, no. 10 (2020): 5111–5112.

Figure 10.



weather events,⁹⁹ while others have suggested that the voting behavior of Republican representatives are unaffected by extreme weather events in their districts.¹⁰⁰

FULL MODEL DISCUSSION MULTIVARIATE

The full multivariate model considers the political and environmental factors simultaneously as predictors for climate score. While the bivariate discussion showed independent influence of each factor on climate score, the multivariate results in Table 4 show that beyond ideology, some variables have a compounding effect on voting behavior. Table 4 shows the statistical values for each variable in a combined context for predicting Republican voting behavior on climate change. The statistical values included are coefficient, standard error, P value, and confidence interval. The r^2 value of the model is 0.56, indicating high statistical significance of the full model and that a large amount of the variation in roll call votes is being explained by the included variables. The coefficient demonstrates % change in climate score when the independent variable increases by one unit. The confidence interval, if significant, does not cross 0 in its spread. Standard error demonstrates how accurately the mean of the dataset represents the true measure. A p value equal to or below 0.05 indicates high statistical significance as well. These statistical rules are used in my analysis to determine level of influence on voting behavior that each variable presents.

⁹⁹ John T. Gasper and Andrew Reeves, "Make It Rain? Retrospection and the Attentive Electorate in the Context of Natural Disasters," *American Journal of Political Science* 55, no. 2 (2011): 340–55.

¹⁰⁰ Chad Hazlett and Matto Mildenberger, "Wildfire Exposure Increases Pro-Environment Voting within Democratic but Not Republican Areas." *American Political Science Review* 114, no. 4 (2020): 1359-1365.

Table 4.

R-SQUARED OF MODEL: 0.56

VARIABLE	COEFFICIENT	STANDARD ERROR	P > T	CONFIDENCE INTERVAL
COASTALDIST	10.01	2.22	0.00	5.63, 14.39
NOMINATE	-71.92	5.47	0.00	-82.71, -61.12
OILGAS	-1. 81E - 06	0.00	0.87	-0.0000235, 0.0000198
REPAGE	-0.14	0.07	0.05	-0.28, -0.001
MEDDISTAGE	0.37	0.22	0.09	-0.05, 0.79
PUBOPINION	0.18	0.17	0.30	-0.16, 0.52

The factor that most affects Republicans' votes on climate change legislation is ideology (as measured by their NOMINATE score). A statistical prediction would tell us that an extremely conservative Republican (with a NOMINATE score approaching 1) can be expected to score about 72% lower on climate score than the most moderate Republican (with a NOMINATE score approaching 0). The NOMINATE scores as a significant indicator tell us that a stronger alignment with conservatism will result in a Republican member voting for fewer climate change bills—demonstrating ideology as a deeply embedded, strong influence in voting behavior. This is consistent with the importance of ideology in the identity of the Republican party. Republicans who are more ideologically extreme vote differently on climate change than those who are ideologically more moderate. The strong correlation of NOMINATE score could additionally be interpreted as voting behavior that is informed by constituency, in which Republicans of varied conservatism levels are elected accordingly by their constituents to reflect conservatism of the district. This nods to the prior roll call analyses that give some weight to the influence of constituency on Congressional voting behavior. With conservative ideology as the primary driving

factor, the statistical analysis of all variables combined thus tells a story of how each variable compounds the effect of ideology in Republican decision-making as it pertains to climate change.

Beyond ideology, coastal location shows a significant finding in understanding Republican voting behavior on climate change. Coastal location also shows a p value of 0.00, which indicates high statistical significance. Additionally, the coefficient of coastal location is 10.01. When considering all factors that I collected data on, this means that a Republican who represents a coastal district can be expected to score 10.01% higher in climate score than a Republican who does not represent a coastal district. The significance of coastal location in Republican voting behavior tells us that climate change impacts are influencing some Republicans at the margins. The science surrounding sea-level rise and storm intensity in coastal states because of climate change is clearly receiving legislative response. Though ideology is a main factor, coastal location still influences Republican voting behavior when ideology is held constant, which shows that the threat of climate change is not being entirely ignored by Republicans. Congressmembers who represent coastal districts are voting to protect the livelihoods of their constituents, because their spaces are at highest risk for immediate impact.

In the 116th Congress, oil and gas contributions showed no statistical significance on Republican voting behavior, with a p value of .87, which is against conventional wisdom that the fossil fuel industry drives such decision-making. Of all the factors, oil/gas is the least significant, which is surprising given that the fossil fuel industry is largely responsible for human-induced climate change. Since oil/gas contributions stem from partisan interest groups and organizations with political agendas, though, it is possible that the statistical insignificance of oil/gas contributions is due to NOMINATE scores overshadowing this effect. Financial contributions have

been shown to only be effective on the voting behavior of those who are already aligned with the contributors' political opinions, so it is likely that this applies to the financial contributions of the oil/gas interest groups as well. It should be noted, too, that the effect of oil/gas contributions might be overshadowed by the effect of NOMINATE score because NOMINATE score and oil/gas contributions could be so closely linked that the statistical analysis of the two variables independently is not appropriate. Oil and gas groups could be making donations on an ideological basis, which would complicate my ability to separate the effect of Oil/Gas contributions from NOMINATE score in independent analyses.

Public opinion in the full model also falls short of explaining Republicans' climate scores, but to a lesser extent. The coefficient of public opinion shows a slight positive effect on climate score, with increases in global warming opinion correlating with higher climate scores. However, this is not conventionally statistically significant, with a p value of 0.30. This result indicates that the past scholarship on constituency-informed behavior is not entirely relevant to the climate voting behaviors of the 116th Congress Republicans. The opinion of constituents on global warming is not driving Republican legislators to vote one way or another, despite the increasing threat of climate change presented by scientific modeling.

The most significant influence on climate score remains ideology and secondarily coastal location, but beyond these, climate score is influenced by representative age. The p value of representative age is 0.05, which is within the standard of 0.05 for statistical significance. The p value of median district age, however, is above 0.05 at 0.09. Since there is much more variation in representative age than median district age, the effect of age is clearer to interpret when looking at representatives' ages rather than the median age of the district. The coefficient of

median district age is a positive value at 0.37, indicating that as median district age increases, the support for climate change legislation actually increases marginally. But, with little significance, median district is not considered an influential factor on Republican voting behavior. Representative Age, however, is statistically significant. The coefficient of representative age is a negative value at -0.14, indicating that as representative age increases, their support for climate change legislation slightly decreases. To put this into context, this would mean that Rep. William Timmons (33 years old) would score 7.14% higher on the climate scoring than Rep. Donald Young (85 years old); or in other terms, Rep. Timmons would vote for one more climate bill on average than Rep. Young. This finding is consistent with prior scholarship that suggests younger generations are more likely to believe in global warming. Therefore, younger Republican representatives are more likely to vote in favor of climate change.

Ideology, location, and representative age are the most significant influences on Republican voting behavior on climate change. While climate scientists and activists might wish that climate change were a nonpartisan issue that causes politicians to respond to the projected science, that is not the case. Partisanship matters, as demonstrated by the significance of NOMINATE scores. However, immediate climate change impacts are, in fact, having an influence on Republican voting behavior beyond the impacts of conservatism. This finding shows that high risk of climate change impacts does carry weight in the political decision-making of Republicans in the 116th Congress.

Conclusion

In conclusion, ideology is a dominant driving force in Republican voting behavior on climate change. Beyond this, coastal location has a positive effect on climate score and age of the representative has a slight negative effect. With these two variables being the most significant, it can be inferred that ideological values of the Republican party and high-risk areas to climate change impacts largely inform voting behavior of Republicans on climate change legislation. The lack of significance found in Oil/Gas contributions, however, suggests that the fossil fuel industry may not be having as much of an impact on Republican voting behavior as one might think. Coastal location as a prevailing influence on voting behavior demonstrates that there exists a group of Republicans that are paying attention to climate change impacts—and vote for climate legislation out of concern for their constituents at risk on the coast. This study confirms what has been known about the impact of ideology on voting behavior and climate change legislation: conservatism will drive anti-climate change behavior. But, this study also gives an important nuance in the behavior of Republicans, by bringing geographical location into the conversation. Coastal districts are at the forefront of vulnerability to climate change impacts, and are indeed receiving legislative response from Republicans that represent such areas. The threat of sea-level rise, storm frequency, and storm intensity is putting constituent lives at risk, and their Republican legislators are taking action.

It is important to recognize the narrow scope of my research, and the implications it has for the wider study of climate change politics. The research conducted was limited to one session of Congress—the 116th—which only gives a timeframe of two years and 206 Republican members to analyze. The conclusions made about Republican behavior regarding climate

change legislation are only within the context of the 116th Congress and the years 2019 and 2020. While the statistical models discussed in this paper may describe the 116th Congress, they may not necessarily describe other sessions of Congress, or the institution of Congress as a whole. Other sessions of Congress, both past and future, may act differently given different circumstances and constituencies.

Additionally, the legislation used in this research was limited to available data. Republican voting behavior could only be tracked via legislation that had recorded roll call votes, so pieces of legislation that were passed via voice vote could not be included. Climate change legislation that was never voted on was not able to be included because there is no quantifiable way to track individual members' support or lack of support for such legislation. In selecting legislation, I incorporated legislation that was found in press releases published by environmental organizations in the US. But, some organizations focused on bills that were only being brought to the floor and not voted on, which complicates my research because while these organizations might have supported such bills, there was no quantifiable way to place the importance the organization placed on the legislation in comparison to Republican Congressman opinion. Moreover, I was limited in the data I was able to collect because I was constrained to district-level analysis.

The dichotomy of Rep. Rooney and Rep. Perry discussed in the opening of this paper now perfectly illustrates the importance of coastal location that my research found. Representative Perry and Rooney are both strong conservatives, yet have very different climate scores. What drives Rooney's voting behavior is the coastal location of his district: the Fort Myers area of Florida state. What drives Perry's voting behavior is his conservatism, because his district of

central Pennsylvania is landlocked. But this story is not limited to these two Congressmen. Rooney is considerably conservative, with a NOMINATE score of 0.501 and a high climate score of 89%. Rep. Brian Mast (FL-18), also a Florida Republican, has a NOMINATE score of 0.454 but has the fifth highest climate score at 57%. While this same level of conservatism might explain other members' climate scores, the coastal location of Rooney's and Mast's districts work beyond their ideology and drives them to vote for more climate change legislation. Rep. Garret Graves (LA-6) has the same NOMINATE score as Rep. Mast: 0.454. However, Graves represents a landlocked district and has a climate score of 23%. This score is significantly below Mast's score of 57%. Furthermore, Rep. Fred Keller (PA-12) has a similar NOMINATE score to Rooney at 0.495, but has a climate score of 7%, well below Rooney's score at 89%. Coastal location clearly matters to Republicans, above their level of conservatism, in making legislative decisions on climate change.

The purpose for my focus on Congressional Republicans remains: if the U.S. wishes to see effective, sweeping climate change legislation, it must come from a united Congress. Climate change will reach every corner of our country if such action does not take place. In the present day, we see a division among Republicans on climate change. With a deeper understanding of Republican voting behavior on climate change because of this research, and seeing a demonstrated legislative response to coastal vulnerability, steps can be taken to move toward unity in the future. Lobbying of coastal Republicans could help increase their concern for the threat that climate change presents to their districts. Concerted efforts towards coastal Republicans might help move the needle towards Republican unification on climate change, because these members already understand the threat of climate change and respond

accordingly. Furthermore, the importance of coastal location on Republican voting behavior opens a potential door for leadership and unity within the Republican party. These coastal Republicans can become the legislative leaders on climate action for their own kind, and bolster efforts that have already begun to take shape—like Conservative Climate Caucus. Though ideology and coastal location are clear influences, Republican voting behavior must continue to be researched and understood for federal climate change legislation to become law. Republicans have the capability—and responsibility—to finally make effective climate change legislation a reality for the United States.

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